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Document Control

Document Title	Inprocess Reference List 2008 - 2025
Date	31 December 2025
Document Reference	2025.4
Author	Josep Anton Feliu

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Siemens-PCS7	Dutch FPSO Constructor	Netherlands	Conversion of an existing OTS in a Guyana FPSO, from Kongsberg technologies to Inprocess	UniSim Design	2025	EPC	Oil & Gas (FPSO)	Initial part of the project that comprises the "conversion" of an existing OTS that was utilizing Kongsberg technologies to Inprocess, using UniSim Design as dynamic process simulator, Inprocess Infrstructure Suite (IIS) and Siemens-PCS7 Simulator
Flare Systems Analysis with Dynamic Simulation Study	North American Oil Refinery	United States	Tube rupture analysis in a Shell&Tube exchanger (two-subsystem dynamic model approach)	OLGA	2025	Operator	Refining	The specifics of this analysis focuses on a tube rupture that is a rare but potentially high-consequence event that can expose the cooling water (CW) system to high-pressure hydrocarbons, potentially causing rapid pressurization in the shell, sub-header, and main cooling water header. Client required a rigorous, systemwide analysis to quantify these transient effects, determine overpressure risks, and confirm whether existing the existing system is adequate under a tube rupture scenario
DirectConnect OTS: Rockwell-FactoryTalk	Brazilian office of a software technology provider for a Brazilian oil company	Brazil	Development of the 3D training environments for the Immersive Training Simulators of 5 FPSOs in Brazil	Aspen HYSYS	2025	Software Development Company	Oil & Gas (FPSO)	Creation of the 3D environments in the Immersive Training Simulators of 5 FPSOs in Brazil in order to train simultaneously the Field Operators with the Control Room Operators. Software and Hardware included
Dynamic Simulation Studies for Compression Systems	FPSO Constructor and Operator	Marshall Islands	Dynamic Simulation for new NAG and Export Compression System in an existing FPSO in Nigeria	Aspen HYSYS	2025	EPC	Oil & Gas (FPSO)	Study to ensure the safe and reliable handling of new gas and liquid processing conditions, and to validate the design and control strategies before implementation. This proactive approach reduces operational risks and provides confidence in the system's performance under both normal and upset scenarios
Dynamic Simulation Studies for Compression Systems	Chinese branch of a Compressor Manufacturer for a Saudi O&G company	China	Dynamic Simulation Study for a Power Plant Fuel Gas System in Saudi Arabia	Aspen HYSYS	2025	Equipment Manufacturer	Power Plants	Development of a dynamic model of the compressor-turbines system and execution of several scenarios in order to simulate how much buffer capacity shall be needed between Fuel Gas Compressors (FGCs) and the Gas Turbines (GT).

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Hybrid DirectConnect OTS: Iconex Honeywell Experion	Japanese FPSO constructor	Singapore	Multi-Purpose Dynamic Simulator for an FPSO to be located in Guyana	UniSim Design	2025	EPC	Oil & Gas (FPSO)	Multi-Purpose Dynamic Simulator for an FPSO in Guyana comprising 9 stages: Process Modelling and Simulation Studies; Operating Procedures and Training Modules; ICSS Verification; Operators Training; FPSO Pre-commissioning support; FPSO start-up support; Post-commissioning and start-up as-built; Update/Improve Operating Procedures and Training Modules; and ongoing OTS support and use.
Dynamic Simulation Studies for Compression Systems	Austrian Oil & Gas Company	Austria	Gas Storage Compressor Dynamic Simulation for Process Safety Time Calculation	Aspen HYSYS	2025	Operator	Natural Gas	Dynamic Simulation to calculate the Process Safety Time for a Gas Storage Compressortesting the response of the proposed system to a blocked outlet scenario followed by an Emergeny Shutdown one
Dynamic Simulation Modelling Study	Chinese EPC for an Emirates NOC	United Arab Emirates	Dynamic Simulation Study for the new and existing processing facilities in an oil & gas field in UAE	Aspen HYSYS	2025	EPC	Natural Gas	Dynamic Simulation study of the gas lift trains as part of an expansion project. The scope includes modelling and studiying new facilities of CDS and interfaces with existing facilities, including a new 5th stage gas injection compressor train and new gas lift compressor train along with the existing gas injection and gas lift compressor trains.
Flare Systems Analysis with Dynamic Simulation Study	Emirates EPC for an Emirates NOC	United Arab Emirates	DSS for a flare gas recovery network, routing flare gases from a series of existing platforms to newly installed Vapor Recovery Compressor Unit	Aspen HYSYS	2025	EPC	Oil & Gas	Dynamic simulation study for flare gas recovery network of an offshore complex, routing flare gases from GIP/CGIP, GG-II, GPF-I and GPF-II platforms to newly installed Vapor Recovery Compressor Unit (VRU) at GPF-II platform. The objective of the study is to analyse the vapour recovery operation during normal operation as well as during process upset conditions in any of the platforms.
Steady State Simulation Modelling Study	Greek Ships Management Services Provider	Singapore	SS model review and validation for an offshore oil processing topside	Aspen HYSYS	2025	Operator	Oil & Gas	Steady State simulation model review and assurance for offshore topsides, assessing the impact of reducing crude RVP from 8.6 psia to 6 psia and providing fit-for-purpose recommendations.
Flare Systems Analysis with Dynamic Simulation Study	Multinational EPC for an Emirates NOC	United Arab Emirates	Transient Analysis in OLGA of NMGL and IGL offshore pipelines + a surge analysis with TLNET	OLGA	2025	EPC	Oil & Gas	Inprocess carried out a Transient Analysis in OLGA of NMGL and IGL offshore pipelines through several scenarios for determining the maximum achievable flow and slug volumes. In addition to a Surge analysis in TLNET of the condensate network and provide mitigation for preventing surge pressure.

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Dynamic Simulation Modelling Study	Multinational EPC for an Emirates NOC	United Arab Emirates	Dynamic Simulation Study for an existing and new Gas Trains including Inlet facilities, Gas Dehydration and Gas Compression	Aspen HYSYS	2025	EPC	Oil & Gas	Inprocess carried out a Dynamic Simulation Study in HYSYS for existing a new Gas Trains including Inlet facilities, Gas Dehydration and Gas Compression facilities to confirm the stability during transient flow conditions, startup and shutdowns.
Generic Unit Operations Training (ITOP)	Greek Refining Company	Brazil	ITOP 3D Modules	No Process Simulator needed	2025	Operator	Refining	3D visualization environment for ITOP, including unit operations involved in heat transfer, fluids transportation, process control, separation processes and continuous ideal reactors
Hybrid DirectConnect OTS: Iconex Yokogawa CentumVP	Brazilian Refining Group	Brazil	Instructor Book & Operating Procedure Review for the acquired OTS	Aspen HYSYS	2025	Operator	Refining	Development of the Instructor Book and revision of the Operating Procedures for the OTS being dveloped for a Residue Fluid Catalytic Cracker
Dynamic Simulation Modelling Study	Spanish Petrochemical Company	Spain	Estimation of process emissions based on real plant data	Aspen HYSYS	2025	Operator	Petrochem	Dynamic Simulation of a plant section in order to estimate the Volatile Organic Compounds (VOC) emissions and compare those results with the values measured in the real plant. In this project, the dynamic model has been improved and validated to better match real data
Dynamic Simulation Modelling Study	Spanish Renewable Energy Solutions provider	Spain	New operating conditions for the Evaporator Tube Rupture and Overpressure Analysis	Aspen HYSYS	2025	EPC	Power Plants	The dynamic simulation study for evaporator tube rupture analysis was successfully completed, employing Aspen HYSYS® Dynamics to model transient behavior and predict dynamic pressure variations. The study focused on identifying potential overpressure scenarios and assessing mitigation strategies to prevent pressure rise above design thresholds. Deliverables included a detailed simulation report, highlighting insights into system safety and operational reliability, and native simulation files for future analysis.
Dynamic Simulation Modelling Study	Emirates office of a Chinese EPC working for an Iraqi O&G company	United Arab Emirates	DSS for a new oil train with latest vendor data included in the model	Aspen HYSYS	2025	EPC	Natural Gas	Dynamic Simulation Study of a new oil train to include updating the model with latest vendor data, re-execution of the scenarios and updating the analysis results and outcome of the study.

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Flow Assurance Analysis	Spanish EPC working for an Argentinian E&P company	Spain	Wax Deposition Flow Assurance Study	OLGA	2025	EPC	Oil & Gas	In the context of increasing production of unconventional crude oil in an onshore oild field in South America, there is the need arises to develop a pipeline as an evacuation route from the field core hub to an export terminal. Therefore, a series of studies were carried out to evaluate paraffin (wax) deposition rates under operating conditions; to estimate the pigging frequency, based on the amount of wax accumulated (maximum WAX layer thickness constraint) and the available discharge pressure from the pumps; to assess the cooling conditions following system shutdown, from the worst case analyzed in the normal operation; and to analysize the start-up procedure from the worst case analyzed in the normal operation
Hybrid DirectConnect OTS: Iconex Yokogawa CentumVP	Japanese FPSO constructor (Indian JV)	India	Operator Training Simulator for an FPSO in a pre-salt Orca field in Brazil	UniSim Design	2025	EPC	Oil & Gas (FPSO)	Operator Training Simulator constructed in two stages to ensure to fulfill all final client requirements regarding training operators on time for sail-away and first-oil. First stage implies the delivery of a rigorous emulated OTS with all control and safety logics being part of the dynamic simulation model in UniSim. The second stage implies the delivery of a hybrid approach to a direct-connect OTS where the DCS is represented in the OTS with a standalone Inprocess' software package (IConex CVPSim) that works exactly as it does in the plant. The SCS code for the simulator and the plant are the same. Another project challenge is the usage of a holistic dynamic simulation model involving both the processing facilities in UniSim and the subsea pipelines in OLGA
Hybrid DirectConnect OTS: Iconex Yokogawa CentumVP	Qatari Oil Company	Qatar	Multi-Purpose Dynamic Simulator for an oil platform offshore Qatar	Aspen HYSYS	2025	Operator	Oil & Gas	Multi-Purpose Dynamic Simulator for an oil platform offshore Qatar including up to four modules: Process Model Development and Dynamic SImulation Studies; Operating Procedures Validation and Early-Emulated OTS; ICSS Database checkout; and Direct-Connect OTS. The simulation model will contain all the exiating brownfield facilities plus the new greenfield ones in the clietn current expansion project

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Flow Assurance Analysis with Dynamic Simulation Study	Spanish EPC working for an Emirates NOC	Spain	Depressurization and MDMT Study for offshore Topside Facilities in UAE	Aspen HYSYS	2025	EPC	Oil & Gas	Depressurization and MDMT Study for offhosre Topside Facilities. The study covered both emergency blowdown scenarios and manual/pipeline depressurizations, ensuring compliance with Customer standards. Using Aspen HYSYS BLOWDOWN Technology, simulation models have been developed, depressurization performance analyzed, and mini-reports per section and a consolidated final report with recommendations have been delivered.
Dynamic Simulation Studies for Compression Systems	Italian Compressor Manufacturer for an Iraqi Oil Company	Italy	Dynamic Simulation Study for the seal system of a Multi-Stage Raw Gas Compressor Systems	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas	Client has requested Inprocess to estimate the quantity of condensates that will be accumulated in the seal gas condensate separators during the start-up of the compressor. To achieve this objective, the currently available dynamic simulation model will be updated to include the seal gas lines and condensate separators, and a succession of dynamic studies will be carrie dout to confirm the adequacy of the current design or to propose corrective measures
Dynamic Simulation Modelling Study	Malaysian FPSO constructor	Marshall Islands	Settling Tank Oil & Water Separation for Optimised Design Case	Aspen HYSYS	2025	EPC	Oil & Gas (FPSO)	Analysis of the performance of FPSO's settling tanks to ensure effective oil-water separation. The primary goal was to verify that oil can be separated to meet the required specification for export, and that produced water meets the oil-in-water specification for overboard discharge. The analysis utilized dynamic simulations, leveraging commercial process simulators with additional calculations for the settling velocity calculation. The study evaluated key factors, such as settling velocity, temperature effects, residence time, and tank configuration, to confirm the adequacy of gravity separation

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DirectConnect OTS: Siemens-PCS7	Dutch FPSO Constructor	Netherlands	Operator Training Simulator for an FPSO in Guyana	UniSim Design	2025	EPC	Oil & Gas (FPSO)	The Test and Training Simulator (TTS) includes model development, validation of both operating procedures and ICSS application code, operator training and operations support. The process simulator contains a dynamic process model simulaiting the FPSO processing facilities using UniSim Design as the process calculation engine; a virtualized version of the integrated control and safety system (ICSS) from Siemens PCS7. Inprocess Infrastructure suite has been the software used to facilitate the interface between the above components, perform administrative tasks (e.g. save and load snapshots) and provide input to the boundaries of the simulation system (e.g. well fluids composition).This software also includes the interface for the Instructor station.
Dynamic Simulation Modelling Study	Malaysian FPSO constructor (Brazil Office)	Brazil	Dynamic Simulation Study to help on the start-up of a combined cycle plant in an FPSO in Brazil	Aspen HYSYS	2025	Operator	Oil & Gas (FPSO)	Simulation studies, taking advatnage of the existing dynamic model in the direct-connect OTS, with the objctive to help on the start-up of the combined cycle that poweres the FPSO. The study had implied three phases: dynamic studies of the combined cycle system to ensure stability, performance, and safety; OTS update and virtual commissioning of the combined cycle area; and operators training in the combined cycle area.
Dynamic Simulation Studies for Compression Systems	Italian Compressor Manufacturer for a Chinese Company	Italy	Dynamic Simulation Study for Dew Point determination in the compressor suction	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas	Simulation analysis to determine the best approach to calculate the dew point in a compressor seal gas system
Dynamic Simulation Studies for Compression Systems	French office of an US Compressor Manufacturer for a UK Oil&Gas company	France	Dynamic Simulation Study for Compression System for an FPSO in Brazil	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas (FPSO)	Dynamic Simulation Study for a Compressor System to be installed in an FPSO to determine the dimensions and its protection systems having tested the performance of the compressor under emergency shutdown, blocked outlet, blocked inlet and start-up scenarios

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Hybrid DirectConnect OTS: Iconex Yokogawa CentumVP	Brazilian Refining Group	Brazil	High Fidelity Emulated OTS for an RFCC plus a Generic OTS for CDU/VDU	Aspen HYSYS	2025	Operator	Refining	Development of a RFCC with high fidelity OTS (using Inprocess CVPSim Yokogawa's Centum VP emulator), including Instructor, administration and operators training, operating procedure review and Instructor book. Development of a Generic CDU/VDU OTS based on specific data from CDU and VDU units in the real plant, including Yokogawa's look& feel.
Advanced Training Content	U.S.-based sustainable fuels technology developer and plant operator	United States	Advanced Training Content for the OTS of a SAF Demonstration Plant	Aspen HYSYS	2025	Operator	Refining	Development, implementation and delivery of a digital training plan for the operators (mix of experienced and newbies) of the SAF demonstration plant bein built
Dynamic Simulation Studies for Compression Systems	USA Division of a German Compressors Manufacturer	United States	Compressor Dynamic Simulation Study for Path2Zero	UniSim Design	2025	Equipment Manufacturer	Petrochem	Dynamic simulation study to evaluate the compressor transient dynamics and control response when the compression system is subjected to different scenarios in accordance with API 617 Appendix H.
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer	Germany	Dynamic Simulation Study for CO2 Compressor	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas	Inprocess will re-use the model files from a previous project delivered to the same end client. In that project, Inprocess provided a dynamic simulation of the turndown scenario for the same compressor, focusing on its impact on the upstream CO_2 stripper. The model will be updated and validated against new data, and the findings from the previous project will be taken into account in order to determine now its behaviour in front of transient operating situations including startup, shutdowns, anti-surge valves failures, blocked outlets, turndown operation…
Dynamic Simulation Modelling Study	North American LNG producer	United States	Dynamic Simulation of GP LNG Inlet Header: Impact of Gas Supply Expansion Project	Aspen HYSYS	2025	Operator	Natural Gas	Dynamic Simulation Study to understand how the system will respond dynamically across different combinations of gas suppliers, control valve actions, and train operational modes, Inprocess simulated a range of operating scenarios, including planned configurations provided by company, as well as stress cases proposed by Inprocess based on industry experience and process behaviour.

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Flare Systems Analysis	German Oil Refinery	Germany	PRV Revalidations for two processing units in a German oil refinery	Salus	2025	Operator	Refining	The scope of the study will be the revalidation of a total amount of 63 PSVs corresponding to 48 services from the Atmospheric Distillation and Vacuum Distillation Units, using Salus software (Smith & Burgess) for the revalidation of safety valves and the same methodology followed in previous revalidation projects executed by Inprocess for the Company
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer	Germany	Dynamic Simulation Study for Low Pressure & Gas Export Compressors	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas (FPSO)	Dynamic simulation study to evaluate the compressor transient dynamics and control response when the system is subjected to different scenarios, including startup, shutdowns, anti-surge valves sizing, turndown operation…
Steady State Simulation Modelling Study	Norwegian Oil Company	Norway	Optimalisation of an production allocation Aspen Hysys LowLowPressure master file	Aspen HYSYS	2025	Operator	Oil & Gas	Enhancing the performance of an Aspen HYSYS Setady State simulation model for the Low Low-Pressure (LLP) mode used for production allocation in a North Sea Platform. The goal had two aspects: to improve the simulation's calculation speed and to streamline the management of model inputs, making the model more user-friendly and efficient for use in the calculation and new inputs.
Flow Assurance Analysis	Middle East EPC working for a National Oil Company	United Arab Emirates	Surge Analysis for the various possible valve closure cases	TL-NET	2025	EPC	Oil & Gas	Surge Analysis for the various possible valve closure cases and propose the required surge relief mitigation measures. The study will be conducted on three pipeline loops going from jetties to refineries.
Dynamic Simulation Modelling Study	Middle East EPC working for a National Oil Company	United Arab Emirates	Dynamic simulation study of the gas circuit of offshore platforms	Aspen HYSYS	2025	EPC	Oil & Gas	Dynamic simulation study of the gas circuit of offshore platforms to evaluate the set point of the New PCVs installed at the suction manifold control valve to provide the preferential flow to new platform.
Flare Systems Analysis	American Petroleum Refinery	United States	Liquid Velocity Analysis in Relief Discharge Pocketed Piping	OLGA	2025	Operator	Refining	Transient analysis for the refinery pipes going from relief devices to flare header and to evaluate the liquid accumulation in the pocketed piping through the results obtained with a dynamic simulation model
Dynamic Simulation Modelling Study	French EPC for an Italian Major Oil Company	France	Dynamic Simulation of an Emergency Depressurization System under Jet Fire Scenarios	Aspen HYSYS	2025	EPC	Power Plants	Inprocess conducted a dynamic simulation study to assess the performance of an emergency depressurization system for a hydrogen storage unit under jet fire conditions. The study confirmed whether the proposed system could safely depressurize storage vessels within the required time and evaluated thermal and mechanical integrity under critical scenarios.

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Steady State Simulation Modelling Study	Technology Lab of a Spanish oil company	Spain	On-Demand Support Services for Process Simulation and Model Maintenance	Client's Proprietary	2025	Operator	Refining	Inprocess provided one year of agile simulation support, delivering expert services for model maintenance, recalibration, and data preparation. The flexible setup ensured quick responses to evolving needs in ongoing digitalization projects.
Flare Systems Analysis with Dynamic Simulation Study	Spanish Petroleum Refinery	Spain	Extended Dynamic Flare Study for a Power Failure in a combustibles plant	Aspen HYSYS	2025	Operator	Petrochem	Inprocess successfully delivered an extended dynamic simulation study focused on the naphtha strippers 655-C-14 and 655-C-20, as part of a broader flare load analysis under GPF (General Plant Failure) conditions. The scope was expanded to include upstream equipment, reducing the need for assumptions on feed conditions and improving the accuracy of the simulation results. This allowed for a more precise assessment of each unit's contribution to flare loads, supporting better-informed design and safety evaluations.
Generic Unit Operations Training (ITOP)	A Spanish vocational training center	Spain	ITOP Fired Heater Module and Web-Based Deployment	Aspen HYSYS	2025	Educational Institution	Educational Institution	Inprocess delivered an additional training module for the ITOP platform focused on fired heater operation, along with a web-based deployment of the entire ITOP system. The module includes realistic exercises, safety systems, and startup procedures, providing students with hands-on simulation of complex thermal equipment. The web-based implementation enables remote access and session management, enhancing flexibility and scalability for training delivery. A 3D visualization package was also included as part of the upgrade.
DirectConnect OTS: Siemens-PCS7	Dutch FPSO Constructor for a major US oil company	Netherlands	Conversion and Extension of an Operator Training Simulator	UniSim Design	2025	EPC	Oil & Gas (FPSO)	Inprocess successfully converted and extended an Operator Training Simulator (OTS) for an FPSO unit. The project involved adapting the existing simulator to new control system interfaces, updating process models, and adding new training scenarios. The updated OTS improves operator readiness and safety through realistic training on key process operations and upset conditions.
Emulated OTS: Emerson-DeltaV	German Ammonia Process Licensor	Germany	Operator Training Simulator for an Ammonia Plant to be built in Mexico	Aspen HYSYS	2025	Process Licensor	Bulk Chemicals	Inprocess developed and delivered a high-fidelity Operator Training Simulator (OTS) for an ammonia plant, supporting pre-commissioning and startup activities. The OTS replicates the full plant behavior, enabling operators to train on normal operations, startups, shutdowns, and emergency scenarios. The system enhances operational safety and accelerates learning before field implementation.

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Flare Systems Analysis with Dynamic Simulation Study	Spanish Petroleum Refinery	Spain	Flare System Study to evaluate the temporary rerouting of flare loads from one network to another one	Flarenet/ Aspen Flare Analyzer	2025	Operator	Refining	Inprocess conducted a dynamic study to evaluate the temporary rerouting of flare loads from the Conversion flare network to the Refinery II flare system. The objective was to verify the capacity and hydraulic behavior of the interconnected system during major upset scenarios, as well as to assess KO drum performance, radiation, and noise. The study provided a timely analysis to ensure safe operation while the Conversion flare was temporarily offline.
Flow Assurance Analysis with Dynamic Simulation Study	Emirates EPC for an Emirates NOC	United Arab Emirates	Dynamic Simulation Study of Depressurization, MDMT, and Hydrate Risk	Aspen HYSYS	2025	EPC	Oil & Gas	Inprocess performed a dynamic simulation study to assess depressurization behavior, Minimum Design Metal Temperature (MDMT) compliance, and hydrate formation risk in a subsea gas system. The analysis helped evaluate thermal and mechanical integrity during blowdown and identified scenarios requiring mitigation to avoid hydrate blockage.
DirectConnect OTS: Emerson-DeltaV	Instrumentation Provider for a US LNG Operator	India	Operator Training Simulator for an LNG Export Terminal	Aspen HYSYS	2025	Instrumentation Provider	Natural Gas	Inprocess developed a dynamic Operator Training Simulator (OTS) for an LNG export facility to support operator readiness ahead of startup. The OTS models key plant systems and integrates with the control system interface, enabling complete training on normal operations, startup/shutdown sequences, and emergency procedures. The solution enhances safety, minimizes commissioning risks, and accelerates operator competency.
Dynamic Simulation Modelling Study	Japanese FPSO constructor	Singapore	Dynamic Reliability Study for FPSO Seawater Injection System	UniSim Design	2025	EPC	Oil & Gas (FPSO)	Inprocess carried out a dynamic simulation study to evaluate the reliability of a seawater injection system on an FPSO. The objective was to assess whether specific equipment trips could lead to full loss of injection header pressure. The study used first-principles modeling and included key transient scenarios to identify critical failure modes and validate system robustness under various operating conditions.
Emulated OTS: Honeywell-TDC3000	Petrochemical Spanish Company	Spain	Emulated Operator Training Simulator for IPA Unit	Aspen HYSYS	2025	Operator	Petrochem	In parallel to the development of the direct-connect version, Inprocess built an emulated Operator Training Simulator (EarlyOTS) for the IPA unit, replicating the control system interface and process behavior to support operator training. The OTS includes realistic scenarios for startups, shutdowns, and malfunctions, enhancing operational safety and preparedness ahead of plant startup.

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Flow Assurance Analysis	Emirates office of a Chinese EPC working for an Iraqi O&G company	United Arab Emirates	Asphaltene Precipitation Study	OLGA	2025	EPC	Oil & Gas	As part of the Transient Study of the Trunklines and Flowlines Network, Inprocess has to provide an Asphaltene precipitation study. The overall project development includes well pads, gathering systems, water injection facilities, gas and water treatment, a light oil export pipeline and tank farm upgrades, tie-ins to LPG and gas export systems and further expansion of utility systems and supporting facilities.
Flow Assurance Analysis	Emirates office of a Chinese EPC working for an Iraqi O&G company	United Arab Emirates	Flow Assurance Transient Study of the Slug volume, pigging and depressurization	OLGA	2025	EPC	Oil & Gas	Inprocess scope includes the Transient Analysis study of the Trunklines and Flowlines of the gathering network from Wellpads to CPF, including the study of the Slug volume, pigging and depressurization. The overall project development includes well pads, gathering systems, water injection facilities, gas and water treatment, a light oil export pipeline and tank farm upgrades, tie-ins to LPG and gas export systems and further expansion of utility systems and supporting facilities.
Dynamic Simulation Modelling Study	Malaysian FPSO Constructor	Malaysia	Debottlenecking Study for Topside Systems on FPSO	Aspen HYSYS	2025	Operator	Oil & Gas (FPSO)	Inprocess successfully completed a debottlenecking study for the topside systems of an FPSO in anticipation of a 20% increase in oil production. Using updated steady-state models, the study assessed system capacity limits, evaluated performance under new operating scenarios, and identified constraints across separation, water treatment, fuel gas, and flare systems. Key performance indicators—such as energy efficiency, emissions, and utility consumption—were defined and applied to analyze process alternatives. The final deliverables included simulation reports detailing optimization strategies to maximize throughput while maintaining safe and efficient operatio
Flow Assurance Analysis	Emirates EPC Company	United Arab Emirates	Transient Analysis of Offshore Oil Pipeline during Emergency Shutdown Scenarios	OLGA	2025	EPC	Oil & Gas	As part of the Lower Zakum Long Term Development Project, Inprocess will develop the transient analysis for new well fluid pipelines, new gas injection pipeline, new gas lift pipelines, new wet gas pipeline, new/existing export gas pipeline , new/existing Well fluid pipelines in addition to new/existing MOL Pipelines. It will include, but not limited to, studying the slug volumes, verification of the separator operation and pigging operation.

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Dynamic Simulation Modelling Study	Multinational Compressor Manufacturer	France	Dynamic Simulation Study for the revamp of an LP Gas Compressor	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas	Inprocess successfully delivered a dynamic simulation study to assess the transient behavior and control response of a low-pressure gas compressor system as part of a revamp project. The study included the development and validation of a high-fidelity dynamic model in Aspen HYSYS® Dynamics, covering all major equipment and control elements. A wide range of operating and emergency scenarios were simulated—such as start-ups, ESDs, surge events, and control loop failures—to evaluate system response and identify potential improvements in protection strategies. The results were compiled in detailed reports and discussed in milestone meetings throughout the three-month execution period, supporting engineering decisions and enhancing the operability and safety of the revamped compressor system.
Online Appplication	Brazilian Oil and Gas Company	Brazil	Gas Market Flow Simulation	Aspen HYSYS	2025	Operator	Oil & Gas	Inprocess successfully updated a gas market flow simulation tool, enhancing both the dynamic model and user interface. Key upgrades included adding a new input point, enabling valve control at all measurement stations, and allowing reverse flow at the Monte Alegre node. The application now supports scenario analysis with real-time valve adjustments and improved inventory calculations. The updated tool was installed and tested on-site, improving operational flexibility and planning accuracy.

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Dynamic Simulation Modelling Study	Japanese EPC	Japan	Dynamic Simulation Study for Compressor Shutdown and Surge Protection in a Gas Compression Train	Aspen HYSYS	2025	EPC	Oil & Gas	Inprocess successfully delivered a dynamic simulation study to evaluate the shutdown behavior and surge protection system of a gas compression train. A detailed dynamic model was developed in Aspen HYSYS® Dynamics, incorporating the main process equipment and control strategies, with particular focus on the anti-surge controller's effectiveness during emergency shutdown scenarios. The study simulated a range of operating and upset conditions—including normal and emergency shutdowns, blocked outlet and inlet, start-up from cold, and valve failures—to assess transient pressure responses and validate protection measures. Simulation results informed optimal sizing of key valves and provided actionable recommendations to enhance system safety and operability. The project was completed over an eight-week period, with phased model validation, scenario execution, and collaborative review meetings, resulting in comprehensive reports and reusable model files.
Dynamic Simulation Modelling Study	EPC for Kazakhstan	Kazakhstan	Dynamic Simulation Studies for an Oil&Gas Expansion Project	Aspen HYSYS	2025	EPC	Oil & Gas	inprocess successfully completed a dynamic simulation study to assess the controllability and transient response of a gas reinjection and dehydration system, supporting HAZOP action closure. A detailed model was developed in Aspen HYSYS® Dynamics covering multi-stage compression, scrubbers, air coolers, and a dehydration unit. Key scenarios, including production ramp-up and ramp-down, controller switching, and high-pressure events, were simulated to evaluate system behavior and protection strategies. The results validated operational strategies under varying load and failure conditions, and the final deliverables included simulation reports, validated model files, and scenario analyses, ensuring safe and reliable plant operation.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Technical Support & Consultancy	US LNG Company	United States	OTS Oversight for an American LNG Company	UniSim Design	2025	Operator	Natural Gas	Inprocess successfully supported the restoration of a malfunctioning Operator Training Simulator (OTS) system at an LNG facility by acting as the owner's engineering representative. The project involved on-site evaluation of system hardware and software across DeltaV, Mark VI, and CCC platforms, coordination with multiple vendors, and verification of simulator functionality. Inprocess provided technical oversight, facilitated contractor accountability, and prevented scope creep while aligning restoration work with operational training needs. A recommendation report was delivered outlining actions taken and guidance for future improvements. The engagement resulted in a fully functional OTS system ready for operator training, maximizing the return on prior investment and establishing a foundation for long-term use and maintenance.
Hybrid DirectConnect OTS: Proconex Honeywell Experion	Qatari Oil and Gas Company	Qatar	High-Fidelity Operator Training Simulators Upgrade for a Middle East Refinery, including CDU, HT, SRU, and RFCC	Aspen HYSYS	2025	Operator	Refining	The High-Fidelity Emulated Operator Training System (OTS) Upgrade project for a major refinery has been successfully delivered. The project involved developing and commissioning a cutting-edge OTS solution based on Aspen HYSYS® Dynamics for eight major process units, including CDU, RFCCU, Catalytic Polymerization, and more. It featured a complete emulation of the plant's Honeywell DCS and SIS systems using Proconex software, faithfully reproducing the operator interface and control logic. Over 200 training scenarios and malfunctions were implemented to prepare control room operators for normal, abnormal, and emergency conditions. The system was installed with new Orion-like operator consoles and instructor stations, enabling immersive, risk-free training. The new OTS will significantly improve operational readiness, enhance safety, reduce downtime, and provide a platform for ongoing engineering analysis and competence development.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Generic Unit Operations Training (ITOP)	A Spanish vocational training center	Spain	ITOP Services for a Spanish Educational Institution	Aspen HYSYS	2025	Educational Institution	Educational Institution	CPIFP Profesor Jose Luis Graiño, a Vocational Institute in Huelva (Spain), has acquired a 10-users license of ITOP (including the internals equipment 3D visualization and the users' management) to educate their students in Unit Operations functioning. Twelve learning modules will ensure trainees understand better the equipment involved in heat transfer, process contrrol, fluids transport, separation processes and chemical reaction.
Dynamic Simulation Modelling Study	French office of an US Compressor Manufacturer for a Qatari Gas company	France	Compressors Dynamic Simulation for Overall Operation for Qatari Oil and Gas Plant	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas	Extension of an existing dynamic simulation project to include overall simulation after the performance of the verification of the compressor behaviour.
Dynamic Simulation Modelling Study	Canadian Oil and Gas Company	Canada	Dynamic Flare Load Analysis for West Flare Network Capacity Expansion	Aspen HYSYS	2025	Operator	Refining	Inprocess successfully delivered a dynamic simulation study to evaluate the flare system behavior of a refinery's west flare network under revised operating conditions following capacity upgrades. The study updated existing Aspen HYSYS® Dynamics models to reflect new furnaces, tray modifications, and revised process configurations, increasing throughput from 270k to 300k barrels per day. Common and single contingency relief scenarios were simulated under two operating modes and compositions, with a focus on evaluating the impact of system changes on flare loads, backpressure, and HIPPS functionality. The results provided crucial insights for validating safety measures, ensuring regulatory compliance, and supporting safe plant operation at higher production rates. Comprehensive reports and reusable model files were delivered following structured project meetings and milestone reviews.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	Italian EPC working for a Saudi petrochemical company	Italy	Dynamic Simulation Study of Xylene Columns for Operability and Control Assessment	Aspen HYSYS	2025	EPC	Petrochem	Saipem delivered for PetroRabigh Petrochemical Complex a set of propietary technology including a Xylenes cloumn. This column was having different operational problems because the Company was operating in high load (to increase production) despite this operation was providing a contatimation of the solvent in the following absorber column. Saipem was contacted to solve the issue. They modify the column trays in order to improve efficiencies and now the column is operating in normal conditions. The key point is that, by contract, they have some liabilities in case the column was not perfoming efficiently. This is the reason why Saipem has contacted Inprocess; in order to demonstrate that with the original tray geometry the operation of the column was the proper one on the operational range provided by Saipem and that it has been Company responsability when exceeding the operational limits.
Dynamic Simulation Modelling Study	French office of an US Compressor Manufacturer, working for a Korean EPC, working for a Thailand Chemical Company	France	Dynamic Simulation and Controller Integration for a Revamped Compressor System in a Thai Chemical Plant	Aspen HYSYS	2025	Equipment Manufacturer	Petrochem	Inprocess has integrated native soft controller from ECT in the dynamic simulation of the compressor system created in the previous phase. Even though the main functionality of the compressor control system can be tested by using dynamic simulation itself, integrating the simulation model with ECT emulator will allow to fine-tune the real controller the compressor controller.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated OTS: Siemens-PCS7	Dutch FPSO Constructor	Netherlands	Delivery of Operator Training Simulator for a FPSO in Angola	UniSim Design	2025	EPC	Oil & Gas (FPSO)	The Operator Training Simulator (OTS) for the N'Goma FPSO has been successfully developed, delivered, and commissioned, providing a high-fidelity, dynamic environment for operator training. Built using Honeywell UniSim® Design and the Inprocess Infrastructure Suite (IIS), the OTS accurately emulates the plant's process behavior, control system (DCS), and safety system (SIS), offering operators realistic hands-on experience in normal, abnormal, and emergency scenarios. The project included the development of training scenarios, malfunctions, and operator interfaces, and was validated through Model, Factory, and Site Acceptance Tests. Comprehensive instructor and maintenance training sessions were also completed to ensure sustainable, long-term use of the system, helping to enhance operational safety, reduce risk, and improve plant performance.
Steady State Simulation Modelling Study	Technology Lab of a Spanish Oil Company	Spain	Delivery of Specialized Process Simulation Services for Refining Projects	Aspen HYSYS	2025	Operator	Refining	Inprocess successfully executed a portfolio of specialized process simulation services to support a wide range of downstream projects throughout 2025. The scope included the development, integration, and maintenance of high-fidelity dynamic and steady-state models using commercial simulation tools, as well as support for model customization, Python integration, and visualization of existing OTS infrastructure. Projects covered various refining units such as hydrotreaters, FCCs, and gas treatment systems, addressing technical challenges including salt deposition, exchanger fouling, and control strategy optimization. The collaboration enabled timely execution, standardized modelling practices, and enhanced decision-making through advanced simulation-based insights.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	French office of an US Compressor Manufacturer, working for a Korean EPC, working for a Thailand Chemical Company	France	Dynamic Simulation and Controller Integration for a Revamped Compressor System in a Thai Chemical Plant	Aspen HYSYS	2025	Equipment Manufacturer	Petrochem	Inprocess delivered a two-phase dynamic simulation project to support the revamp of a gas compression system. Using Aspen HYSYS® Dynamics, Phase I focused on analyzing compressor behavior during critical transient scenarios such as start-up from cold conditions and emergency shutdown near surge. In Phase II, the model was integrated with a soft controller emulator (ECT) using Inprocess Infrastructure Suite (IIS), allowing validation and fine-tuning of the actual control logic. The project supported improved compressor safety, controller performance, and overall operability in the revamped configuration.
Flare Systems Analysis	Global energy advisory firm for an European fertilizer producer	Spain	Steady-State Flare Network Study for an Ammonia and Urea Production Facility	Aspen HYSYS; Flaresim	2025	Consulting & Services	Fertilizers	Inprocess delivered a steady-state flare study for a large-scale ammonia and urea plant undergoing decarbonization initiatives. The study objective was to assess the adequacy of the existing flare system under critical scenarios, such as power and cooling water failures, using Aspen Flare System Analyzer (Flarenet). Optional revalidation of over 160 PSVs using Aspen HYSYS® was included to ensure compliance with relief requirements. Additionally, a flare radiation and noise impact assessment was performed with FlareSim to evaluate safety and environmental constraints. The results support recommendations for flare system modifications to meet evolving process and safety demands.
Dynamic Simulation Modelling Study	Italian EPC for an Algerian National Oil Company	Italy	Dynamic Simulation of Compression Systems for Gas Field Boosting Facilities	Aspen HYSYS	2025	EPC	Oil & Gas	Inprocess developed high-fidelity dynamic simulation models for three gas processing facilities as part of a major boosting infrastructure upgrade. Using Aspen HYSYS® Dynamics, the study covered existing systems and integrated new low-pressure booster compressors to assess their operability under future declining wellhead pressures. Key scenarios included compressor start-up, emergency shutdowns, anti-surge control validation, and system stability under failures. The study supported design verification, tuning of control strategies, and safe operation across various transient conditions, with tailored insights for each facility's unique configuration.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated OTS: Honeywell-TDC3000	Spanish Petrochemicals Company	Spain	Screens Migration of an Operator Training Simulator to Updated HMI Platform for a Petrochemical Facility	Aspen HYSYS	2025	Operator	Petrochem	Inprocess executed the migration of 118 operator interface screens in an existing Operator Training Simulator (OTS) to reflect the transition from legacy TDC3000 to Honeywell Experion HMI for a petrochemical plant area. The project preserved the underlying dynamic model and focused exclusively on updating the visual interfaces using Inprocess' emulated HMI environment (IOS) integrated with Aspen HYSYS. The updated screens enabled operators to train in a simulated environment that closely replicates the new DCS interface, ensuring a smooth transition to the modernized control system without altering control logic or model behavior.
Dynamic Simulation Modelling Study	Italian EPC for an Italian National Oil Company	Italy	Dynamic Depressuring and Vessel Survivability Study for a Large-Scale Gas Processing Facility	Aspen HYSYS; Vessfire	2025	EPC	Oil & Gas	Inprocess delivered a dynamic simulation and vessel survivability study for a major gas processing plant, evaluating depressuring behavior and fire-induced stress conditions. The study used Aspen HYSYS® Dynamics and VessFire to model multiple units—including slug catchers, acid gas removal, dew point control, and fuel gas systems—under jet and pool fire scenarios, both with and without BDV activation. The results helped assess PSV sizing, blowdown adequacy, and vessel integrity, supporting safety-critical design decisions and regulatory compliance in high-risk offshore environments
Dynamic Simulation Modelling Study	Spanish site of a German Petrochemicals Company	Spain	Operating Sequences Analysis and Operators' Training for a propane vaporizer in a PDH plant	Aspen HYSYS	2025	Operator	Petrochem	Inprocess delivered a project to validate control sequences and support operator training for a key unit at a chemical production site. Building on a previously developed dynamic model, the team adjusted the simulation with final documentation and integrated it with DeltaV Simulate to test the programmed logic. The project included testing of start-up sequences using HYSYS Event Scheduler, model-logic integration with DeltaV, and preparation of a mini-OTS environment for operator instruction—all leveraging the client's existing OTS infrastructure.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Online Appplication	US Major Oil Company	United States	Digital Twin Deployment and Troubleshooting Support for Online Process Models		2025	Operator	Oil & Gas	Inprocess provided ongoing support for the deployment and troubleshooting of online-connected dynamic models as part of a digital twin initiative for a large-scale oil and gas operation. Working within the client's secure virtual environment, Inprocess engineers remotely accessed simulation models and plant data to enhance model robustness and support integration into the client's monitoring and diagnostic infrastructure. The scope included model adjustments, data validation, and coordination with internal teams to ensure successful deployment and long-term operability of the digital twin system.
Dynamic Simulation Modelling Study	Italian EPC for a Middle East National Oil Company	Italy	Dynamic Simulation Study of Steam System Transients for a Gas Development Megaproject	Aspen HYSYS	2025	EPC	Oil & Gas	Inprocess delivered a dynamic simulation study to evaluate the transient behavior of the steam system in a large-scale gas development project. Using Aspen HYSYS® Dynamics, the study modeled the interaction of boilers, turbines, and condensate systems under various failure and trip scenarios. The simulation helped assess control response, equipment interactions, and pressure dynamics, supporting engineering decisions to enhance system reliability and operability. The project was executed for an EPC contractor involved in the onshore processing facilities of the development.
DirectConnect OTS: Rockwell-FactoryTalk	U.S.-based sustainable fuels technology developer and plant operator	United States	Operator Training Simulator for a Sustainable Aviation Fuel Demonstration Plant	Aspen HYSYS	2025	Operator	Refining	Inprocess developed and delivered a high-fidelity Operator Training Simulator (OTS) for a demonstration-scale sustainable aviation fuel (SAF) plant, incorporating technologies such as CO_2 electrolysis and Fischer-Tropsch synthesis. The OTS was built using Aspen HYSYS® Dynamics and integrated with a replica of the plant's DCS via Inprocess Infrastructure Suite (IIS). The solution included both an Early OTS (emulated) and a Direct-Connect one, enabling operators' training on start-ups, shutdowns, emergency scenarios, and control strategies. Additionally, the system supports future use as a digital twin and includes training for instructors and engineers to ensure long-term operability and knowledge retention.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	US Major Oil Company	United States	Relief System Evaluation for Utility Reconfiguration in an U.S. Refinery		2025	Operator	Refining	Inprocess provided relief design support for a water system reconfiguration project at a U.S. refinery. The study assessed the overpressure protection of equipment affected by bypassing a storage tank and re-routing water streams. A detailed relief analysis was performed on 21 pieces of equipment, identifying protection gaps and proposing cost-effective alternatives. Deliverables included a baseline relief report, high-level comparison of design options, and marked-up P&IDs. The project supported safety, compliance, and operational decisions while minimizing capital expenditure risks.
Generic Unit Operations Training (ITOP) with Courses	Peruvien LNG Operator	Peru	Training Program for an LNG Plant operators Using ITOP and ICOM	Aspen HYSYS	2025	Operator	Natural Gas	Inprocess delivered a customized training program for LNG plant operators using its ITOP (Inprocess Training for Operators) platform and ICOM (Inprocess Competence Management System). The training focused on foundation training on unit operations such as pumps, compressors, heat exchangers, distillation, and control loops, combining theoretical content with interactive, simulation-based exercises. Hosted on cloud infrastructure with multi-user access, the program enables continuous skills development and performance tracking for both control room and field operators, enhancing operational readiness and safety awareness.
Dynamic Simulation Modelling Study	Dutch FPSO Constructor	Netherlands	Dynamic Simulation Study for an Offshore Production Facility (FPSO) in Guyana	UniSim Design	2025	EPC	Oil & Gas (FPSO)	Inprocess delivered a dynamic simulation study for an offshore production facility to assess the operability and control performance of integrated process and utility systems. Using Honeywell UniSim® Design, a high-fidelity dynamic model was developed covering key systems such as gas compression, seawater treatment, heating medium circuits, and flare response. The study evaluated a wide range of scenarios—from equipment failures to emergency shutdowns—validating control strategies, alarm and trip settings, and providing inputs for HAZOP close-outs. The model and findings support safer design, enhanced operability, and future reuse in training or virtual commissioning activities.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	A global compressor control system supplier	United Arab Emirates	Dynamic Simulation Study for Molecular Weight control strategy evaluation and Let Down Valve Control calculation	Aspen HYSYS	2025	Equipment Manufacturer	Oil & Gas	Inprocess delivered a dynamic simulation study to evaluate a new molecular weight (MW) control strategy for a low-pressure compressor system. The study integrated Aspen HYSYS® Dynamics with an emulated compressor control system to simulate real-time interactions with the let-down valve from a high-pressure compressor. Reusing an existing validated OTS model, the team analyzed normal operation, start-up, and fail-to-act scenarios. The study helped verify control logic, prevent compressor overload, and optimize the new controller's performance under transient conditions.
Flare Systems Analysis	French Engineering Company for an Abu-Dhabi petrochemicals company	France	Dynamic Simulation of Flare Loads for an Expansion Project in a Petrochemicals complex	Aspen HYSYS	2025	EPC	Petrochem	Inprocess delivered a dynamic simulation study to evaluate the relief loads during critical upset scenarios in a major petrochemical complex expansion. Using Aspen HYSYS® Dynamics, dynamic models were developed for key process units discharging to the flare system. The study focused on scenarios such as cooling water failure, general power failure, and refrigerant system malfunctions, ensuring that calculated flare loads remained within design limits. The results supported improved flare system reliability and safety compliance during transients.
Flare Systems Analysis with Dynamic Simulation Study	Saudi Arabian Oil Company	Saudi Arabia	Flare Network Study for a Saudi Arabian Oil Company	Aspen HYSYS	2024	Operator	Refining	The flare study was successfully executed, delivering a thorough evaluation of the flare system and revalidating multiple PSVs in a revamped industrial facility. Using advanced simulation tools, the project assessed critical scenarios such as General Power Failure and Cooling Water Failure, ensuring system adequacy and compliance with safety standards. The deliverables included detailed technical reports and actionable recommendations for system optimization, with optional radiation and noise analyses further enhancing the study.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Emerson-DeltaV	Singaporean Office of a Global Instrumentation Provider	Singapore	Direct-Connect OTS for the North Field Sout (NFS-Qatar)	Aspen HYSYS	2024	Instrumentation Provider	Natural Gas	Inprocess delivered a high-fidelity Operator Training Simulator (OTS) for a new LNG mega-train, featuring detailed dynamic models in Aspen HYSYS® Dynamics and integration with emulated DCS, SIS, and compressor control systems. The simulator enables realistic operator training across normal, startup, shutdown, and emergency scenarios. Covering a wide range of process and utility units, the OTS also supports engineering studies such as MPC prototyping. The project enhances safety, operational readiness, and long-term performance of the facility.
Flow Assurance Analysis with Dynamic Simulation Study	Chinese EPC in the Emirates working for an Emirates Oil & Gas company	United Arab Emirates	Transient Analysis for Pipeline Performance Optimization in a new Pipeline System	OLGA	2024	EPC	Oil & Gas	The transient analysis project was successfully executed, delivering a comprehensive evaluation of pipeline performance under various operational scenarios. Using advanced simulation tools, the study addressed transient conditions, including pigging, ramp-up, depressurization, and surge analysis, ensuring the adequacy of design and operational parameters. Detailed technical reports provided actionable insights, including recommendations for optimization and safe operations. The project was completed within the scheduled timeline, enhancing reliability and efficiency in the system's pipeline network.
Generic Unit Operations Training (ITOP)	A Spanish vocational training center	Spain	ITOP: Digital Training Solution for Unit Operations Education	Aspen HYSYS	2024	Educational Institution	Educational Institution	The implementation of ITOP, a digital training solution for basic operations, successfully enhanced the educational capabilities of the institution, equipping students with practical knowledge in chemical engineering and process operations. The solution combined theoretical lessons with dynamic simulations of key unit operations, offering hands-on exercises through an intuitive digital platform. The program improved the understanding of essential engineering concepts, provided tools for interactive learning, and ensured the compatibility of the training system with existing educational frameworks. This initiative fostered a comprehensive and engaging learning experience, aligning with the institution's goals of modernized and effective vocational training.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis with Dynamic Simulation Study	Spanish Petroleum Refinery	Spain	Comprehensive Update of Flare Validation Reports for the Refinery Systems	Aspen HYSYS	2024	Operator	Refining	The revision and update of the flare validation reports for two refinery units were successfully executed, addressing client requests for recalculations and alignment with updated evaluation criteria. The project involved detailed analysis of pressure relief valve (PSV) systems and flare networks, ensuring compliance with revised technical standards. Comprehensive updates to the reports provided actionable insights and validated system adequacy for safe operations. This initiative reinforced operational reliability and adherence to evolving engineering best practices.
Dynamic Simulation Studies for Compression Systems	Italian Compressor Manufacturer for an Iraqi Oil Company	Italy	Dynamic Simulation Study for Multi-Stage Raw Gas Compressor Systems	Aspen HYSYS	2024	Equipment Manufacturer	Oil & Gas	The dynamic simulation study for raw gas compressors was successfully conducted, utilizing Aspen HYSYS® Dynamics as the simulation engine to evaluate transient dynamics and control responses under various operational scenarios. The study encompassed comprehensive modeling of multi-stage compressors and gas systems, delivering insights into anti-surge control, load sharing, and system stability. The project provided detailed simulation reports and validated operational strategies to optimize system performance and ensure reliability under dynamic conditions.
Dynamic Simulation Studies for Compression Systems	Italian Compressor Manufacturer for an Abu Dhabi Oil Company	Italy	Dynamic Simulation Study for Transient Dynamics and Control Evaluation in a pair of compressor systems	Aspen HYSYS	2024	Equipment Manufacturer	Oil & Gas	The dynamic simulation study for compressors in the project was successfully executed, leveraging Aspen HYSYS® Dynamics as the primary simulation engine. The study evaluated transient dynamics and control responses for sour off-gas and recycle gas compressors under various operational scenarios. Deliverables included dynamic simulation models, scenario execution reports, and steady-state analysis. This initiative ensured optimal compressor performance, validated anti-surge mechanisms, and reinforced operational reliability.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis with Dynamic Simulation Study	US Major Oil Company	United States	Transient Multiphase Analysis and Slug Force Evaluation for Liquid Phase in Piping Systems	OLGA	2024	Operator	Refining	The slug force calculation for the liquid phase was successfully performed, focusing on transient multiphase analysis of selected pipelines to evaluate liquid accumulation and potential hydraulic surge risks. Utilizing OLGA® as the simulation tool, the study assessed the dynamic behavior of the system during sudden accelerations and liquid slug flow conditions. Detailed reports were delivered, providing insights into the adequacy of the design to prevent pipe failure and optimize system stability under various scenarios.
Dynamic Simulation Modelling Study	Spanish Renewable Energy Solutions provider	Spain	Dynamic Simulation Study for Evaporator Tube Rupture and Overpressure Analysis	Aspen HYSYS	2024	EPC	Power Plants	The dynamic simulation study for evaporator tube rupture analysis was successfully completed, employing Aspen HYSYS® Dynamics to model transient behavior and predict dynamic pressure variations. The study focused on identifying potential overpressure scenarios and assessing mitigation strategies to prevent pressure rise above design thresholds. Deliverables included a detailed simulation report, highlighting insights into system safety and operational reliability, and native simulation files for future analysis.
Generic Unit Operations Training (ITOP)	A Spanish vocational training center	Spain	ITOP: Digital Training Solution for Unit Operations Education	Aspen HYSYS	2024	Educational Institution	Educational Institution	The implementation of ITOP, a digital training solution, successfully enhanced training in chemical and process operations for the designated centers. By combining theoretical lessons with interactive dynamic simulations and 3D visualization, ITOP equipped students with practical skills for real-world applications. This innovative program provided a virtual laboratory environment, covering key topics such as fluid transport, heat transfer, and process control, ensuring an engaging and comprehensive learning experience tailored to future industry needs.
Dynamic Simulation Modelling Study	Italian producer of specific polymer chemical intermediates	Italy	Dynamic Simulation for Control Strategy Verification in Process Systems	Aspen HYSYS	2024	Operator	Bulk Chemicals	The dynamic simulation study for control strategy verification was successfully conducted to assess the updated process configuration involving a partial oxidation reactor and recycle gas system. Using Aspen HYSYS® Dynamics as the simulation engine, the study verified control valve CVs, evaluated the current control narrative, and pre-tuned control parameters. Comprehensive deliverables included a validated dynamic model, scenario execution reports, and insights into system performance and control optimization.

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis with Dynamic Simulation Study	Spanish Petroleum Refinery	Spain	Dynamic Relief Study for Refinery Flare System Performance Evaluation	Aspen HYSYS	2024	Operator	Refining	The dynamic relief study for critical refinery flare system areas was successfully conducted to evaluate the General Power Failure (GPF) scenario. Using Aspen HYSYS® Dynamics, the study focused on major subsystems contributing to the total relief load, including the fractionation column, naphtha stripper, and stabilizer column. The project provided detailed simulation reports, validated system capacity, and identified necessary safety measures to optimize flare system performance and ensure compliance with engineering standards.
Dynamic Simulation Modelling Study	French Oil Major Company	France	Simulation Study for Leak Calculations in FPSO Offloading System	Synergi Pipeline Simulator (SPS)	2024	Operator	Oil & Gas (FPSO)	The simulation study for leak calculations in the FPSO offloading system was successfully conducted, using Synergi Process Simulator (SPS) to analyze pressure dynamics and leak behavior under various scenarios. The study evaluated critical points in the system with different leak sizes, providing transient analysis and insights into system safety and reliability. Comprehensive reports detailed the results and ensured system compliance with operational standards.
Online Appplication	Dutch FPSO constructor for a US Oil Major in Guyana	Netherlands	Real-Time Simulator for FPSO Topsides Operational Optimization	UniSim Design	2024	Operator	Oil & Gas (FPSO)	The Real-Time Simulator (RTS) project for FPSO Topsides was successfully developed and implemented to enhance operational decision-making, optimize performance, and improve maintenance scheduling. Using UniSim® Design as simulator and Inprocess Infrastructure Suite as Digital Twin supporting software, the RTS provided real-time process simulation integrated with the Aveva PI system for data collection and visualization. Key functionalities included what-if analysis, real-time H&MB monitoring, virtual instrumentation, and environmental emission calculations. Deliverables included dynamic models, user interfaces, and comprehensive training materials to support the deployment and operational efficiency of the FPSO.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: ABB-800xA	Main Automation Contractor for a Norwegian EPC	Norway	Operator Training System with ICSS Virtual Commissioning for FPSO Operations	Aspen HYSYS	2024	Instrumentation Provider	Oil & Gas (FPSO)	The usage of the model in the Operator Training System (OTS) for virtual commissioning was successfully completed, integrating dynamic simulation models and ICSS virtual commissioning capabilities. Utilizing Aspen HYSYS® Dynamics and ABB ICSS 800xA, the project delivered a comprehensive OTS environment, including scenario testing, ICSS database review, and HMI configurations. Deliverables encompassed functional training scenarios, ICSS checkout reports, and operator training capabilities, supporting enhanced training and operational readiness.
DirectConnect OTS: Siemens-PCS7	Nigerian EPC for a Nigerian Oil Company	Nigeria	Extension of the Lifecycle Operator Training Simulator for FPSO Operational Areas	Aspen HYSYS; OLGA	2024	EPC	Oil & Gas (FPSO)	The extension of the Lifecycle Operator Training System (OTS) for the FPSO project was successfully executed, incorporating additional operational areas such as the flare system, production wellhead system, manifold system, and test separator system. Advanced simulation tools like Schlumberger OLGA® and Aspen HYSYS® Dynamics were utilized to model subsea pipelines and operational scenarios, enabling operators to simulate real-life actions such as well connections, riser depressurization, and pigging operations. This enhanced OTS delivers a comprehensive training environment to support improved decision-making and operational efficiency.
DirectConnect OTS: ABB-800xA	Main Automation Contractor for a Norwegian EPC	Norway	Subsea System Model Integration in an existing OTS for an FPSO	Aspen HYSYS; OLGA	2024	Instrumentation Provider	Oil & Gas (FPSO)	The inclusion of the subsea system into the Operator Training Simulator (OTS) for a FPSO project in UK was successfully executed. Utilizing Schlumberger OLGA®, the project involved the modeling of critical subsea pipelines, including gas export, water injection, production wells, and gas lift pipelines. The dynamic simulations were tailored to achieve a real-time factor of 1, enabling realistic transitory scenarios such as startup operations. This addition enhanced the training system by providing operators with accurate and practical simulations of subsea operations.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Operator Training System (OTS)	Swedish Refinery	Sweden	HYSYS model version migration for enhancing two existing Inprocess' OTSs	Aspen HYSYS	2024	Operator	Refining	The migration of HYSYS dynamic models for the Operator Training Simulators (OTS) was successfully executed, upgrading the existing Iso Cracker Unit (ICR) and Hydrogen Production Unit (HPU) models from HYSYS version 9 to a newer version. This activity ensured compatibility with updated software, maintaining the integrity of the training environment and enhancing simulator performance. The migration process preserved all operational features while addressing solver convergence issues, providing a seamless transition for improved operator training and simulation fidelity.
DirectConnect OTS: ABB-800xA	Main Automation Contractor for an Emirates Oil & Gas company	United Arab Emirates	Operator Training System for an Oil Field in the Emirates	Aspen HYSYS; OLGA	2024	Instrumentation Provider	Oil & Gas	The Operator Training System (OTS) for the Bab Far North project was successfully developed to enhance operator competencies and ensure safe and efficient operations. Utilizing Aspen HYSYS® Dynamics for dynamic simulation and incorporating OLGA model results, the OTS provided a high-fidelity environment for training on normal, abnormal, and safety-critical scenarios. Key deliverables included dynamic plant simulation models, training scenarios, and a fully integrated instructor and operator station setup, ensuring realistic training and operational readiness.
Flow Assurance Analysis with Dynamic Simulation Study	Chinese EPC in the Emirates working for an Emirates Oil & Gas company	United Arab Emirates	Dynamic Simulation Study for a production train System Optimization	Aspen HYSYS; OLGA	2024	EPC	Oil & Gas	The dynamic simulation study for the project was successfully executed, focusing on the evaluation of various operational and transient scenarios to ensure optimal performance and safety. Utilizing Aspen HYSYS® Dynamics and OLGA®, the project covered key aspects, including HIPPS adequacy, pump startup automation, surge analysis, and slug catcher control schemes. Deliverables included validated models, scenario execution reports, and actionable recommendations for system optimization, aligning with engineering standards and operational requirements.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis with Dynamic Simulation Study	Oil and Energy Company from Kazakhstan	Kazakhstan	Flow Assurance Study for a Raw Gas-Condensate Pipeline System	OLGA	2024	Operator	Oil & Gas	The flow assurance study for the raw gas-condensate interfield pipeline was successfully conducted, analyzing steady-state and transient hydraulic behaviors to ensure optimal operation under varying conditions. Using OLGA® as the simulation software, the study evaluated a 10-inch underground pipeline and a 30-inch aboveground segment, focusing on scenarios like pigging, surge handling, and thermal insulation performance. Deliverables included detailed simulation reports and recommendations to address flow assurance challenges and improve pipeline reliability.
Dynamic Simulation Modelling Study	Italian EPC Company for Oil Company from Kazakhstan	Italy	Vessel Survivability Assessment for Jet Fire Scenarios	Aspen HYSYS; Vessfire	2024	Operator	Oil & Gas	The vessel survivability assessment for the project was successfully conducted, focusing on evaluating vessel integrity under jet fire scenarios during blowdown events. Using Vessfire simulation software, the study calculated pressure evolution and determined the time to vessel collapse under heat load exposure. Deliverables included a detailed simulation report, providing insights into vessel safety, validating restriction orifice sizing, and recommending mitigation strategies to enhance system resilience.
Dynamic Simulation Modelling Study	UK Equipment Manufacturer for an Emirates Oil Company	United Kingdom	Dynamic Simulation Study for CO2 Pumping System	Aspen HYSYS	2024	Equipment Manufacturer	Oil & Gas	A dynamic simulation study for the pumping system was successfully conducted, focusing on evaluating the transient behavior of CO2 supercritical pumps under various operational and emergency conditions. Using Aspen HYSYS® Dynamics as the simulation software, the project analyzed scenarios including flow reduction, pump shutdowns, and emergency conditions. Deliverables included a detailed simulation report with recommendations for optimizing alarm and trip settings, ensuring system protection, and maintaining operational reliability.
Dynamic Simulation Modelling Study	German office of an Indian Engineering Company	Germany	Feasibility Study Design for the Cargo Tanks and the Reliquefaction System	UniSim Design	2024	EPC	Oil & Gas	The feasibility study for cargo tanks and reliquefaction lines was successfully conducted, leveraging Honeywell UniSim® Design Dynamics to simulate methane content variations over a 30-day shipping period. The study evaluated a novel two-stage compressor configuration, analyzing system performance and thermodynamic behavior. Deliverables included dynamic simulation reports and native simulation files, providing insights for optimal design and operational reliability.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis with Dynamic Simulation Study	US Major Oil Company	United States	Evaluation of Relief System Deficiencies and Development of feasible Alternatives for two Refinery Units	Client's Proprietary	2024	Operator	Refining	The evaluation of relief system deficiencies and LOPA/PHA findings for the refinery's Isomerization and Reformer units was successfully completed, utilizing client's own software for relief calculations and documentation. The project analyzed 12 relief scopes, addressing scenarios like overfill protection, valve misalignment, fire cases, and freeze concerns. Multiple alternatives were developed and assessed for technical feasibility, safety, cost, and implementation challenges, resulting in a comprehensive set of recommendations. Deliverables included detailed IFR and IFU packages, enabling a seamless transition into detailed engineering.
Dynamic Simulation Modelling Study	Singaporean EPC for a Turkish Oil & Gas Company	Singapore	Holistic Dynamic Simulation model and studies for a Gas Field in Turkey	Aspen HYSYS; OLGA	2024	EPC	Oil & Gas	The holistic dynamic simulation model for a gas field in Turkey, was successfully developed, integrating in a single model the subsea and the topside systems to ensure seamless simulation. Aspen HYSYS® Dynamics was utilized for topside modeling, while OLGA® subsea models were incorporated for comprehensive analysis. The study included steady-state and transient scenario simulations, focusing on HIPPS response, slug management, gas compression, and blowdown scenarios. Deliverables encompassed high-fidelity models, simulation reports, and actionable recommendations to optimize system safety and efficiency.
Dynamic Simulation Modelling Study	Indian EPC working for a Saudi NOC	India	Dynamic Simulation Studies for a Gas Processing Plant	Aspen HYSYS	2024	EPC	Natural Gas	The dynamic simulation study for the gas processing plant was successfully conducted, focusing on the transient analysis of Train 3 systems to validate the control narrative for various operational scenarios. Using Aspen HYSYS® Dynamics as the simulation engine, the study covered critical units, including gas compression, condensate stabilization, propane refrigeration, and dehydration systems. Deliverables included validated dynamic models, scenario execution reports, and recommendations to enhance system performance and operational reliability.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Italian EPC for an Algerian NOC	Italy	Dynamic Simulation Study for gas boosting stations in an Algerian gas field	Aspen HYSYS	2024	EPC	Oil & Gas	The Dynamic Simulation Study for the Boosting Stations a gas field in Algeria has been successfully completed and delivered. Inprocess developed high-fidelity dynamic models of the three processing facilities integrating both existing installations and the new LP booster compression systems. Using Aspen HYSYS® Dynamics, the study verified the stability and operability of the compression trains, assessed start-up and shutdown procedures, and evaluated control strategies and safety systems under various transient conditions. The project deliverables included validated steady-state models, detailed scenario execution reports, and native simulation files, providing the client with essential insights and recommendations for safe and optimized operation of the new compression systems.
DirectConnect OTS: Siemens-PCS7	Norwegian Oil&Gas operator	Norway	Integration of additional wells and pipelines into the simulation model of an existing OTS for a Norwegian Oil & Gas platform	UniSim Design	2024	Operator	Oil & Gas	Inprocess successfully completed the integration of new wells and platform systems into the existing Operator Training System (OTS). The project was executed in two phases, focusing on subsea system modeling followed by topside system integration, both connected to the ICSS. New process units and flowlines were incorporated into the Unisim model, and additional screens were developed for enhanced instructor control. This integration enables operators to train effectively on the expanded system, enhancing preparedness for the new platform tie-back and its impact on the existing infrastructure.
Dynamic Simulation Modelling Study	Italian EPC Company working for an Italian Operators	Italy	Simulation Study for Carbon Capture Storage and Transport Project in a bay in Ireland	Aspen HYSYS	2024	EPC	Oil & Gas	We successfully delivered the Simulation Study for the HyNet North West CCS Transport & Storage Project. The project involved the development of comprehensive steady-state and dynamic simulation models using Aspen HYSYS, ensuring seamless CO2 transport from the onshore facilities to offshore platforms. Key deliverables included the Operating Envelopes for steady-state operations and detailed depressurization scenarios for dynamic conditions across four platforms. The simulations effectively prevented hydrate and CO2 dry ice formation, ensuring safe and efficient CO2 injection into the depleted hydrocarbon fields for permanent storage

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Hybrid DirectConnect OTS: Proconex Honeywell Experion	Petrochemical Spanish Company	Spain	Hybrid OTS for the new IsoPropyl Alcohol plant	Aspen HYSYS	2024	Operator	Petrochem	This project involved implementing an Operator Training Simulation (OTS) system for a new IPA Plant, focusing on enhancing operator training and safety. This was a hybrid OTS therefore, using a third party software (Proconex' LCNSIMPlus) for the simulation of the Honeywell DCS, and Aspen HYSYS to simulate the processing plant, all linked with the Inprocess Infrastructure Suite (IIS) platform. The OTS allowed operators to get acquianted with the new process technology while simulating not only normal operation but various abnormal scenarios, including start-ups, shutdowns, upsets, and emergencies, without risking plant equipment. Its main objectives are to provide intensive training for operators, improve their understanding of the process and control systems, enhance overall operational safety, and move towards Operational Excellence.
Flare Systems Analysis	US Major Oil Company	United States	Dynamic Analysis of the oiping in the Relief System of a refinery	OLGA	2024	Operator	Refining	Inprocess successfully delivered the Relief System Analysis for client's refinery. Using OLGA® as the process simulator, Inprocess performed a transient multiphase analysis for the pipe, which runs from the relief device to the header. The project also evaluated liquid accumulation in the pocketed piping through dynamic simulation. The final Transient Analysis Report provided detailed insights into the behavior of the system under various simulation scenarios, helping client optimize the relief system's performance and ensure operational safety.
Online Appplication	North American RefiningComp any	United States	Pre-Heat Train Analysis and Online Monitoring Tool	Aspen HYSYS	2024	Operator	Refining	Inprocess successfully completed the Pre-Heat Train Analysis and developed a real-time monitoring tool for client's refinery. The analysis identified critical heat exchangers for cleaning during the Spring 2025 turnaround, optimizing energy efficiency and minimizing downtime. Using Aspen tools, a real-time monitoring system was implemented to track fouling trends and heat transfer efficiency, enabling proactive maintenance planning. The project provided the client with actionable insights, improving operational performance, reducing maintenance costs, and enhancing overall efficiency of the crude unit’s pre-heat train.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Chinese subsidary of a German Compressor Manufacturer	China	Dynamic Simulation Study for the Fuel Gas Booster compressors in a power plant	Aspen HYSYS	2024	Equipment Manufacturer	Power Plants	Inprocess successfully completed the dynamic simulation model for the fuel gas booster compressors (FGB) at the power plant. Utilizing Aspen HYSYS® Dynamics, the project focused on analyzing the buffer capacity between the FGBs and the turbines and adjusting the control actions of the FGBs to maximize turbine availability. The simulation encompassed three compressor trains, with two operational and one spare, effectively modeling their performance across various scenarios. The model was validated against operational data from the manufacturer, demonstrating accurate predictions of flows, pressures, and temperatures. A sensitivity analysis for the discharge header volume was performed to determine the minimum buffer capacity required to avoid certain trips and maximize gas turbine (GT) availability. Overall, the project provided valuable insights for optimizing compressor efficiency and operational safety.
Flow Assurance Analysis	Chillean subsidary of a Spanish EPC	Chile	Flow Assurance Study for an onshore-offshore oil pipeline that is under construction in Argentina	OLGA	2024	EPC	Oil & Gas	Inprocess successfully delivered the Flow Assurance Study for a pipeline that is under construction in Latin America. Using OLGA®, Inprocess conducted steady-state and transient analyses, identifying potential issues in the onshore and offshore terminals. The final Analysis Report provided key insights to optimize flow assurance and ensure reliable terminal performance across various scenarios.
Flare Systems Analysis with Dynamic Simulation Study	Spanish branch of a multinational petrochemical company	Spain	Updated Flare Network Study after plant recent revamps	Flarenet/ Aspen Flare Analyzer	2024	Operator	Petrochem	Inprocess successfully completed the Flare Study for client, updating the existing analysis to include seven new services after recent plant revamps. Using Aspen Flare System Analyzer, the study ensured the flare network meets all requirements. The project concluded with the delivery of the Flare Network Study Report
DirectConnect OTS: Rockwell-FactoryTalk	Ecuador Office of a software technology provider	Ecuador	Direct-Connect OTS with Virtual Reality for an Oil&Gas Field in Ecuador	VMGSim/ Simmetry	2024	Software Development Company	Oil & Gas	Inprocess successfully delivered the Direct-Connect Operator Training System (OTS) with Virtual Reality for client's oil and gas field project. The high-fidelity dynamic model, developed using SLB Symmetry, was integrated with the plant's ICSS system, enabling operators to be trained in normal, abnormal, and emergency scenarios. The OTS included immersive 3D Virtual Reality training, providing operators with a realistic, hands-on experience.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	UAE office of a Chinese EPC working for an Iraki Oil&Gas Company	United Arab Emirates	Dynamic Simulation Study for a New Production Facility in Irak	Aspen HYSYS	2024	EPC	Oil & Gas	Inprocess successfully delivered the Dynamic Simulation Study for a New Production Facility in Iraq for the Dubai office of a Chinese EPC. Using Aspen HYSYS® Dynamics, the study evaluated the maximum pressure of downstream equipment and ensured the adequacy of the pressure safety valves (PSVs) across six transient scenarios. The final Dynamic Simulation Report was delivered, providing client with detailed insights into system performance, safety, and equipment protection, ensuring the facility's operational reliability and integrity.
Dynamic Simulation Modelling Study	A Malaysian FPSO Construction Company	Malaysia	Dynamic Scenarios for Heating Medium Rupture Disk	Aspen HYSYS	2024	Operator	Oil & Gas (FPSO)	Inprocess successfully conducted a series of dynamic scenarios focused on the Heating Medium (HM) system as part of an enhancement to the Operator Training System (OTS) for an FPSO in Brazil. The project evaluated the feasibility of the rupture disks across the entire HM system and proposed optimized pressure set points to prevent disk rupture under varying operating condition
Flow Assurance Analysis with Dynamic Simulation Study	Chinese EPC working for an Emirates Oil & Gas company	China	Steady State, Transient, and Dynamic Simulation Studies for an Onshore facility in Abu Dhabi	OLGA; PIPESIM ; TL-NET	2024	EPC	Oil & Gas	Inprocess successfully delivered the Steady State, Transient, and Dynamic Simulation Studies for a project aimed at optimizing crude production and enhancing water injection systems. The project involved three key areas: reducing gas load at a central degassing station, de-bottlenecking a central processing plant, and increasing water injection capacity across multiple sites. Using OLGA®, Aspen HYSYS Dynamics®, and PIPESIM/TL NET, Inprocess developed and executed simulations to assess pipeline dynamics, equipment performance, and network integration. The final reports provided valuable insights to enhance production efficiency and support future expansion plans.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Steady State Simulation Modelling Study	Italian EPC	Italy	Aspen Plus® Activities for Iso-Octene Synthesis Proprietary Technology	Aspen Plus	2024	EPC	Petrochem	Inprocess successfully completed the development of a new and enhanced steady-state simulation model for client's Iso-Octene synthesis technology. Using Aspen Plus® v11.0, Inprocess built the model based on experimental data, accurately simulating the reactor's performance, including conversion, selectivity, and outlet stream characteristics. The model was integrated into client's existing reactor model for Water-Cooled Tubular Reactors (WCTR). Comprehensive documentation, including reports, a software handbook, and training materials were delivered to client, ensuring a smooth implementation and future use.
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer for a Gas Operating Company in Middle East	Germany	Dynamic Simulation Study for a Compression System Integrating the CCC Controller	Aspen HYSYS	2024	Equipment Manufacturer	Power Plants	Inprocess has successfully completed the dynamic simulation studies. The project involved developing models encompassing all specified equipment selected scenarios. The project was divided into two phases for each platform: -In the first phase, initial studies using Aspen HYSYS evaluated the behavior of the control philosophy. Results from this phase were shared with client to specify features required by the real controller. -In the second phase, the compressor systems were linked with CCC Emulator to pre-tune the real controller. Control logic was studied through the execution of critical scenarios, ensuring the logic was nearly complete before final implementation. Detailed sensor information and support from the control vendor were crucial for adjusting and verifying the control system. This approach allowed testing of sensor ranges and real controller parameters with the final logic. Inprocess has delivered a comprehensive dynamic simulation report detailing the project's execution and results, providing valuable insights for client's operational planning and control strategy refinement.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Emerson-DeltaV	Instrumentation Provider for a Malaysian Chemicals Company	Malaysia	Direct-Connect OTS for a Maleic Anhydride Plant in Malaysia	Aspen HYSYS	2024	Instrumentation Provider	Petrochem	Inprocess has successfully delivered a Direct-Connect Operator Training Simulator (OTS) for the client's Maleic Anhydride Plant. The OTS replicates the plant's transient dynamics and connects to software simulating the control and safety systems, allowing operators to train intensively on normal, abnormal, and safety-critical scenarios. This training enhances operators' understanding of the process and improves operational safety by providing opportunities to practice plant start-ups, shutdowns, upsets, and emergency situations without risk. The OTS also reduces the risk of major operational incidents, decreases start-up time, increases plant on-stream time and performance, provides a test-bed for engineering analysis, and helps avoid equipment damages. The simulation closely mirrors the real plant DCS interface, enabling operators to seamlessly transition from training to actual operations.
Dynamic Simulation Studies for Compression Systems	French Engineering & Construction company	France	Dynamic Simulation Study for CO2 Stripper and Compressor	Aspen HYSYS	2024	EPC	Power Plants	Inprocess has successfully delivered the Dynamic Simulation Study for the CO2 Stripper and Compressor as requested by client. The study encompassed a dynamic simulation model incorporating all specified equipment. Following model development, Inprocess executed the selected scenarios. Key objectives achieved in the dynamic simulation study include: -Analysis of pressure variations in the stripper resulting from pressure control with the inlet guide vanes of the compressor at different loads. -Validation of the current machine arrangement, including the need for High-Pressure Bypass (HGBP), check valves, sizing of valves, and recommendations for additional volumes to act as buffers at the inlet of the compressor. -Overall safety assessment of the system to ensure operational integrity and reliability. The study findings and recommendations have been presented to client, providing valuable insights into the dynamic behavior and operational considerations of the CO2 Stripper and Compressor system.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	Chinese FLNG constructor for an Italian Operator	China	Dynamic Simulation Study a FLNG unit in Congo	Aspen HYSYS	2024	EPC	Oil & Gas; Natural Gas	This project completed with Inprocess's successful delivery of a comprehensive Dynamic Simulation Study for an FLNG vessel project in Congo. The study evaluated the reactivity and operational integrity of the entire Floating Liquefied Natural Gas (FLNG) production system, including the cooling water system, fuel gas system, and hot oil system, during initial start-up and various transient scenarios. The results confirmed the system's ability to withstand transient conditions and achieve a new stationary state during start-up, operating upsets, and restart scenarios. The project has met all objectives, demonstrating the system's robustness and reliability.
Online Appplication	Technology Lab of a Spanish oil company	Spain	Glycols Production Plant Simulation for training a Deep Reinforcement Learning (DRL) agent	Aspen HYSYS	2024	Operator	Petrochem	The completed project involved Inprocess delivering a dynamic simulation model for client's Propylene Glycol production plant. The plant consists of three sections: the Reaction section for synthesizing glycols from propylene oxide and water, the Evaporation and Drying section for separating excess water using a three-column triple-effect distillation and a dryer column, and the Distillation section for separating the final products (MPG, DPG, TPG, and higher glycols) through a continuous distillation train. Inprocess, recognized for their expertise in process simulation, developed a dynamic simulation model encompassing all the specified equipment. The project successfully addressed the controlled fluctuations in pressure and temperature due to load changes and adjustments in the water/propylene oxide ratio. A comprehensive dynamic simulation report detailing the results was delivered to client, fulfilling all requirements
Dynamic Simulation Modelling Study	Indian EPC working for a Saudi NOC	India	Dynamic Simulation Studiesof a Gas Processing Facility to be used in HAZOP analysis	Aspen HYSYS	2024	EPC	Oil & Gas	The main objective of the study is to develop a dynamic model of the gas processing facility that will be available before HAZOP and will subsequently be used for start-up

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Flow Assurance Analysis	Malaysian Engineering Company	Malaysia	FEED Flow Assurance Study for a Malaysian Oil&Gas company	OLGA	2024	EPC	Oil & Gas	The size for new production pipelines has been validated. Individual pipeline operating conditions, including pressure and temperature profiles, minimum turn-down rate (MTDR), liquid hold-up, gas and liquid outlet flowrates, fluid velocity, and flow regime, have been established. Liquid surging (slug) behavior during steady state, ramp-up after shutdown and cooldown, start-up, and pigging operation has been comprehensively studied. Sensitivity runs for bypass pigging at 5% and 10% flow have been performed to mitigate liquid surge (slug) volume. The adequacy of the Inlet Separator to handle worst-case liquid surge (slug) scenarios has been confirmed including the control action (modelled in OLGA). Ramp-up rates for all FWS pipelines from shutdown and turndown conditions have been established. The risk of hydrate formation for the entire production forecast across all FWS and relevant pipelines has been assessed.
Steady State Simulation Modelling Study	German Refinery Operator	Germany	Conversion of Refinery Process Units Models from ProII to HYSYS	Aspen HYSYS; PRO/II	2024	Operator	Refining	Inprocess has successfully completed the model conversion, prioritizing the Fit for Purpose requirements over 100% equivalence with the Pro/II model. This approach ensured that the models are tailored to the client's needs and accurately reflect real process behavior. Key achievements include: -Converting the complete Pro/II case to HYSYS -Adapting thermodynamics -Ensuring stable convergence behavior -Final fine-tuning was collaboratively decided during the model review workshop, optimizing the models to represent the client's processes accurately. Each phase had Flexible Modelling hours assigned, and Inprocess provided weekly reports to the client for effective progress tracking. Any unused hours from Phase 1 were efficiently reallocated to other conversion efforts, ensuring maximum efficiency and value.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis with Dynamic Simulation Study	Spanish Petroleum Refinery	Spain	Dynamic Simulation Study of Flare Netwrok for General Power Failure Analysis	Aspen HYSYS	2024	Operator	Refining	Inprocess has successfully completed a steady state flare study for a previous project in the same plant. The study revealed that the current flare system cannot handle all discharges to the flare under worst-case conditions. Consequently, the client requested a more accurate dynamic simulation study Recognizing Inprocess's expertise in process simulation, the client commissioned Inprocess to conduct a Dynamic Simulation Study for the general power failure analysis. Inprocess developed a dynamic simulation model that included all specified equipment and executed the general power failure scenario. The study provided detailed technical and commercial insights, fulfilling the client's requirements.
Flow Assurance Analysis with Dynamic Simulation Study	Chinese EPC working for an Emirates Oil & Gas company	United Arab Emirates	Transient Analysis P5 Project Bu Hasa Field	OLGA	2024	EPC	Oil & Gas	The Steady State Hydraulic analysis aimed to assess the adequacy of existing transfer lines, determine new requirements, establish line sizes, and define operating envelopes (pressure, temperature, velocity, liquid hold-up) for new and existing lines. It also identified potential slugging issues, bottlenecks, and confirmed line sizes for flow lines from well bays and pads. The Transient analysis focused on establishing thermal and operating parameters, ensuring design adequacy for handling slug volume during operations and maintenance (e.g., pigging). It included transient scenarios like turn down, ramp-up/down, start-up, pigging, and depressurization, determining pigging frequency, and analyzing slug catcher and draining valve scenarios to confirm vessel size.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Training Courses for Operators	Malaysian FPSO constructor (Brazil Office)	Brazil	Educational Programs Development using Digital Solutions and Train the Trainers	Aspen HYSYS	2024	EPC	Oil & Gas (FPSO)	In this project, Inprocess successfully delivered a comprehensive FPSO operator training program using its suite of digital solutions. The initiative supported the setup and deployment of harmonized training content for multiple FPSOs across Yinson's training centers in Brazil and Ghana. By leveraging Early and Direct-Connect OTS platforms, ITOP modules, and the ICOM competence management system, Inprocess developed structured learning paths, trainer sessions, and scenario-based exercises tailored to each FPSO unit. The program empowered both instructors and operators with consistent, high-quality training tools and methodology, enabling improved operational readiness and long-term workforce competence across diverse control system environments.
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer	Germany	C3 Splitter - Compressor Dynamic Simulation Study	Aspen HYSYS	2024	Equipment Manufacturer	Refining	In this project, Inprocess successfully delivered a dynamic simulation study of a compressor system integrated into a propylene/propane splitter unit. The study focused on evaluating the system's behavior during critical transient scenarios, such as start-up from settle-out and cold conditions, emergency shutdowns, blocked flow events, and normal operation shutdown. Using Aspen HYSYS® Dynamics, Inprocess developed and validated a high-fidelity dynamic model that included key equipment and control elements. The project culminated in detailed reports analyzing the system's response and confirming the adequacy of the anti-surge control and protection systems. The insights gained support safer, more reliable compressor operations and informed design decisions.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office) for an US Oil Major	Germany	Dynamic Simulation Study for a multi-stage compression system in a North America oil & gas field	Aspen HYSYS	2024	Equipment Manufacturer	Oil & Gas	A dynamic simulation study was successfully completed to assess the transient behavior and control response of a multi-stage compression system consisting of two parallel trains with three stages each. Using Aspen HYSYS® Dynamics, a detailed model was developed and validated against design data, enabling the evaluation of various operational scenarios such as start-ups from settle-out and process conditions, normal and emergency shutdowns, anti-surge valve failures, blocked inlet and outlet events, and turndown to minimum speed. The study confirmed the effectiveness of the anti-surge protection, identified control system optimizations, and ensured the system's safe and reliable performance under a wide range of conditions.
DirectConnect OTS: Yokogawa-CentumVP	Canadian LNG Company	Canada	OTS for a Canadian LNG Facility	UniSim Design	2024	Operator	Natural Gas	Inprocess delivered a direct-connect OTS using UniSim Design as dynamic process simulator, Yokogawa CentumVP simulator as DCS emulator, and Inprocess Infrastructure Suite (IIS) as communication hub, for a complete LNG facilities comprising the different plnat sections: inlet facilities, mercury removal, acid gas sweetening, dehydration, liquefaction by mixed refrigerant, condensate stabilization, hot oil circuit, fuel gas system, boil-off gas system, and LNG storage and handling.
Flow Assurance Analysis with Dynamic Simulation Study	French Oil Major Company	France	Surge Analysis for FPSO's Offloading System	Synergi Pipeline SImulator (SPS)	2024	Operator	Refining	The main objective of this study was to develop two Steady State models for the offloading system. The first model reproduced and validated the results obtained in a previous study using VariSim software. The second model assessed the impact of reducing the main hose size from 24” to 20” and the hose rating from 300# to 150#. Following this, a Transient Hydraulic Study of the updated model was conducted to evaluate the response of the surge relief system and propose necessary mitigation measures.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	US Office of a German Compressors Manufacturer	United States	Compressor Dynamic Simulation Study	UniSim Design	2024	Equipment Manufacturer	Oil & Gas (FPSO)	In this project, Inprocess successfully delivered a dynamic simulation study for a compressor system associated with the BM-C-33 area. Using Honeywell UniSim® Design, the team developed a high-fidelity dynamic model to assess the compressor's transient behavior and control response under a wide range of operational and failure scenarios—including start-up, shutdown, valve malfunctions, surge conditions, and transitions between operating modes. The study helped evaluate the effectiveness of the anti-surge control system, confirmed system responses during critical events, and provided actionable insights for improving safety and reliability. Key deliverables included detailed simulation reports and reusable model files.
Dynamic Simulation Modelling Study	Singapore Office of a Norwegian Engineering Company for a Turkish Operator	Singapore	High fidelity Holistic Dynamic Simulation of an offshore gas field in north of Turkey	Aspen HYSYS	2024	EPC	Oil & Gas	The completed project successfully developed a dynamic simulation model for the Gas Field, integrating results from existing OLGA models to ensure accurate and comprehensive analysis under realistic operational conditions. The model utilized OLGA data in Aspen HYSYS®, accurately reflecting flow profiles and pressure variations, and strategically applied IFLOW, the Inprocess' OLGA-HYSYS link in critical scenarios such as start-up and slugging to enhance realism. Conservative assumptions were used for other scenarios to ensure safe and robust analysis, particularly for over-pressurization risks. The scope included the subsea gas production flowline from 10 wells to the riser top, and topside systems such as Gas Production, Gas Separation, HP Gas Compression, Gas Dehydration, Gas Export, and the Flare System. Closed drains and pig receivers were excluded to maintain model efficiency, with some minor operations simplified or adjusted without affecting overall dynamic behavior. This approach optimized project costs and timeline while prioritizing safety and reliability, meeting the client's specific needs.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Online Appplication	US Major Oil Company	United States	Support to client in its Dynamic Digital Twin Reseach & Development efforts	UniSim Design	2024	Operator	Refining	Inprocess provided the following services to accelerate client's in-house development using Inprocess' IIS platform and UniSim models: -Support for Inprocess Infrastructure Suite (IIS) and any associated tools for project team -Training on model integration using IIS -Ad hoc consultation and support for model development and deployment -Guidance on Process Digital Twin architecture, best practices, and development roadmap
Dynamic Simulation Studies for Compression Systems	US Compressor Manufacturer for a Canadian operator of an oil sands field	United States	Dynamic Simulation Study for a Compressor Unit in an oil sands refinery	Aspen HYSYS	2024	Equipment Manufacturer	Oil & Gas; Refining	The dynamic simulation study for the three new compressors has been successfully completed using Aspen HYSYS® Dynamics. High-fidelity models were developed to assess key operational scenarios, including start-up, emergency shutdown, anti-surge valve failure, and heat exchanger malfunction, aiming to prevent issues such as surging, choking, overloading, and overheating. The study included both internal control logic and integration with the ECT emulator for enhanced control system analysis. Final deliverables included validated models and detailed reports, providing valuable insights to ensure safe and efficient compressor operation.
Steady State Simulation Modelling Study	Saudi Arabian Oil Company	Saudi Arabia	Steady State Models for the Hydrocracking Unit (HCU), the Vacuum Distillation Unit (VDU, and the Dewaxing Unit (DWU) in a Saudi Arabian refinery	Aspen HYSYS	2024	Operator	Refining	The main objective of this study was to develop steady-state models for the Hydrocracker, Dewaxing, and Vacuum Distillation Units and validate them against historical plant data to assess unit operability. Additionally, Inprocess provided an optional detailed steady-state modeling of the fired heater and the reactor for the unit.
Dynamic Simulation Modelling Study	Spanish Refinery Site	Spain	Dynamic simulation study for the pre- heat trains of a refinery Crude Distillation Unit (CDU)	PetroSIM	2024	Operator	Refining	Inprocess successfully completed a project aimed at addressing premature shutdowns and efficiency losses in the Crude I unit caused by fouling in the preheating train exchangers. The project involved developing a model incorporating new technology exchangers for the pre-heating train of the Crude I unit. This model simulated cold startup and heating train switch-over scenarios to ensure operational success. By implementing this solution, Inprocess helped mitigate the risk of potential equipment damage for the client.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flow Assurance Analysis with Dynamic Simulation Study	Chinese EPC working for an Emirates Oil & Gas company	United Arab Emirates	Transient Analysis Modification Works at TPO & Gas Field	OLGA; PIPESIM	2024	EPC	Oil & Gas	Inprocess conducted a Flow Assurance Analysis for the Trunklines associated with certain working packages for the increase in production of two Gas Fields in the Emirates. Such a study has involved Steady State and Transient Hydraulic Analyses of specified pipelines and executing selected scenarios. Inprocess successfully developed and executed the models, aiding in the smooth integration of modified facilities to meet project objectives.
Competence Management System (ICOM)	Norwegian subsidiary of a Malaysian FPSO constructor	Norway	ICOM license and customization		2024	Operator	Oil & Gas (FPSO)	ICOM has been licensed by client in order to implement a customized training system for their operating workforce in Brazil, Ghana and Norway. ICOM is Inprocess' comprehensive browser-based software facilitating workforce development and competency assessment in hydrocarbon and chemical processing industries by offering customizable training itineraries, integrated learning materials, and assessment tools.
Dynamic Simulation Modelling Study	Technology Lab of a Spanish oil company	Spain	Control optimization study for the Fractionator column in the Delayed (DCU) Coker Unit of a Spanish Refinery	Aspen HYSYS	2024	Operator	Refining	The project aimed at enhancing the operational performance of the Fractionator column of a Delayed Coker Unit (DCU), with a focus on optimizing its operations during critical Coke Drum switchover processes. The chosen refinery unit for this initiative was a DCU, consisting of the fractionator, two heaters, and four Coke Drums. To achieve operational improvements, the unit implemented a multivariable controller based on the dynamic matrix control algorithm.
DirectConnect OTS: Yokogawa-CentumVP	A Bahraini Refining Company	Bahrain	OTS Systems For Low Sulphur Fuel Oil (LSFO) Complex	Aspen HYSYS	2024	Operator	Refining	A project aimed to replace obsolete existing Operator Training Simulator (OTS) systems for the Low Sulphur Fuel Oil (LSFO) complex. Inprocess delivered a Direct Connect OTS solution, enabling intensive training on normal, abnormal, and safety-critical scenarios. OTS covered key units: * Two (2) Hydrodesulphurization Units (HDU), * One (1) Hydrogen Plant (HPU), * Six (6) Vacuum Distillation Units (VDU), * Seven (7) Sulphur Recovery Units (SRU), and * Two (2) Tail Gas Treating Units (TGTU), along with a comprehensive training package for operations staff evaluation and certification.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	US Subsidiary of a German Compressor Manufacturer for an Australian petroleum exploration and production company	United States	Dynamic Simulation Study for a Turboexpander	UniSim Design	2024	Equipment Manufacturer	Oil & Gas	Inprocess carried out a dynamic simulation model encompassing all major equipment of a Turboexpander plant. Once the model was developed, Inprocess executed the selected scenarios listed in proposal. Following completion, Inprocess delivered a dynamic simulation report detailing the obtained results during the project's execution. The developed model was also provided to the client.
Dynamic Simulation Modelling Study	Malaysian FPSO constructor (Brazil Office)	Brazil	Dynamic Simulation Studies for the Seawater Treatment System of an FPSO in Brazil	Aspen HYSYS	2024	EPC	Oil & Gas (FPSO)	The client commissioned a dynamic simulation study (DSS) for the Seawater Treatment System, focusing on analyzing the hydraulic behavior and controllability of the SRU Feed Pumps. The study aimed to address vibration issues observed at low flow rates by adjusting the minimum flow protection of the pumps. The SRU Membrane Units operated in different modes, with the number of SRU Feed Pumps and SRU Membranes adjusted according to downstream demand. The study evaluated the operational requirements for each mode of SRU Membrane Unit operation.
Dynamic Simulation Modelling Study	Spanish Petroleum Company	Spain	Sr Process Simulation Expert outsourcing	DWSIM	2024	Operator	Refining; Petrochem	Inprocess developed a code for the automation of the FCC reactor calibration on a commertial simulator, directly extracting data from historian data.
Dynamic Simulation Modelling Study	Spanish Petroleum Company	Spain	Sr Process Simulation Expert outsourcing	DWSIM	2024	Operator	Refining; Petrochem	Inprocess performed a technical evaluation of the commertial simulation softwares for an international Oil and Gas Operating Company. The purpose of this study was to find out the strengths and weakness of each simulator for e-Fuels processes simulation, mainly focusing the Fischer-Tropsch process.
Dynamic Simulation Modelling Study	Spanish Petroleum Company	Spain	Sr Process Simulation Expert outsourcing	DWSIM	2024	Operator	Refining; Petrochem	Inprocess supported the model building of a Naphta Splitter on steady state mode using the DISTOP simplified method.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated OTS: Siemens-PCS7	Malaysian FPSO constructor	Singapore	Early Training Solution (Emulated OTS) for an FPSO located offshore Brazil	Aspen HYSYS	2024	EPC	Oil & Gas (FPSO)	Inprocess had successfully completed a Multipurpose Dynamic Simulation project. However, there were some delays in receiving ICSS from provider. To address delays in the final Database of the ICSS project for the FPSO, an Early Training Solution (emulated OTS) was provided. This solution enabled the verification of operating procedures and training of new operators on the process. It emulated the ICSS and operator HMI using Aspen HYSYS models and IIS capability for screens emulation. Activities included SIS implementation, HMI configuration, quality testing, and documentation. Hardware from the base scope for Direct-Connect OTS was reused, with remote access provided.
Dynamic Simulation Modelling Study	Malaysian EPC for a Malaysian Oil&Gas company	Malaysia	Controllability study by Dynamic Simulation for a terminal liquid and condensate network handling	Aspen HYSYS	2024	EPC	Oil & Gas	This project involved conducting a Dynamic Simulation Study (DSS) for Inter-Terminal Liquid Handling and Inter-Terminal Condensate Network, aiming to evaluate the existing process control scheme and propose improvements through dynamic simulation. Utilizing Aspen HYSYS® Dynamics as the process simulation engine ensured model portability and maintainability with the latest technology. Inprocess collaborated closely with the client, leveraging their expertise to consider flow regime and composition on flowlines for an effective control strategy. The main deliverables included Dynamic Simulation and Scenarios Execution Reports, contributing to enhanced control and operational efficiency in the Inter-Terminals.
Hybrid DirectConnect OTS: Proconex Honeywell Experion	European site of a Saudi chemical manufacturing company	Netherlands	Operator Training System for a Steam Cracker	Aspen HYSYS	2024	Operator	Petrochem	This project involved implementing an Operator Training Simulation (OTS) system for a steam cracker facility, focusing on enhancing operator training and safety. The OTS allowed operators to simulate various scenarios, including start-ups, shutdowns, upsets, and emergencies, without risking plant equipment. Its main objectives are to provide intensive training for operators, improve their understanding of the process and control systems, and enhance overall operational safety. This was a hybrid OTS so Inprocess worked with an intermediary software that replicated DSC behavior.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Online Appplication	Spanish branch of a multinational petrochemical company	Spain	Inferential to estimate the propane content at the bottom of a De-propanizer column	Aspen HYSYS	2023	Operator	Petrochem	The project successfully replaced the empirical formula used for inferring C3 at the bottom of the depropanizer column with a precise process simulation-based method, employing Aspen HYSYS. By incorporating new plant instrumentation and refining the inferential equation, the accuracy of C3 estimations, especially under challenging conditions, significantly improved. The resulting rigorous models achieved the project's objectives, leading to the successful update of the Digital Twin previously provided by Inprocess.
Emulated OTS: Yokogawa-CentumVP	American Oil Major for its Nigerian subsidiary	United States	Operator Training System for a Gas to Liquids facility in Nigeria	Aspen HYSYS	2023	Operator	Refining	Inprocess has successfully delivered four Operator Training Simulators (OTS) to the customer, accompanied by a series of courses. These OTS systems include a comprehensive representation of associated controllers (DCS), interactive Operator Interface, and an Instructor Station, specifically designed for conducting training sessions. The primary goal of the OTS was to provide operational staff, including control room operators, operating supervisors, and process engineers, with practical experience in operating facilities under various scenarios. This encompasses control of process systems during normal operation, preparation of process systems for normal shutdown, startup procedures following a trip or shutdown, and the ability to effectively manage emergencies and abnormal situations
DirectConnect OTS: ABB-800xA	Norwegian Subsidary of a main automation contractor	Norway	Direct-Connect OTS for a FPSO located in an oil & gas field in the North Sea	Aspen HYSYS	2023	Instrumentation Provider	Oil & Gas (FPSO)	The delivered Operator Training Simulators (OTSs) aim to train operational staff on both process and control systems, reduce the risk of operational incidents, decrease start-up time, increase plant on-stream time, and serve as a test-bed for engineering analysis. The OTSs emulate plant behavior with high fidelity, ensuring minimal differences from the real plant DCS interface. This realistic simulation helped operators practice and improve responses to various scenarios, preventing equipment damages and enhancing overall operational efficiency.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Steady State Simulation Modelling Study	Peruvien Refinery	Peru	Steady State Model for a Flexicoker Unit	Aspen HYSYS	2023	Operator	Refining	Inprocess successfully delivered a steady-state simulation model of a Flexicoker unit for a refinery, enabling detailed analysis and optimization of key process areas including the feed, reaction, gasification, and fractionation sections. The model was developed using Aspen HYSYS and incorporated a custom-built “lumped kinetics” approach to realistically simulate thermal cracking and gasification reactions. As part of the project, Linear Programming (LP) vectors were generated in Excel format for integration into planning tools like PIMS, and technical support was provided to ensure seamless model integration with existing tools. The model underwent several validation stages and collaborative review meetings, culminating in a final report and a complete hand-over to the client’s team.
Dynamic Simulation Studies for Compression Systems	Korean Compressor Manufacturer Company for a Polish CC Power Plant	South Korea (Republic Of Korea)	Dynamic Simulation Study for Fuel Gas Compressor in a Combined Cycle Power Plant in Poland	Aspen HYSYS	2023	Equipment Manufacturer	Power Plants	The project has achieved its main objective of delivering a dynamic simulation study, analyzing the fuel gas compressor system's dynamic behavior during various transient operations. Key study objectives were successfully met, including verifying compressor operability, assessing the positioning of the anti-surge valve and Inlet Guide Vanes (IGV), confirming the need for a pressure throttling valve at the feed gas line, verifying the sizing of Anti-Surge Control Valves (ASCV), and ensuring the overall performance of the anti-surge system. The study contributes to the operational reliability and efficiency of the fuel gas compressor system, enhancing the project's overall effectiveness.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	Italian EPC for a Middle East National Oil Company	Italy	Dynamic Simulation Study and Low Temperature Study for an Oil & Gas field development project	Aspen HYSYS	2023	EPC	Oil & Gas	Following the successful realization of the project, the Dynamic Simulation Study for the Oil and Gas Development Project has achieved its objectives by executing up to thirty dynamic simulation scenarios using Aspen HYSYS® Dynamics as the chosen process simulation engine. This comprehensive verification process ensures the reliability and efficiency of the project under various operational conditions. Simultaneously, the Low Temperature Study has successfully reconfirmed expected low temperatures resulting from depressuring in the facilities. A critical review of liquid formation in systems handling dense phase during depressuring has been conducted, leading to the incorporation of suitable recommendations into the design
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office) for an international EPC	Germany	Dynamic Simulation Study for a PDH Reactor Effluent Compressor (REC)	Aspen HYSYS	2023	Equipment Manufacturer	Petrochem	Inprocess, having previously developed a dynamic simulation for a feasibility project involving the same compressor system in a Propane Dehydrogenation (PDH) plant, has expanded its evaluation to cover five scenarios under two operating conditions. The assessment includes normal operation, start-up from settle-out/process conditions, normal (delayed) shutdown, emergency shutdown (undelayed), and operation on the anti-surge control line (turn-down). This extended analysis provides a comprehensive understanding of the compressor system's dynamics in diverse operational situations, surpassing the previous focus solely on start-up analysis.
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office) for an international EPC	Germany	Dynamic Simulation Study for Heat Pump Compressor (HPC)	Aspen HYSYS	2023	Equipment Manufacturer	Petrochem	The project has successfully achieved its main objective by employing a dynamic model to simulate and obtain results for the entire process of machine start-up. The simulation encompassed the progression until the compressor reached its operating speed, with the Anti-Surge Valves (ASVs) fully open. This successful delivery demonstrates the effective utilization of dynamic modeling for comprehensive analysis and simulation of the machine start-up process.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: ExperionPKS	European site of a Saudi chemical manufacturing company	Netherlands	Operator Training System for a Steam Cracker	Aspen HYSYS	2023	Operator	Petrochem	The delivered Operator Training System (OTS) successfully addresses the scarcity of hands-on opportunities for new operational staff in plant operations. The system provided a risk-free environment for practicing start-ups, shutdowns, and emergencies, achieving key objectives such as training staff on processes and control systems, reducing operational risks, minimizing start-up time, enhancing plant performance, serving as a test-bed for engineering analysis, and preventing equipment damages. This "Hybrid OTS" accurately mirrors the Distributed Control System (DCS) with a standalone software package, ensuring staff confidence in safe and efficient plant operation under diverse scenarios.
Online Appplication	Polish Petrochemical company	Poland	A Digital Twin for a petrochemical distillation column	PetroSIM	2023	Operator	Petrochem	The primary purpose of the solution was to provide the expected real time process parameters at steady state conditions which are not measurable onsite (i.e. stream compositions, column stabilization and rectification hydraulics and temperature profile, reboiler mass and energy balance).
Flare Systems Analysis	Spanish Oil Company (Refining Division)	Spain	Flare study	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2023	Operator	Refining	The project has successfully achieved its main objective, conducting a comprehensive analysis of the impact on the flare network following a Hazop study. The focus of the analysis was on the integration of new Pressure Safety Valves (PSVs) connected to a recently added sub-collector, strategically linked to the refinery's general collector within the flare network. The project's successful delivery provides valuable insights into the implications and efficiencies of the new configuration for the flare network.
DirectConnect OTS: ABB-800xA	Main Automation Contractor working for an USA Natural Gascompany	United States	Direct-Connect OTS for a north american LNG project	UniSim Design	2023	Instrumentation Provider	Natural Gas	Inprocess has successfully delivered a Direct-Connect Operator Training System (OTS) utilizing the proprietary Inprocess Infrastructure Suite (IIS) programming environment, coupled with Honeywell UniSim® Design as the process simulation engine. This OTS has facilitated the certification of operators for competence, providing the operational staff, including control room operators, operating supervisors, and process engineers, with practical hands-on experience in operating the facilities across diverse scenarios.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	Spanish Petroleum Company	Spain	Technological scoping of an open-source simulation technology	DWSIM	2023	Operator	Refining; Petrochem	Inprocess executed a scouting for the open-source simulation technology for the client. Inprocess also prepared a proof of concept that is required for the implementation, development and analysis. This helped the client to analyze and decide based on the results of POC on the feasibility of the project and to proceed with projects subsequent phases.
Training Courses for Operators	Colombian Oil Company	Colombia	Training Courses for Plant Operators about processing units using INGENO	UniSim Design	2023	Operator	Refining	Inprocess has successfully delivered a series of courses using INGENO, focusing on the training of operational procedures for generic production units. The courses, targeted at specific units such as Turbogenerador, Calderas, and Hornos, includes a comprehensive technical and commercial description of the INGENO training solution, along with its hardware/software requirements.
Hybrid DirectConnect OTS: Proconex Honeywell TPS	Greek Refining Company	Greece	Update of CDU's OTS according to latest column revamp	UniSim Design	2023	Operator	Refining	Inprocess has updated the previoulsy delivered OTS for the refinery CDU with the information coming from the latest revamp
DirectConnect OTS: Siemens-PCS7	Dutch FPSO constructor and International EPC Joint Venture	Netherlands	Lifecycle OTS for an FPSO in Guyana	Aspen HYSYS	2023	Operator	Oil & Gas (FPSO)	Inprocess has successfully delivered the oil development project, utilizing its advanced IIS software, recognized as a premier OTS orchestration tool. This project included a Lifecycle OTS with a Virtual Start-up initiative. The solution aimed to proactively identify issues in the FPSO system before actual start-up, saving time, reducing risks, and improving overall process safety. The Testing and Training Simulator, a key component, served various purposes, such as OTS, ICSS testing, Virtual Start-up, controller tuning, verification of process control narratives, and commissioning support. The successful completion underscores the effectiveness of Inprocess IIS software in optimizing critical processes for clients.
Dynamic Simulation Modelling Study	North American Refinery	United States	Dynamic Simulation Study of Gas blow of a Distillate Hydrotreating Unit	Aspen HYSYS	2023	Operator	Refining	Inprocess has successfully completed the execution of the dynamic simulation project. The team developed a comprehensive dynamic simulation model incorporating all the specified equipment . Subsequently, the selected scenarios were meticulously executed. The project culminated in the delivery of a thorough dynamic simulation report, presenting detailed insights and outcomes obtained during the course of the project's implementation.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Emerson-DeltaV	Spanish branch of a multinational petrochemical company	Spain	Direct-Connect OTS for Depropanizer and Deethanizer	Aspen HYSYS	2023	Operator	Petrochem	Inprocess developped a Direct-Connect OTS using the proprietary Inprocess Infrastructure Suite (IIS) programming environment. Thanks to this OTS it was possible to certify operators for competence and allow the operational staff (control room Operators, operating Supervisors, Process Engineers…) to gain practical experience on how to operate the facilities in various situations
Online Appplication	Spanish branch of a multinational petrochemical company	Spain	Digital Twin for the C3 Splitter + Deethanizer columns in a PDH plant	Aspen HYSYS	2023	Operator	Petrochem	The client has achieved the primary objective with the successful delivery of the Digital Twin, aiming to enhance process control efficiency. The implemented Digital Twin facilitates the reporting of key variables, contributing to a more streamlined control of the overall process. Additionally, a set of Key Performance Indicators (KPIs) has been established to promptly alert and signal any deviations between the model and plant data. This proactive approach serves to highlight potential anomalies related to process or equipment, enabling timely intervention and optimization.
Dynamic Simulation Studies for Compression Systems	Italian EPC for a Swedish CCS plant	Italy	Dynamic Simulation Study for for the compressors in a Carbon Capture and Storage facility in a power plant in Sweden	Aspen HYSYS	2023	EPC	Power Plants	The dynamic simulation study successfully achieved its objectives, validating start-up and shut-down procedures, optimizing hot gas bypass valves, and assessing the impact of equipment trips on the process system. The project ensured the adequacy of safety systems, including anti-surge protection, valve sizing, and control system effectiveness. Through a comprehensive evaluation of expander and motor load dynamics, the study provided valuable insights into system stability during transient operations and load variations.Since the engineering project was still in the early design phases, Inprocess client was able to use the dynamic simulation as a test-bed for several design parameters (plant lay-out, control philosophy, equipment/valves sizing, etc.)

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Siemens-PCS7	Dutch FPSO constructor	Netherlands	Testing and Training Simulator for an FPSO located offshore Brazil	UniSim Design	2023	EPC	Oil & Gas (FPSO)	Inprocess has successfully delivered the OTS as a versatile and integrated component with the Digital Twin of the FPSO. The simulator have been serving various purposes, including ICSS testing, Virtual Startup, verification of process control narratives, Operator Training Simulator (OTS), and operations support during initial start-up and ongoing phases. During the ICSS testing phase, Inprocess worked in close collaboration with the ICSS developer company, which allowed for early bug indentification that could be implemented in the real FPSO before real commissioning. The primary objective of the OTS was to certify operators for competence. This enabled the operational staff, including control room operators, operating supervisors, and process engineers, to gain practical experience in operating facilities across diverse situations, encompassing normal operation, shutdown, start-up after a trip or shutdown, control of emergencies, abnormal situations, process control strategies, advanced control logics, communication with field operators, and handling equipment malfunctions and emergency conditions.
Dynamic Simulation Modelling Study	Spanish EPC working for an Emirates NOC	Spain	Holistic Dynamic Simulation for a gas development project in Emirates	Aspen HYSYS; OLGA	2023	EPC	Oil & Gas	The completed dynamic simulation study successfully ensured stable and controlled plant operation following Water Heat Treater (WHT) trips. Assessments of compressor operability and control, along with verification of system responses to major upsets, were conducted. The study also examined anti-surge systems, settle-out conditions, and proposed modifications for optimization. Additionally, the optimum set pressure for Pressure Control Valves (PCV) and Pressure Safety Valves (PSV) was defined to prevent flaring. Identified shortcomings were addressed through modifications.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	North American Refinery	United States	Dynamics modelling and HMI interface of a crude distillation unit	Aspen HYSYS	2023	Operator	Refining	Inprocess has successfully delivered a dynamic process model for the crude distillation unit, featuring a DCS-like graphical user interface mirroring the real DCS screens. This model is a valuable asset for training on new unit operations and facilitating process optimization throughout the revamp project – spanning pre-revamp, during, and post-start-up phases. Leveraging Inprocess' expertise in dynamic modeling, we efficiently constructed a simulation model that accurately represents the CDU design with planned revamp changes. This virtual CDU enables engineers to validate the new process configuration, assess equipment sizing, explore operating windows, and test control schemes. It serves as a robust tool for troubleshooting any issues that may arise during the restart process.
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office)	Germany	DSS for a Propane Gas Compressor	Aspen HYSYS	2023	Equipment Manufacturer	Petrochem	The project has successfully achieved its main objective, delivering a dynamic simulation study that thoroughly evaluates the transient dynamics and control response of the compressor system under two distinct scenarios. The first scenario involves a Hot Start-up from predefined settle out pressure (SOP) conditions, while the second scenario assesses the impact of disturbances at the compressor inlet, focusing on the evaluation of the compressor control logic and transient dynamics during such disturbances. The study provides valuable insights into the system's behavior under different conditions, contributing to enhanced understanding and optimization of the compressor's operational dynamics.
Dynamic Simulation Studies for Compression Systems	French office of an US Compressor Manufacturer for a Qatari Gas company	France	Dynamic Simulation Study for Compression Systems in Qatar LNG plants	Aspen HYSYS	2023	Equipment Manufacturer	Natural Gas	Inprocess delivered a dynamic simulation study for 3 different types of compressors (Helium. LP and HP) of a LNG plant for transient conditions. Thanks to this study, it was possible to evaluate the design of compressor as well as confirm the adequacy of the control system.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Malaysia office of an Australian EPC Company for a Qatari Gas company	Malaysia	Dynamic Simulation study for Compression Systems in Platform Complexes	Aspen HYSYS	2023	EPC	Oil & Gas	Inprocess has created a dynamic simulation model for 2 compression platform complexes for a natural gas field on the north of Qatar. This dynamic study has been divided into 5 section: Well head to compression platform, inlet separator level control, HIPPS for Condensate export system, fuel gas system and slipstream mode. The compression platform is tested for different scenarios that enabled the test and fine tune of the compressor's PID control parameters
Operator Training System (OTS)	French Oil Major Company	France	Assistance to Global Review of Operator Training programs based on existing and new OTSs	DYNSIM; IndissPlus; UniSim Design	2023	Operator	Refining	Inprocess has been selected as the company responsible for the review and maintenance of all existing OTSs in different plants as well as for the implementation of any future OTSs, as a single supplier (Total 14 OTSs).
Dynamic Simulation Modelling Study	Italian consulting company for an Italian Oil Major company	Italy	Dynamic Simulation Study for a Fractionation Section in an Italian bio-refinery	Aspen HYSYS	2023	Operator	Refining	Inprocess has built a dynamic simulation model of the newly built fractionation unit that consists of 13 different equipment. It is verified if maximum temperature will reach to the design temperature for 5 different scenarios including general and partial power failure, loss of cooling, lack of reflux and blow bygas from HP separator
Operator Training System (OTS)	French Oil Major Company	France	Assistance to Global Review of Operator Training programs based on existing and new OTSs	DYNSIM; IndissPlus; UniSim Design	2023	Operator	Refining	Inprocess has been selected as the company responsible for the review and maintenance of all existing OTSs in different plants as well as for the implementation of any future OTSs, as a single supplier (Total 14 OTSs).
Dynamic Simulation Modelling Study	Spanish Petroleum Refinery	Spain	Feasibility studies for capacity increase of a refinery alkylation Unit	Aspen HYSYS	2023	Operator	Petrochem	Inprocess has realized a dynamic simulation study for an alkylation unit whose capacity has been increased and where iso-butane purity on top must be maintained at 95%. Thanks to this study, the client was able to verify and modify its revamp parameters. In a second project phase, the model was used to design a better heat integration due to the increase in vapor needs in the column reboiler
Dynamic Simulation Studies for Compression Systems	Korean Compressor Manufacturer Company for an UAE oil company	South Korea (Republic Of Korea)	DSS for Ethylene Compressor	Aspen HYSYS	2023	Equipment Manufacturer	Natural Gas	Inprocess has delivered a dynamic simulation study for Low Pressure Ethylene Compressor Suction Drum and Low pressure Ethylene Compressor for the following scenarios: • Verification report • Surge analysis and reports including ESD. • Requirement of hot bypass valve for surge avoidance

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Dynamic Simulation Modelling Study	Dutch FPSO constructor for a US Oil Major	Netherlands	Dynamic Simulation Study for an oil development Project in Guyana	Aspen HYSYS	2023	Operator	Oil & Gas (FPSO)	Inprocess has created a high fidelity dynamic simulation model. This model enabled: 1. The demonstration that the configuration of the process equipment and the control philosophy applied meets the functional requirements, 2. Verification of the performance of the process control scheme and confirm control, alarm, and trip settings, 3. Verification of start-up and shut-down procedures
Flare Systems Analysis with Dynamic Simulation Study	Oil refinery in Spain	Spain	Dynamic Simulation Study for Coker Relief Load in a refinery	Aspen HYSYS	2023	Operator	Refining	Inprocess has carried out a dynamic simulation model including all the equipment detail in order to evaluate the impact of a power failure scenario for the low pressure section of the coker unit, including the shutdown curve for the coker drums.
Flare Systems Analysis with Dynamic Simulation Study	Spanish Petroleum Refinery	Spain	Dynamic Relief Study for critical areas on GPF analysis for the Alkylation Flare System	Aspen HYSYS	2023	Operator	Refining	A previous Inprocess study in steady state showed that current flare system was not able to assume all discharges to flare in worst case scenarios. As dynamic simulation can give more accurate results, a dynamic simulation study has been requested. A flare network model has been built with Aspen HYSYS® to analyze the dynamic effects of the reliefs (non-simultaneity of the peaks) on those systems that have been modelled in dynamic.
Dynamic Simulation Studies for Compression Systems	Korean Compressor Manufacturer Company	South Korea (Republic Of Korea)	Dynamic Simulation Studies of Fuel Gas Compressor for a Mexican Combined Cycle Power Plant	Aspen HYSYS	2023	Equipment Manufacturer	Power Plants	A dynamic simulation study has been delivered that shows the analysis of the dynamic behavior of the Fuel Gas Compressor for selected transient operations, verifying the anti-surge valve size, including the trim characteristics and to evaluate the need of additional protection, hot gas bypass valve and to check the settle-out pressures conditions.
Dynamic Simulation Studies for Compression Systems	Korean Compressor Manufacturer Company	South Korea (Republic Of Korea)	Dynamic Simulation Studies of Fuel Gas Compressor for a Mexican Combined Cycle Power Plant	Aspen HYSYS	2023	Equipment Manufacturer	Power Plants	A dynamic simulation study has been delivered that shows the analysis of the dynamic behavior of the Fuel Gas Compressor for selected transient operations, verifying the anti-surge valve size, including the trim characteristics and to evaluate the need of additional protection, hot gas bypass valve and to check the settle-out pressures conditions.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Korean Compressor Manufacturer Company	South Korea (Republic Of Korea)	Dynamic Simulation Studies of Fuel Gas Compressor for a Mexican Combined Cycle Power Plant	Aspen HYSYS	2023	Equipment Manufacturer	Power Plants	A dynamic simulation study has been delivered that shows the analysis of the dynamic behavior of the Fuel Gas Compressor for selected transient operations, verifying the anti-surge valve size, including the trim characteristics and to evaluate the need of additional protection, hot gas bypass valve and to check the settle-out pressures conditions.
Dynamic Simulation Studies for Compression Systems	Korean Compressor Manufacturer Company	South Korea (Republic Of Korea)	Dynamic Simulation Studies of Fuel Gas Compressor for a Mexican Combined Cycle Power Plant	Aspen HYSYS	2023	Equipment Manufacturer	Power Plants	A dynamic simulation study has been delivered that shows the analysis of the dynamic behavior of the Fuel Gas Compressor for selected transient operations, verifying the anti-surge valve size, including the trim characteristics and to evaluate the need of additional protection, hot gas bypass valve and to check the settle-out pressures conditions.
Dynamic Simulation Studies for Process Control Analysis	Spanish E&P company operating in the North Sea	Norway	Plant controllability studies at low flow condition analysis at an oil&gas platform in the North Sea	Aspen HYSYS	2023	Operator	Oil & Gas	Tasks that have been carried out during the project are: • Validate the Plant Simulation (Aspen HYSYS stationary model) at actual operative conditions. • Built and validated the dynamic model on Aspen Hysys. - Perform the tuning of the process control loops. - Validate the tuning with the dynamic model and evaluate the stability with the process with the historical data. • Improve the tuning across process control loops to optimize and increase the stability in YME Plant. • Train Operators on “Basic Control loop Tuning” and provide general Support during field visits.
Flow Assurance Analysis	Indian EPC Emirates office	United Arab Emirates	Steady State & Transient Analysis for 3 offshore pipelines	OLGA; PIPESIM	2023	EPC	Oil & Gas	The scope of work consisted of modelling of three offshore pipelines. Steady state and transient state scenarios are considered to ensure the operability of the pipeline. Transient analysis scenarios were surge volume during ramp-up and surge volume during pigging operation. Summer and winter cases are also considered for each scenario.
DirectConnect OTS: ExperionPKS	European site of a Saudi chemical manufacturing company	Netherlands	Operator Training System for Steam Cracker	Aspen HYSYS	2023	Operator	Petrochem	A Direct-Connect OTS of a Steam Cracker was delivered. This project included the design, engineering, delivery, testing and installation of the Steam Cracker OTS. It consisted of training scenarios configuration, KPI configuration/customization, Instructor Station software and configuration.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated Operator Training System	Major American Petroleum Company	United States	Operator Training Simulator for Electric Submersible Pumps in a Gulf of Mexico field	Aspen HYSYS; OLGA	2023	Operator	Oil & Gas	Inprocess have developed the OTS using our proprietary Inprocess Infrastructure Suite (IIS) platform alongside Aspen HYSYS Dynamics for the topsides process simulation engine and OLGA for the subsea process simulation engine. The resulting holistic model was created leveraging the existing OLGA models provided by the client.
Dynamic Simulation Modelling Study	Spanish EPC company	Spain	Dynamic Simulation Studies on gas system for a Combined Cycle Power Plant	Aspen HYSYS	2023	EPC	Power Plants	A dynamic simulation study of the plant's gas system was delivered in order to verify if the process requirements were satisfied under transient scenarios such as compressors failure, turbine failure, loading rejection. The equipment that was included in the dynamic model: - Five (5) Gas Turbines-Generators - Five (5x25%) Gas Compressors - Fuel Gas Conditioning (FGCS): Five (5) Performance Heater skids (1x100%) & Five (5) Fine Filter Coalescing skids (1x100%)
DirectConnect OTS: Siemens-PCS7	Dutch EPC Compnany for Offshore Plants	Netherlands	Virtual Commissioning using an OTS for a Brazilian FPSO	UniSim Design	2023	EPC	Oil & Gas (FPSO)	Virtual Commissioning and Start-up targeted to reveal hidden issues and flaws of the whole FPSO (equipment, control narratives, ICSS code, operating procedures, process safety, etc.) before they may happen in the real start up. This would save start up time, reduce the risk of potential equipment damages, minimize the flaring/ emissions and improving the process safety.
Operator Training System (OTS)	French Major Oil Company	France	Assistance to Global Review of Operator Training programs based on existing and new OTSs	DYNSIM; IndissPlus; UniSim Design	2023	Operator	Refining	Inprocess has been selected as responsible for the review and maintenance of all existing OTSs in different plants as well as for the implementation of any future OTSs, as a single supplier (Total 14 OTSs).
DirectConnect OTS: Siemens-PCS7	Norwegian Oil&Gas operator	Norway	Integration of an additional well and pipeline into an existing Norwegian platform OTS	UniSim Design	2023	Operator	Oil & Gas	The existing Direct-Connect OTS was extended keeping current models and OTS architecture. Three new process units and flowlines of the platform were included in the Unisim Dynamic model. Regarding the instructor station, new additional screens were added (screens related to the DCS and for the FODS) to extend the instructor navigation and the FOD and instructor actions execution. The initial conditions were re-generated and the new scenarios were tested with the training instructor.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Kongsberg-K-Chief700	Malaysian FPSO constructor	Singapore	Multi-purpose Dynamic Simulator (Lifecycle OTS) for an FPSO to be located offshore Angola	Aspen HYSYS	2023	EPC	Oil & Gas (FPSO)	Phase I – Dynamic Process Model Development, Dynamic Simulation Studies and Steady State Simulations Verification: Based on the design and equipment data, a complete dynamic Aspen HYSYS® Dynamics model will be built against H&MB and/or Steady State model provided. In parallel, the Steady State simulations will be verified according to existing design conditions. Phase II – Operating Procedures Validation & Early-Emulated OTS Phase III – ICSS Database Checkout Phase IV – OTS Direct-Connect Phase V - Start-up Support
Flow Assurance Analysis	Japanese FPSO constructor	Singapore	Operating scenarios for an FPSO using an integrated transient model (subsea + topside facilities)	OLGA; UniSim Design	2023	EPC	Oil & Gas (FPSO)	Additional transient scenarios necessary obtain conclusions on how to ensure the correct operation of the subsea production line of the FPSO
Flow Assurance Analysis	Emirati consulting company working for an UAE NOC	United Arab Emirates	Dynamic Simulation Analysis to determine the operability limits of new main gas line that is deemed necessary for an increase in gas production	Aspen HYSYS; OLGA	2023	Consulting & Services	Oil & Gas	Dynamic Simulation study to verify the following: • The facilities can operate in a stable and controlled manner in case of any spurious trip. • The control system can ensure safe operation and equipment protection during transient conditions. • The set points of the controllers as suggested during detailed engineering stage can maintain the plant in a safe and operable window. • Confirm the proposed control scheme by demonstrating the flow distribution through the 34” NMGL and existing 18” pipeline during Pre-LTPD and Post-LTDP operating scenario. • Estimate the indicative controller set points for the new pressure controllers added as part NMGL Project and identify the set point change required for existing pressure controllers.
Dynamic Simulation Studies for Compression Systems	Spanish EPC working for a Middle East gas company	Spain	Additional (9) scenarios for the BOG compressors protection	Aspen HYSYS	2023	EPC	Natural Gas	Additional scenarios necessary to ensure the compression system protection (right ASV sizes) during possible emergency situations

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HIPPS or other Depressurizatio n	Emirates EPC for an Emirates NOC	United Arab Emirates	Blowdown and Minimum Design Metal Temperature Determination (MDMT) for an new pipeline from an offshore platform to onshore facilities in the UAE	Aspen HYSYS; OLGA	2023	Consulting & Services	Oil & Gas	Blowdown and Minimum Design Metal Temperature Study to addresses the assessment of depressurization rate, depressurization time, hydrate formation temperature, calculation of blowdown orifice areas and calculation of MDMT for a new main gas pipeline to be installed connecting an offshore platform with an onshore processing facilities
Emulated Operator Training System	German Ammonia Process Licensor	Germany	Emulated OTS for an ammonia plant to be located in Egypt	Aspen HYSYS	2023	Process Licensor	Fertilizers	Development of an Emulated Operator Training Simulator for an ammonia plant to be built by our client (ammonia process licensor) in Egypt, using the proprietary Inprocess Infrastructure Suite (IIS) environment as the basis platform, as well as Aspen HYSYS Dynamics as the process simulation engine. The Emulated OTS solution does not use any additional software component to simulate the behavior of the Distributed Control System (DCS). The control narrative and the simulation of the control loops are part of the dynamic process simulation model. A similar approach is followed with the Safety Instrumented System (SIS).
Dynamic Simulation Modelling Study	Spanish Petrochemical Site	Spain	Hydraulic study of the cold water network in the polypropylene plant	Aspen HYSYS	2023	Operator	Petrochem	Construction of a dynamic model of the cold water network of the polypropylene plant with the objective of: * Owning a dynamic model that allows to know the current state of the cold water network in the polypropylene plant * Evaluate the impact of high temperatures in the cooling tower * Evaluate the possible optimization alternatives of the cold water network

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Dynamic Simulation Modelling Study	Brazilian midstream company	Brazil	New gas processing and Inventory analysis and application development	Aspen HYSYS	2023	Operator	Natural Gas	Development of applications to determine the gas inventory (stock in the pipeline) and the daily schedule (production forecast) for the natural gas processing plant. This will support client in calculating the gas inventory within two hours' time horizon. This application will be fed with plant data from EnergySys Cloud Platform the calculated results will be also sent to EnergySys. The EnergySys Cloud Platform enables users to connect to the database for reporting and export purpose via a secure web interface. This interface uses an open-standards data transfer protocol called OData. The applications will: * determine the gas inventory (gas stock in the pipeline) and * calculate the production forecast for the natural gas processing plant (production schedule for daily, 30 days and 90 days periods).
DirectConnect OTS: Rockwell-FactoryTalk	Brazilian office of a software technology provider for a Brazilian oil company	Brazil	Deplyment, Licensing and Support for a Multi-Purpose Dynamic Simulator ,and Operators Training, for an FPSO located offshore Brazil	Aspen HYSYS	2023	Software Development Company	Oil & Gas (FPSO)	Development of a multi-purpose dynamic simulator (MPDS) in order to train control room and field operators of a Brazilian FPSO. The project is scheduled in five modules, comprising 1. the development of the dynamic simulation model (to rigorously replicate the behavior of the processing facilities) 2. the simulation of the control system using the softcontroller supplied by the control system provider 3. the configuration of the training system with the instructor and operators consoles 4. the development of an immersive environment, based on 3D virtual reality, to simultaneously train the field operators and the CROs 5. development and implementation of the Start-up and Commissioning Monitoring System by connecting the MPDS to the real-time database

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Rockwell-FactoryTalk	Brazilian office of a software technology provider for a Brazilian oil company	Brazil	Deplyment, Licensing and Support for a Multi-Purpose Dynamic Simulator ,and Operators Training, for an FPSO located offshore Brazil	Aspen HYSYS	2023	Software Development Company	Oil & Gas (FPSO)	Development of a multi-purpose dynamic simulator (MPDS) in order to train control room and field operators of a Brazilian FPSO. The project is scheduled in five modules, comprising 1. the development of the dynamic simulation model (to rigorously replicate the behavior of the processing facilities) 2. the simulation of the control system using the softcontroller supplied by the control system provider 3. the configuration of the training system with the instructor and operators consoles 4. the development of an immersive environment, based on 3D virtual reality, to simultaneously train the field operators and the CROs 5. development and implementation of the Start-up and Commissioning Monitoring System by connecting the MPDS to the real-time database
DirectConnect OTS: Rockwell-FactoryTalk	Brazilian office of a software technology provider for a Brazilian oil company	Brazil	Deplyment, Licensing and Support for a Multi-Purpose Dynamic Simulator ,and Operators Training, for an FPSO located offshore Brazil	Aspen HYSYS	2023	Software Development Company	Oil & Gas (FPSO)	Development of a multi-purpose dynamic simulator (MPDS) in order to train control room and field operators of a Brazilian FPSO. The project is scheduled in five modules, comprising 1. the development of the dynamic simulation model (to rigorously replicate the behavior of the processing facilities) 2. the simulation of the control system using the softcontroller supplied by the control system provider 3. the configuration of the training system with the instructor and operators consoles 4. the development of an immersive environment, based on 3D virtual reality, to simultaneously train the field operators and the CROs 5. development and implementation of the Start-up and Commissioning Monitoring System by connecting the MPDS to the real-time database

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DirectConnect OTS: Rockwell-FactoryTalk	Brazilian office of a software technology provider for a Brazilian oil company	Brazil	Deplyment, Licensing and Support for a Multi-Purpose Dynamic Simulator ,and Operators Training, for an FPSO located offshore Brazil	Aspen HYSYS	2023	Software Development Company	Oil & Gas (FPSO)	Development of a multi-purpose dynamic simulator (MPDS) in order to train control room and field operators of a Brazilian FPSO. The project is scheduled in five modules, comprising 1. the development of the dynamic simulation model (to rigorously replicate the behavior of the processing facilities) 2. the simulation of the control system using the softcontroller supplied by the control system provider 3. the configuration of the training system with the instructor and operators consoles 4. the development of an immersive environment, based on 3D virtual reality, to simultaneously train the field operators and the CROs 5. development and implementation of the Start-up and Commissioning Monitoring System by connecting the MPDS to the real-time database
DirectConnect OTS: Rockwell-FactoryTalk	Brazilian office of a software technology provider for a Brazilian oil company	Brazil	Deplyment, Licensing and Support for a Multi-Purpose Dynamic Simulator ,and Operators Training, for an FPSO located offshore Brazil	Aspen HYSYS	2023	Software Development Company	Oil & Gas (FPSO)	Development of a multi-purpose dynamic simulator (MPDS) in order to train control room and field operators of a Brazilian FPSO. The project is scheduled in five modules, comprising 1. the development of the dynamic simulation model (to rigorously replicate the behavior of the processing facilities) 2. the simulation of the control system using the softcontroller supplied by the control system provider 3. the configuration of the training system with the instructor and operators consoles 4. the development of an immersive environment, based on 3D virtual reality, to simultaneously train the field operators and the CROs 5. development and implementation of the Start-up and Commissioning Monitoring System by connecting the MPDS to the real-time database

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Dynamic Simulation Studies for Compression Systems	Compressor Manufacturer in USA for an EPC for an oil company	United States	CO2 Compressor System Dynamic Simulation	UniSim Design	2023	Equipment Manufacturer	Oil & Gas	Analysis of the transient behavior of a 2-stages CO2 compression system. The analysis will allow to confirm following points: • Anti-surge valve sizing and response time, recommendation of anti-surge control line • ESD valve / confirmation of location, sizing and number of blow off valve/requirements (if needed), this may be HOT or COLD Gas Bypass as required or selected by client (It will be included in Emergency shutdown from worst conditions scenario). • Confirmation of system settle out pressure • Motor size confirmation: The dynamic model will also provide the following information about motor size: - From all analyzed transitory cases in the proposed scenarios, it will be verified the compressor capacity (Power). It will be possible to see if available power is enough to cover all transitory cases of this study. - Torque margin will be calculated and compared with the provided design torque curve.
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office) for a Singapore FPSO constructor (Norway office)	Germany	Dynamic Simulation Studies for compressors in an FPSO to be located offshore Angola	Aspen HYSYS	2022	Equipment Manufacturer	Oil & Gas (FPSO)	Dynamic simulation study analyzing of the dynamic behavior of the MP, HP and HP injection Gas Compressor Packages for various transient operations (e.g., start-up from settle out conditions, normal shutdown, emergency shutdown, ASV failure, blocked outlet, etc.) in order to determine the adequacy of the dimensions of the protecting systems
Generic Operator Training Simulator (INGENO)	A Vocational Oil Training Institute in Iraq	Iraq	Two INGENO Modules for an Educational Institution in Iraq	UniSim Design	2022	Educational Institution	Educational Institution	As an initial step in its modernization and digitalization strategy, the Missan Training Oil Institute (MOTI) located in Amarah (Iraq) has acquired a couple of modules (Gas Oil Separation Plant - GOSP, and Desalter Unit) of Inprocess' Generic OTS - INGENO to train their students in the operation of such processing facilities.

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DirectConnect OTS: Siemens-PCS7	Nigerian EPC for a Nigerian E&P Oil Company	Nigeria	Multi-Purpose Dynamic Simulation for a Nigerian FPSO Rehabilitation	Aspen HYSYS	2022	EPC	Oil & Gas (FPSO)	The Multi-Purpose Dynamic Simulation project for this FPSO includes engineering studies, validation of operating procedures, ICSS and OEM configuration revision, operator training and operations support. This means 5 project stages covering the development of the dynamic model in Aspen HYSYS for engineering studies; a Process Trainer to develop and validate operating procedures; connection to the emulation of the control and safety system from Siemens PCS7; the development of the training scenarios and the instructor-devoted console; and the training of the operators
DirectConnect OTS: ABB-800xA	Norwegian office of a Malaysian FPSO constructor	Norway	Implementation of the Safety System in the dynamic model of a Process Trainer for an FPSO	Aspen HYSYS	2022	EPC	Oil & Gas (FPSO)	During the development of the Process Trainer (early-OTS) in one of the stages of a Multi-Purpose Dynamic Simulator project, client requested to expand it including the Safety System in the simulation model, something that usually is not part of a Process Trainer
Dynamic Simulation Modelling Study	Dutch FPSO constructor	Netherlands	Dynamic Simulation Study for a Combined Cycle Power Plant	UniSim Design	2022	EPC	Oil & Gas	Dynamic simulation study for a combined cycle power plant to evaluate different scenarios: normal operation, start-up / ramp-up, and transient scenarios such as sudden gas turbine trip, mal-functions, pump trips, steam turbine trip, etc. With the objective of: * Checking that the configuration of the process equipment and the control philosophy applied meets the functional requirements * Confirming the adequacy of the control system
Dynamic Simulation Modelling Study	Spanish EPC for a Spanish pipeline operator	Spain	Pressurization study of the initial pumping and final distribution installations of a subsea pipeline	Aspen HYSYS	2022	EPC	Oil & Gas	Dynamic simulation study to determine the process conditions reached during the pressurization of the two battery limits of the subsea line: the compressing station in one of the boundaries and the reception facilities at the other end
Dynamic Simulation Modelling Study	Spanish Petrochemicals Company	Spain	Operational enhancement of two distillation columns in a petrochemical process	Aspen HYSYS	2022	Operator	Petrochem	Using a dynamic simulation model built, adjusted and validated on-purpose, Inprocess helped this operating company to minimize loses of one key component, by the top of the column in the recovery plant. The model was also used to infer values of non-measured process variables, as well as to generate Advanced Process Control models.

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Steady State Simulation Modelling Study	German producer of pure aromatic chemicals	Germany	Expansion of an already developed steady state model	Aspen HYSYS	2022	Operator	Petrochem	After the satisfactory conclusions extracted from a previous project carried out developing a steady state with a reduced scope, client has requested to extend the original model, with additional plant sections, to execute complementary studies with new operating scenarios
Dynamic Simulation Modelling Study	Oil refinery in Spain	Spain	Dynamic Simulation Study to determine the flare load during a power failure scenario for three refinery columns	Aspen HYSYS	2022	Operator	Refining	As part of an ongoing flare revalidation study for the refinery, it has been decided to extend the scope, including three columns and its dynamic simulation model i order to precisely determine the load that they bring to the flare system in case of a power failure scenario
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer for a Gas Operating Company in Middle East	Germany	Dynamic Simulation Study to determine the adequacy of the control and protection systems for a series of compressors in four offshore platforms	Aspen HYSYS	2022	Equipment Manufacturer	Oil & Gas	Confirmation by dynamic simulation (with the incorporation of the emulation of the CCC controller) of the adequacy of the: o Anti-surge valve sizing o ESD valve requirements (if needed) this may be HOT or COLD Gas Bypass as required or selected by client o Confirm settle-out pressure and temperature of the system o Capacity Control Valve sizing o Recycle Line sizing Additionally, the study did show: o The pressure and temperature profile at various defined locations of the compression recycle loop. O Optimized tuning of anti-surge controller parameters and load sharing control
DirectConnect OTS: Yokogawa-CentumVP	American Oil Major for its Nigerian subsidiary	United States	Upgrade of an existing OTS of a Syngas plant to the Inprocess Infrastructure Suite technology	UniSim Design	2022	Operator	Refining	As part of a larger project involving up to four OTSs, Inprocess moved an existing OTS of a Syngas plant, based on UniSim for Operations user interfaces to Inprocess Infrastructure Suite ones, maintaining the existing dynamic models in UniSim Design
Emulated OTS: Schneider	Argentinian Fertilizers Producer	Argentina	Development of Emulated OTSs for Ammonia and Urea plants	Aspen HYSYS	2022	Operator	Fertilizers	The client's fertilizers plant produces granular urea and natural-gas based ammonia. Inprocess has developed the OTS for these plants including its design, engineering, and testing of the Aspen HYSYS Dynamics models of the Ammonia and Urea sections and its associated control logic, and the configuration of the Instructor and Operator Stations, based on the emulation of the existing Schneider DCS

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Advanced Training Content	Argentinian Fertilizers Producer	Argentina	Development of Extended Training Content (Instructor Book)		2022	Operator	Fertilizers	The base scope considered in the execution of an OTS is the delivery of the simulator user manual for the instructor and a specific course for the use of the simulator also by the instructor. Both are intended to allow the instructor the most effective use possible, through an exhaustive knowledge of the capabilities and full functionalities of the simulator, as a tool to carry out the training and evaluation of operators. However, Inprocess develops as well when requested the Inprocess Instructor Book (IIB), an extended document that can allow the Instructor to have a deeper knowledge on the OTS solution instead of the general view provided by the manual on scope.
Generic Unit Operations Training (ITOP)	Argentinian Fertilizers Producer	Argentina	ITOP: Inprocess Generic OTS for Unit Operations	Aspen HYSYS	2022	Operator	Fertilizers	As part of the deployment of the emulated custom-made OTSs for the Ammonia and Urea plants, client wanted as well to acquire the Inprocess platform devoted to train operators on the functioning of the different equipment (unit operations) that they face in their day-to-day tasks
Dynamic Simulation Modelling Study	Indian branch of an FPSO constructor	India	Determination of the Process Safety Time by dynamic simulation of a HIPPS protecting a gas turbine in an FPSO	UniSim Design	2022	Operator	Oil & Gas (FPSO)	Due to an inconsistency detected in the safety documentation, the FPSO operator requested to carry out a dynamic simulation study of the Process Safety Time of a HIPPS system protecting one of the gas turbines in order to find a permanent solution to the issue after having applied a temporary short-term action in the FPSO
Flow Assurance Analysis	Spanish EPC working for an Emirates NOC	Spain	Transient Analysis Condensate Pipeline Study for a Gas Development Project	PIPELINE Studio	2022	EPC	Oil & Gas	Inprocess carried out the transient analysis of a pipeline (subsea condensate export line) in order to confirm that the maximum and minimum peak pressures, which are generated by a sudden variation of the fluid velocity, are within acceptable values. It was also requested to identify mitigation actions, in case they were deemed necessary
Flow Assurance Analysis	Spanish EPC working for an Emirates NOC	Spain	Transient Analysis to evaluate pigging and surge handling capacity inn Oil&Gas pipeline	OLGA	2022	EPC	Oil & Gas	Inprocess was requested to carry out an additional study to assess the feasibility of the operation of pipelines to be soon commissioned in terms of piggeability and surge handling capacities, evaluating different alternatives like pigging with motive gas and surge evaluation

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Dynamic Simulation Studies for Compression Systems	Indian EPC working for a Saudi NOC	India	Dynamic Simulation Study for Gas Compression Plants	Aspen HYSYS	2022	EPC	Oil & Gas	The dynamic simulation study for three Gas Compression Plant, aimed at evaluating the system's transient behavior under various operational scenarios. The three plants have similar configuration but different processing capacities of gas, condensate, and water. The study primarily focuses on the validation of the process control system, compressor section, refrigeration system in the gas conditioning section and associated equipment to validate the effectiveness of the plant's control strategies, robust protection, and identify potential limitations, trip limits verification, and recommend adjustments to optimize safety and performance. Specially in the case of switch of plant operation mode from HP to LP.
Flow Assurance Analysis with Dynamic Simulation Study	Indian EPC working for a Saudi NOC	India	Dynamic Simulation Study for a Produced Water Injection Station (PWIS)	Synergi Pipeline SImulator (SPS)	2022	EPC	Oil & Gas	Rigorous assessment of fast transient effects associated with water-column separation, vapor pockets formation and their subsequent collapse due to pump trips/valve closure to determine the effect of various predefined upset scenarios with the objectives to develop a control strategy that prevents or minimizes unnecessary pump trips or total shut-downs, ensures the system stability after an upset, and maximizes system throughput by ensuring stable and reliable operation
Documentation	Norwegian office of a Malaysian FPSO Constructor	Norway	Training Program Development and Train the Trainer for the operators in an FPSO using OTS	Aspen HYSYS	2022	EPC	Oil & Gas (FPSO)	The complexity of the production process that takes place in a FPSO and the high degree of specialization of the different job positions, makes it necessary to setup a training program based on the OTS supported by a team of instructor and OTS support engineers. The training program and the team set up was performed in the following steps: 1. Develop the training program based on training material generated for the OTS and the training needs according to the group of instructors and/or operators' level of competency. 2. Train the trainers sessions 3. Operators training sessions

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Dynamic Simulation Studies for Compression Systems	Spanish EPC for a Qatar gas company	Spain	Dynamic Simulation Study for BOG compressors in LNG trains	Aspen HYSYS	2022	EPC	Natural Gas	The objective of this study was mainly to carry out a dynamic simulation study for the C3 BOG Compressors of the onshore facilities, in order to confirm that the anti-surge control system is correctly sized in capacity and fast enough to prevent surge during any of the analyzed transient scenarios.
DirectConnect OTS: Siemens-PCS7	Malaysian FPSO Constructor	Norway	Lifecycle Operator Training System for an FPSO located offshore Brazil	Aspen HYSYS	2022	EPC	Oil & Gas (FPSO)	Multi-Purpose Dynamic Simulator (MPDS) or Lifecycle OTS for an FPSO that will be operating offshore the Brazilian coast. Besides using the MPDS to train the future operators of the control room in the FPSO, it will also be used to carry out dynamic simulation studies to validate the correct sizing of the equipment; to validate the initially drafted operating procedures; to virtually commission the ICSS database; to train the operators; and to support operations during wells and FPSO start-up
Dynamic Simulation Modelling Study	Spanish Petrochemical Company	Spain	Estimation of process emissions based on real plant data	Aspen HYSYS	2022	Operator	Petrochem	Dynamic Simulation of a plant section in order to estimate the Volatile Organic Compounds (VOC) emissions and compare those results with the values measured in the real plant. In this way, the dynamic model would be validated and it will be possible to use it in the future for such a purpose.
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturers for a Norwegian FPSO constructor	Germany	Dynamic Simulation Study for some compressors in an FPSO (CO2, Flash Gas and Export Gas)	Aspen HYSYS	2022	EPC	Oil & Gas (FPSO)	Development of dynamic simulation models to validate the systems design including motor, recycle valves sizing, response time and piping volumes, compressors anti-surge and performance control system. The models shall be used to simulate the compressors train start-up including verification of motor horsepower and torque requirements (motor torque margin vs speed curve) for the start-up from settle-out conditions.
Flare Systems Analysis	Olefines plant of a Spanish refinery	Spain	Modelization and study of the olefins flare system	Flarenet/ Aspen Flare Analyzer	2022	Operator	Petrochem	Steady State Flare System Analysis for an olefins plant that is part of a refinery complex in Spain. The project consisted in two phases, being the first one the revalidation of the PSVs, determining the discharge loads associated to everyone of the services; and the second one the revalidation of the flare network, considering all common contingencies, checking its hydraulic behavior

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Generic Unit Operations Training (ITOP)	Public Vocational Education Institutes in a Spanish state	Spain	Licensing and implementation of ITOP in the public Vocational Education Institutes of Catalunya	Aspen HYSYS	2022	Educational Institution	Educational Institution	Licensing and implementation of ITOP (the Inprocess Training Platform to educate operators and students in the functioning of the Unit Operations in the chemical and hydrocarbon processing industries) in the public Vocational Education Institutes of Catalunya
Dynamic Simulation Modelling Study	Spanish EPC working for a Mexican energy company	Spain	Dynamic Simulation Study for the turbines and compressors in two Combined Cycle Power Plants	Aspen HYSYS	2022	EPC	Power Plants	Dynamic Simulation studies for the rotating equipment installed in two combined cycle power plant, in order to determine their correct sizing and their transient responses in front of unexpected operating incidents
Training Courses for Operators	Colombian Oil Company	Colombia	Training Program for Plant Operators on Unit Operations using ITOP	Aspen HYSYS	2022	Operator	Refining	After having acquired the ITOP license, the client requested as well the delivery of the associated training sessions to Inprocess. Along the last 2022 quarter, the Inprocess instructors have been lecturing unit operations topics, and have guided the simulation-based practical exercises of ITOP in the two refineries that client owns in the country
Dynamic Simulation Studies for Compression Systems	Compressors Manufacturer for an EPC for a refinery operator	Czech Republic	Dynamic Simulation Study for the compressor in the H2 recycle line in a refinery hydrocracker	Aspen HYSYS	2022	Equipment Manufacturer	Refining	The compressor manufacturer contracted Inprocess to carry out a dynamic simulation study of a compressor in the hydrogen recycle line of a hydrocracker unit in a refinery, The study helped to evaluate the design of the equipment as well as identified potential operating problems
Dynamic Simulation Studies for Compression Systems	French compressors manufacturer for an Italian FPSO constructor in Brazil	France	Dynamic Simulation Study for the compressor in the processing facilities of an FPSO in Brazil	Aspen HYSYS	2022	Equipment Manufacturer	Oil & Gas (FPSO)	Dynamic Simulation Study to determine the necessity of a cooler in the antisurge circuit of a compressor in a FPSO. Along project phase I (Antisurge cooler validation) it was studied for how long the compressor can recirculate flow on its recirculation loop without reaching the compressor suction temperature trip settings. In project phase II a series of upset and operational scenarios (emergency shutdown, blocked inlet/outlet, start-up, etc.) to study the transient behavior of the compressor. The antisurge recycle cooler will be included or not depending on the results obtained in phase I.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Kongsberg-K-Chief700	Norwegian Office of a Malaysian FPSO constructor	Norway	Multi-Purpose Dynamic Simulator for an FPSO to be located in the Jubarte Field, North Campos Basin (Brazil)	Aspen HYSYS	2022	EPC	Oil & Gas (FPSO)	The Multi-Purpose Dynamic Simulator project will include the development of the dynamic model in Aspen HYSYS, validation of both operating procedures and ICSS (Kongsberg's K-Chief 700) application code, operator training and operations support. The MPDS supplied by Inprocess comprises the following phases: • Phase I (Process Model Development and Dynamic Simulation Studies) • Phase II (Procedures Validation & Early-Emulated OTS) • Phase III (Database Checkout) • Phase IV (OTS Direct-connect) • Phase V (Start-up Support)
HIPPS or other Depressurizatio n	Spanish EPC working for a Middle East NOC	United Arab Emirates	Depressuring and MDMT Dynamic Study for the Onshore facilities of a new gas development project in Emirates	Aspen HYSYS	2022	EPC	Oil & Gas	Inprocess to carried out the dynamic simulation studies for emergency depressurization and maintenance/manual depressurization; determined the minimum metal design temperature (MDMT) through an additional analysis and performed the Low Temperature study for the onshore facilities of this New Gas Development Project. BLOWDOWN Technology of Aspen HYSYS, based on Imperial College's developments, was selected as the modelling tool for these analysis.
Flow Assurance Analysis	Spanish EPC working for a Middle East NOC	United Arab Emirates	Revision of alternatives for the sequential pigging with bypass plus detailed surge evaluation in floating mode	OLGA	2022	EPC	Oil & Gas	As a result of the comments from final client for the assessment of new Jump Over configuration of the facilities, and after clarification meeting held between the three parties, it is noted that some additional scenarios and modifications on existing OLGA models are required to properly address final client comments. Specifically: - Sequential pigging with bypass: to maintain minimum 2 hours between each pig launching - CDS inlet manifold modelling for detailed surge evaluation in floating mode

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Online Appplication	Spanish Oil Company	Spain	Artificial Intelligence Optimized Control for a Bolivian Gas Plant	Aspen HYSYS	2022	Operator	Oil & Gas	Our client is exploring the possibility of incorporating some Advanced Process Control to its gas processing plant (three trains) operating close to the producing field in Bolivia. The technology they are considering is an Artificial Intelligence brain based on Microsoft's Bonsai technology. In order to train such AI system, a dynamic simulation model has been considered a suitable source of simulated operating data. Inprocess did develop an OTS for this plant some years ago and the dynamic model inside that OTS has been periodically updated with all plant changes. Therefore, after some additional adaptations, this model will be used for this new objective
Dynamic Simulation Modelling Study	Malaysian FPSO constructor (Netherlands office)	Netherlands	Engineering Studies (Depressurization) for an FPSO, located offshore Brazil	Aspen HYSYS	2022	EPC	Oil & Gas (FPSO)	The FPSO constructor requested Inprocess the execution of the FPSO Depressurization Study regarding production and gas lift risers through 1st Stage Separator and/or HP Flare KO Drum, in order to evaluate if the General Technical Description requirements are met. The Blowdown Utility in Aspen HYSYS was used for this transient analysis
Dynamic Simulation Modelling Study	Emirates EPC for an Emirates NOC	United Arab Emirates	Holistic Dynamic Simulation Study for an oil & gas field	Aspen HYSYS; OLGA	2022	EPC	Oil & Gas	The main objectives of the studies carried out with the Holistic Dynamic Simulation Model of the production facilities were: • Verify that project facilities can operate in a stable and controlled manner in case of any spurious trip. • Verify operability and controllability of the compressors under steady state and transient conditions, and to recommend acceptable solutions where the control scheme or proposed methodology if found deficient or unsuitable. • Verify that control systems can ensure safe operation and equipment protection during major upset conditions such as feed reductions, trips, blocked compressor suction / discharge, parallel machine trips, etc. • Identify specific requirement to be included in the start-up and shutdown procedures. • Demonstrate the operation capacity of MP compressor and slug catcher control scheme, integrated with pipeline transient simulation model built in OLGA

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Dynamic Simulation Modelling Study	Dutch FPSO constructor	Netherlands	Dynamic Simulation Studies for an FPSO to be located offshore Brazil	UniSim Design	2022	EPC	Oil & Gas (FPSO)	A dynamic Simulation study was performed in order to identify the dynamic behavior of individual process components and of the overall topside process & utility systems for major scenarios such as normal operation, startup, shutdown, pressure packing & depacking, and transient scenarios, such as sudden closure of ESDV, malfunctions, pump trips etc. The main design objectives of this dynamic simulation study were the following: • To demonstrate that the configuration of the process equipment and the control philosophy applied meets the functional requirements. • Confirm control and trip settings • Verify the start-up and shutdown procedures • Provide input to close relevant HAZOP actions
Online Appplication	Norwegian Exploration and Production Company	Norway	Digital Twin for an oil & gas platform in the Norwegian North Sea	OLGA; UniSim Design	2022	Operator	Oil & Gas	The main objectives of the project were to deliver an out-of-the-box software platform to orchestrate different simulation models (UniSim / OLGA) in different modes (Steady State / Dynamics) and with Digital Twin functionalities (Monitoring and What-if) connected to different real-time databases (CDF, PI, etc.). The Inprocess Infrastructure Suite (IIS) software was considered the suitable tool to achieve such objectives and did have the following functionalities in this project: • Orchestration of multiples data flows and multiples models • Simulation Control / What-if Scenarios • Operation View and Control • Simulator Native HMI Access • Connecting with Cognite Data Fusion (CDF)

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Dynamic Simulation Modelling Study	Ghana office of a Malaysian FPSO Constructor	Ghana	Simulation Studies for the installation of the 3rd HP compressor in an FPSO offshore Ghana	Aspen HYSYS	2022	Operator	Oil & Gas (FPSO)	Client is interested in increasing the FPSO gas processing capacity. For that reason, it is interested in evaluating the possible installation of a 3rd train HP compression system, with higher flowrates to supplement associated gas processing and reduce process flaring. Inprocess was requested to provide the compressor analysis of the effect of the addition of the new 3rd HP compressor train. The results of this study will be the input to the Feasibility and Constructability study executed by the engineering company, which shall highlight any potential showstoppers focusing on technical debottlenecking in order to operate the 3rd HP compression system at a maximum flow of 130 MMSCFD.
Flare Systems Analysis	Spanish Refinery	Spain	Modelization and Study of the acid flare system in the alkylation zone of the refinery	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2022	Operator	Refining	The objective of this study was to verify the suitability of the Alkylation Flare System to absorb the discharges coming from the safety valves of the process units, indicating those modifications or relocations necessary to be able to absorb all the necessary discharges. Said analysis was carried out with the Aspen HYSYS® and Aspen Flare System Analyzer software. This study focuses specifically on the Alkylation flare system. With this study, it was intended to review the entire Alkylation flare system in order to adapt those elements that were not correctly designed. The scope of the study included: review of the design cases of the safety valves that discharge to this flare with redesign and definition of a new orifice where applicable; validation of PSVs discharge lines and validation of KO-Drums and main collectors . Within this scope, these three points were specifically validated: • Vibration of the valves • Chattering of the valves • Accumulation of liquid in the relief system

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Dynamic Simulation Modelling Study	Spanish Refinery	Spain	Dynamic Study of the refinery chilling water network	Aspen HYSYS	2022	Operator	Refining	Inprocess provided its consulting services to carry out the hydraulic study, through dynamic simulation, by developing a model that allowed analyzing the hydraulic behavior of the cooling water network, with the objective to: • Have a dynamic model that allows knowing the current state of the cooling water network of one of the plants in the refinery. • Evaluate the cooling circuit with the implementation of a heat pump • Evaluation of optimization alternatives to the cooling network • Training of the Processes department in the use and modification of the dynamic model developed and delivered.
Flare Systems Analysis with Dynamic Simulation Study	Spanish Refinery	Spain	Dynamic Study of the refinery flare network	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2022	Operator	Refining	The main objective of the project was to carry out an Assessment of the current flare system for some new proposed installations in the refinery in order to confirm that the Flare system will not require substantial modifications, as a result of the new overall flare limiting case, with the addition of the incremental load of the new units to the current flare total power failure event. On this first project step, Inprocess will make a dynamic model of the currently units in operation: isomerization and reformate splitter. The relief loads obtained will be compared with the loads calculated in the existing steady state Flarenet model. It is expected to have lower loads in dynamic case. Dynamic case loads will be added to the existing steady state Flarenet model in which total power failure of the plant is considered.

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Generic Operator Training Simulator (INGENO)	Oil & Gas Training Institution in Iraq	Iraq	Generic Operator Training Systems (INGENO) for up to eleven units in an upstream production plant	UniSim Design	2022	Educational Institution	Educational Institution	Collection of fifteen Generic OTSs for upstream units intended to train the students of an Iraq educational institution in the operation of an Oil DEgassing Unit, a Gas Compression Unit, a Gas Sweetening with Amines unit, a Dehydration Unit with glycol, a Stabilization Unit, an NGL Unit, an LNG Unit, an LPG Unit, a Desalter, a Gas Storage, a Liquids Storage Station, a Wells System simulation with a Test Separator and Gas Lift. The project also included a ten days training course for the institute instructors. It was also part of Inprocess scope the classroom furniture as well as the computer hardware
Dynamic Simulation Modelling Study	Italian EPC for a Saudi NOC	Italy	Dynamic Simulation for the Compression System in an Arabian Oil & Gas field	Aspen HYSYS	2022	EPC	Oil & Gas	Final client intends to increase the oil production of an Oil & Gas field from 250 MBCD to 500 MBCD by installing a new GOSP with Crude Stabilization Units. The incremental condensate and sour gas generated in the offshore plant is exported onshore utilizing the existing as well as a new pipeline, where a new pipeline to transport sour hydrocarbon condensates. The new facilities will require some additional compressors to be installed that require to be analyzed by dynamic simulation. Currently, the EPC has requested Inprocess to perform the dynamic simulation study for the compressors associated to the above production increase. The purpose of this dynamic simulation study was to perform a process simulation analysis focusing on the dynamic behavior of each compressor system during start-up, shutdown and pressure upset scenarios.
DirectConnect OTS: Emerson-DeltaV	Instrumentation Provider for a Malaysian FPSO constructor	Malaysia	Development of a direct-connect OTS for an FPSO offshore Brazil (Mero field)	Aspen HYSYS	2022	Instrumentation Provider	Oil & Gas (FPSO)	Development of an OTS for an FPSO to be located in the Mero field, offshore Brazil. The system will be direct-connect using the software provided by Emerson in order to simulate the behavior of their DeltaV ICSS. The simulation of the processing facilities will be carried out with Aspen HYSYS Dynamics and Inprocess Infrastructure Suite will provide the Instructor capabilities of the tool, the data transmission among applications and the qualification of the students. A deep checkout of the ICSS database will be as well carried our as one of the phases of the OTS construction

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Generic Unit Operations Training (ITOP)	Greek Refinery	Greece	ITOP Furnace Module for Corinth Refinery	UniSim Design	2022	Operator	Refining	Corinth Refinery complemented their current collection of twelve ITOP modules with the one representing the functioning of a fired heater (Furnace module). Through the hands-on exercises in this module the refinery operators will get a deeper understanding of the fundamental principles of this type of heaters
Steady State Simulation Modelling Study	German Chemicals Company	Germany	Steady State Model to Evaluate Feedstock Changes	Aspen HYSYS	2022	Operator	Bulk Chemicals	Foreseeing a future change in the feedstocks composition that the company processes (subproducts from coking plants) to produce benzene and derivatives, they have asked Inprocess to prepare a steady state model of their processing facilities to check what would be the implications of this changes in feedstocks.
Dynamic Simulation Modelling Study	Singapore FPSO Constructor	Malaysia	Detailed Depressuring Study for an FPSO offshore Brazil (Marlim field)	VMGSim/ Simmetry	2022	EPC	Oil & Gas (FPSO)	As a Variation Order for the main project (Lifecycle OTS), Inprocess was requested to perform a detailed depressurization analysis in dynamics for the GL Riser, using the Symmetry process simulator from Schlumberger. The study had to consider dynamic changes of composition and temperature at the HP Flare Cold header, taking into account the heat transfer phenomena. A sensitivity analysis was included on three options, modifying the key parameters and combining the effects of the different options.
Emulated OTS: Yokogawa-CentumVP	Japanese FPSO constructor	Brazil	Emulated OTS for an FPSO offshore Brazil	UniSim Design	2022	EPC	Oil & Gas (FPSO)	Inprocess developed and commissioned an emulated OTS for a new FPSO to be placed in the Marlim field, offshore Brazil. The characteristic of an emulated solution is that it does not use an additional software component to simulate the behavior of the Distributed Control System. The control narrative and the simulation of the control loops are part of the dynamic process simulation model. A similar approach is followed with the Safety Instrumented System. This approach ensures that operators can be trained with the OTS independently of the delays in the delivery of the ICSS database.

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Dynamic Simulation Modelling Study	Italian EPC for a Kazakhstan Oil Operating Company	Italy	Dynamic Simulation Studies for KEP (Karachaganak Expansion Project)	Aspen HYSYS	2022	EPC	Oil & Gas	The EPC company requested Inprocess to carry out dynamic simulation studies for a gas condensates field in Kazakhstan. The study comprised an analysis of the re-injection compressor; a dynamic study of the PSVs protecting the slug-catcher section; and a controllability analysis of the overall plant. The original model was owned by the EPC company and has been enhanced by Inprocess in order to be able to carry out the requested analysis
Dynamic Simulation Modelling Study	North American Liquid Pipelines Operator	United States	Terminal Pump and Piping Configuration Study	Aspen HYSYS	2022	Operator	Oil & Gas	Client wanted to ensure by dynamic simulation results that its ethylene system operated in an optimized way. Inprocess developed the dynamic model and carried out several hydraulic scenarios, for four possible process configurations, to identify bottlenecks and other possible constrains
Flare Systems Analysis	Italian EPC for a Libyan operator	Italy	Study for the HP flare in an offshore platform in Libya	Aspen HYSYS	2022	EPC	Oil & Gas	The main objective of the project was to carry out an analysis in Sabratha Platform to provide client with the expected P/T curve (with special focus on the minimum wall temperature) during depressurization scenario for three (3) depressurization areas of the HP Flare, and provide a benchmark for their current model and results.
Online Appplication	Spanish Oil Company	Spain	Digital Twin for AI / ML	Aspen HYSYS	2022	Operator	Refining	Inprocess developed a Digital Twin with the scope of training Artificial Intelligence (AI) and Machine Learning (ML) algorithms. The basis would be the dynamic simulation models that Inprocess developed for two propane splitter distillation columns of the ethylene cracker in a Spanish petrochemicals complex. Inprocess was in charge of adapting the models and generating valuable data with them. Client's engineering team was in charge of configuring and training the AI/ML models.

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Dynamic Simulation Studies for Compression Systems	Petrochemical French Company	France	Analysis of the new propylene refrigeration compressor for the Vinyl Chloride Monomer (VCM) unit	Aspen HYSYS	2022	Operator	Petrochem	Analysis of the dynamic behavior of the New Propylene Refrigeration Compressor for various transient operations (Phase I). Dynamic model integration with the compressor controller emulator (ECT emulator) (Phase II). The integration will required the usage of the Inprocess Infrastructure Suite plus the Rockwell emulator software. The system allowed to fine-tune the real plant controller. Additionally, the dry gas seal system (Phase III) was modelled and analyzed to verify the margin of protection to leakage in the case of pressure disturbance in the seal gas circuit. The study of the dry seal gas system was focused on the shutdown and settle out conditions cases.
Online Appplication	Norwegian Oil Company	Norway	Digital Twin Development with a Chemical Advisory Tool (CAT) for an FPSO in the North Sea	UniSim Design	2022	Operator	Oil & Gas (FPSO)	Development of a Digital Twin focused on chemical injection system using the results to feed a tool under client's development: CAT (Chemical Advisory Tool). An on-line digital Twin is able to provide additional key information derived from real-time instrumentation data and steady state / dynamic process models. For this project, Inprocess did take advantage of client knowledge in the North Sea platform and will reuse the simulation models already available.
Dynamic Simulation Modelling Study	Omani EPC for an Omani Gas company	Oman	Dynamic Simulation Study for a gas pipeline	UniSim Design	2021	EPC	Oil & Gas	The scope of Inprocess involved the development of a dynamic simulation model to be used as a design evaluation and validation tool for the natural gas 48" pipeline. Later on, Inprocess will carry out the dynamic analysis for a set of pre-defined operating scenarios. The results obtained with the model will allow identifying potential problems both, in steady state conditions, when blending composition changes, and in transient conditions when either some of the consumers trip or some of the suppliers also do.
Generic Unit Operations Training (ITOP)	Colombian Refinery	Colombia	ITOP license for refinery operators	Aspen HYSYS	2021	Operator	Refining	The Ecopetrol refinery sited in Barrancabermeja (Colombia) has selected ITOP (Inprocess Training for Operators) tool to train their plant operators in the functioning of the most common unit operations existing in a refinery. Exercises simulating the behavior of pumps, compressors, heat exchangers, distillation columns, etc. will support the learning path of the operators in a modern and rigorous environment

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Steady State Simulation Modelling Study	Italian EPC	Italy	Development of an MTBE reactor simulation model in steady state	Aspen Plus	2021	EPC	Petrochem	As a continuation of a successfully previously executed project with Inprocess, the client has requested to enhance their current simulation models, involving from now on the proprietary high-octanes technologies around Etherification, Iso-Octene synthesis and related side reactions, and Butene-1 Recovery. The enhanced steady state simulation models should allow client engineers and researchers to exploit further the commercial usage of their know-how.
Dynamic Simulation Studies for Compression Systems	American Compressor Manufacturer	United States	Dynamic Simulation Study of a regeneration gas compressor	Aspen HYSYS	2021	Equipment Manufacturer	Oil & Gas	Dynamic Simulation Studies to determine the correctness of the designed protection systems against surge for a one-stage regeneration gas compressor
DirectConnect OTS: Emerson-DeltaV	Spanish site of a German chemicals company	Spain	Direct-Connect OTS for the C3 Splitter units of a PDH plant	Aspen HYSYS	2021	Operator	Petrochem	After the execution of the Dynamic Simulation Study (DSS) of the Depropanizer Unit, client has requested Inprocess to develop a Direct-Connect Operator Training System (OTS) for the C3 Splitter Units. The OTS proposed by Inprocess will allow familiarization and provide direct offline operator control, response and intervention experience for Production Department personnel and trainees in all non-frequent events, shutdown and emergency shutdown operations. This project is the continuation of the previous projects of the Dynamic Simulation Studies of the Depropanizer and C3 Splitter Units and the Online Digital Twin of the Depropanizer. Client will take advantage of the evolution of these projects and will benefit from extraordinary conditions from licensing point of view and from service development point of view.
DirectConnect OTS: Siemens-PCS7	FPSO Constructor and Operator	Brazil	Migration of an existing OTS for a Brazilian FPSO	Aspen HYSYS	2021	Operator	Oil & Gas (FPSO)	Migration of the current four direct-connect OTS that Inprocess has developed in the past for this FPSO client to current virtual environment in place in their corporate training center
Steady State Simulation Modelling Study	Technology Lab of a Spanish oil company	Spain	Simulation for synthetic fuels (e-fuels) production processes	Aspen Plus	2021	Operator	Refining	The steady state simulation model is intended to evaluate configurations and optimizations of this process at different client projects. Inprocess will identify potential problems in the operating envelope. In principle, the model will be developed based on public information available and considering not information from licensor will be available

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Dynamic Simulation Studies for Compression Systems	Emirates Consulting Company	United Arab Emirates	Feasibility study and dynamic simulation of an MP compression system	Aspen HYSYS	2021	Consulting & Services	Oil & Gas	The objective of the project is to carry out a feasibility study for the provision of the interconnecting lines between Phase-I/II and Phase-III MP Compressors at Suction and Discharge, as well as detailed engineering works. Through this project, Inprocess will analyze the demand of tripping the compressor upon additional load sharing due to integration.
Dynamic Simulation Modelling Study	FPSO Constructor and Operator	Malaysia	Determination of gas emissions during FPSO operation	Aspen HYSYS	2021	Operator	Oil & Gas (FPSO)	Dynamic Simulation Study to calculate and monitor the expected amounts of gas (and VOCs) that are lost (sent to flare) during FPSO tanks loading and offloading operations
Dynamic Simulation Modelling Study	FPSO Constructor and Operator	Netherlands	Sea Water Treatment and Water Injection System dynamic model for an FPSO in Brazil	UniSim Design	2021	Operator	Oil & Gas (FPSO)	Inprocess will build a dynamic model for the Seawater treatment and water injection systems for an existing FPSO in Brazil. The purpose of this project is to allow the FPSO operator to obtain a dynamic simulation model ready to be connected to the ICSS system (SIMATIC PCS7) through SIMIT and taking advantage of the Inprocess Infrastructure Suite (IIS) software
Dynamic Simulation Modelling Study	FPSO Constructor and Operator	Ghana	OTS Models update and Non-Associated Gas (NAG) studies	Aspen HYSYS	2021	Operator	Oil & Gas (FPSO)	Existing simulation model in an OTS will be updated and used to determine the possible limitation in the major main process equipment: LP/MP/HP flash gas compressor, HP flash gas compressor common suction cooler, dehydration inlet scrubber, TEG contactor, TEG regeneration package and gas injection train. There is the intention to increase the topside gas injection capacity, therefore there are interest to determine the maximum injection rate without any major modification on the FPSO.
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office)	Germany	Dynamic Simulation Study for a Refinery Reactor Effluent Compressor	Aspen HYSYS	2021	Equipment Manufacturer	Refining	The main objective of the project was to use a dynamic model to obtain by simulation the results of performing a machine start-up, until the compressor's operating speed is reached (AntiSurge Valves completely open).
Hydrogen Network Study	Serbian Oil Refinery	Serbia	Feasibility study for a hydrogen network management tool	Aspen HYSYS	2021	Operator	Refining	Initial feasibility study of the hydrogen networks in the refinery for a potential optimization of the consumers, avoiding to waste hydrogen to the fuel network
DirectConnect OTS: Yokogawa-CentumVP	US Major Oil Company	United States	Operator Training Systems for a Gas To Liquids facility in Nigeria	UniSim Design	2021	Operator	Refining	The operator of the facility owned already 3 OTSs that became obsolete. They asked Inprocess to update, in a phased approach, the existing ones (Syngas, Fischer-Tropsch and Product Work-Up) and to build a new one for the Air Separation Unit (ASU)

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Flare Systems Analysis	Spanish Refinery Operator	Spain	Flare study of the acid flare systems from conversion and refinery	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2021	Operator	Refining	A study of the flare system that collects all discharge loads from the acid zones of the conversion and some refinery zones was carried out, revalidating the PSVs and the headers of the whole system
Dynamic Simulation Modelling Study	FPSO Operator in Ghana	Ghana	Dynamic Simulation Study to determine the gas emissions during FPSO common operations	Aspen HYSYS	2021	Operator	Oil & Gas (FPSO)	A dynamic simulation study was requested by the FPSO operator in order to evaluate how much gas was vented and flared due to common operation of the internal oil tanks
Dynamic Simulation Modelling Study	German Instrumentation provider for a Norwegian Oil&Gas operator	Germany	Update of current OTS with a newly developed DCS database	UniSim Design	2021	Instrumentation Provider	Oil & Gas	The instrumentation provider, responsible for the DCS system in the platform did update the DCS with a new database configuration that was necessary to upload to the OTS that was previously built by Inprocess
Dynamic Simulation Modelling Study	Japanese FPSO constructor (USA office)	United States	Dynamic Simulation Study of the FPSO subsea lines to determine operational limitations	OLGA	2021	EPC	Oil & Gas (FPSO)	More operability studies were carried out for the Houston-based office in charge of designing a new FPSO. The studies were necessary for the subsea lines that will connect the wells to the FPSO
Dynamic Simulation Modelling Study	Dutch producing site of an Austrian petrochemicals company	Netherlands	Dynamic Simulation Studies to determine operating profiles of a propane dehydration plant	Aspen HYSYS	2021	Operator	Petrochem	A Propane Dehydration plant works with two sources of propane, a conventional one, with propane from Oil&Gas and another one, with propane from biorefineries. The dynamic study will determine what percentage, depending on the operating conditions, of each source is being processed
Online Appplication	Norwegian Oil&Gas operator	Norway	Online Process Digital Twin for an offshore platform	UniSim Design	2021	Operator	Oil & Gas	An online process Digital Twin will be built for an Oil&Gas operator in the North Sea to be used for equipment monitoring and process optimization
Online Appplication	Norwegian Oil&Gas operator	Norway	Online Process Digital Twin for energy optimization in an offshore platform	UniSim Design	2021	Operator	Oil & Gas	An online process Digital Twin and additional software applications will be built for an Oil&Gas operator in the North Sea to be used for energy optimization while operating the asset
Flare Systems Analysis	Canadian operator of an oil sands field	Canada	Flare system analysis for one of the sections of the refinery	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2021	Operator	Refining	After several studies to revalidate the flare systems of different sections of the refinery, the client requested an additional one for another plant zone. As always, valves and headers revalidation was carried out to determine the adequacy of current equipment

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Steady State Simulation Modelling Study	German refinery	Germany	Process Modelling Support and Connectivity Tool	Flarenet/ Aspen Flare Analyzer	2021	Operator	Refining	The refinery Inprocess is already involved with, carrying out a full flare system revalidation, requested onsite support to improve the steady state simulation models they already own. They have also requested a software tool capable of interconnecting those models
Emulated OTS: Honeywell-TDC3000	Spanish petrochemical operator	Spain	Improvement of current OTS with enhanced dynamic model, and re-defined KPIs for operators evaluation	Aspen HYSYS	2021	Operator	Petrochem	After some plant modifications the dynamic simulation model of the Operator Training System required an actualization. On top of that, the OTS was improved by incorporating the calculation of certain operating Key Performance Indicators that will help to better qualify the operators being trained.
Dynamic Simulation Modelling Study	German refinery	Germany	Dynamics modelling support for a complex refinery distillation column	Aspen HYSYS	2021	Operator	Refining	An on-site Inprocess engineer carried out some dynamic simulation studies for the columns in the refinery in order to detect some operating bottlenecks
Steady State Simulation Modelling Study	Italian EPC	Italy	Steady State modelling support for a complex refinery distillation column	Aspen HYSYS	2021	EPC	Refining	Inprocess supported the EPC engineers in the definition of complex property packages required for the correct steady state process simulation of refinery columns
Dynamic Simulation Studies for Compression Systems	Malaysian FPSO constructor and operator	Malaysia	Dynamic Simulation Study for the Export Gas compressors of an offshore facility	Aspen HYSYS	2021	EPC	Oil & Gas (FPSO)	Analysis by dynamic simulation of the behavior and the required protection systems of the export gas compressor, that is part of an FPSO located offshore Malaysia
Online Appplication	Swedish site of an Austrian petrochemical s company	Sweden	Support for the development of an Offline Digital Twin as demonstration of IIS capabilities	UniSim Design	2021	Operator	Petrochem	Client will create the Honeywell Unisim Design (USD) models for the Demo, including two (2) loop reactors in two (2) separate flowsheets. Then, these models will be handed over to Inprocess. The mapping between model variables and I/O tags will be a joint effort between Inprocess and client. The main objective of the Demo is to demonstrate the capabilities of IIS in terms of the following: 1. Communication among different flowsheets (two or more) 2. Graphics interface (static / dynamic graphic, faceplates, trending, etc.…) 3. To gain insight in the IIS tool.

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Flare Systems Analysis	German refinery (British owner)	Germany	Pressure Relief Valves Revalidation Project of a German refinery	Salus	2021	Operator	Refining	A German refinery, in order to bring the site to comply with corporate internal safety standards and procedures, needed to carry out the revalidation of 1404 of its Pressure Relief Valves (PRV) and, as a consequence, ensure the site had a sustainable way to manage the PRVs life cycle and ensure as well that the disposal systems are adequate in their design. The project scope included the major process PRVs, but excluded vents and thermal expansion PRVs. As per client specific request, the revalidation project needed to be carried out with SALUS, a software developed and commercialized by Smith & Burgess.
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer for Turkish Operator	Germany	Dynamic Simulation Study for the compressors in an underground gas storage project	Aspen HYSYS	2021	Instrumentation Provider	Natural Gas	The manufacturer has requested Inprocess to perform a Dynamic Simulation Study for Kuzey Marmara Underground Gas Storage Project. Inprocess will build a model for the system by identifying and collecting the process data required to build the dynamic simulation involved in this project. With that simulation model, Inprocess will carry out the dynamic analysis for a set of operating scenarios, corresponding to the start-up and the shutdown at different conditions
Dynamic Simulation Studies for Compression Systems	German Compressor Manufacturer for a Qatar oil company	Germany	Dynamic Simulation Study for Gas Turbo Compressors for an upstream field	Aspen HYSYS	2021	Equipment Manufacturer	Oil & Gas	Inprocess delivered a dynamic simulation study in order to analyze the dynamic behavior of a 3-stage compressor driven by a gas turbine with speed variation for various transient operations. The simulation scenarios evaluated the adequacy of the antisurge valve sizing, the ESD valve requirements, this may be hot or cold gas as needed as well as the confirmation settle-out conditions of the system.

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Dynamic Simulation Studies for Compression Systems	German Compressor Manufacturer (US Office)	Germany	Dynamic Simulation Study for the treatment compressors in an oil field	Aspen HYSYS	2021	Equipment Manufacturer	Oil & Gas	Inprocess developed a dynamic simulation model in Aspen HYSYS of the compression system with the objective of determining its adequacy and the need for any additional protection system that might be required. Therefore, Inprocess analyzed the adequacy of the anti-surge valve size and its timing to avoid surge during the compressor shutdown; we evaluated the requirements of a hot/cold gas bypass valve; we confirmed the settle-out conditions of the system; we demonstrated the effectiveness of the control system in different scenarios such as variation of the feed gas pressure, turndown or blocked outlet; we performed the compressor system start-up to validate the start-up procedure, confirm the process control performance, verify the trip settings and identify possible limitations.
Steady State Simulation Modelling Study	Japanese Multinational Petrochemical company (Spanish site)	Spain	Steady State Model development of the triple effect evaporator	Aspen HYSYS	2021	Operator	Petrochem ; Bulk Chemicals; Fertilizers	Inprocess helped the client in the development of a steady state simulation model of the triple effect evaporator system to be used by client to improve the understanding of the process, its constraints and interactions, in order to improve the current and future operation of the triple effect columns. The project was carried out in three phases: a) To study the historical data of the plant during one-year and looking for issues or bad operations; b) To build a steady state model of the plant, the model was calibrated to a representative day; c) To analyze with the model a number of operational scenarios
Online Appplication	German Instrumentatio n Provider for a French Oil&Gas Operator	Germany	Connection of an Operator Training System to the plant Historian database	UniSim Design	2021	Instrumentati on Provider	Oil & Gas	Inprocess will adapt its Historian_Link application to the needs of this client, operator of an oil & gas field in the Danish sector of the North Sea, who wants to connect the OTS that Inprocess is currently developing for them with the historian database in a way that it is possible to upload operating conditions recorded in the historian and use them as initial conditions for an OTS exercise

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DirectConnect OTS: Emerson-DeltaV	US Chemicals Company	United States	Development of a direct-connect OTS for a steam-reformer hydrogen producing plant	Aspen HYSYS	2021	Operator	Fine Chemicals	Inprocess has developed an Operator Training Simulator (OTS) for a hydrogen producing plant located in the USA. This hydrogen plant is part of the production plant that meets the growing, global demand for high-quality chemical compounds. Inprocess project comprises the design, engineering, delivery, testing and installation of the OTS, as well as training scenarios and project management. For the execution of this project, Inprocess has been using Aspen HYSYS® Dynamics as the process simulation engine, Emerson's SimulatePro as the DCS emulation package, and Inprocess Infrastructure Suite (IIS) to provide all the required data connectivity and instructor functionalities. This Direct-Connect OTS by Inprocess utilizes a high-fidelity dynamic model of the process, including the following plant areas: Natural Gas Preparation, Catalytic Reformation furnace, Catalytic Shift conversion, PSA, Vent Gas Recovery, Waste Heat Recovery/Steam Generation, and Water Treatment.
Emulated OTS: ABB 800xA	Implementation Services Provider for a UAE National Oil Company	United Arab Emirates	Operator Training Simulators for four processing facilities (and their associated utilities) in four Emirates Oil&Gas fields	Aspen HYSYS	2021	Consulting & Services	Oil & Gas	Inprocess is in charge of developing the emulated OTS that will comprise the processing facilities and their associated utilities of four United Emirates . The Operator Training Simulator OTS will be developed for the main process units in the four plants as well as their associated Utilities. The scope for this project includes the complete delivery and commissioning of the OTS including design, development, engineering, configuration, training, and commissioning activity for this emulated ABB 800xA
Dynamic Simulation Modelling Study	FPSO Operator in a West African field	Ghana	Simulation for new throttle valve upstream High Pressure Fuel Gas Compressors	Aspen HYSYS	2021	Operator	Oil & Gas (FPSO)	Taking advantage of the dynamic simulation model developed for the OTS currently in use in the FPSO, our client requested us to carry out additional operability analysis of the throttle valve located upstream of the compressors in the high pressure fuel gas system.
Flare Systems Analysis	Belgian Refinery	Belgium	Dynamic Simulation Study to revalidate the NC3 valves in the refinery	Aspen HYSYS	2021	Operator	Refining	Revalidation by dynamic simulation of some of the valves in a Belgian refinery

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Steady State Simulation Modelling Study	German Refinery Operator	Germany	In-House Technical Support during the development and usage of the refinery unit SS model	Aspen HYSYS	2021	Operator	Refining	A German refinery operator requested one of the Inprocess engineers to work on-site to provide Technical Support to the refinery engineers during the development of the Steady State model of the refinery unit and as well to monitor its usage and the benefits obtained from it.
Dynamic Simulation Modelling Study	Japanese FPSO constructor (USA office)	United States	Dynamic Simulation Studies for the FPSO subsea lines	OLGA	2021	EPC	Oil & Gas (FPSO)	Dynamic Simulation Study to analyze the operational behavior of the subsea lines that connect the many wellheads with the FPSO
Dynamic Simulation Modelling Study	Italian EPC for a Middle East Fertilizer producer company	Italy	Dynamic Simulation Study for a Steam & Power Generation System in an Ammonia and Urea complex	Aspen HYSYS	2021	EPC	Fertilizers	The simulation project main purpose was to deliver to the EPC the results of the dynamic simulation studies in order to evaluate (with the new data, after an improvement study to optimize the operating modes and to increase the NH3 and Urea production) the response of the system and the suitability of the protective controls and devices currently installed in the Steam & Power System. To validate the planned strategy, it was considered necessary to carry out operating tests using an already existing dynamic simulation model for both Steam and CO2 Networks, after updating and improving it, before carrying out the necessary series of simulation scenarios.
DirectConnect OTS: Yokogawa-CentumVP	Brazilian Chemical Company	Brazil	Training Simulator for the chlorine processing system in a VCM complex	Aspen HYSYS	2021	Operator	Bulk Chemicals	Inprocess entered into a framework agreement with client to develop a series of training tools based on dynamic simulations (OTS). The initial project has been to develop an OTS for the chlorine processing system in the VCM plant
Online Appplication	PDH plant in the Spanish site of a German chemicals company	Spain	Online Digital Twin for the depropanizer and C3 splitter units	Aspen HYSYS	2021	Operator	Petrochem	Inprocess has developed a Digital Twin (rigorous dynamic simulation model) of two units of the PDH complex (depolarizer and C3 splitter) and has connected it online with the instrumentation database. The DT will then serve to monitor equipment performance and to run what-if studies
Technical Support & Consultancy	Process Licensor	Denmark	Migration of an existing Inprocess OTS to a new client's online platform	VMGSim	2021	Process Licensor	Bulk Chemicals	Client decided to change the online platform where the existing OTS, that was delivered by Inprocess, was being hosted. Client requested technical support to facilitate the migration project from the old platform to the new one

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Swiss Compressor Manufacturer (German Office) for a Japanese FPSO constructor	Switzerland	Dynamic Simulation Study for six compressors trains in a FPSO offshore Senegal	Aspen HYSYS	2021	Equipment Manufacturer	Oil & Gas (FPSO)	Under the contract with the FPSO constructor, client will deliver six centrifugal compressor trains: one low pressure (LP), three medium pressure (MP) and two high pressure (HP), which are all driven by fixed speed electric motors. The whole application will have the following capacities for each compression system: • LP - One Train with 100% capacity • MP - Three trains with 50% capacity each • HP - Two trains with 100% capacity each. Client has requested Inprocess to carry out a Dynamic Simulation Study for all these FPSO Compressors
Dynamic Simulation Studies for Compression Systems	Abud Dhabi office of an Egyptian EPC working for a Middle East NOC	United Arab Emirates	Dynamic Simulation Study for Off Gas Compressor at an Offshore Gas Plant	Aspen HYSYS	2021	EPC	Natural Gas	The existing Export Gas Compressor in the offshore gas plant, is expected to become a bottleneck beyond year 2021 to handle the forecasted export gas profile. During a FEED study, it was proposed to augment the export gas handling capacity by operating Amine Bypass Unit Compressor in 'export mode' permanently in parallel with the Export Gas Compressor and to install a new Off Gas Compressor to handle low pressure gas. The detailed dynamic simulation study needed to determine the adequacy of the proposed arrangement
HIPPS or other Depressurizatio n	Emirates EPC for an Emirates NOC	United Arab Emirates	De-Pressurization, MMDT and Hydrate study for the 85 MBD Wellhead Towers	OLGA	2020	EPC	Oil & Gas	After deciding to increase production in an Emirates field to 85 MSTBOPD of crude oil, the depressurization, MDMT and hydrates formation study already carried out by Inprocess in 2015 needed to be updated with the new production levels and compositions performing simulated topside depressurizations for all WHT and pipelines determining the minimum temperature achieved and determining if selected metals are valid and if hydrates will be formed

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DirectConnect OTS: ABB-800xA	Japanese FPSO constructor (Mexican office)	Mexico	Lifecycle OTS for an FPSO to be located in the Gulf of Mexico	UniSim Design	2020	EPC	Oil & Gas (FPSO)	Development and commissioning of a Lifecycle OTS whose main purpose will be to train the control room operators of an FPSO located in the gulf of Mexico. On top of that, because this OTS is going to be built following Inprocess' Lifecycle approach: • Client's engineers will benefit from the results obtained with the dynamic simulation model (built in Honeywell's UniSim Design) during the design phase of the FPSO's topsides, • The proposed operating procedures will be validated and tested in a preliminary Process Trainer (emulated OTS), • The configuration of the Integrated Control and Safeguarding System (ICSS) provided by ABB will be checked out in a virtual FAT (against the results of the process simulation model), • The control room operators will be deeply trained well before first oil in the risk-free environment provided by the direct-connect OTS, • Client's Operations team will be supported during the start-up of the FPSO by the Inprocess' engineers which would have gained extensive process, control, and procedures knowledge during the development of the OTS
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office)	Germany	Dynamic Simulation Study for the revamping of an existing compression system	Aspen HYSYS	2020	Equipment Manufacturer	Refining	Dynamic Simulation Study to determine the revamp possibilities of a compression system that included as driver a fix-speed electrical motor, a speed increasing gear box and one-barrel compressor, type RV 35-4. For future operation the barrel compressor will be revamped and E-motor and gear box will be reused
Dynamic Simulation Studies for Process Control Analysis	German Chemical Company (Spanish site)	Spain	Dynamic Simulation Study for a C3 Splitter Unit	Aspen HYSYS	2020	Operator	Petrochem	Development of a dynamic simulation model of a C3 splitter in a PDH plant in order to improve the understanding of the process, controls, constraints and interactions, in order to improve the current and future operation of the unit (e.g. hydraulic conditions and flooding limits, optimal sensitive tray, etc.)
Dynamic Simulation Modelling Study	German Compressors Manufacturer	Germany	MRC Simulation Model	UniSim Design	2020	Equipment Manufacturer	Natural Gas	Project to evaluate by dynamic simulation the Start-up of the Refrigeration Compressor in the Mixed Refrigerant Cycle system.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Software Extension and Programming	German Compressors Manufacturer	Germany	MRC Application	UniSim Design	2020	Equipment Manufacturer	Natural Gas	Inprocess developed a software application that facilitated manufacturer's engineers to interface with the Dynamic Simulation model, allowing changing key selected data of the models and perform sensitivity analyses of the different predefined configurations. The application had a library of different possible compressor configurations with the capability of expand it by users when required.
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office)	Germany	Feasibility Study for Propylene Compressor	Aspen HYSYS	2020	Equipment Manufacturer	Natural Gas	Feasibility study by dynamic simulation to determine the adequacy of a 4-stage propylene compressor evaluating any driver limitation during the start-up of the compression system
DirectConnect OTS: ABB-800xA	Singapore Subsidary of a Malaysian FPSO Constructor	Singapore	Lifecycle OTS for an FPSO located in a Brazilian field	Aspen HYSYS	2020	EPC	Oil & Gas (FPSO)	Development of a Lifecycle Operator Training Simulator (LC-OTS) for a Floating Production Storage and Offloading (FPSO) platform, which will be deployed at Marlim field in the Campos Basin. Although the LC-OTS's main purpose is to train the control room operators on a direct-connect OTS, the FPSO operator, like it has done before with other LC-OTS with Inprocess, will benefit from a wider scope during the engineering phases including: * Dynamic Simulation studies, operating procedures validation. * Early operators and engineers training with an Early-Emulated OTS. * Virtual commissioning of the ICSS configuration. * Processing facilities start-up support. * Post start-up support with the resulting Digital Twin.
Dynamic Simulation Modelling Study	FPSO Constructor	Norway	Engineering Studies for Operations Support for an FPSO	Aspen HYSYS	2020	EPC	Oil & Gas (FPSO)	Inprocess has performed a complete dynamic model for the FPSO topside facility. This dynamic model has been planned to be used for some initial verification of the process unit during the initial phase of the production start of the plant. Up to fifteen different upset production scenarios have been tested in this project
HIPPS or other Depressurization	Italian EPC for a Mozambique LNG company	Italy	Depressurization for a Domestic Gas Unit in Mozambique	Aspen HYSYS	2020	EPC	Natural Gas	Depressurization calculations using dynamic simulation to accurately determine the Minimum Design Metal Temperature (MDMT) in a small domestic gas unit that is dedicated to produce a stream of treated gas to be sent to local distribution grid

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis	Spanish Refinery	Spain	Study and Modelization of the system to discharge to flare of a refinery section	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2020	Operator	Refining	Two-phase Flare System Revalidation project where the PSVs of a plant section, associated to several services will be revalidated by simulation results for different possible operating contingencies. In the second project phase, the complete flare network will also be revalidated with the new loads calculated during the PSV revalidation phase
Dynamic Simulation Studies for Process Control Analysis	French E&P Company	France	Process Control Dynamic Simulation Study for 1st Stage Separator	Aspen HYSYS	2020	Operator	Oil & Gas	Client was interested in developing a methodology to operate the liquid side of the 1st stage separator (having a slug catcher functionality) and improving the process control philosophy and the PID parameters of the 1st stage separator. Such a controllability study was carried out with the help of a dynamic simulation model of the system and the subsequent analysis
Generic Operator Training Simulator (INGENO)	Oil & Gas Training Institution in Iraq	Iraq	Generic OTSs for up to nine units in an upstream processing plant	UniSim Design	2020	Educational Institution	Educational Institution	Collection of nine Generic OTSs for upstream units intended to train the students of an Iraq educational institution in the operation of an Oil Gas Separation Unit, a Gas Compression Unit, a Gas Sweetening with Amines unit, a Dehydration Unit with glycol, an NGL Unit, an LNG Unit, an LPG Unit, an Energy Unit and a Treatment Unit
DirectConnect OTS: Emerson-DeltaV	Spanish E&P Company	Spain	Update of the existing OTS simulation model with new equipment	Aspen HYSYS	2020	Operator	Oil & Gas	Update of a direct-connect OTS developed by Inprocess to the new version of the DCS (Emerson DeltaV). Additionally, the dynamic model was also updated with the inclusion of a new booster compressor, a new gas turbine and the associated filters
Flow Assurance Analysis	Multinational EPC for a Middle East NOC	Saudi Arabia	Flow Assurance Analysis for an increase in production in a Middle East field	OLGA	2020	EPC	Oil & Gas	Planning for a platform production capacity increase, a flow assurance (steady state and transient) was required by the operating company in order to ensure current equipment was capable to cope with the increase. After receiving a existing pipelines simulation models in Flowmaster and OLGA, Inprocess did update them with newer information. With the updated models, Inprocess executed different simulation scenarios (Flowmaster for Steady State, OLGA for Transient) in order to obtain results to confirm the project objectives.

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Dynamic Simulation Studies for Process Control Analysis	Spanish branch of a multinational chemical company	Spain	Dynamic Simulation Study for the controllability and debottlenecking of a Depropanizer Unit	Aspen HYSYS	2020	Operator	Petrochem	Inprocess was requested to develop a dynamic simulation model of a depropanizer column, part of a PDH plant, in order to help to solve client's current issues with the multivariable process controller in operation and to support client's plan to increase production the following year. Once the rigorous model will be ready, it will also be used to infer the values of certain process variables that are difficult (if not, impossible) to measure in the real plant
Dynamic Simulation Modelling Study	Omani EPC for a Middle East Gas company	Oman	Phase 2 of the Dynamic Simulation Study for the debottlenecking of a gas grid	UniSim Design	2020	EPC	Natural Gas	The project main objective was to build a dynamic simulation model for the rich and lean gas segregation pipelines in the country national gas grid. The results obtained for a series of scenarios, carried out with the model will allow identifying potential problems both, in steady state conditions, when blending composition changes (up to six cases), and in transient conditions when either some of the consumers trip or some of the suppliers also do.
Dynamic Simulation Modelling Study	Italian EPC	Italy	Dynamic Simulation Study for a series of Boil-Off Gas Compressors in an African LNG plant	Aspen HYSYS	2020	EPC	Natural Gas	Dynamic Simulation Study (DSS) for a BOG compression system in order to analyze different operating scenarios and upset cases and considering all the piping, controls and equipment handling BOG in the abovementioned plant. The project was divided into two main parts which depended on the available information to carry out the project, which were: * Preliminary Data. Inprocess will proceed with the development of the project using the available data provided by client at the beginning of the project. * Vendor Updated Data. Once the initial studies using preliminary data would have been finished, Inprocess will use the updated data provided by vendor to carry out the scenarios in a more specific and realistic manner.
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office)	Germany	Dynamic Simulation Study for Ethylene Refrigeration Compressor (ERC)	Aspen HYSYS	2020	Equipment Manufacturer	Petrochem	Dynamic Simulation Study of an Ethylene Refrigeration Compressor, for only one initial condition, to evaluate if the acceleration phase during the start-up to identify driver limitation or requirement based on the calculated load curve and if the compressor behavior in the compressor map when the system accelerates

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Yokogawa-CentumVP	Major FPSO constructing and operating company	Singapore	Lifecycle Operator Training Simulator for an FPSO located offhsore Brazil	UniSim Design	2020	EPC	Oil & Gas (FPSO)	Development of the Lifecycle Operator Training Simulator (LC-OTS) for a Floating Production Storage and Offloading (FPSO) platform, which will be installed in the Búzios field, offshore Brazil. This LC-OTS will be installed in the same training center in Rio where Inprocess is already deploying LC-OTS for other two FPSOs. Although the LC-OTS's main purpose is to train the control room operators on a direct-connect OTS, client will benefit from a wider-scope during the engineering work including: Flare system validation, operating procedures drafting, early operators and engineers training with an emulated OTS, virtual commissioning of the ICSS configuration, start-up and post start-up support.
Flare Systems Analysis	Spanish Oil Major (petrochemicals branch)	Spain	Flare system revalidation study for the butadiene plant	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2020	Operator	Petrochem	Revalidation study for the flare system of a butadiene plant, comprising the resizing of a number of safety valves, together with the revalidation of the flare network, by steady state simulation
Flow Assurance Analysis	Norwegian EPC for a Norwegian Oil & Gas Company	Norway	Dynamic Process Simulation of a North Sea installation Oil Export System	OLGA	2020	Operator	Oil & Gas	Dynamic hydraulic study for an oil export pipeline. The possibility of wax deposition along the line was also investigated
Dynamic Simulation Modelling Study	American Office of a German Compressors Manufacturer for a French EPC working for a British O&G company	United States	Dynamic Simulation Study for a Turboexpander in a FLNG	Aspen HYSYS	2020	Equipment Manufacturer	Natural Gas	Dynamic Simulation Study to determine the correct setup of the turbo expander machinery, its process control and its protection system
HIPPS or other Depressurization	Italian EPC for a FPSO constructor	Italy	HIPPS Study for an FPSO in Angola coast	Aspen HYSYS	2020	EPC	Oil & Gas (FPSO)	Dynamic Simulation Study for a HIPPS protection system in order to determine the setpoint of operation

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Flow Assurance Analysis	Portuguese EPC for a Libyan O&G Operator	Portugal	Slug and Pigging Analysis for a Libyan O&G field	OLGA	2020	EPC	Oil & Gas	Flow Assurance study for two pipelines and two different scenarios for each one
Dynamic Simulation Modelling Study	FPSO Constructor	Norway	Dynamic Simulation Model of a FPSO	Aspen HYSYS	2020	EPC	Oil & Gas (FPSO)	Planning for a future Operator Training System to be developed following the concept of Lifecycle Simulator, Inprocess' client requested to start separately the dynamic simulation studies around the equipment to be installed in the processing facilities of an FPSO
Steady State Simulation Modelling Study	Austrian Petrochemical Company, Swedish site	Sweden	Steady State Modelling of a C3 splitter and deethanizer distillation columns in a cracker plant	Aspen HYSYS	2019	Operator	Petrochem	A cracker plant was having trouble when operating the propane/propylene splitter distillation column. Inprocess oversaw building the steady state simulation model and running a Sensitivity Analysis in order to evaluate the options to limit propylene losses in the bottom stream and to analyze how MAPD can be limited to the maximum allowable concentration in the column with the current instrumentation.
Dynamic Simulation Studies for Compression Systems	French Compressor Manufacturer	France	Dynamic Simulation Study for the Overhead Compressor in an LNG train	Aspen HYSYS	2019	Equipment Manufacturer	Natural Gas	A French compressor manufacturer (providing the overhead compressor to a Russian LNG plant) required Inprocess to determine by means of dynamic simulation the protection requirements (anti-surge circuit, hot gas bypass valve requirements, etc.)
Dynamic Simulation Studies for Compression Systems	French Compressor Manufacturer	France	Dynamic Simulation Study for the Regeneration Compressor in an LNG train	Aspen HYSYS	2019	Equipment Manufacturer	Natural Gas	The French compressor manufacturer (providing the regeneration compressor to a Russian LNG plant) required Inprocess to determine by means of dynamic simulation the protection requirements (anti-surge circuit, hot gas bypass valve requirements, etc.)
Dynamic Simulation Modelling Study	Austrian Petrochemical Company, Belgian site	Belgium	Dynamic Simulation Model for a Propane dehydrogenation plant	Aspen HYSYS	2019	Operator	Petrochem	The client wanted to process an alternative feedstock (from bio sources) into their PDH and PP3 plants, and it was in need of testing the evolution of the concentration of this alternative feedstock at the exit of the polymerization plant, once the feedstock tank at their logistic partner was connected to the pipeline feeding the PDH plant. Therefore, a dynamic simulation model of the plant was built, and it was used to determine the residence time of the new feedstock, after switching from the traditional one

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Flare Systems Analysis with Dynamic Simulation Study	Italian EPC for an Austrian petrochemicals company (Belgian Site)	Italy	Dynamic Flare Network Analysis for safety gas evaluation in a Propane dehydrogenation (PDH) plant	Aspen HYSYS	2019	EPC	Petrochem	Inprocess built the dynamic model of the flare network of a propane dehydrogenation plant for an Italian engineering company who was in charge od carrying out a safety gas evaluation in the plant Final client was facing a problem with the Flare system for which the reduction load applied was not properly supported by a simulation, and the HIPS implementation is not enough to close the safety gap coming from a LOPA analysis. Inprocess carried out a flare simulation for the design scenario (power failure) in order to check if the time-dependence of the overpressure phenomena can give additional credit to close the safety gap going to safe reduce the flare design.
Dynamic Simulation Studies for Compression Systems	French Compressor Manufacturer for an Indonesian Oil&Gas company	France	Dynamic simulation study for a three stages centrifugal compression system	Aspen HYSYS	2019	Equipment Manufacturer	Oil & Gas	Inprocess built a dynamic simulation model of the three-stages compression system to validate the sizing of the proposed anti-surge valves and the configuration of the recycle loops
Dynamic Simulation Modelling Study	Process Licensor division of an Italian EPC	Italy	Dynamic Simulation for a high pressure gas circuit in a hydroconversion type unit	Aspen HYSYS	2019	EPC	Refining	Inprocess updated an existing dynamic simulation case in order to match Steady State conditions, according to H&MB, in order to tune up controllers and instrumentation as well as to check dynamics to verify that in three different scenarios, no overpressure and overtemperature will occur.
Dynamic Simulation Modelling Study	Italian EPC	Italy	Dynamic Simulation Study to study start-up procedures for two units in a green refinery	Aspen HYSYS	2019	EPC	Refining	During the start-up of two units of a green refinery lots of operational problems were detected, actually leading to the impossibility of starting them. Inprocess created a dynamic simulation model of the units and helped out the engineers there to find and define the right procedure to smoothly start the refinery units
Dynamic Simulation Modelling Study	Emirates EPC working for an Middle East NOC	United Arab Emirates	Dynamic Simulation Study for Desalter trains in new GCs	Aspen HYSYS	2019	EPC	Oil & Gas	Due to the construction of new processing facilities in gathering center of an oil & gas field, new desalter treating trains need to be built. Inprocess did carry out the dynamic simulation of such series of desalter trains in order to assess their dimensions, their desalting capacity, and their control and safety strategy for start-up and shutdown sequences

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Flow Assurance Analysis	Italian EPC for a Russian Oil Company in Middle East	Italy	Surge Analysis Study for a Crude Oil Export Pipeline between two tank farms (121 km)	OLGA	2019	EPC	Oil & Gas	A FEED surge analysis of a 121 km long crude oil export pipeline, between two tank farms, was carried out by Inprocess using OLGA with PVTSim in order to determine the adequate line size (48"), the NPSHA for booster and shipper pumps, the cool down, as well as testing other different operational and emergency situations
Flare Systems Analysis	Spanish site of a Multinational Chemicals company	Spain	Flare Network Evaluation for the whole producing site (several plants)	Flarenet/ Aspen Flare Analyzer	2019	Operator	Bulk Chemicals	Client wanted an updated Aspen Flare Analyzer model of their flare network (93 sources relieving). Inprocess built the model and run the proposed scenarios (Power Failure, Cooling Water Failure, Instrument Air Failure and Fire) and suggested possible ways of overcoming the detected bottlenecks
Hydrogen Network Study	Serbian Refining Company	Serbia	Feasibility Study for Hydrogen Network Modeling and Optimization	Aspen HYSYS	2019	Operator	Refining	Inprocess' refinery experts did analyze the status of the existing Hydrogen Network with the aim to investigate different alternatives to optimize hydrogen utilization at the refinery. Afterwards, Inprocess, in collaboration with its EPC partner, did conduct the Technical and Economic Evaluation of the proposed alternatives as well as created the required technical documentation for the selected solution.
Flare Systems Analysis	Spanish Refinery	Spain	Modelling and Study for the Flare System of the Conversion Section of the Refinery	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer; Flaresim	2019	Operator	Refining	* Revalidation of the PSVs: Determination of the load associated with each of the services, for each of the defined contingencies, and calculation of the required dimensions of each service. This will be applicable for those PSVs that do not have this information in their original specsheet. If this information is available, it should only be collected for use in the following project points. In turn, Inprocess will calculate the isometrics necessary to carry out the revalidation study. * Revalidation of the Network: Determination of the services affected by common contingencies and development of a model of the flare network in order to analyze its hydraulic behavior and determine its possible limitations. * Revalidation of the Flare: Design of the Seal and the Tip, plus radiation study with Flaresim

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HIPPS or other Depressurizatio n	Spanish EPC working for and Emirates' NOC	United Arab Emirates	Minimum Metal Temperature Study (FEED) for a Gas-Lift Compression System in an Abu Dhabi offshore field	Aspen HYSYS	2019	EPC	Oil & Gas	Development of a Minimum Metal Temperature Study for the Gas-Lift Compressor System in an oil & gas field (offshore Abu Dhabi) using BLOWDOWN technology available in Aspen HYSYS. This technology has been incorporated by Aspentech in Aspen HYSYS keeping the code unchanged in order to maintain the accuracy of the original depressurization technology developed by Dr. Graham Saville and Prof. Stephen Richardson
Dynamic Simulation Studies for Compression Systems	FPSO Constructor	Ghana	Dynamic Simulation Study of the Gas Injection Compressor in an FPSO in Ghana	Aspen HYSYS	2019	Operator	Oil & Gas (FPSO)	Dynamic Simulation Studies, with different operational scenarios, to calculate sizes of equipment and of safety devices for the Gas Injection compressor installed in a FPSO in Africa
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German Office) for an Indonesian oil company	Switzerland	Dynamic Simulation Study for three compression systems in an oil & gas plant	Aspen HYSYS	2019	Equipment Manufacturer	Oil & Gas	Dynamic study to confirm the design of the Anti-Surge Valve, including the trim characteristic, and to evaluate the need of hot gas bypass valve; to detect potential reverse rotation of the compressor; to perform the compressor system start-up, including interfaces with the process sequence identification of required starting torque, starter driver sizing, and the required acceleration limitations
Flare Systems Analysis	German Engineering Company for a German Refinery	Germany	PSVs and Flare network revalidation for a German refinery	UniSim Design	2019	EPC	Refining	An Inprocess modelling expert remotely supported the EPC firm to carry out a PSVs and flare network revalidation study for a refinery in Germany
Dynamic Simulation Studies for Compression Systems	British Compressor Manufacturer	United Kingdom	Dynamic Simulation Study for the LLP and LP compressors in a FPSO in Africa	Aspen HYSYS	2019	Equipment Manufacturer	Oil & Gas (FPSO)	Dynamic Simulation Studies, with different operational scenarios, to calculate sizes of equipment and of safety devices for the LLP and LP compressors installed in a FPSO in the west coast of Africa
Dynamic Simulation Studies for Compression Systems	Swiss Compressor Manufacturer (German Office) for an Uzbek oil & gas company	Switzerland	Dynamic simulation study for a booster compressor station (two stages)	Aspen HYSYS	2019	Equipment Manufacturer	Oil & Gas	A compressor manufacturer wanted Inprocess to build a dynamic model and to run simulation scenarios to determine if their compressor design was satisfying final client needs to boost the pressure of a declining field to keep desired discharge pressure (by moving from one-stage to two-stages compression system)

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Emulated OTS: Yokogawa-CentumVP	Malaysian Fertilizers Company	Malaysia	Operator Training System for an Ammonia, Methanol and Urea Plant	UniSim Design	2019	Operator	Fertilizers	An Operator Training System for the Ammonia, Urea and Methanol plants (plus the associated Utilities plant) has been built for a fertilizers company in Southeast Asia. The dynamic process model has been built using UniSim Design, the emulation of the Yokogawa DCS has been included in the process model, the Advanced Process Control Module has been connected to the process model and the emulated HMI has been developed with Inprocess Instructor Station that is also acting as the communication hub for the whole of the system
Dynamic Simulation Modelling Study	EPC (Italian office) working for a Middle East NOC	Italy	Dynamic analysis of a steam network in a desalination plant during shutdown	Aspen HYSYS	2019	EPC	Refining	Inprocess carried several operation scenarios to determine the operability of the steam network of the utilities section of a desalination plant in Middle East
Dynamic Simulation Studies for Compression Systems	FPSO Constructor	Ghana	Dynamic study to select adequate compressors in an FPSO	Aspen HYSYS	2019	EPC	Oil & Gas (FPSO)	Dynamic Simulation studies carried out for different compressor alternatives in order to select the best suited one
Dynamic Simulation Modelling Study	Spanish Metallurgical Company	Spain	Dynamic Model and Technology Transfer for a Sulphur Oxide Plant	Aspen HYSYS	2019	Operator	Metallurgy	A dynamic model of one section of the sulphur oxide gas treatment plant has been built in Aspen HYSYS dynamics to help client engineers to improve current process control setup. The model development activity will be supported by a series of knowledge transfer sessions that will guide control engineers on how to benefit from the dynamic simulation results to improve plant controllability
Steady State Simulation Modelling Study	Canadian Process Licensor	Canada	Steady State Model Improvement and Exergy Analysis of a Compressed Air Storage System	Aspen HYSYS	2019	Process Licensor	Bulk Chemicals	An existing Steady State model in Aspen HYSYS will be reviewed and enhanced in terms of convergence time and redundant information. Once validated, the model will be used to identify potential energy improvements by exergy analysis
Dynamic Simulation Modelling Study	Norwegian office of a Malaysian FPSO Constructor	Ghana	Depressurization and re-pressurization dynamic study for a gas export sealine	Aspen HYSYS	2019	Operator	Oil & Gas (FPSO)	Dynamic Study to determine the operating procedure for the switch from automatic to manual in the gas export line from FPSO to the continent

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flare Systems Analysis	Spanish Refinery	Spain	Revalidation of the PSVs protecting the Coker (DCU), the Heavy Gas Oil (HGO), and the Crude Light Ends & Light Virgin Naphtha (CLE&LVN)	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer	2019	Operator	Refining	After several successful previous projects, the refinery owner has requested Inprocess to carry out another project to revalidate the sizing of the Pressure Safety Valves protecting some other units in the refinery (Coker, HGO, CLE & LVN)
Dynamic Simulation Studies for Compression Systems	Swiss Compressors Manufacturer (German branch) for a Qatari oil company	Germany	Dynamic Simulation Study for a compressor train changing from VSD drive/control to fixed speed drive	Aspen HYSYS	2019	Equipment Manufacturer	Refining	The main objective of the project was to deliver a dynamic simulation study for a compression system to confirm the viability of eliminating VDS, though the verification of the operation under a number of defined procedural and upset conditions. The model will allow evaluating the design and identifying potential problems.
Dynamic Simulation Studies for Compression Systems	Swiss Compressor Manufacturer (German Office) for a Japanese FPSO constructor	Germany	Dynamic Simulation Study for three Different Compressor Trains Systems in a FPSO	Aspen HYSYS	2019	Equipment Manufacturer	Oil & Gas (FPSO)	Inprocess has developed a dynamic simulation model of the three compression systems designed to work in an FPSO offshore Brazil with the objective of determining the anti-surge requirements for the three systems; to evaluate the compressor start-up procedures and the driver ability to provide sufficient torque at the settle out pressure with/without soft starter; and to evaluate an emergency shutdown or trip event.
Dynamic Simulation Modelling Study	Spanish Synthetic Rubber Producer	Spain	Dynamic Simulation Study for the rubber plant chilling water network	Aspen HYSYS	2019	Operator	Petrochem	Inprocess has developed a dynamic simulation model of the chilling water network in Aspen HYSYS in order to help client to determine hydraulic bottlenecks in its cooling water network and to help client to find solutions that could lead to their solution
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer for a Russian EPC for an LNG plant operator	Germany	Dynamic Simulation Study for a Feed Gas Booster Compressor and a Boil Off Gas Compressor in an LNG train	Aspen HYSYS	2019	Equipment Manufacturer	Natural Gas	The main objective of the project is to deliver a dynamic simulation study for the Feed Gas Booster compression system and for the Boil-Off Gas compression system in order to confirm its proper operation under several defined procedural and upset conditions. The model will allow evaluating the design and identifying potential problems.
DirectConnect OTS: Siemens-PCS7	Middle East Control Systems Implementor	United Arab Emirates	Operator Training Simulator for a gas plant in Basrah (Iraq)	Aspen HYSYS	2019	EPC	Natural Gas	Operator Training Simulator for a Gas Utilization Plant that will use Siemens PCS7 as distributed control system. Inprocess has developed a direct-connect OTS, with a dynamic model of the process based on Aspen HYSYS, the emulation of the Siemens DCS based on PCS7Sim and SIMIT, and an instructor station developed with Inprocess Instructor Station

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Steady State Simulation Modelling Study	Process Licensor division of an Italian EPC	Italy	On-site Support for Aspen Plus MTBE Reactor Modelling	Aspen Plus	2019	EPC	Petrochem	Within the innovation process on going, client is evaluating the use of Aspen Plus to perform integrated process simulation models for High-Octanes Technologies, more specifically MTBE, ETBE and TAME synthesis and related side reactions. Client is currently simulating the whole process (reaction, product separation and reactant recovery) using different tools with an important effort related to the integration of the results from one tool to the other until a stable convergence is reached. The reason of this is linked to the reliability of each tool results that were confirmed over the years with data coming from several operating plants all over the world. Client requested Inprocess its support to implement the whole of the existing models and routines into a single process simulation tool, like Aspen Plus.
Hybrid DirectConnect OTS: Proconex Honeywell TPS	Greek Refining Company	Greece	Upgrading of existing Operator Training Simulators for a Fluid Catalytic Cracking (FCC) and a Mild Hydrocracker (MHC) refinery units	UniSim Design	2019	Operator	Refining	Inprocess updated and upgraded an existing simulation system for the complexes of Fluidized Catalytic Cracking (FCC) and Mild Hydrocracker (MHC) to the new process simulator (UniSim Design), matching current plant conditions. On top of the new model, Inprocess created an Operator Training Simulator, simulating the Honeywell control system and the safety system with Proconex software and developing the instructor capabilities with Inprocess Instructor Station
Hybrid DirectConnect OTS: Proconex Honeywell TPS	Greek Refining Company	Greece	Operator Training Simulator of a continuous catalytic reforming (CCR) refinery unit	UniSim Design	2019	Operator	Refining	Inprocess developed an OTS for continuous catalytic reforming unit (CCR) in the refinery, developing the process model with UniSim Design, simulating the Honeywell control system and the safety system with Proconex software and developing the instructor capabilities with Inprocess Instructor Station
Hybrid DirectConnect OTS: Proconex Honeywell TPS	Greek Refining Company	Greece	Operator Training Simulator of a topping refinery unit (CDU)	UniSim Design	2019	Operator	Refining	Inprocess developed an OTS for an old topping complex in the refinery, developing the process model with UniSim Design, simulating the Honeywell control system and the safety system with Proconex software and developing the instructor capabilities with Inprocess Instructor Station

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Research, Development and Innovation (R+D+I)	Norwegian Oil and Gas company	Norway	Development of a Bad Actors Detection Application	Aspen HYSYS	2019	Operator	Oil & Gas	Inprocess and client will jointly devote R&D resources to develop a software tool capable of detecting process anomalies due to the deviation between the real equipment behavior and that expected from a rigorous first-principles dynamic process simulator
DirectConnect OTS: Yokogawa-CentumVP	Major FPSO constructing and operating company	Brazil	Lifecycle project and OTS for one FPSOs to be located offshore Brazil	UniSim Design	2019	Operator	Oil & Gas (FPSO)	A major FPSO constructing and operating company has awarded Inprocess the construction of an Operator Training Simulator for their new Floating Production Storage and Offloading (FPSO) platform, which is soon to be installed off the coast of Brazil (in the Sepia field). These fields produce a natural gas with a high CO2 content, thus a careful design of the processing facilities in the FPSO is required as well as precise operating procedures in order to be able to adequately process the fluids produced. The OTS being built to train the control room operators are, however, part of a wider-scope simulation lifecycle project which will include dynamic simulation studies to be executed before the actual construction of the topsides, as well as validation of the proposed operating procedures, checkout of the ICSS databases, operator training, start-up support and post start-up updates.
DirectConnect OTS: Siemens-PCS7	German Resins Company	Germany	OTS for a Hydrogenated Hydrocarbon Resin plant	Aspen HYSYS	2019	Operator	Bulk Chemicals	Inprocess will take advantage of existing models in Aspen Dynamics to build an OTS based on Aspen HYSYS Dynamics to train control room operators on the behavior of the plant that is controlled by a PCS7 Simatic from Siemens. Inprocess Instructor Station will be the software acting as data hub and providing the Instructor functionalities
Steady State Simulation Modelling Study	Norwegian Exploration & Production Company	Norway	Steady State model expansion and software extension upgrade for a North Sea field	Aspen HYSYS	2019	Operator	Oil & Gas	Inprocess will build new steady state standalone models for two new fields to be integrated with an existing CORF model. Models will be fed with real plant data from PI system. Software extensions will be upgraded to cope with the new feeds
Dynamic Simulation Modelling Study	Slovak EPC for a Slovak petrochemicals company	Slovakia	Dynamic Simulation Study for Ethylene Storing Facility Subcooling Section	Aspen HYSYS	2019	EPC	Petrochem	EPC dynamic simulation studies to verify basic engineering calculations for the facilities of the storing complex of an ethylene production plant

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Flow Assurance Analysis	Spanish EPC for an Emirates oil company	United Arab Emirates	Flow Assurance Study for an oil field in Middle East	OLGA	2019	EPC	Oil & Gas	The purpose of this hydraulic analysis was to establish the line size requirements for the new transfer lines from PADs and Main Transfer line forming a Fish Bone Network for the Oil Gathering Network. The analysis also evaluated and identified the various problems that could be faced during start-up, shutdown, pigging operations of the gathering network facility
Emulated OTS: Yokogawa-CentumVP	Petrochemical Spanish Company	Spain	Operator Training Simulator with Immersive 3D-VR for a greenfield linear alkylbenzene (LAB) plant based on DETAL technology	Aspen HYSYS	2019	Operator	Petrochem	A Spanish petrochemicals site contracted Inprocess to develop a Digital Twin based on a rigorous dynamic process simulation model of their revamped Linear Alkylbenzene (LAB) plant (which was moved to Detal technology), which is also connected to a detailed 3D Virtual Reality model of the plant. That Digital Twin is being used in a number of key project tasks including: -* Verify the complex and automatic regeneration sequences of absorbers and reactors, and all the control and safety narratives of the project. * Verify and tune the new operating procedures for Start-up/Shutdown and operability of the plant * Tune all new controllers and configure the right settings for alarms. * Train control room operators on replicas of their CR operator consoles communicating with field operators in the 3DVR environment. * Train AI systems to infer product qualities on distillation units The Digital Twin was delivered on Dec-2019 and it was being used intensively prior to plant start-up, scheduled for May-2020. The expected benefits were safer, shorter and smoother start-up.
Steady State Simulation Modelling Study	German EPC	Germany	Aspen + Conceptual Design of Distillation Sequence	Aspen Plus	2019	EPC	Bulk Chemicals	Client requested Inprocess technical support to help them to build a model in Aspen Plus that should help them to select the best distillation sequence configuration
DirectConnect OTS: Siemens-PCS7	Brazil office of a Dutch FPSO constructor	Brazil	Operator Training System for one FPSO located offshore Brazil	UniSim Design	2019	Operator	Oil & Gas (FPSO)	Development of an Operator Training system for one FPSO located offshore Brazil. The dynamic model will be developed taking advantage of a previously built dynamic model for EPC studies. The control and safety system (from Siemens) will be simulated with Siemens softcontroller based on SIMIT

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Siemens-PCS7	Brazil office of a Dutch FPSO constructor	Brazil	Operator Training System for one FPSO located offshore Brazil	UniSim Design	2019	Operator	Oil & Gas (FPSO)	Development of an Operator Training system for one FPSO located offshore Brazil. The dynamic model will be developed taking advantage of a previously built dynamic model for EPC studies. The control and safety system (from Siemens) will be simulated with Siemens softcontroller based on SIMIT
DirectConnect OTS: Siemens-PCS7	Brazil office of a Dutch FPSO constructor	Brazil	Operator Training System for one FPSO located offshore Brazil	UniSim Design	2019	Operator	Oil & Gas (FPSO)	Development of an Operator Training system for one FPSO located offshore Brazil. The dynamic model will be developed taking advantage of a previously built dynamic model for EPC studies. The control and safety system (from Siemens) will be simulated with Siemens softcontroller based on SIMIT
DirectConnect OTS: Siemens-PCS7	Brazil office of a Dutch FPSO constructor	Brazil	Operator Training System for one FPSO located offshore Brazil	UniSim Design	2019	Operator	Oil & Gas (FPSO)	Development of an Operator Training system for one FPSO located offshore Brazil. The dynamic model will be developed taking advantage of a previously built dynamic model for EPC studies. The control and safety system (from Siemens) will be simulated with Siemens softcontroller based on SIMIT
Dynamic Simulation Modelling Study	Finish Refinery	Finland	Yield Shift Reactor Modelling for Hydrocracker	Aspen HYSYS	2018	Operator	Refining	Our client needed a dynamic model of the refinery hydrocracker, in the format of yield shift reactor, to be built using Aspen HYSYS Dynamics for its future use in their internal operators training tool. As the source of information, Inprocess used an existing steady state PetroSIM model, previously developed by client.
DirectConnect OTS: Siemens-PCS7	Norwegian Instrumentation Provider for an Oil & Gas Operator	Norway	OTS for a Danish O&G field in the North Sea	UniSim Design	2018	Instrumentation Provider	Oil & Gas	Inprocess will use the dynamic models developed by third parties (in UniSim Design) to develop and commission an OTS for the control room operators in the oil & gas field facilities. The ICSS emulator will be provided by Siemens AS, who is the instrumentation provider of the field. Inprocess will use its own Instruction Station software to act as the data connectivity hub as well as the provider of the instruction capabilities.
Dynamic Simulation Studies for Compression Systems	Italian EPC for a Russian refinery	Italy	Dynamic Simulation Studies for the compressors in a Delayed Coker Unit (DCU)	Aspen HYSYS	2018	EPC	Refining	Through a series of simulated operating scenarios, using an on-purpose developed dynamic simulation model, Inprocess determined the adequacy and effectiveness of the compression system in the delayed coker unit. Certain shutdown procedures are also evaluated taking into account the anti-surge protection and control and trip settings, including the need for hot/cold gas bypass valves and circuits. The impact on flaring following system depressurization will as well be checked

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DirectConnect OTS: ABB-800xA	Main Automation Contractor working for an Abu Dhabi Oil & Gas company	United Arab Emirates	Operator Training System for an Abu Dhabi Oil Field Facilities	Aspen HYSYS	2018	Instrumentation Provider	Oil & Gas	Inprocess is developing for an Instrumentation Provider a Direct-Connect Operator Training System based on their 800xA DCS. Inprocess will use Aspen HYSYS as the dynamic process simulator for the processing facilities of the oil & gas field; it will use Inprocess Instructor Station as the data connectivity hub as well as the provider of the instruction capabilities; and the softcontroller for the 800xA simulation provided by the provider
Dynamic Simulation Studies for Compression Systems	Swiss Compressor Manufacturer	Switzerland	Dynamic simulation study for a compression system	Aspen HYSYS	2018	Equipment Manufacturer	Oil & Gas	The compressor manufacturer wanted Inprocess to build a dynamic model and to run simulation scenarios to determine if their compressor design was satisfying final client needs
Dynamic Simulation Modelling Study	Chinese EPC working for an Abu Dhabi Oil & Gas company	United Arab Emirates	Dynamic Simulation for an Abu Dhabi Oil Field Facilities	Aspen HYSYS; OLGA	2018	EPC	Oil & Gas	Working in three project phases, the Inprocess simulation team will develop a dynamic simulation model of the integrated processing facilities (transfer lines, separation trains, vapor recovery, MOL lines and pumps, dewatering system, flare systems, hot water and others), using Aspen HYSYS and OLGA. A series of dynamic simulation scenarios will be run with the model to ensure the correct sizing of the equipment and of the protecting systems. Inprocess engineers will work for six months at client facilities in Abu Dhabi to facilitate and ensure the knowledge transfer to client's team
Software Extension and Programming	British Fine Chemicals Company. Spanish Production Site	Spain	Development of an educational platform to train operations personnel	Aspen HYSYS	2018	Operator	Fine Chemicals	Inprocess develops client's educational platform for operators in their Catalan site, 60 km north of Barcelona. In close collaboration with client's HR department, the Inprocess Services team developed an educational environment where their operations personnel will find rigorous representation of their producing lines and processes (either in the form of rigorous dynamic simulation or in the form of audio-visual content) where to learn-by-practicing how to optimally operate their real processes
Generic Unit Operations Training (ITOP)	British Fine Chemicals Company. Spanish Production Site	Spain	Platform to train operators on Unit Operations	Aspen HYSYS	2018	Operator	Fine Chemicals	The educational platform developed by Inprocess will as well contain ITOP (Inprocess' learning content about Unit Operations)

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Emulated OTS: Eurotherm	British Fine Chemicals Company. Spanish Production Site	Spain	OTS for a batch chemicals production line	Aspen HYSYS	2018	Operator	Fine Chemicals	With a bunch of batch operating lines, this site has been producing for years high-added value natural based specialties and oleo chemicals to the personal care, life sciences, and industrial chemical markets. Inprocess has developed an emulated Operator Training Simulator based on their Eurotherm DCS for one of their multiproduct line
Emulated Operator Training System	Argentinian Oil Company	Argentina	Operator Training System for a Generic Crude Distillation Unit (CDU) in a refinery	Aspen HYSYS	2018	Operator	Refining	Inprocess has developed an OTS for a generic refinery production CDU. The dynamic process model was built in Aspen HYSYS; the control system was emulated in the dynamic process simulator while the Operator Consoles were emulated with Inprocess Infrastructure Suite (IIS) software
DirectConnect OTS: Schneider Serie IA	Argentinian Oil Company	Argentina	Operator Training System for a refinery fluid catalytic cracking unit (FCC-B) in La Plata (Argentina)	Aspen HYSYS	2018	Operator	Refining	Inprocess has developed an OTS for a refinery production FCC for a refinery located in La Plata (Argentina). The dynamic process model was built in Aspen HYSYS; the Schneider Serie IA control system was emulated via the softcontroller provided by Schneider.
DirectConnect OTS: ABB-800xA	Argentinian Oil Company	Argentina	Operator Training System for a refinery fluid catalytic cracking unit (FCC) in Luján de Cuyo (Argentina)	Aspen HYSYS	2018	Operator	Refining	Inprocess has developed an OTS for a refinery production FCC for a refinery located in Luján de Cuyo (Argentina). The dynamic process model was built in Aspen HYSYS; the ABB 800xA control system was emulated via the softcontroller provided by ABB.
DirectConnect OTS: ABB-800xA	Argentinian Oil Company	Argentina	Operator Training System for a refinery fluid catalytic cracking unit (FCC-A) in La Plata (Argentina)	Aspen HYSYS	2018	Operator	Refining	Inprocess has developed an OTS for a refinery production FCC for a refinery located in La Plata (Argentina). The dynamic process model was built in Aspen HYSYS; the ABB 800xA control system was emulated via the softcontroller provided by ABB.
Flow Assurance Analysis	Spanish Engineering Company (Chile office)	Chile	Dynamic Flow Assurance Analysis for shutdown and restart procedures in a Bolivian Oil&Gas field	OLGA	2018	EPC	Oil & Gas	Transient analysis using OLGA of the behavior of a Bolivian O&G field during the last unplanned shutdown and processes restart, providing recommendations on the restart procedures, targeting at reducing the accumulation of liquids (oil & water) in the system
Dynamic Simulation Modelling Study	Norwegian office of a Malaysian FPSO Constructor	Ghana	Dynamic Simulation Study to test and verify relief scenarios for a Non-Associated Gas line in a Ghanaian FPSO	Aspen HYSYS	2018	EPC	Oil & Gas (FPSO)	Inprocess executed several scenarios using the FPSO dynamic model to test and verify relief scenarios for the Non-Associated Gas processing line in John Agyekum Kufuor FPSO in Ghana coast

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: TEAM_Logic ABB 800xA	Czech Oil Refiner and Petrochemicals	Czech Republic	Operator Training System for an Olefins Steam Cracker	Aspen HYSYS	2018	Operator	Petrochem	Inprocess has developed a virtualized version of the OTS for an olefins steam cracker for a petrochemicals site located in the Europe. The dynamic process model was built in Aspen HYSYS; the HIMA Elop-II Safety System was replicated in the dynamic process model; the ABB 800xA with AC460 control system was emulated via TEAM_Logic for AC460 while the 800xA Operator Consoles were emulated with Inprocess Instructor Station software
Dynamic Simulation Studies for Compression Systems	French Chemicals Company	France	Dynamic Simulation Study for Cracked Gas Compression Trains	Aspen HYSYS	2018	Operator	Petrochem	Inprocess developed a dynamic simulation model, carrying out a series of dynamic simulation scenarios and delivering a training session (including model handover) for two compressor trains for the cracked gas process. One is driven by a turbine (CT1) and one is driven by a motor (CM2), both are constituted by five-stage compression.
Flare Systems Analysis	Canadian oil sands refining company	Canada	Model update and additional runs for new yields in refinery units	Aspen HYSYS	2018	Operator	Refining	After having changed the yields in the refinery units as well as the plant throughput, client wanted Inprocess to review the conclusions reached with the previous dynamic simulation study regarding the adequacy of their Over Pressure Protection System. Inprocess has updated the existing dynamic model with the new operating conditions, and has run the necessary scenarios with the model to analyze and verify the limitations, reporting the main findings and recommendations
Flare Systems Analysis	Spanish Refinery Site	Spain	Flare Dynamic Simulation Update	Aspen HYSYS	2018	Operator	Refining	Inprocess updated different Naphtha Splitter simulation models for a Spanish refinery.
HIPPS or other Depressurization	Italian Engineering Company	Italy	Dynamic Simulation Study HIPPS Verification for a Libyan Offshore	Aspen HYSYS	2018	EPC	Oil & Gas	Inprocess' client requested the Inprocess' services to carry out HIPPS study. The dynamic process simulation study was developed in order to verify if the HIPPS system was able to protect the existing HP separators with the new operating conditions.
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for the Malaysian office of a Norwegian EPC	Switzerland	Dynamic Simulation Study for Compressor Trains	Aspen HYSYS	2018	Equipment Manufacturer	Oil & Gas	Inprocess client requested to carry out a Dynamic Simulation Study for Compressor Trains in an offshore platform, located in Vietnam. In order to achieve the objectives of this project, Inprocess built a Dynamic Model and performed a series of pre-defined scenarios, according to client's comments.

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Dynamic Simulation Studies for Compression Systems	Norwegian office of a Malaysian FPSO Constructor	Ghana	Dynamic Simulation Study to troubleshoot operational problems in MP and LP compressors in a Ghanaian FPSO	Aspen HYSYS	2018	EPC	Oil & Gas (FPSO)	Inprocess executed several scenarios using the FPSO dynamic model to troubleshoot operational problems in MP and LP compressors in John Agyekum Kufuor FPSO in Ghana coast
Dynamic Simulation Modelling Study	Norwegian office of a Malaysian FPSO Constructor	Ghana	Dynamic Simulation Study to test and check operational procedures to start the Non-Associated Gas processing line in a Ghanaian FPSO	Aspen HYSYS	2018	EPC	Oil & Gas (FPSO)	Inprocess executed several scenarios using the FPSO dynamic model to test and check operational procedures to start the Non-Associated Gas processing line in John Agyekum Kufuor FPSO in Ghana coast
Dynamic Simulation Modelling Study	Norwegian office of a Malaysian FPSO Constructor	Ghana	Dynamic Simulation Study on a Ghanaian FPSO model to analyze flare incident	Aspen HYSYS	2018	EPC	Oil & Gas (FPSO)	Inprocess executed several scenarios using the FPSO dynamic model to analyze flare incident in John Agyekum Kufuor FPSO in Ghana coast
Training Courses for Operators	Canadian EPC for an Austrian LPG plant owner in Tunisia	Canada	Process Training Courses for the Operators of an LPG Plant	Aspen HYSYS	2018	EPC	Natural Gas	Inprocess' instructor was in charge of delivering the courses about the processing plant details to the operators in Tunisia. Part of the material was already prepared by the EPC and the Process Licensor and other part was prepared by Inprocess, taking advantage of the simulation models that were built in a separate project to help the EPC in their design phase
DirectConnect OTS: Emerson-DeltaV	Spanish polymers company	Spain	DCS Checkout activities during client DCS migration project	Aspen HYSYS	2018	Operator	Petrochem	During the migration of the plant Distributed Control System from previous provider to current one (DeltaV from Emerson), Inprocess staff, involved in the lifecycle project, did carry out the checkout activities for the FAT version of the DCS, helping final client to reduce the number of onsite DCS commissioning hours
Dynamic Simulation Modelling Study	Argentinian Engineering Company	Argentina	Feasibility CFD Study for the backwash operation of columns		2018	EPC	Bulk Chemicals	Inprocess, with the help of a local university, carried out a feasibility study, using Computational Fluid Dynamics software (open source) to check possible design alternatives for the liquid distributor in the bottom of a wash column where adsorbed components were desorbed and washed when operating with backwards flow

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Dynamic Simulation Studies for Compression Systems	Spanish Engineering Company for a Saudi NOC	Spain	Dynamic Simulation Studies for Compression Plants	Aspen HYSYS	2018	EPC	Oil & Gas	A Spanish engineering company was awarded the contract to carry out the Haradh Gas Plant EPC project. The purpose of the EPC project is to boost the non-associated gas pressure from the gas gathering system to Haradh Gas Plant and/or Hawiyah Gas Plant, allowing the wellhead pressures to be reduced. This lower pressure will improve or extend the field production profile. Inprocess was requested to perform a Dynamic Simulation Analysis aimed at verifying the adequacy of the instrumented protection system, at confirming the stable operation during different operational modes with the existing control scheme and at providing support to the EPC on the design of the ASV and CGBV. The project consisted of three main packages: • North Haradh Gas Compression Package • Satellite Gas Compression Package • South Haradh Gas Compression Package Each package had three gas compression plants located at different emplacements and, in turn, each of the plants contained a certain number of compression systems
Advanced Training Content	Spanish Oil Company (Chemical Division)	Spain	Steady State Model + Dynamic Model + Training Material for Engineers in a Petrochemicals Plant	Aspen HYSYS	2018	Operator	Petrochem	Taking advantage of the dynamic simulation models already built for an OTS in a similar plant the operator owns in Shanghai (China) Inprocess modelling engineers developed the steady state version of the Spanish Cumene and Phenol producing units in order owner engineers could use it to test and check possible operating points. On top of the steady state versions, Inprocess has also been requested to create the dynamic model of the three producing lines in order to help Operations department in designing and applying operating procedures. Simultaneously, Inprocess has created training material that has been used to train owner's engineers on how models were built and how they can be used in the future

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Model linked to DCS	Norwegian Oil&Gas Operator	Norway	On-Line Model Based Application Using Process Simulation (Twin Model	UniSim Design	2018	Operator	Oil & Gas	Development of a production software application, based on a simulation model in UniSim Design of an oil & gas field and processing units, being connected to the cloud PI database, which is capable of tuning the model with current production conditions, in order to predict future behavior of the whole asset. The fitting algorithm, with poor data rejection, has been built in MATLAB and the Inprocess Instructor Station has been used as data communication hub. The application is using as GUI the same HMI than the real DCS is using
Dynamic Simulation Modelling Study	Qatar Oil & Gas Company	Qatar	Dynamic Simulation for Over Pressure Scenario Validation	Aspen HYSYS	2018	Operator	Oil & Gas	Inprocess' client requested the dynamic simulation study for Over Pressure Scenario Validation in order to determine the capacity of the system to avoid reaching the design pressure of equipment when in the event of a Thermal Reactor' shutdown. Inprocess also studied the maximum achievable pressure in the super-heater coils under worst case conditions.
Dynamic Simulation Modelling Study	Swedish Refinery	Sweden	Dynamic Simulation Study for a Tube Rupture scenario in the furnace of the Sulphur Recovery Unit (SRU)	Aspen HYSYS	2017	Operator	Refining	Inprocess developed the dynamic model of Claus Unit in order to investigate the propagation of a pressure wave through the unit to understand how high the pressure can rise.
Flow Assurance Analysis	Spanish Engineering Company for a Bolivian Operating Company	Spain	Dynamic Analysis of the hydraulics of the load and unload circuits of cargo ships	OLGA	2017	EPC	Oil & Gas	Inprocess carried out an analysis of the hydrodynamic behavior of the loading and unloading lines in cargo ships for a new terminal using OLGA. Special attention was devoted to analyze water hammer effects when motorized valves were closed unexpectedly
HIPPS or other Depressurizatio n	Italian Oil & Gas Industry	Italy	Dynamic Simulation Study HIPPS Verification for Oil & Gas Platform	Aspen HYSYS	2017	EPC	Oil & Gas	Inprocess' client requested the Inprocess' services to carry out HIPPS study. The dynamic process simulation study was developed in order to verify if the HIPPS system was able to protect the existing HP separators with the new operating conditions.

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Dynamic Simulation Modelling Study	French Chemicals Company	France	Dynamic Simulation Study for EDC Cracking Furnaces and HCL Distillation Column	Aspen HYSYS	2017	Operator	Bulk Chemicals	Inprocess developed a dynamic simulation study in order to: - Determinate the flowrates to be evacuated due to the furnaces shut-down. - Determinate the on/off valves sizes to be installed. - Analyze the system/flow behaviors during the furnaces shut--down. - Estimate the flow rates generated by a pipe rupture.
Dynamic Simulation Modelling Study	Oil Refinery in Finland	Finland	Dynamic Simulation Study for Finland Refinery	Aspen HYSYS	2017	Operator	Refining	The main objectives for the model were to develop a simulation model including the modelling of seven underground caverns with connections crude oil feed and gas to be vented. The model also included the time actions like: ship and railway unloading, crude charging to process, maintenance broke when one cavern was sealed off from others. Inprocess developed the project using Petro-SIM as the process simulation engine.
Steady State Simulation Modelling Study	Spanish Engineering Company	Spain	Steady State Study of a Phenol Column	Aspen HYSYS	2017	EPC	Petrochem	Inprocess developed a steady state model of a Phenol Column. The main objective of this study was to determinate the efficiency of the column. Furthermore, Inprocess' Client had requested the simulation of the modified column.
Flare Systems Analysis	Czech Petrochemical Company	Czech Republic	Flare Revalidation Project and Knowledge Improvement Program (KIP)	Aspen HYSYS	2017	Operator	Petrochem	During this project, Inprocess developed a complete flare network revalidation study according to API520 and API521. The common relief scenarios were analyzed for all the affected units and the sizing cases were determined in order to perform the revalidation study using dynamic simulation methods. In addition, according to the Inprocess Client need to teach engineers on how to revalidate flare networks using Steady State and Dynamic Simulation, Inprocess provided a Knowledge Improvement Program (KIP). KIP allowed to transfer the knowledge acquired during the execution of the project.
Dynamic Simulation Modelling Study	Norwegian office of a Malaysian FPSO Constructor	Norway	Debottlenecking Study for Oil & Gas Project	Aspen HYSYS	2017	EPC	Oil & Gas	Inprocess carried out a Debottlenecking Study for an Oil & Gas Project. During the study, Inprocess developed a series of verification and evaluation studies for the project.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated OTS: Honeywell-TDC3000	Spanish Oil Company (Petrochemicals branch)	Spain	Emulated OTS for Propylene Oxide and Styrene Monomer Plant	Aspen HYSYS	2017	Operator	Petrochem	Inprocess developed an Emulated OTS for a Propylene Oxide and Styrene Monomer Plant. The different process areas of the plant were simulated separately through the execution of different project phases. This allow the early provision of the Emulated OTS for the main part of the plant for the benefit of Inprocess Client.
Flare Systems Analysis	Belgian Olefins plant	Belgium	Flare Network Revalidation Study for a naphtha cracker	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer; Flaresim	2017	Operator	Petrochem	Inprocess reviewed the situation of the safety devices and flare network considering new feedstock added to the naphtha cracker. The new relief loads for all the detailed feedstock scenarios were calculated, and the evaluation of the inlet and outlet piping of each safety device were validated. Finally, Inprocess suggested the solutions to potential non-conformities of the installation found during the study.
Dynamic Simulation Studies for Compression Systems	Spanish Engineering Company for a Kuwait NOC	Spain	Dynamic Simulation Study support for a refrigeration loop compression system	Aspen HYSYS	2017	EPC	Oil & Gas	Inprocess Client required Inprocess to provide technical support and consultancy services for the development of a Dynamic Simulation Study for a refrigeration loop compression system. During the project execution, Inprocess reviewed and validated the results obtained by Inprocess Client to ensure its quality and reliability.
Dynamic Simulation Modelling Study	French Chemicals Company	France	Dynamic Simulation Model for the Chlorine and Hydrogen Sections	Aspen HYSYS	2017	Operator	Bulk Chemicals	Inprocess' Client started-up a new chlorine and hydrogen lines downstream of an electrolysis system. This project is split in two different parts. First, Inprocess, using an existing dynamic model, improved the procedures for the start-up and shutdown of the new unit. Second, Inprocess developed a dynamic model for the hydrogen section to determine how to avoid high pressure differences, which could cause membranes damage.
Dynamic Simulation Modelling Study	Spanish polymers company	Spain	Dynamic Simulation Study for operating conditions improvements in a Synthetic Rubber Plant	Aspen HYSYS	2017	Operator	Petrochem	A Dynamic Simulation Study was carried out in order to identify possible operating problems and to suggest solutions and improvements to optimize the process for obtaining synthetic rubber. Inprocess executed different scenarios to determine all possible improvements. These studies were carried out for two different Process areas: Butadiene and Solvent.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Spanish - Mexican Joint Venture	Spain	Dynamic Simulation Study for a Combined Cycle Power Plant in Mexico	Aspen HYSYS	2017	EPC	Power Plants	Inprocess carried out a dynamic simulation study for a Combined Cycle Power Plant. Inprocess established the necessary gas holdup between compressor and gas turbine to avoid pressure fluctuation and analyzed the maximum pressure variation.
Flare Systems Analysis	Spanish Refinery	Spain	Flare System Revalidation for a Spanish Refinery	Aspen HYSYS; Flarenet	2017	Operator	Refining	Final Client initiated a series of modifications including a revamp to increase the intermediate Paraffin production capacity from 330,000 tm/year to 370,000 tm/year and a modification of existing LAB production facilities. Inprocess carries out the revalidation of the PSVs for different contingencies as well as of the Flare Network for four different cases, to ensure that the results obtained by Inprocess' Client are valid.
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer	Switzerland	Dynamic Simulation Studies for a MOPICO-type compression system	Aspen HYSYS	2017	Equipment Manufacturer	Oil & Gas	Inprocess client requested a Dynamic Simulation Study for a compressor system project. In the project was included two integrated high speed motor driven compressor (type MOPICO) that could be operated either in series or parallel configuration. The Inprocess' study confirmed the operation under a number of defined procedural and upset conditions.
Dynamic Simulation Modelling Study	British FPSO Operating Company	Ghana	Dynamic Simulation Study for two Ghanaian FPSOs to check operational issue when both produce in parallel	Aspen HYSYS	2017	Operator	Oil & Gas (FPSO)	Inprocess' client wanted to check the impact in the operation of the gas export pipeline, from TEN and Jubilee FPSOs, specifically of the control system of the HP & GI compressors when both FPSOs were producing alone and together.
Dynamic Simulation Modelling Study	Italian EPC	Italy	Dynamic Simulation studies for an expansion project	Aspen HYSYS	2017	Operator	Natural Gas	Inprocess client initiated an Expansion Project to commercialize the incremental resource into high margin gas markets based on a single LNG (liquefied natural gas) train expansion. Inprocess carried out an integrated dynamic simulation model of the facilities in operation and the new ones focusing on the steam and power system, in order to achieve a N+1 operating philosophy for the steam turbine generators and auxiliary boilers.
Steady State Simulation Modelling Study	Hydrocarbons exploration and production company	Norway	Upstream Steady State model update for future dynamic simulation	Aspen HYSYS	2017	Operator	Oil & Gas	Inprocess engineers updated a series of Aspen HYSYS Steady State models with new PVT data and well compositions and trained the client on the model modifications.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated OTS: Wonderware	Omani Consultancy and Engineering company	Oman	Dynamic Simulation Study for a Gas Grid Integration and Emulated Operator Training System	UniSim Design	2017	EPC	Natural Gas	Inprocess carried out a detailed concept study of the Gas Grid pipeline system to identify and evaluate all possible options required to meet all gas delivery specifications and Gas Grid capacity for a minimum of 10 years. Once the dynamic models were created, Inprocess developed an Emulated OTS for the complete Gas Grid.
Emulated OTS: Yokogawa-CentumVP	Process Licensor Company	Denmark	High-fidelity Operator Training Environment for a Methanol Plant	VMGSim	2016	Process Licensor	Bulk Chemicals	Development of a high-fidelity Operator Training Environment, composed by a series of training modules to be used to learn about the fundamentals of unit operations (based on Inprocess' training environment: ITOP) and an emulated solution for a methanol plant OTS, founded on a dynamic simulation model built on VMGSim technology. The architecture of this training environment consisted on a web-based infrastructure. This approach allowed different thin-clients to access the different operator training functionalities from different PCs, sitting at various company locations. The remote environment allowed the interaction from clients to the central application in a smooth and non-intrusive way.
Dynamic Simulation Modelling Study	Oil Refinery in Finland	Finland	Fluid Catalytic Cracking unit (FCC) Yield Shift Reactor Modelling	Aspen HYSYS	2016	Operator	Refining	The client was interested in the development of a Dynamic model for its FCC in order to use this model for an OTS. Inprocess performed a FCC Yield Shift Reactor Modelling based on FCC Steady State model.
Steady State Simulation Modelling Study	Qatar Oil & Gas Company	Qatar	Hydraulic performance check for non-licensed process units, major lines and equipment of a train downgraded operation in a gas plant	PRO/II	2016	Operator	Oil & Gas; Natural Gas	The Phase I of the study was performed by Inprocess in order to determine the maximum possible operating capacity limits, by considering the safety limitation factors, when increasing the production of the wells. Once capacity limits were determined, during project Phase II, Inprocess updated a series of PRO/II simulation files provided by client and it performed the hydraulic performance check for the non-licensed units, major lines and equipment in scope.
Dynamic Simulation Modelling Study	Spanish polymers company	Spain	Dynamic Modelling of a Butadiene Plant for operating transient analysis	Aspen HYSYS	2016	Operator	Petrochem	The main objective of this project was to optimize the area alarm of the butadiene process. Inprocess developed a dynamic simulation modelling of the butadiene area in order to carry out the analysis of the plant's dynamic behavior, which could help to identify the operating conditions that lead to the activation of the plant section alarms.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Yokogawa-CentumVP	Major FPSO constructing and operating company	Brazil	Operator Training System for a FPSO in Brazil	UniSim Design	2016	EPC	Oil & Gas (FPSO)	Inprocess carried out an Operator Training System for a FPSO in Brazil. The OTS was developed as a direct connect solution using Honeywell UniSim Dynamic model and Yokogawa's Centrum VP DCS emulator system.
Steady State Simulation Modelling Study	Hydrocarbons exploration and production company	Norway	Upstream Steady State model update for new production conditions	Aspen HYSYS	2016	Operator	Oil & Gas	Inprocess engineers updated an Aspen HYSYS model used to compute the hydrocarbons allocation. The modifications consisted on: - Updated compressor performance curves for the LP compressor - Re-routing of LP compressor suction line form the inlet separators - New parameter limits under "set-up" tab in the Company Oil Recovery Factor sheet
Dynamic Simulation Studies for Compression Systems	Middle East EPC company	Iran	Dynamic Simulation Study for an Acid Gas Compression Unit	Aspen HYSYS	2016	EPC	Oil & Gas	Dynamic simulation study of an acid gas compression system in a gas treating plant, driven by a gas turbine. The acid gas removed in the gas treating solvent units, plus the propane regeneration gas with a high sulphur contents, was compressed by the acid gas compression system, object of this dynamic study The main objectives of the study was to predict the behavior in transient conditions of the compression system. To achieve this, Inprocess carried out the analysis of the different operational cases like start-up, shut down, and side stream cut off.
Steady State Simulation Modelling Study	Spanish Refinery Site	Spain	Modelling and Calibration of a Platformer Unit in a Spanish Refinery	Aspen HYSYS; RefSYS	2016	Operator	Refining	The project's main objective was to deliver a calibrated Catalytic Reformer Unit (Platformer) simulation model for a Spanish refinery. Model calibration was based on four sets of plant data provided by client. A data reconciliation step was deemed necessary in order to redistribute possible instrumentation errors. A specific model in Aspen HYSYS Refinery was used for model development and calibration. Model handover meeting included a model delivery workshop, where the main model characteristics, and its possible future uses, were detailed to client.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Middle East National Petroleum Company	United Arab Emirates	Turbo Expander/Residue Gas Compressor Dynamic Simulation Study	Aspen HYSYS	2016	EPC	Natural Gas	Inprocess delivered a Dynamic Simulation Study for a Turbo Expander/Residue Gas Compressor, for a Gas Plant Train in Kuwait in order to confirm high operational safety and reliability of the system. Consequently, the project: - Verified the Instrumented Protection System (response of the antisurge control system / adequacy of the Turboexpander protections) - Confirmed the stable operation during start-up and shutdown with existing control scheme. - Validated the stable Turboexpander and Residue Gas Compressor operation under minimum - maximum loadings and response to flow rate variations. - Confirmed the stable operation during sequencing for mode switching to / from JT mode. - Confirmed the adequacy of the overpressure protection system of the Demethanizer installed downstream of Turboexpander.
Flare Systems Analysis	O&G Field Operator in Bolivia	Bolivia	Dynamic Simulation Studies for the Flare Network of an Oil & Gas field	Aspen HYSYS; Flarenet/ Aspen Flare Analyzer; OLGA	2016	Operator	Oil & Gas	In a previous project for this client, Inprocess supplied a high fidelity OTS of an oil & gas field. In this new project, client requested to deliver dynamic simulation studies for the field flare network, taking advantage of the previously developed OTS dynamic model. Additionally, Inprocess updated the OTS dynamic model with current field operating data.
Flare Systems Analysis	Spanish Refinery Site	Spain	Flare Network Analysis and Dynamic Simulation Study	Aspen HYSYS; Flarenet	2016	Operator	Refining	Inprocess was requested to deliver a rigorous analysis of the flare network requirements during GPF using dynamic simulation. Results were consequently used to re-assess flare network capacity and the safety philosophy of the refinery unit. Eight (8) units of the Refinery were analyzed under dynamic mode.
DirectConnect OTS: Kongsberg-K-Chief700	Norwegian office of a Malaysian FPSO Constructor	Norway	Lifecycle Operator Training System for a Development Project	Aspen HYSYS	2016	EPC	Oil & Gas (FPSO)	In a previous project, Inprocess developed a high-fidelity dynamic simulation model, including all topside equipment with detailed design data. Taking advantage of the existing model, Inprocess carried out a Lifecycle approach for the Operator Training System (OTS) of the FPSO, comprising thus three phases: - The Control Narrative Verification, - The ICSS Checkout, and the - Direct-Connect OTS (Aspen HYSYS with Kongsberg K-Chief DCS)

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
DirectConnect OTS: Emerson-DeltaV	Swedish Refinery	Sweden	Operator Training System for a new Vacuum Distillation Unit (VDU)	Aspen HYSYS	2016	Operator	Refining	The client had approved the construction of a new VDU. For this reason, Inprocess was asked to develop an OTS in order to train the owner's operators of the control room. The new OTS would be a direct connect ones to the DCS emulator software: DeltaV. The OTS hardware architecture was reused from other OTS commissioned by Inprocess.
Dynamic Simulation Studies for Compression Systems	Spanish - Mexican Joint Venture	Spain	Dynamic Simulation Study for a Turbine and Gas compressors in a Combined Cycle Plant	Aspen HYSYS	2016	EPC	Power Plants	A Dynamic Simulation Study was carried out in order to analyze the transient pressure of gas turbine fluctuations. Additionally another Dynamic Simulation Study did investigate the transient pressure when gas compressor change over.
Flare Systems Analysis	Petroleum Refinery in Spain	Spain	Revalidation of PSVs in a Vacuum Distillation Unit (VDU), plus Auditing EPC work	Aspen HYSYS	2016	Operator	Refining	Determination and identification of the relief scenarios that needed to be considered for every unit (or group of units) that were protected by the safety device. The quantitative determination of the load associated with every relief scenarios was calculated. The relief load calculation was done by using an Aspen HYSYS case including the simulation model of the process unit working at current/design operating condition. This project includes Auditing EPC work.
Flare Systems Analysis	Petroleum Refinery in Spain	Spain	Revalidation of the PSVs in a refinery Vacuum Distillation unit (VDU)	Aspen HYSYS; Flarenet	2016	Operator	Refining	VDU under a Cooling Water Failure and GPF was analyzed under dynamic mode. Flare Network requirements were analyzed using the results from the Dynamic Simulation Study of the VDU.
Flare Systems Analysis	Norwegian FPSO Operator	Norway	Sensitivity analysis for the LP flare system in a Norwegian FPSO	Aspen HYSYS	2016	Operator	Oil & Gas (FPSO)	Ten sensitivity runs (under dynamic steady state conditions) ranging from 10% to 100% of the Max Oil flow rate from LP separator to LP flare system were run in order to determine how system pressure is affected by increasing flow rates.
Dynamic Simulation Modelling Study	Spanish Engineering Company	United Arab Emirates	Dynamic Simulation Study for an Oil Heater in an Abu Dhabi Surface Facilities	Aspen HYSYS	2016	EPC	Oil & Gas	The project main purpose was to deliver a Dynamic Simulation Study for oil field facilities in Abu Dhabi in order to evaluate the behavior of new valves in the control loops of the inlet to one existing oil heater under pressure control and on another existing oil heater under flow control during selected operational scenarios.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Italian Engineering Company	Italy	Dynamic Simulation Study for Ethylene Refrigerant Compressor	Aspen HYSYS	2016	EPC	Petrochem	Inprocess was requested to carry out a Dynamic Simulation Study for Ethylene Refrigerant Compressor in order to study some serious operational problems that were detected during compressor start-up after driver trip (steam turbine). The aim of the dynamic simulation study in this project was to determine possible improvements in process design that could solve the detected operational problems.
Flare Systems Analysis with Dynamic Simulation Study	Italian Engineering company for a Russian Oil Company	Italy	Dynamic Simulation Study for HP-LP Flare System in an upstream Central Processing Facility (CPF)	Aspen HYSYS; OLGA	2016	EPC	Oil & Gas	Dynamic simulation (using Aspen HYSYS® software) of an existing HP/LP flare system that was upgraded by additional HP Flare. In particular, the HP-LP flare header pressure build up was investigated during different plant flaring scenarios in order to define the HIPPS set point that would trip the CPF.
Steady State Simulation Modelling Study	French Exploration & Production Company (Norwegian Branch)	Norway	Update of the Steady State model used to allocate produced hydrocarbons	Aspen HYSYS	2016	Operator	Oil & Gas	An Aspen HYSYS Steady State model was used by Inprocess' client to calculate the Company Oil Recovery Factor, key element to allocate production and revenue among field owner companies. Due to changes in production flows and composition, the processing plant changed its operation to a new one already planned. The Inprocess engineers updated the allocation simulation model as needed with the new plant configuration.
Flow Assurance Analysis	Spanish Engineering Company for an Emirates NOC	United Arab Emirates	Flow Assurance Study for an oil field in Abu Dhabi	OLGA	2016	EPC	Oil & Gas	The Transient Analysis Study of the pipeline system was divided in two main steps: - Steady state flow validation with the objective to validate pressure losses and performance of the systems installed at the pipeline inlets (well head chock valve), and to validate the inlet and outlet pressure and temperature for each pipeline. - Transient Analysis Study was aimed at calculating transport system behavior during flow variation associated with start-up, shut-down, pigging, etc. the blowdown operation was also analyzed in order to define the discharge rate, duration, pipeline internal pressure, temperature and slug evolution.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for an Omani oil company	Oman	Dynamic Simulation Study for a Compression System in Oman (Phase II)	Aspen HYSYS	2016	Equipment Manufacturer	Oil & Gas	A dynamic simulation study was performed in order to confirm the operation of the HP and LP acid gas compressors, gas export compressors and flash gas LP and HP compressors under a number of defined procedurals and upset conditions. The model allowed evaluating the design and identifying potential problems. The objectives for the study were to check the proposed emergency shut-down procedures and recommend changes, if deemed necessary; to verify the suitability of the anti-surge control system and recycle valve sizing; to identify the requirement for hot or cold gas by-pass compressor cycle.
Dynamic Simulation Studies for Compression Systems	Major FPSO constructing and operating company	Ghana	Dynamic Simulation Study for the modification of a FPSO located in Ghana	Aspen HYSYS	2016	EPC	Oil & Gas (FPSO)	New fields had been discovered in Ghana region. It was intended to produce from these discoveries to the FPSO. Based on the fact that the gas capacity was increasing, it required both trains of MP, HP, and gas Injection Compressors to be in operation to accommodate the final production. Since this was not how the gas system was originally designed, there were concerns about the control of two compression trains operating in parallel and Dynamic Simulation Studies were required to be carried out by Inprocess in order to address these concerns.
Flare Systems Analysis	Spanish Oil Company	Spain	Relief analysis to check the adequacy of the safety devices of a petrochemical plant	Aspen HYSYS; Flarenet	2016	Operator	Petrochem	Adequacy study of the safety devices of a petrochemical plant in Spain in order to evaluate the flare system. The relief requirement were reviewed for selected process units carrying out several emergency scenarios, among which: Power failure, cooling water failure, fire in main equipment and blocked outlet.
DirectConnect OTS: Emerson-DeltaV	Swedish Refinery	Sweden	Operator Training Systems for the Isocracker (ICR) and the Hydrogen Production (HPU) units in a Swedish Refinery	Aspen HYSYS	2015	Operator	Refining	Client had an OTS installed for the FCC unit and was interested in extending its OTS capability to two additional units: Isocracker (ICR) and Hydrogen Production (HPU) units. Client requested a new OTS would be a direct connect ones to the DCS emulator software: DeltaV SimulatePro. In addition, the upgrade of the instructor functionality of the existing OTS for the FCC unit with the Inprocess Instructor Station was also been part of the project scope.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated Operator Training System	Spanish EPC and Process Licensor	Spain	Dynamic Model, Process Trainer and Operator Training System for a Nitric Acid Plant	Aspen HYSYS	2015	Process Licensor	Fertilizers	Many nitric acid plants had been designed and erected by Client based on its own technology. In order to complement the Client technological offer to their clients, it was been required the development of a dynamic model of the plant that would be used by the Client to show the plant operability to current customers and to show plant and technology capabilities to potential customers. As an extended scope, once the dynamic model of the plant would be available, it would be evolved to a Process Trainer and then to an Operator Training System.
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for an Emirati oil company	United Arab Emirates	Dynamic Simulation Studies for the Compressors in an Abu Dhabi oil & gas field	Aspen HYSYS	2015	Equipment Manufacturer	Oil & Gas	At client operating plant there were two compression trains in operation. The Client requested to install new compression trains whose correct operation could be confirmed under a number of predefined procedural and upset conditions through dynamic simulation.
Flare Systems Analysis	Qatar Oil & Gas Company	Qatar	PSV and Flare Network Revalidation for Safety Limitations during train downgraded operation	Flarenet	2015	Operator	Oil & Gas	The Operating company of offshore field and onshore processing facilities wanted to increase the wells production. One of the main limitations was the design of the flare discharge network. It was requested to Inprocess to validate if the existing flare system was capable of handle emergencies for the proposed new production rates.
Steady State Simulation Modelling Study	O&G Field Operator in Bolivia	Bolivia	Steady State Simulation of pipelines in a Bolivian O&G field	Aspen HYSYS	2015	Operator	Oil & Gas	With the objective of making production forecast for different future scenarios, without making physical shunting in the field, Inprocess' client required an integrated steady state simulation model. Client expected to later integrate the steady state pipeline model developed by Inprocess with a reservoir simulation model (already owned by client) in order to obtain an integrated simulation system which allowed to study different production scenarios.
Emulated OTS: Siemens-PCS7	Dutch Exploration and Production Company	Brazil	Process Trainer and Training Program for the operators in a Brazilian FPSO	Aspen HYSYS	2015	Operator	Oil & Gas (FPSO)	A previously developed training system for a sister FPSO was adapted to the operating conditions of FPSO. New exercises, new procedures, other small scenarios were developed and incorporated into this new Process Trainer. Associated with the development of the tool, there were also operator training sessions, led by Inprocess instructors, at client site.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Studies for Process Control Analysis	French Petroleum Refinery	France	Support to integrate Dynamic Simulation model and APC Controller for a de-Propanizer Column	Aspen HYSYS	2015	Operator	Refining	The intention of Inprocess' client was to integrate an in-house developed routine to specifically address non linearity issues around quality control for binary columns with MVPC technology. Before moving to testing this integration on the real plant, the client intended to validate the solution through a simulation representing a reasonable process response, being sure the simulated system exhibited a process behavior more realistic than just simple linear behavior
Flare Systems Analysis	Petroleum Refinery in Spain	Spain	Flare Network Revalidation Study using Steady State Simulation	Flarenet	2015	Operator	Refining	A Spanish Refinery expressed to Inprocess the interest in applying process simulation to revalidate the flare network once a more accurate flare loads were calculated in a separate project by means of dynamic simulation.
Software Extension and Programming	Petroleum Refinery in Spain	Spain	Development of a PSVs Database software for an oil refinery	Aspen HYSYS; Flarenet	2015	Operator	Refining	After a previous project carried out by Inprocess, the refinery owned a series of databases for every unit that was discharging to the flare network. On top of that, the client wanted to own a tool that would be capable of managing all the existing PSVs databases, together with all associated documentation, and that could facilitate the work of all involved personnel in the refinery.
Dynamic Simulation Modelling Study	British FPSO Operating Company	Ghana	Dynamic Simulation Study for a FPSO to be installed in Ghana coast	Aspen HYSYS	2015	Operator	Oil & Gas (FPSO)	Inprocess developed and delivered a dynamic simulation model of the entire processing facility starting from the Top of Riser (ToR) ESD Valve through to the cargo tanks. Inprocess engineers confirmed the behavior of the systems under a number of defined procedural and production upset conditions including but not limited to start up, shut down (normal & emergency), turndown, sudden loss of refrigerant, loss of cooling and/ or heating medium, inability to export gas due to sudden shutdown of the plant.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	Spanish Refinery	Spain	Dynamic Simulation Study for the Chilling Water Network of a refinery	Aspen HYSYS	2015	Operator	Refining	The cooling water circuit of Olefins plant consisted of 9 refrigeration cells, 4 pumps and various collectors that distribute water to consumers of Olefins plants, hydrogenation of pyrolysis gasoline, benzene plant and spent soda caustic treatment plant. A 1991 hydraulic study determined the distribution of cooling water and checked that all the exchangers received a rate higher than required for process water. In this study the benzene plant and the treatment of soda caustic were not included because these units were subsequently installed. Additionally, the circuit had 3 pumps and 8 cells. The aim of current project was to reproduce in a dynamic simulation the hydraulic calculation make previously by using a tool that allowed easy modifications by users trained to update the study to the installation.
Dynamic Simulation Modelling Study	Milan-based EPC (Indonesia Office)	Indonesia	Dynamic Simulation Study for the steam system of an LNG plant	Aspen HYSYS	2015	EPC	Natural Gas	Inprocess developed an integrated dynamic simulation model of the TEO and TEP steam system on a single LNG (liquefied natural gas) train expansion. In addition, Inprocess carried out the dynamic analysis for a set of pre-defined operating scenarios.
HIPPS or other Depressurizatio n	Italian EPC	Italy	Dynamic Simulation Study HIPPS verification for an offshore Libyan Platform	Aspen HYSYS	2015	EPC	Oil & Gas	Due to the fact that the gas treating capacity of a Libyan platform was expected to be increased, a dynamic process simulation study was required in order to verify if the HIPPS system was able to protect the existing HP separators with the new operating conditions.
Dynamic Simulation Modelling Study	Norwegian office of a Malaysian FPSO Constructor	Ghana	Dynamic Simulation Study for a Development Project	Aspen HYSYS	2015	EPC	Oil & Gas (FPSO)	Inprocess developed three dynamic simulation models of the compression, produced water and sea water systems. Inprocess detailed the results obtained when testing the process control and protection devices by means of dynamic simulation
Flow Assurance Analysis with Dynamic Simulation Study	Spanish-Italian Joint Venture operating Venezuelan Oil&Gas fields	Spain	Dynamic Studies and Tech assistance at a Venezuelan Oil&Gas site	Aspen HYSYS; OLGA	2015	Operator	Oil & Gas	Client requested Inprocess a process simulated on-site support and training for start-up operation based on Very Early Production Phase (150 MMSCFD) and production increase to Early Production Phase (300 MMSCFD) for the Venezuelan Field. Three on-site support and training stages took place with one Inprocess' process simulation expert working at Client premises in Venezuela.

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Emulated OTS: Emerson-DeltaV	Spanish Engineering Company - Chile office	Chile	Delivery of an Early-OTS for a new Catalytic Reformer (CRU) Unit in a Bolivian refinery	Aspen HYSYS	2015	EPC	Refining	In order to be able to accommodate the schedule changes in the main OTS project, it was proposed to final client the option to develop and deliver an "early-OTS" (OTS with simplified screens and control system still inside the process simulator), that was accepted as a change in scope. A number of additional days was considered for this project and for the original one.
Steady State Simulation Modelling Study	Spanish Refinery Site	Spain	Modelling and Calibration of a semi-regenerative reformer unit in a Spanish refinery	RefSYS	2015	Operator	Refining	The project's main objective was to deliver a calibrated simulation model of the reformer unit for aromatics production using Aspen HYSYS Refining. Inprocess developed the model of the unit using the Aspen HYSYS Refining reformer model and calibrated it using one set of close in time plant data provided by client.
Dynamic Simulation Modelling Study	Canadian Engineering Company	Canada	Dynamic Simulation Studies for a LPG Plant	Aspen HYSYS	2015	EPC	Oil & Gas	The project's main objective was to deliver a dynamic simulation model for an LPG Plant. The aim of the dynamic simulation model required in this project was to verify effective in-scope process and controls during normal operating conditions. This included normal start up, ramp up, ramp down, steady state operating mode, planned shutdown, emergency shutdown without equipment depressurization, and emergency shutdown with equipment depressurization. The project also included a Knowledge Improvement Program (KIP) through which the Client engineers acquired the know-how around dynamic model building and scenarios execution
Dynamic Simulation Modelling Study	USA Engineering Company	United Arab Emirates	Dynamic Simulation Studies for VRU and IAC compressor systems	Aspen HYSYS	2015	EPC	Oil & Gas	Inprocess used the existing dynamic model of Vapor Recovery Unit (VRU) already developed by Inprocess in a previous project, and developed a model of the Instrument Air Compressor (IAC) system as, by identifying and collecting the process data required to perform the dynamic simulation of the system. In addition, Inprocess performed a series of operating scenarios for both systems located in Umm Lulu Field.
Flow Assurance Analysis	Spanish Engineering Company for an Algerian Operating Company	Spain	Flow Assurance Study for Algerian Oil Field	OLGA	2015	EPC	Oil & Gas	Flow Assurance Study based on the dynamic simulation to evaluate and identify the various problems that was able to be faced during start-up, shutdown, pigging operations for selected gathering system trunk lines and transfer lines of the Algerian Oil Field using OLGA Software .

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Flow Assurance Analysis with Dynamic Simulation Study	Abu Dhabi-based EPC for Abu Dhabi Oil Company	United Arab Emirates	Depressurization, MMDT and Hydrate Study for Offshore Oil Field	OLGA	2015	EPC	Oil & Gas	The project's main objective was to develop pipeline simulation models with OLGA in order to: * Perform WHT topside depressurization and report minimum metal temperature and confirm it is within MMDT, fluid temperature at restriction orifice (RO) inlet & outlet, depressurization rate and depressurization time for WHTs topside well fluid and gas lift facilities. * Identify all possible cases for hydrate formation and provide recommendation for mitigation measures to prevent the hydrate formation for all the cases. * Identify the depressurization and hydrate formation cases of well fluid, gas lift and excess gas.
Dynamic Simulation Modelling Study	Italian Major Oil Company	Italy	Dynamic Simulation Study for a Floating Production Unit	Aspen HYSYS	2015	Operator	Oil & Gas	Through a series of dynamic simulation studies carried out by Inprocess our client verified the equipment suitability for defined design cases of the floating production unit, including compressors, drivers, pumps, heat exchangers and columns performances. It evaluated the control valve sizing, the primary and secondary protection systems and the instrument ranges and alarms. In addition, the engineering model was be used for control system design studies including Compressor surge protection, Control strategies, Controllers tuning, Shutdown philosophy and sequences (including PSD and ESD) and Complex control sequences and procedures. Finally, the engineering studies cover operability studies in addition to verification of operational procedures.
Dynamic Simulation Studies for Process Control Analysis	French Major Oil Company	France	Dynamic Model of a Refinery Reformer Fractionator for APC studies	Aspen HYSYS	2015	Operator	Refining	A dynamic simulation model of the fractionator column of the catalytic reformer of a refinery in France has been developed and handed over to the client. The main purpose of such a high-fidelity dynamic model is to test new Advanced Process Control alternatives before implementing them in the real plant
DirectConnect OTS: Siemens-PCS7	German EPC and Process Licensor	Germany	Operator Training System for a new Ammonia and Hydrogen plant in USA	UniSim Design	2015	EPC	Fertilizers	An Operator Training System, direct connect with Siemens DCS, UniSim Design Dynamic Simulation, and Inprocess Instructor Station, was developed and implemented in a new Ammonia plant (and its associated Hydrogen plant)

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Training Program	Spanish Oil Company (Chemical Division)	Spain	Process Trainer Courses for PTA column operators (I) & (II)	Aspen HYSYS	2015	Operator	Petrochem	After the successful development of a Process Trainer (dynamic model with a user friendly interface), the client requested Inprocess to deliver a series of training course for the operators that would be in charge of running the PTA column in the plant. These courses took place twice, during which around 20 operators were trained on the behavior of the new unit.
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for an Omani oil company	Switzerland	Dynamic Simulation Studies for the Booster Compressors and Recompressor in an Oman Gas Plant	Aspen HYSYS	2015	Equipment Manufacturer	Natural Gas	Dynamic Simulation Study was carried out for the Booster Compressor and Recompressor in Turbo Expanders for an Oman Gas Plant to confirm the operation of the compressor systems under a number of defined procedural and upset conditions. The model will allow evaluating the design and identifying potential problems.
HIPPS or other Depressurizatio n	Milan-based EPC for an Arabian Oil Major	Italy	Third Phase of HIPPS Study for Gas Fields Development	OLGA	2015	EPC	Oil & Gas	Third phase of a dynamic Simulation Study to evaluate HIPPS system of an upstream process plant for new operating conditions, using OLGA. Inprocess was requested to verify the results of the previous study with the model developed by the Customer and perform a sensitivity analysis to determine the minimum HIPS set point to protect the Trunk line.
Dynamic Simulation Modelling Study	Spanish Energy Company - R&D Division	Spain	Simulation studies for a series of potential distillation sequences	Aspen HYSYS	2015	Operator	Bulk Chemicals	A mixture coming out from a biological reactor needed separation and purification in order to reach purities above 99% for some of the alcohols that were in the fermentation broth. Inprocess was requested to prepare the process simulations that would support the conceptual design study in order to select the most promising separation and purification sequence of unit operations
Flow Assurance Analysis	Spanish Engineering Company for an Algerian Operating Company	Spain	Flow Assurance Study for a new field development in Algeria	OLGA	2015	EPC	Oil & Gas	The project main deliverable was the “Transient Flow Assurance” report that detailed the results obtained during the execution of the selected transient simulation scenarios. Steady State reports and OLGA native files were also handed over to the EPC company as part of the project deliverables

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Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for an Omani oil company	Switzerland	Dynamic Simulation Study for Compression System in Oman (Phase I)	Aspen HYSYS	2014	Equipment Manufacturer	Oil & Gas	Dynamic simulation study was performed in order to confirm the operation of the gas injection compression system under a number of defined procedurals and upset conditions. The model allowed evaluating the design and identifying potential problems. The objectives for the study were to check the proposed emergency shut-down procedures and recommend changes, if deemed necessary; to verify the suitability of the anti-surge control system and recycle valve sizing; to identify the requirement for hot or cold gas by-pass compressor cycle.
DirectConnect OTS: APACS/Quadlog	USA E&P Company	United States	OTS for an Alaska Oil & Gas Field in Alpine	Aspen HYSYS	2014	Operator	Oil & Gas	The exploration and production company wanted an OTS to train its team of operators in charge of the control system in a remote facility in Alaska. The control system in place was not a common DCS but a combination of a data acquisition system (InfoPlus.21) and an APACS/Quadlogs controller. The proposed OTS would model the plant facilities with HYSYS, it also simulated the control system with a softcontroller and would use Inprocess Instructor Station software for connectivity, instructor console and emulation of operators consoles.
DirectConnect OTS: ExperionPKS	Swedish Chemical Company	Sweden	Additional Reactor model for the OTS of a Chemicals Plant	Aspen HYSYS	2014	Operator	Bulk Chemicals	The dynamic model of an OTS developed by Inprocess for a chemical plant in Sweden was extended in order to incorporate an additional reactor. The DCS emulation and the instructor and operator consoles were as well modified.
Documentation	Arabian Oil Company	Saudi Arabia	On-site engineer consultancy services to develop step-by-step documentation	Aspen HYSYS; RefSYS	2014	Operator	Refining	One refining simulation consultant from Inprocess stayed for four consecutive weeks at the client headquarters in Saudi Arabia to help and advise on the development of case studies for several refinery units.
Steady State Simulation Modelling Study	Arabian-Chinese Joint Venture	Saudi Arabia	Development of Steady State Simulation models for a series of Refinery Process Units in a new Arabian Refinery	Aspen HYSYS; RefSYS	2014	Operator	Refining	Individual Steady State simulation models were developed for 15 refinery process units and its associated equipment for a greenfield refinery project in Saudi Arabia. Three additional models, combining some of the individual ones into a refinery-wide type, were also part of the project.

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Emulated OTS: Yokogawa-CentumVP	Spanish Oil Company (Chemical Division)	Spain	Process Trainer for Purified Terephthalic Acid (PTA) Columns	Aspen HYSYS	2014	Operator	Petrochem	Inprocess delivered a training tool that enabled operators to modify process variables in the PTA columns dynamic model through a user-friendly HMI in order to study the dynamic behavior of the system. Inprocess' Process Trainer solution combined the Operator Console, the user-friendly interface and the core dynamic model engine (Aspen HYSYS).
Dynamic Simulation Studies for Compression Systems	French Engineering Company (UK office)	United Kingdom	Dynamic Simulation Study of a Booster Fan system for a Carbon Capture Plant	Aspen HYSYS	2014	EPC	Power Plants	A dynamic simulation model of the booster fan system in a Power Station was developed in order to quantify the impact of booster fans operations (start-up, shut-down, etc.) on the pressure profile of the flue gas from the outlet of the Heat Recovery Steam Generator (HRSG) through the flue gas ducting from the duct interface to the Carbon Capture plant (CCP).
Dynamic Simulation Modelling Study	French Operator Company	France	Dynamic Simulation Study for the fuel gas network of a chemical plant	Aspen HYSYS	2014	Operator	Petrochem	Inprocess developed two dynamic simulation models (the current and the future one) for the Fuel-Gas Network in order to evaluate pressure changes at boilers burners against fuels flow disturbances for both plant configurations.
Dynamic Simulation Modelling Study	Spanish Engineering Company	Spain	Dynamic Simulation Study for a Dew Pointing Unit	Aspen HYSYS	2014	EPC	Oil & Gas	A dynamic simulation model for a Dew Pointing Unit was developed and a set of operating scenarios was carefully selected in order to analyze the dynamic response of the system, verifying pressure and temperature limits, at different situations.
Dynamic Simulation Modelling Study	Spanish Oil Company (Refining Division)	Spain	Dynamic Simulation Models for Maleic Anhydride Production Column	Aspen HYSYS	2014	Operator	Refining	Inprocess developed simulation models for the dehydration column in a Maleic Anhydride production plant in order the client could evaluate the column behavior, specifically around reboiler fouling, with regards to operational variables (such as temperature, pressure or load).
Generic Unit Operations Training (ITOP) with Courses	Spanish Refinery Site	Spain	Development of an Operational Efficiency Module for the Generic Unit Operations Training (ITOP)	Aspen HYSYS	2014	Operator	Refining	The client (the training department of an oil refining company) was interested in owning a generic training tool that could teach operators on how to operate "right" a refinery unit but also how to operate if optimally in terms of operational efficiency. To achieve so, Inprocess Training for Operators (ITOP) tool was modified in order to include Key Performance Indicators related to Operational Efficiency, together with a dashboard showing the evolution of such parameters.

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Flow Assurance Analysis with Dynamic Simulation Study	French Engineering Company (Abu Dhabi office) for an Abu Dhabi Oil Company	United Arab Emirates	Dynamic Simulation Study for pipelines and processing plant in a Field Development Project in UAE	Aspen HYSYS; OLGA	2014	EPC	Oil & Gas	A dynamic simulation model for a field development project was developed in order to verify and validate the system behavior and responses to operating upsets and varying process and wells conditions. Two process simulators were required: OLGA for pipelines and Aspen HYSYS for onshore facilities.
HIPPS or other Depressurizatio n	Milan-based EPC for an Arabian Oil Major	Italy	Second Phase of HIPS Study for Gas Fields Development	OLGA	2014	EPC	Oil & Gas	Second phase of a dynamic Simulation Study to evaluate HIPPS system of an upstream process plant for new operating conditions, using OLGA. Inprocess was requested to verify the results of the previous study with the model developed by the Customer and perform a sensitivity analysis to determine the minimum HIPPS set point to protect the Trunk line.
DirectConnect OTS: Emerson-DeltaV	Spanish Engineering Company (Chile office)	Chile	Operator Training System for a New Catalytic Reformer Unit (CRU) in a South American Refinery	Aspen HYSYS	2014	EPC	Refining	An Operator Training System for the New Catalytic Reformer Unit of a refinery in Bolivia was developed and implemented by Inprocess. The dynamic model was built in Aspen HYSYS, the emulation of the DCS and the operators consoles were developed with DeltaV software from Emerson and the instructor station with Inprocess' proprietary software.
Dynamic Simulation Studies for Process Control Analysis	French Exploration & Production Company	France	Dynamic Simulation Study to analyze the Controllability and Flow Assurance Study for Slugging Prediction in a Gabon O&G Plant	Aspen HYSYS	2014	EPC	Oil & Gas	The objective of the project was to tune the dynamic model, once real plant data was made available to Inprocess, in order to match the values obtained by plant instrumentation. Also, a Flow Assurance Study for Slugging Prediction was developed in an onshore Oil & Gas Separation Plant in Gabon.
DirectConnect OTS: Siemens-PCS7	German E&P Operating Company	Germany	Operator Training System for a Gas Oil Separation Plant (GOSP) and the associated Gas Utilization Plant (GUP)	Aspen HYSYS	2014	Operator	Oil & Gas	Operator Training System for the GOSP and GUP at a North-African Field. The dynamic model was built in Aspen HYSYS, the emulation of the DCS and the operators consoles were carried out with SIMIT software from Siemens and the instructor station with Inprocess proprietary software.
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer	Germany	Dynamic Simulation Study for Excess BOG Compressor system in a LNG Plant	Aspen HYSYS	2014	Equipment Manufacturer	Natural Gas	The Project's main objective was to deliver a dynamic simulation study (DSS) for the BOG compression system and to confirm the operation of the compressor system under a number of defined procedural and upset conditions. The model allowed evaluating the design and identifying potential problems.

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Emulated OTS: Siemens-PCS7	Dutch Exploration and Production Company	Brazil	Process Trainer and Training Program for operators in a Brazilian FPSO	Aspen HYSYS	2014	Operator	Oil & Gas (FPSO)	The HYSYS models developed for a previous Dynamic Simulation Study was further developed to an emulated Process and Operator Trainer. In order to transform the already existing engineering simulation models into a Process Trainer, an emulation of the DCS was incorporated into the dynamic model and several training exercises were developed.
Steady State Simulation Modelling Study	French Exploration & Production Company (Norwegian Branch)	Norway	Version Upgrading of an Existing Allocation Simulation Case	Aspen HYSYS	2014	Operator	Oil & Gas	The allocation model being used to calculate CORF (Component Oil Recovery Factor) by Client was not compatible with the latest HYSYS version. Therefore, Inprocess was requested to upgrade the simulation model and the calculator utility in order to use the latest (and future) HYSYS version.
DirectConnect OTS: Emerson-DeltaV	Spanish Oil Company (Chemical Division)	Spain	Replica of the Operator Training System already built for two large chemical plants	Aspen HYSYS	2014	Operator	Petrochem	Inprocess developed an Operator Training System replica for two existing chemical plants in Spain. The modelling was based on the original OTS developed for the two new chemical plants in China. Both plants are owned and operated by the same company.
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for a Japanese FPSO constructor	Switzerland	Dynamic Simulation Study for multiple compressors systems in a FPSO topside	Aspen HYSYS	2014	Equipment Manufacturer	Oil & Gas (FPSO)	Dynamic simulation to confirm the operation of the three individual compressor system under a number of defined procedurals and upset conditions.
Emulated OTS: Rockwell-FactoryTalk	Swiss compressor manufacturer for a British oil company (Ghana office)	Switzerland	Operator Training System for multiple compressors systems in FPSO topsides	Aspen HYSYS	2014	Equipment Manufacturer	Oil & Gas (FPSO)	The existing models of the 3 individual compressor systems were merged in one single model and the compressor systems duplicated and assembled as they will be in the real plant. The resulting model was connected to Rockwell's FactoryTalk to replicate very similar functionality as in the control room. The functionality for the instructor was also implemented by using Inprocess' instructor station software
Steady State Simulation Modelling Study	German EPC Company (Romanian Office)	Germany	Steady State Simulation Support for an Amines System	Aspen HYSYS	2014	EPC	Bulk Chemicals	Inprocess was requested to validate the existing steady state process simulation for an Amines gas treatment and to evaluate possible alternative configurations.

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Steady State Simulation Modelling Study	Spanish Oil Company (Chemical Division)	Spain	Dynamic Simulation models for purified terephthalic acid (PTA) Dehydration Columns	Aspen HYSYS	2014	Operator	Bulk Chemicals	Inprocess developed steady state and dynamic simulation models of the three new columns and associated equipment. These models were used to study the behavior of the system and the results did help the client to enhance their operating decisions. With the dynamic simulation model, the client did analyze different operating conditions for the start-up, shutdown and normal operation of the new purified terephthalic acid (PTA) columns.
Emulated OTS: NP-MarkVI/Easy5	Compressor Manufacturer	Italy	Operator Training System for a Methane Compressor in a LNG Plant	Aspen HYSYS	2014	Equipment Manufacturer	Natural Gas	In a process licensed by Conoco Philips, Inprocess focused on the model on the Gas Turbine, auxiliary equipment (with Mark VI GE property control) and the compressor trains linked to CCC controllers to size the compressor protection system.
DirectConnect OTS: ExperionPKS	Swedish Chemical Company	Sweden	Operator Training System for a Chemicals Plant	Aspen HYSYS	2014	Operator	Bulk Chemicals	An Operator Training Simulator (OTS) was developed as a training tool for the operators of a chemical plant in Sweden was developed. An interesting technical challenge was solved by integrating the rigorous dynamic model in Aspen HYSYS with an emulation software of the Experion PKS from Proconex and an instructor station from Inprocess
Dynamic Simulation Modelling Study	Italian Engineering Company	Italy	Dynamic Simulation Modelling for a Gas-To-Liquids (GTL) Plant	Aspen HYSYS	2014	EPC	Refining	The EPC in charge of the project requested Inprocess to develop a dynamic model of several of the processing units in a Gas-To-Liquids plant. The interactions among the different process units, the utilities and the combined heat and power plant will be tested.
Dynamic Simulation Modelling Study	Italian Engineering Company	Italy	Dynamic Simulation Studies for a LNG plant	Aspen HYSYS	2014	EPC	Natural Gas	The aim of the Dynamic Simulation Study was to demonstrate that the LNG Storage Tanks could act as buffering capacity that stored all the energy released during the loading mode by means of an increase in pressure without reaching the design pressure.
DirectConnect OTS: Emerson-DeltaV	Spanish Engineering Company (Chile office)	Chile	Operator Training System for a Crude Distillation Unit (CDU)	Aspen HYSYS	2014	EPC	Refining	Operator Training System for the Atmospheric Distillation Unit of a refinery in Bolivia. The dynamic model was built in Aspen HYSYS, the emulation of the DCS and the operators consoles was carried out with software DeltaV from Emerson and the instructor station with Inprocess software

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Dynamic Simulation Modelling Study	Spanish Engineering Company (Oman site)	Oman	Dynamic Simulation Studies for a Gas Plant Facility	UniSim Design	2014	EPC	Oil & Gas	The EPC company required Inprocess to design, build and install a high fidelity dynamic process model for a gas plant facilities in Oman. Using the dynamic simulation model, it was checked the operation and stability of the entire facility in the various operating modes. The detailed dynamic simulation helped to confirm process control performance, the adequacy of equipment protection, the adequacy of safety systems, control - safeguarding set points and the adequacy of start-up and shutdown procedures.
DirectConnect OTS: ABB-800xA	French Consultancy Company	France	Operator Training System for Polyols and PG unit in a Petrochemicals Plant	IndissPlus	2014	Operator	Petrochem	An Operator Training System, with INDISS dynamic simulation model connected to ABB's DCS emulation, was developed for the operator of a petrochemicals plant in Saudi Arabia
PSA Studies	Spanish Petroleum Refinery	Spain	Dynamic Simulation Study for a refinery Pressure Swing Adsorption unit (PSA)	Aspen HYSYS	2014	Operator	Refining	Dynamic simulation of a PSA unit in a refinery to purify hydrogen streams. Each step of the cyclic unit operation was simulated and the behavior of the existing unit reproduced by the model. The model run dynamically and once the steady state was reached, the following results was recorded: * Hydrogen recovery * Hydrogen productivity * Hydrogen composition purified product * Composition rejected product
Dynamic Simulation Studies for Compression Systems	Dutch Exploration and Production Company	Brazil	Dynamic Simulation Study for a Topside Compressor Closed Loop	Aspen HYSYS	2014	Operator	Oil & Gas (FPSO)	To verify the initial condition, control strategy and operability of the process system during closed-loop test as well as verification of the utility conditions, since the utility conditions was constrained in the test. The closed loop test of gas compressors intends to use inert gas. Nitrogen was used as the basic test gas, while helium could be added for cooling constraints.
Dynamic Simulation Modelling Study	Swedish Petrochemicals Company (Belgian Brand)	Belgium	Dynamic Simulation of the start-up of a LTRS Refrigeration Unit	Aspen HYSYS	2014	Operator	Petrochem	An existing dynamic model of the unit from a previous project with Inprocess was enhanced to allow for the dynamic simulation of the start-up procedures for the LTRS unit

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Flare Systems Analysis	Spanish Petroleum Refinery	Spain	Determination of the Flare Load for a refinery Crude Distillation Unit (CDU) by Dynamic Simulation Analysis	Aspen HYSYS	2013	Operator	Refining	A Spanish refinery expressed to Inprocess the interest in applying dynamic process simulation to realistically estimate the flare load resulting from a General Power Failure (GPF) for two units of the Refinery: Light-Ends Unit (without de-isohexanizer) in a second project phase
Emulated OTS: Honeywell-TDC3000	Automation Systems Provider (Spanish Office)	Spain	Operator Training System for a Combined Cycle Power Plant	UniSim Design	2013	Equipment Manufacturer	Power Plants	Development of a simulation tool, with training capabilities that was been used to train the operators of the control room of a Combined Cycle Power Plant facility. This kind of applications requires creating a dynamic model of the plant units and connecting it to software capable of reproducing the behavior of the DCS being used to control the plant
Dynamic Simulation Studies for Compression Systems	Dutch Exploration and Production Company	Brazil	Dynamic Simulation Study Extension to expand the original project scope	Aspen HYSYS	2013	Operator	Oil & Gas (FPSO)	Implementation of the dynamically developed control logic for the injection compressor and rerun critical scenarios to check the behavior of the system. Implementation of the compressor manufacturer control logic for the CO2 compressor and rerun critical scenarios to check the behavior of the system. These actions are a consequence of the results obtained by dynamic simulation in the parent project.
Flare Systems Analysis	Spanish Engineering Company	Spain	Dynamic Simulation Flare Load Analysis for a Canadian Oil Sands Field	Aspen HYSYS	2013	EPC	Refining	Dynamic simulation studies were carried out to assess the EPC company in charge of the design of the plant flare network, evaluating the flare loads from different units and for different possible contingencies.
Dynamic Simulation Studies for Compression Systems	German Compressors Manufacturer	United Arab Emirates	Dynamic Simulation Study for a LP Compression System at Upper Zakum Platform	Aspen HYSYS	2013	Equipment Manufacturer	Oil & Gas	To revamp project from Abu Dhabi company to improve volume flow rate capacity of 4 LP compressors which are located in Upper Zakum Platform (Offshore).
Dynamic Simulation Studies for Process Control Analysis	Swedish Petrochemicals Company (Belgian Brand)	Belgium	Dynamic Model for LTRS Refrigeration Unit	Aspen HYSYS	2013	Operator	Petrochem	Our customer was interested in improving the control and operability of the LRTS refrigeration unit in the DeHy plant they operated in Belgium. At present, too much C3 is lost to the fuel gas system so that a solution must be found in order to improve the plant economics. A dynamic simulation process model was developed and handed over to our client in order it could try several new control narratives, either conventional or multivariable.

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HIPPS or other Depressurizatio n	Italian Engineering Company	Italy	Dynamic Simulation Studies to confirm HIPPS	Aspen HYSYS	2013	EPC	Oil & Gas	A dynamic process simulation study to confirm if the PS was able to protect the existing HP Production Drums.
DirectConnect OTS: Siemens-PCS7	German DCS and Automation supplier (Norwegian Office)	Norway	Life Cycle Simulator for a North Sea Field Development Project	UniSim Design	2013	Equipment Manufacturer	Oil & Gas	As part of the Safety Automation System, the operator of the North Sea field and the Engineering company developing the project have specified a Life Cycle Simulation system to be used during the Engineering Phase, the SAS FAT and the Operators Training.
DirectConnect OTS: ABB-800xA	French Consultancy Company	United Arab Emirates	Operator Training System for a Gas Treatment Train	IndissPlu s	2013	Operator	Natural Gas	A Direct-Connect Operator Training System was developed for the UAE operator of a Natural Gas Treatment plant
Flow Assurance Analysis with Dynamic Simulation Study	Korean EPC Company for an Abu Dhabi Oil Company	United Arab Emirates	Dynamic Simulation Study for a Field Development Project in the Persian Gulf	Aspen HYSYS; OLGA	2013	EPC	Oil & Gas	To carry out Dynamic simulation of the integrated process system including artificial islands and Zirku islands process facilities. Prepare all calculations required to ensure smooth start-up, adequate safety response to anticipated emergencies, and orderly shutdown of the systems
Dynamic Simulation Modelling Study	Major Oil&Gas Company	United Kingdom	Dynamic Model version upgrade	Aspen HYSYS	2013	Operator	Oil & Gas	The dynamic model previously developed by Inprocess was requested to be upgraded to a newer version
Dynamic Simulation Studies for Process Control Analysis	French Exploration & Production Company	France	Dynamic Simulation Study to analyze the Controllability of the Slug Catcher and the first Separator in a Gabon O&G Plant	Aspen HYSYS	2013	EPC	Oil & Gas	A Dynamic Simulation Study was carried out to analyze the controllability in order to optimize it, for the new Slug Catcher and Separator in an onshore Oil & Gas Separation Plant in Gabon.
Emulated OTS: Yokogawa-CentumVP	Turkish Petroleum Refinery	Turkey	Operator Training System for a Delayed Coker (DCU) + Knowledge Improvement Program (KIP)	Aspen HYSYS	2013	Operator	Refining	The operator of a Turkish refinery requested Inprocess to develop a dynamic model of their delayed Coker, including an emulation of the DCS system in operation. This emulated OTS was used to train the refinery operators on the normal and abnormal operation of the Coker.
Steady State Simulation Modelling Study	Major Chemical Company (Spanish brand)	Spain	Steady State Study for a Depropanizer Column	Aspen HYSYS	2013	Operator	Bulk Chemicals	A Steady State model of the depropanizer column of a propylene plant was developed by Inprocess. The model was used to simulate the column behavior for two new operating points candidates

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Steady State Simulation Modelling Study	Saudi Refining Company	Saudi Arabia	Simulation Study of an atmospheric/vacuum system (CDU/VDU) for processing 100% KH Crude Oil	Aspen HYSYS	2013	Operator	Refining	Our client will expand developed simulation model processing 50:50 AL: KH crudes, under a Clean fuel project to create a new process simulation model to reflect 100% KH crude oil. The new process simulation shall be developed for Crude and Vacuum Distillation units including CDU Naphtha Stabilizer columns.
Steady State Simulation Modelling Study	German Petroleum Refinery	Germany	Steady State Simulation of a refinery Mild Hydrocracker (MHC)	Aspen HYSYS	2013	Operator	Refining	One of Inprocess existing refinery customers requested to update their existing steady state model for the Mild Hydrocracker (MHC) unit with all safety measures and some additional equipment like amines system, to have a complete simulation for the MHC unit.
Hydrogen Network Study	Spanish Petroleum Refinery	Spain	Refinery Hydrogen Network Flowrates Optimization	Aspen HYSYS	2013	Operator	Refining	The Inprocess optimization application was focused on the H2 Network, with all suppliers and consumers units of the Refinery and external suppliers/consumers. Inprocess analyzed the way the hydrogen network was being managed in the Refinery and it determined how it could be optimally operated by an online application, Inprocess' H2 Network Optimizer.
Dynamic Simulation Studies for Process Control Analysis	London-based Oil & Gas Major - E&P Division	United Kingdom	Control strategy and parameters determination for a flow recycle controller	Aspen HYSYS	2013	Operator	Oil & Gas	Customer found that the MOL pump minimum flow controller showed a very slow response. Since the recycle valve was fully closed most of the time, it is difficult to get any actual plant data to improve the controller response. Based on the existing dynamic model, customer is interested to analyze the control strategy and calculate the pre-settings of the flow recycle controller of the MOL pumps
Dynamic Model linked to DCS	Norwegian FPSO Operator	Norway	Verification of a previous dynamic model for OTS and tuning of PID controllers	Aspen HYSYS	2013	Operator	Oil & Gas (FPSO)	Project Engineering company requested to Inprocess to review, update and improve an existing dynamic model of the FPSO that was developed by a third company in order to build an Operator Training System. Additionally, once the model is closer to plant reality, customer wants Inprocess to tune the control loops of controllers in the DCS
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for a Japanese FPSO constructor	Switzerland	Dynamic Simulation Study for a Reinjection Compressor	Aspen HYSYS	2013	Equipment Manufacturer	Oil & Gas (FPSO)	Dynamic simulation to prove the Anti surge valve sizing and to analyze if any further safety device i.e. Cold gas bypass Valve or Hot gas bypass valve is required to protect the compressor from surge excursions that would harm the compressor

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Dynamic Simulation Modelling Study	Dutch Exploration and Production Company	Brazil	Dynamic Simulation Study for a FPSO in Brazil	Aspen HYSYS	2013	Operator	Oil & Gas (FPSO)	Inprocess client was interested in obtaining the results from several case studies run for different operating conditions and for different emergency scenarios of the FPSO. The main objective of the whole study were to proof the selected control strategies were fit for purpose. Additionally, the study should verify the operability and robustness of the process control system and to check whether controllers that are to be implemented work as intended
Software Extension and Programming	Compressor Manufacturer	Italy	Tailoring an existing HYSYS extension (controller) as per customer request	Aspen HYSYS	2013	Equipment Manufacturer	Natural Gas	After using the release candidate version of the HYSYS extension, a number of modifications to the Graphical User Interface and workflow had been identified. These changes were intended to streamline the usage of the extension along with providing additional options to improve its features.
Dynamic Simulation Modelling Study	Norwegian FPSO Operator	Norway	Dynamic Model Development of a FPSO	Aspen HYSYS	2013	Operator	Oil & Gas (FPSO)	Client wanted to see, in a proof of concept way, the benefits of developing a dynamic model of the FPSO
Dynamic Simulation Modelling Study	Italian Engineering Company	Italy	Dynamic Simulation Study for a Gas Utilization Plant	Aspen HYSYS	2013	EPC	Oil & Gas	The Project's objective was to deliver dynamic simulation of the provided process scheme, including additional details from PFD to be supplied, Possible uses of the dynamic model was: • Evaluate operational procedures • Determine the effects of unit trips (compressors, pumps, heating medium, etc.). • Ensure compressors' protective and safety systems operate effectively under all require conditions • Evaluate the operation of the existing columns • Verify that the control system operates effectively under the required conditions
Dynamic Simulation Studies for Compression Systems	German Compressor Manufacturer	Germany	Dynamic Simulation Study for the compressors in a Floating LNG	Aspen HYSYS	2013	Equipment Manufacturer	Natural Gas	The project main objective was to deliver a dynamic simulation study to check and confirm the operation of the Excess BOG compressor for the Floating LNG project under a number of defined procedural and upset conditions. The model allowed evaluating the design and identifying potential problems

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Hydrogen Network Study	Spanish Petroleum Refinery	Spain	Hydrogen Network Optimizer installation and execution	Aspen HYSYS	2013	Operator	Refining	The proposed optimization application was focused on the H2 Network, with all suppliers and consumers units of the Refinery and external suppliers/consumers. Inprocess had analyzed the way the hydrogen network was being managed in the Refinery and how it was able to be optimally operated by an online application, here referred as H2 Network Optimizer.
Dynamic Simulation Modelling Study	Spanish Engineering Company	Spain	Dynamic Simulation Study for the compression system of a Combined Cycle Power Plant	Aspen HYSYS	2013	EPC	Petrochem	Steady State check and Dynamic Simulation Study to verify the fuel supply to the gas turbine in the combined cycle was always ensured in front of several equipment malfunctions and unexpected disturbances
Knowledge Improvement Program (KIP)	Norwegian FPSO Operator	Norway	Technical Support in developing a simulation model during pre-FEED phase	Aspen HYSYS	2013	Operator	Oil & Gas (FPSO)	Optimization of a simulation model developed in Aspen HYSYS. The model was enhanced and a process control report was issued.
Dynamic Simulation Studies for Compression Systems	Petroleum Refinery in Spain	Spain	Dynamic Simulation Study for the propylene storage and refrigeration system	Aspen HYSYS	2013	Operator	Refining	A dynamic process simulation study of the storage system was delivered in order to evaluate the required compressor capacity. The capacity evaluation was based on the dynamic analysis of the produced gas during selected operating modes of the plant
DirectConnect OTS: Emerson-DeltaV	Spanish Oil Company (Chemical Division) - China branch	Spain	Operator Training System for two large chemical plants	Aspen HYSYS	2012	Operator	Petrochem	Operator Training System for two new chemical plants with a total of 3000 I/O points, based on dynamic simulation model, DeltaV control system & SIS emulation, and using Inprocess' proprietary Instructor Station (IIS)
Emulated OTS: Honeywell-TDC3000	Spanish Petroleum Refinery	Spain	Process Trainer tool for a series of distillation columns	Aspen HYSYS	2012	Operator	Petrochem	The client was interested in providing a hands-on training environment for the control room operators of their two deethanizer columns in the refinery cracker. This process trainer should improve the understanding of the process and the coordination of the operational shifts
Dynamic Simulation Modelling Study	Italian Engineering Company	Italy	Dynamic Simulation Study applied to analyze operational scenarios in project design phase	Aspen HYSYS	2012	EPC	Oil & Gas	Dynamic Simulation Studies were conducted on behalf of the final operator of the oil & gas plant to analyze operational scenarios (what-if studies) in order to predict potentially critical operational conditions before they actually happen: effect of incorporating additional equipment; effect of equipment trips; operational bottlenecks (column capacity)

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Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Dynamic Simulation Modelling Study	Solvent Recovery Company in Germany	Germany	Dynamic Simulation Study to evaluate the performance of the hot oil system servicing the reboiler of a distillation column under a number of emergency situations	Aspen HYSYS	2012	Operator	Petrochem	The client was interested in evaluating the dynamic behavior of the heating oil system in the distillation column reboiler during emergencies. In particular, the control system performance and the maximum temperature increase rate.
Flare Systems Analysis with Dynamic Simulation Study	German E&P Operating Company	Germany	Dynamic Simulation Study to evaluate the performance of current flare system after a plant expansion	Aspen HYSYS	2012	Operator	Oil & Gas	The goal of the study was to investigate if the existing HP emergency flare system was sufficient for the safe blow-down of the gas lift plant as result of the gas lift facilities extension and the new depressurization devices installed, following the API guidelines.
DirectConnect OTS: Emerson-DeltaV	Exploration and Production Company in Bolivia	Bolivia	Operator Training System for Gas Field	Aspen HYSYS	2012	EPC	Oil & Gas	The second phase of this OTS project considers the expansion of the dynamic model with the addition of the new units of the second Central Processing Facilities, so that the entire plant was included in a single OTS
Dynamic Simulation Studies for Compression Systems	German Compressor Manufacturer	Germany	Dynamic Simulation Study to check and confirm the protection and correct operation of a maintenance compressor	Aspen HYSYS	2012	Equipment Manufacturer	Oil & Gas; Natural Gas	Dynamic Simulation Study to verify that the anti-surge system provides adequate protection; that the isolation valve response time was adequate; that the control valves' actuator rates was right; and that the system responds properly to load changes
Flare Systems Analysis	Spanish Petroleum Refinery	Spain	Flare Network Revalidation Study	Aspen HYSYS	2012	Operator	Refining	In this study, Inprocess executed the revalidation of the existing refinery PSVs by means of process simulation. All possible contingencies was simulated, flare loads was recalculated and PSVs, resized (API 520). With these newly determined PSVs and flare loads, the entire flare network was been as well revalidated (API 521)
Dynamic Simulation Studies for Compression Systems	Norwegian FPSO Operator	Norway	Dynamic Simulation Study of the Dry Gas Export System (DGES) of an FPSO	Aspen HYSYS	2012	Operator	Oil & Gas (FPSO)	Dynamic Simulation Study to evaluate different emergency and normal operation scenarios for the compression system exporting the dry gas from a FPSO platform
Dynamic Simulation Modelling Study	Spanish Engineering Company	Spain	Dynamic Simulation Study for a Gas Turbine System	Aspen HYSYS	2012	EPC	Oil & Gas	Dynamic Simulation Studies for the gas system in order to identify if this system was able to maintain the gas feed according to the gas turbine manufacturer requirement

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Dynamic Simulation Studies for Compression Systems	German Compressor Manufacturer	Germany	Dynamic Simulation Study to check and confirm the protection and correct operation of a regeneration compressor	Aspen HYSYS	2012	Equipment Manufacturer	Oil & Gas; Natural Gas	Dynamic Simulation Study to verify that the anti-surge system provided adequate protection; that the isolation valve response time was adequate; that the control valves' actuator rates was right; and that the system responds properly to load changes
HIPPS or other Depressurizatio n	Dutch Exploration and Production Company	Brazil	CO2 Compression Blow down Study for FPSO	VMGSim	2012	Operator	Oil & Gas (FPSO)	Blow down studies of the CO2 compression system of a FPSO to determine the temperature profile and phase behavior during depressurization of the “at risk” sections in order to determine if there was a real possibility of forming dry ice during compressor blow down
Software Extension and Programming	Compressor Manufacturer	Italy	HYSYS Dynamic Extension for Voith Vorecon Simulation Tool	Aspen HYSYS	2012	Equipment Manufacturer	Oil & Gas	Development of a dynamic extension module to incorporate a variable speed planetary gear type RWE model by integrating the Voith Vorecon Simulation Tool.
Software Extension and Programming	Arabian National Oil Major - Refining Division	Saudi Arabia	Pre-heat Train Performance Monitoring and Cleaning Schedule Evaluation Tool for an atmospheric/vacuum system (CDU/VDU)	Aspen HYSYS	2012	Operator	Refining	Inprocess developed a complete application to perform heat exchanger fouling monitoring for a 124000 BPD refinery CDU/VDU and, based on the predicted trends, it developed an automated tool to run different heat exchanger cleaning scenarios over one year of operation.
Emulated OTS: CCC	Compressor Manufacturer	Italy	OTS for a two-train compression system	Aspen HYSYS	2012	Equipment Manufacturer	Oil & Gas	Operator Training System for an Oil & Gas processing plant, using Inprocess Instructor Station (IIS) and Mark VI emulator (including operator HMI) for anti-surge control including the connectivity to GE proprietary turbine dynamic model (Easy5)
Flare Systems Analysis	Petroleum Refinery in Spain	Spain	Revalidation of Pressure Safety Valves for a Refinery	Aspen HYSYS	2012	Operator	Refining	Revalidation of a selection of the safety valves that are currently in operation in this Spanish refinery.
Dynamic Model linked to DCS	London-based Oil Major - (E&P Division)	United Kingdom	Controllability Study using Dynamic Simulation. Phase 2	Aspen HYSYS	2012	Operator	Oil & Gas	Inprocess developed a dynamic process simulation model of an existing oil production platform. The model was connected to the existing ABB DCS using OPC - in order to test new control strategies before implementing these into the real plant. Inprocess also developed a graphical user-friendly interface for the model.

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Steady State Simulation Modelling Study	German Petroleum Refinery	Germany	Reformer Model Calibration and Training	Aspen HYSYS	2012	Operator	Refining	For model calibration, a reformer model of one refinery unit that represents the actual plant was developed. The model was calibrated using one set of plant test runs. The model delivery was combined with a model delivery workshop at refinery site, where the main model characteristics were explained and the possible use of the model were described.
HIPPS or other Depressurizatio n	Spanish EPC for an E&P Company in Bolivia	Spain	Depressurization Study for the Central Processing Facilities and Exporting System of a Field Development Project	Aspen HYSYS	2012	EPC	Oil & Gas	Dynamic Simulation of the depressurization scenarios of the Central Process Facility of a Bolivian O&G field following the calculation normative of the operating company
Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for an Omani oil company	Switzerland	Dynamic Simulation Study for a new single train, four stage, gas lift compression system	Aspen HYSYS	2012	Equipment Manufacturer	Oil & Gas	Development of a dynamic simulation model for the Zauliyah new Gas Lift Compressor Package consisting of a single train four stage compression system with four gas coolers and five scrubbers. The existing plant was not modelled as part of project scope
Generic Unit Operations Training (ITOP) with Courses	Japanese Chemicals Company - Spanish Site	Spain	Multi-year Training Program for Plant Operators based on Inprocess' program ITOP	Aspen HYSYS	2012	Operator	Bulk Chemicals	Inprocess was carrying out 20 days of operator education per year using ITOP. ITOP is Inprocess' approach for training operator in subjects like Process Engineering, and Unit Operation
HIPPS or other Depressurizatio n	Dutch Exploration and Production Company	Brazil	Production HIPPS and Test HIPP studies on a FPSO plant	Aspen HYSYS	2012	Operator	Oil & Gas (FPSO)	Dynamic Simulation Study using process simulation to evaluate the pressure protection systems for the facilities
Knowledge Improvement Program (KIP)	Petroleum Refinery in Spain	Spain	Knowledge Transfer for the dynamic modelling of an atmospheric crude unit (CDU)	Aspen HYSYS	2012	Operator	Refining	Client was interested in enhancing their dynamic simulation skills through the joint development of the dynamic model of the refinery crude fractionator. Event scheduler was configured for the study of the column under 17 different scenarios for the assessment of the PSV and the vent header size.
HIPPS or other Depressurizatio n	Milan-based EPC for an Arabian Oil Major	Italy	HIPS Study for Gas Fields Development	OLGA	2012	EPC	Oil & Gas	Dynamic Simulation Study to evaluate HIPPS system of an upstream process plant for new operating conditions, using OLGA.

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Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for a Japanese FPSO constructor	Switzerland	Dynamic Simulation Study of a flash gas compressor	Aspen HYSYS	2012	Equipment Manufacturer	Oil & Gas	Inprocess carried out a dynamic compressor simulation study to analyze the following design and operational aspects: - Cold-Gas-Bypass requirement & sizing - Analysis of Settle-Out Conditions - Verification of PSV and pressure Alarm Settings - Blow-Down Conditions (blow down valve open delays, etc.)
Hydrogen Network Study	Spanish Petroleum Refinery	Spain	Feasibility Study for Control and Optimization of Hydrogen Network	Aspen HYSYS	2012	Operator	Refining	A feasibility study for an online application (H2 Network Optimizer) was carried out, focusing on the site H2 network (with all consumers and suppliers from the refinery, the petrochemical plant and externals), to consider ways to improve network management.
Dynamic Model linked to DCS	Norwegian FPSO Operator	Norway	Dynamic Simulation to Support FPSO operation	Aspen HYSYS	2011	EPC	Oil & Gas (FPSO)	Client already developed the bulk of the dynamic model and requests Inprocess to further support these modelling activities, i.e. with regards to further updating & validating the model and to connect the model to an emulation of the DCS.
Software Extension and Programming	London-based Oil Major - Refining Division	United States	Refsys Extension Development	Aspen HYSYS	2011	Operator	Refining	Inprocess developed a software extension that links process and refining simulator to an existing in-house calculation routine (dll) developed by our client.
Equipment Monitoring	Multinational Chemical Company - Spanish site	Spain	Simulation-based Online monitoring of a twin Heat Exchanger	Aspen HYSYS	2011	Operator	Petrochem	Simulation-based online monitoring of twin Heat Exchangers. The application was tracking fouling factors of the exchangers and offers prediction functionalities to support operational decisions, e.g. when to clean the exchanger.
Dynamic Simulation Studies for Compression Systems	Milan-based EPC	Italy	Dynamic Simulation Study for a Compressor refrigeration loop and export gas compressor	Aspen HYSYS	2011	EPC	Oil & Gas	Dynamic Simulation Study of the refrigeration loop and export gas compressors
Emulated OTS: PLCs+iFIX	Spanish Engineering Company	Spain	Operator Training System for a lube oil plant	Aspen HYSYS	2011	EPC	Refining	Integration of an existing dynamic process model into a new Operator Training System for a Lube Oil Plant. The OTS is based on generic DCS operator views and uses Inprocess' Instructor Station.

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Dynamic Simulation Studies for Compression Systems	Norwegian FPSO Operator	Norway	Support for the dynamic analysis of a wide variety of operating scenarios for the new FPSO	Aspen HYSYS	2011	EPC	Oil & Gas (FPSO)	Inprocess supported the dynamic analysis of a wide variety of operating scenarios for the new FPSO.
Emulated OTS: CCC	Compressor Manufacturer	Italy	Operator Training Simulator for an LNG plant compressor	Aspen HYSYS	2011	Equipment Manufacturer	Natural Gas	In a process licensed by Air Products, Inprocess focused the efforts in modelling the Mixed Refrigerant (MR) and the C3 Train sections with special attention to the compressor areas, coolers and vaporizers zones.
Flare Systems Analysis	Major Oil&Gas Company	United Kingdom	Dynamic Flare Load Study for a Platform in Trinidad & Tobago	Aspen HYSYS	2011	Operator	Oil & Gas	Model the blowdown of several holdups of a platform in order to study the cold temperature penetration along the vent header.
HIPPS or other Depressurizatio n	Milan-based EPC	Italy	Evaluation of the HIPPS system of an upstream process plant	Aspen HYSYS	2011	EPC	Oil & Gas	Dynamic Simulation Study to evaluate HIPPS system of an upstream process plant for new operating conditions.
Dynamic Simulation Modelling Study	London-based Oil Major - Refining Division	United States	Dynamic Simulation Study to analyze the warm-up behavior of the drum in a Delayed Coker Unit (DCU)	Aspen HYSYS	2011	Operator	Refining	Inprocess developed a dynamic simulation model to study the transient warm-up behavior of an existing coke drum - when charged with the off-gases from the online drum. This model was then used to evaluate planned process changes.
DirectConnect OTS: Emerson-DeltaV	Spanish EPC for an E&P Company in Bolivia	Spain	Operator Training System for Gas Field	Aspen HYSYS	2011	EPC	Oil & Gas	Operator Training System based on a dynamic model linked to DeltaV DCS and SIS. Total I/O point was 1600.
Dynamic Simulation Modelling Study	Italian Oil & Gas Major (E&P Division)	Italy	Dynamic process model development of separation train	Aspen HYSYS	2011	Operator	Oil & Gas	Dynamic process model development of separation processes of one train of a production asset. The model was to be integrated into the DOFF infrastructure, which was being developed to support the operations team in taking control of primary separators during slug generation --> thus, avoiding unexpected plant shut downs.

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Dynamic Simulation Studies for Compression Systems	Swiss compressor manufacturer for an Malaysian oil company	Switzerland	Dynamic compressor station simulation study to analyze several design and operational aspects	Aspen HYSYS	2011	Equipment Manufacturer	Oil & Gas	Inprocess carried out a dynamic compressor simulation study to analyze the following design and operational aspects: * Cold-Gas-Bypass requirement & sizing * Analysis of Settle-Out Conditions * Verification of PSV and pressure Alarm Settings * Blow-Down Conditions (blow down valve open delays, etc.) * Analysis of Hydrate Formation or Liquid Formation in piping during depressurization
Flare Systems Analysis	Italian EPC for a Polish Natural Gas Operator	Italy	Dynamic flare system wall temperature calculations during the blow-down of a compressor unit	Aspen HYSYS	2011	EPC	Oil & Gas	Dynamic flare system wall temperature calculations during the blow-down of a compressor unit
Knowledge Improvement Program (KIP)	Italian Oil & Gas Major (E&P Division)	Italy	KIP for Dynamic Simulation of a gas conditioning plant	Aspen HYSYS	2011	Operator	Oil & Gas	Following the success of the initial Knowledge Improvement Program (KIP) for dynamic simulation, the client deploys Inprocess' KIP concept to a larger gas conditioning plant: In a first step, Inprocess developed the dynamic model. In a subsequent phase the client was trained in developing and using the model.
Dynamic Simulation Studies for Compression Systems	Compressor Manufacturer	Italy	Dynamic Simulation Study for a Compression System (two trains, 2 stages each)	Aspen HYSYS	2011	Equipment Manufacturer	Oil & Gas	Dynamic simulation studies to check and confirm the operation of compressor trains of a compressor station under a number of defined procedural and upset conditions
Dynamic Simulation Studies for Compression Systems	Compressor Manufacturer	United Arab Emirates	Dynamic Simulation Study to check and confirm the operation of compressor trains of a compressor station	Aspen HYSYS	2011	Equipment Manufacturer	Oil & Gas	Dynamic simulation studies to check and confirm the operation of compressor trains of a compressor station under a number of defined procedural and upset conditions
Dynamic Simulation Modelling Study	London-based Oil Major - Refining Division	United States	Dynamic Simulation Study to analyze the hydraulics behavior during dumping of HF to dump drum	Aspen HYSYS	2011	Operator	Refining	Inprocess developed a dynamic process model of the HF reactor and the dump drum in order to support our client in assessing the safe design of a new HF Reactor. For this study, Inprocess applied dynamic process modelling for investigating the behavior of the reactor loop during an Emergency Shut-Down (ESD).

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Dynamic Simulation Modelling Study	Spanish Ethylene Cracker Operator	Spain	SS and Dynamic models development of a double column C3 splitter unit to be used for APC revamp	Aspen HYSYS	2010	Operator	Petrochem	Development and calibration of Steady-State and Dynamic model of a double C3 splitter with reboiler/Condenser heat integration, including the associated DMCplus controller. Obtain the non-linearity gain curves for each pair independent-dependent variable of the associated DMCplus controller. Validate the Dynamic model against plant historic data feed to the Dynamic model. Perform virtual Step-test over HYSYS Dynamic model to obtain the HYSYS-based DMCplus model and review design. Educate customer on the project details.
Dynamic Simulation Studies for Compression Systems	Milan-based EPC	Italy	Dynamic Simulation Study for Gas Processing and Sulphur Plants Compressors	Aspen HYSYS	2010	EPC	Oil & Gas	Dynamic Simulation Compressor Study for up to 6 compressor trains.
Dynamic Model linked to DCS	London-based Oil Major - (E&P Division)	United Kingdom	Controllability Study of an LP Separation Train using Dynamic Simulation. Phase 1	Aspen HYSYS	2010	Operator	Oil & Gas	Development of a dynamic process simulation model of an existing oil production platform. The model was connected to the existing ABB DCS using OPC, in order to test new control strategies before implementing these into the real plant. Inprocess also developed a graphical user-friendly interface for the model.
Software Extension and Programming	London-based Oil Major - Refining Division	United States	Refsys Extension Development	Aspen HYSYS	2010	Operator	Refining	Inprocess improved the functionality, usability and robustness of an existing refinery software extension that our client previously developed.
Dynamic Simulation Studies for Compression Systems	Global EPC (UK office) for Libyan O&G	United Kingdom	Dynamic Simulation Study for a Gas Recovery Module	Aspen HYSYS	2010	EPC	Oil & Gas	Dynamic Process Simulation Compressor Study for a new off-shore platform. The study focuses on the operability and controllability issues of the complex four stage compression train as well as on safety issues.
Steady State Simulation Modelling Study	German Petroleum Refinery	Germany	Steady State Model of a Hydrocracker Unit (HCU)	Aspen HYSYS	2010	Operator	Refining	Inprocess developed a steady state model of an existing hydrotreating process unit including the detailed representation of the heat exchangers. This model was used by the client for energy studies.
Knowledge Improvement Program (KIP)	Compressor Manufacturer	Germany	Knowledge Improvement Program for Dynamic Compressor Modelling	Aspen HYSYS	2010	Equipment Manufacturer	Oil & Gas	Dynamic Process Simulation Study for a new compressor system combined with a number of training modules to train the client in the use and development of dynamic simulation models.

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Flare Systems Analysis with Dynamic Simulation Study	German E&P Operating Company	Germany	Dynamic Blow Down Study for GUP and GOSP	Aspen HYSYS	2010	Operator	Oil & Gas	Dynamic Blow Down Study to investigate the adequacy of an existing flare system and to analyze different blow-down options. The scope of the integrated dynamic process simulation model includes a number of process unit sections as well as the flare header.
Knowledge Improvement Program (KIP)	Madrid-based EPC	Spain	Dynamic Simulation know-how transfer based on a Dynamic Simulation Study project	Aspen HYSYS	2010	EPC	Oil & Gas	Training Program based on a number of training sessions to be executed in parallel to the execution of a dynamic simulation study project in order to effectively deploy dynamic simulation know-how.
Dynamic Simulation Modelling Study	Madrid-based EPC	United Arab Emirates	Dynamic Simulation Studies to test the controllability of the revamped production separators	Aspen HYSYS	2010	EPC	Oil & Gas	Dynamic simulation studies for a production separator system in order to check and confirm its operability under a number of defined procedural and upset conditions of the producing facilities.
Dynamic Simulation Studies for Compression Systems	Madrid-based EPC	United Arab Emirates	Dynamic Simulation Study (DSS) for an Abu Dhabi Field development project	Aspen HYSYS	2010	EPC	Oil & Gas	Dynamic simulation compressor study for a new centrifugal compressor line integrated into an existing reciprocating compressor train. The study focuses on the design of the new equipment as well as on the operability and controllability of the complete compression system.
Flow Assurance Analysis	Madrid-based EPC for an Emirates NOC	United Arab Emirates	Flow Assurance in Transfer Lines for an Abu Dhabi Field development, using OLGA software	OLGA	2010	EPC	Oil & Gas	Flow assurance study using OLGA for a transfer line to evaluate slugging, surge, hydrates, etc. during different initial and operation conditions (ramp-up, ramp-down, pigging, etc.).
Flow Assurance Analysis	Madrid-based EPC for an Emirates NOC	United Arab Emirates	Flow Assurance in Transfer Lines for an Abu Dhabi Field development, using OLGA software	OLGA	2010	EPC	Oil & Gas	Flow assurance study using OLGA for two transfer lines to evaluate slugging, surge, hydrates, etc. during different initial and operation conditions (ramp-up, ramp-down, pigging, etc.).
Flow Assurance Analysis	Madrid-based EPC for an Emirates NOC	United Arab Emirates	Simulation of Gas Dissolution in a MOL line for an Abu Dhabi Field development, using OLGA software	OLGA	2010	EPC	Oil & Gas	Transient analysis using OLGA to study gas dissolution and flow assurance after gas injection into a transportation oil pipeline.

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Knowledge Improvement Program (KIP)	German Petroleum Refinery	Germany	Knowledge Improvement Program (KIP) for Steady State Simulation of a Crude Unit (CDU) with pre-flash and associated pre-heat train	Aspen HYSYS	2009	Operator	Refining	Inprocess developed a steady state crude unit model with pre-heat train for this refinery. The pre-heat train model can be manually updated from plant data and pre-heat train monitoring is supported. As part of the Knowledge Improvement Program (KIP), refinery process engineering team was trained in maintaining the model and using the complex model for different case studies - like predicting the pre-heat train performance after cleaning a specific heat exchanger
Dynamic Simulation Studies for Compression Systems	Compressor Manufacturer	Italy	Dynamic Simulation Study for a Compression System (two trains, 2 stages each)	Aspen HYSYS	2009	Equipment Manufacturer	Oil & Gas	Dynamic simulation studies to check and confirm the operation of compressor trains of a compressor station under a number of defined procedural and upset conditions
Flare Systems Analysis with Dynamic Simulation Study	German Petroleum Refinery	Germany	Dynamic Simulation Study to determine the flare load of a crude unit (CDU) and a delayed coker (DCU) during a General Power Failure (GPF) event	Aspen HYSYS	2009	Operator	Refining	Dynamic Simulation Study to determine the flare load of a crude unit and a Delayed Coker during a general power failure. The approach applied in this study has been described in an article that can be obtained from the download section of the Inprocess webpage.
Flare Systems Analysis with Dynamic Simulation Study	Global EPC for German Refinery	Germany	Conceptual (non-detailed) Dynamic Flare Load Study for a Refinery Crude unit (CDU) during a General Power Failure (GPF) event	Aspen HYSYS	2009	Operator	Refining	Conceptual dynamic simulation study to determine the flare load of a crude unit during a general power failure and a water breakthrough. The conceptual dynamic study allows for reduced detail and, therefore, reduced cost.
Software Extension and Programming	Compressor Manufacturer	Italy	Development of a connection between the PLC and the process simulation software	Aspen HYSYS	2009	Equipment Manufacturer	Oil & Gas	In order to gain flexibility during the control design phase for compressors, Inprocess developed a connection between the PLC and the process simulation software. This connection allows exchanging analogue and digital signals between the compressor equipment simulation and the PLC control system, thus allowing Inprocess' customer to setup, modify and improve the logic control before start-up of the plant.
Flow Assurance Analysis	Italian EPC	Italy	Consultancy on integrating Pipeline and Facilities Models	OLGA	2009	EPC	Oil & Gas	Our Simulation Experts were involved in Consultancy on integrating Pipeline and facilities to analyze flow assurance performance (applying HYSYS-OLGA link)

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Dynamic Simulation Studies for Compression Systems	Compressor Manufacturer	Italy	Dynamic Process Simulation Compressor Study and external anti-surge, load sharing and performance controller integration	Aspen HYSYS	2009	Equipment Manufacturer	Oil & Gas	Dynamic Process Simulation Compressor Study and external anti-surge, load sharing and performance controller integration into commercial process simulators. This allowed a more accurate/realistic representation of the complete compressor system.
Software Extension and Programming	Compressor Manufacturer	Italy	New Unit Operation Development (Turboexpander) for dynamic process simulation	Aspen HYSYS	2009	Equipment Manufacturer	Oil & Gas	Inprocess developed a new dynamic unit operation model for commercial process simulators. The complete model was consecutively connected to a PLC through OPC and used to develop a more efficient control design (instead of real equipment). In additional, some project equipment delivery phases were shortened by using the model to analyze extreme unit conditions and abnormal behavior which could not be tested on real equipment.
Flare Systems Analysis	German E&P Operating Company	Germany	Dynamic Flare Load Study to test the adequacy of current flare network	Aspen HYSYS	2009	Operator	Oil & Gas	Dynamic Flare Load Study to investigate the adequacy of an existing flare system for new emergency conditions (fire) for a single vessel.
Dynamic Simulation Studies for Compression Systems	Compressor Manufacturer	Italy	Dynamic Compressor Study including the anti-surge control as software extension	Aspen HYSYS	2009	Equipment Manufacturer	Oil & Gas	Dynamic Process Simulation Compressor Study including the development of the client's project specific anti-surge controller (implemented as a process simulator extension).
Generic Unit Operations Training (ITOP) with Courses	Multinational Chemical Company - Spanish site	Spain	Multi-year Training Program for Plant Operators based on Inprocess' program ITOP	Aspen HYSYS	2009	Operator	Bulk Chemicals	Inprocess carried out >50days of operator education per year using ITOP = Inprocess Training for Operators tool (Unit Operations). The training content and schedule was adjusted to specific customer needs.
Software Extension and Programming	London-based Oil Major - Refining Division	United States	Refsys Extension Development	Aspen HYSYS	2009	Operator	Refining	Inprocess developed a software extension that links process and refining simulator to an existing in-house calculation routine (dll) developed by our client.
Knowledge Improvement Program (KIP)	German Petroleum Refinery	Germany	Knowledge Improvement Program (KIP) for Steady State Simulation of Distillation	Aspen HYSYS	2008	Operator	Refining	Process Simulation Knowledge Improvement Program (KIP) for Downstream Unit. Inprocess updated the existing model and trained the client's engineers in using the model to improve operations. The model has been used by the client to improve operations.

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Documentation	Italian Oil & Gas Major (E&P Division)	Italy	Best Practices Documentation for Dynamic Simulation	Aspen HYSYS	2008	Operator	Oil & Gas	Development of client-specific "Best Practice Manual for Dynamic Process Simulation". This project helped to promote Dynamic Process Simulation to be used more often - whenever suitable.
Knowledge Improvement Program (KIP)	Italian Petroleum Refinery	Italy	KIP for Refinery SS Simulation: Topping & Vacuum (CDU/VDU) Model Update and Maintenance	Aspen HYSYS	2008	Operator	Refining	Inprocess Knowledge Improvement Program (KIP) for Process Simulation of Crude and Vacuum Unit. Inprocess developed a steady state model for the client and trained the client's engineers in using and maintaining the model. One example of the case studies developed was related to the operation of the column with reduced condenser duty.
Flare Systems Analysis with Dynamic Simulation Study	German Petroleum Refinery	Germany	Dynamic Flare Load Study for a Refinery Crude unit (CDU) during a General Power Failure (GPF) event	Aspen HYSYS	2008	Operator	Refining	Dynamic Simulation Study to determine the flare load of a crude unit during a general power failure. This study has been described in a PTQ article that can be obtained from the download section of the Inprocess webpage.
Training Program	Milan-based EPC	Italy	Multi-year Process Simulation Training Program	Aspen HYSYS	2008	EPC	Oil & Gas	Multi-Year Training Program on Process Simulation Packages (Upstream, Steady State, Dynamics, Advanced) Total: > 30 courses
Software Extension and Programming	Italian Oil & Gas Major (E&P Division)	Italy	HYSYS Integration with In-house simulator	Aspen HYSYS	2008	Operator	Oil & Gas	Development of IT infrastructure to integrate in-house simulator into Standard Process Simulation Software, while keeping the customer's Intellectual Property invisible to the users (Black Box approach).

Inprocess References List: 2008-2025

Project Type	Customer	Country	Project Title	Process Simulator	Year	Company Type	Industry	Short Description
Knowledge Improvement Program (KIP)	Italian Oil & Gas Major (E&P Division)	Italy	KIP for the Dynamic Modelling & Technology Transfer for a Natural Gas Conditioning Plant	Aspen HYSYS	2007	Operator	Natural Gas	Inprocess applied its Knowledge Improvement Program (KIP) approach for dynamic process simulation by developing a dynamic model of an LTS gas plant and subsequently training the client in developing such a model. The model allows the users to evaluate current and future performance of the unit. The dynamic process simulation technology transfer sessions where held based on customized training material developed by Inprocess. This material remains with the customer for future usage. After completion of the model development and the training sessions, Inprocess provided consultancy to the client's process engineering team from our offices in Barcelona in order to motivate the customer's process engineers to develop their own models. As a result of this KIP, dynamic process simulation has seen much wider use with this client in the last few years.
Flare Systems Analysis	Multinational EPC - Italian site	Italy	Dynamic Flare Load Study for Refinery Columns	Aspen HYSYS	2007	EPC	Refining	Dynamic Simulation Project for the Italian office of a multinational EPC. Inprocess developed a number of dynamic models for different distillation columns to study the flare behavior for general power failure. The intention was to study the simultaneity of the flare load peaks. This study was presented at the 2008 Aspentech UGM.