



OIL
REFINING



PETROCHEMICALS



GASES



ALTERNATIVES &
RENEWABLES



WATER

Connect'In™

Axens
HORIZON

Drive Asset Performance to Optimum with Proactive Digital Advisor



High speed data networks, cloud-based systems and advanced data techniques are leading a distinct change in the way industries monitor and optimize operating assets. Refineries that will adopt real-time unit monitoring tools incorporating on-demand, advanced modelling of process performance will see an immediate marketplace advantage.

Axens' Connect'In™ addresses these challenges and is leading the breakthrough to substantially improve the efficiency of refineries. Axens has developed Connect'In™, a digital application, that automatically collects data from the refinery, with the highest standards of cyber security, and converts them into normalized KPIs using Axens high-fidelity models in real-time. Results are displayed through dashboards and projection tools enabling to accelerate the decision-making process (see figure 1).

Axens has always been providing optimization services through technical assistance services, audits, troubleshooting and margin improvement studies, APC, Linear Programming, and management support. Connect'In™ is the natural, digital evolution of these services aimed at increasing refineries profitability.



BENEFITS

- Optimization and margin improvement
- Reduction of operational costs
- Operational risk reduction
- Growth and expansion enablement
- Acceleration of the decision-making process

COMMERCIAL EXPERIENCE

Axens is a leading global supplier of technologies and catalysts with over 1,500 units/catalysts follow-up.

At the heart of Connect'In™ is Axens' continued commitment to client success.

- Data capture, conditioning & reconciliation
- Axens turn-key data infrastructure or data infrastructure of client choice



Operation,
optimization
& planning



- High fidelity reaction models
- Process insight, modelization & prediction

Axens
expertise



- Customized dashboard
- Reports & recommendations from Axens experts

↑ Figure 1: Connect'In™ process

Axens has become the proactive advisor; through online alerting & advising. Axens' experts see the same thing the operator sees, simultaneously, resulting in real-time, on-demand interactions. This efficiency allows the operator to focus on business objectives such as performance and reliability improvements.

Axens' tools are customized to better suit the end-user's requirements, with designed and selected operating indicators. The main objective of Axens' digital initiative is to make Axens' expertise continuously available to its clients by focusing on three key areas:

- Remote monitoring of process performance benchmarked against high fidelity models,
- Proactive technical support of operating assets,
- Data consistency, allowing skilled technical personnel to concentrate on margin improvement as opposed to data compilation.

Connect'In™ enables leveraging Axens' expertise when needed, in order to deliver the best performance recommendations through operation assessment & normalization KPIs, planning down time or operational advices.

Technology Features

- Continuous, cloud-based performance monitoring
- Predictive capabilities to improve decision making
- Integration of high-fidelity models
- Web-based dashboards with customizable KPIs
- Benchmarking and centralized monitoring across refinery networks
- Efficiency of the Axens' / operator interface
- Compatible with client data infrastructure



TESTIMONY

Axens is ahead of the curve providing digital solutions. Connect'In™ has been a valuable tool to centrally monitor units across our network.

... US Refining Major

{ CASE STUDY 1 }

During an Operational Review

The planning group pointed out a coming shortage in octane in the gasoline pool. The problem was going to be amplified by an unexpected 2 points FCC gasoline octane loss.

Conventional way

- > Actions following call to Axens: sampling, analysis, data sending...
- > Several days for troubleshooting to solve the issues.

With Connect'In™

- > Through inferences, prediction of HDS rate allows to detect patterns of catalyst poisoning and suspicion of contamination.
- > Immediate alerting to take appropriate actions to recover expected Δ RON.

↗ **\$1M**
over 3 weeks

{ CASE STUDY 2 }

In a Control Room

In the control room of an Aromatics complex, Connect'In™ proactively detected an aromatics yield loss.

Conventional way

- > Undetected performance losses. (in that case 3 points loss over 90 days)
- > Axens regularly performance review leads to key recommendations.

With Connect'In™

- > Early detection of performance losses thanks to normalized key operating indicators.
- > Immediate adjustment of operating parameters and follow-up of performance recovery.

↗ **\$4.3M**
over 12 weeks



› Watch the Connect'In™ movie
<https://bit.ly/2XleOWs>



axens.net/blog



Axens is a group providing a complete range of solutions for the conversion of oil and biomass to cleaner fuels, the production and purification of major petrochemical intermediates as well as all of natural gas treatment and conversion options. The integrated offer includes technologies, equipment, furnaces, modular units, catalysts, adsorbents and related services, commercialized under "Axens Solutions", "Heurtey Petrochem Solutions" and "Axens Horizon" brands.

Axens
Powering integrated solutions