

The background of the image is a deep purple with a network of glowing, intersecting diagonal lines in shades of cyan and magenta, creating a diamond-shaped pattern. The text is centered in the middle of the image.

AVEVAWORLD

ACCELERATE INDUSTRIAL INTELLIGENCE



OIL, GAS & ENERGY

Operational support, troubleshooting and prediction of performance through integrated operations

GLOBAL SCALE, PROVEN TRACK RECORD

YINSON 
Production



11

assets operating in 6
countries

30+

years of project and
operational
experience

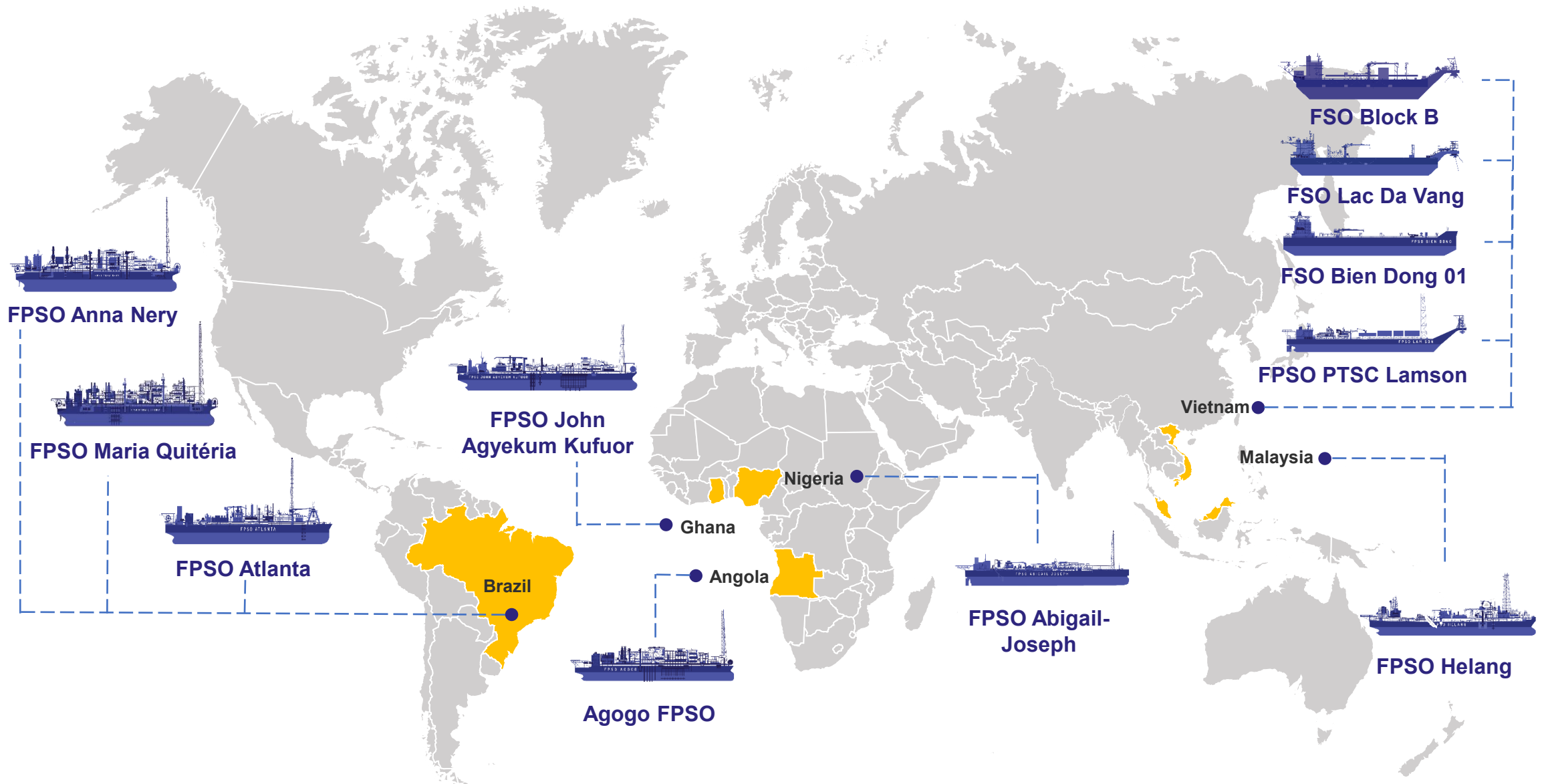
99%+

uptime
fleet-wide

**USD
19.9b**

contract revenue until
2048

A global footprint with operations in all key regions for offshore oil and gas



An aerial photograph of a large FPSO (Floating Production Storage and Offloading) vessel at sea. The ship has a red hull and a blue upper section. It is equipped with a tall, white derrick and various yellow and orange structures. The ship is positioned in the center of the frame, with the ocean and a clear sky in the background.

OUR MODEL: LEASE, OPERATE, DELIVER

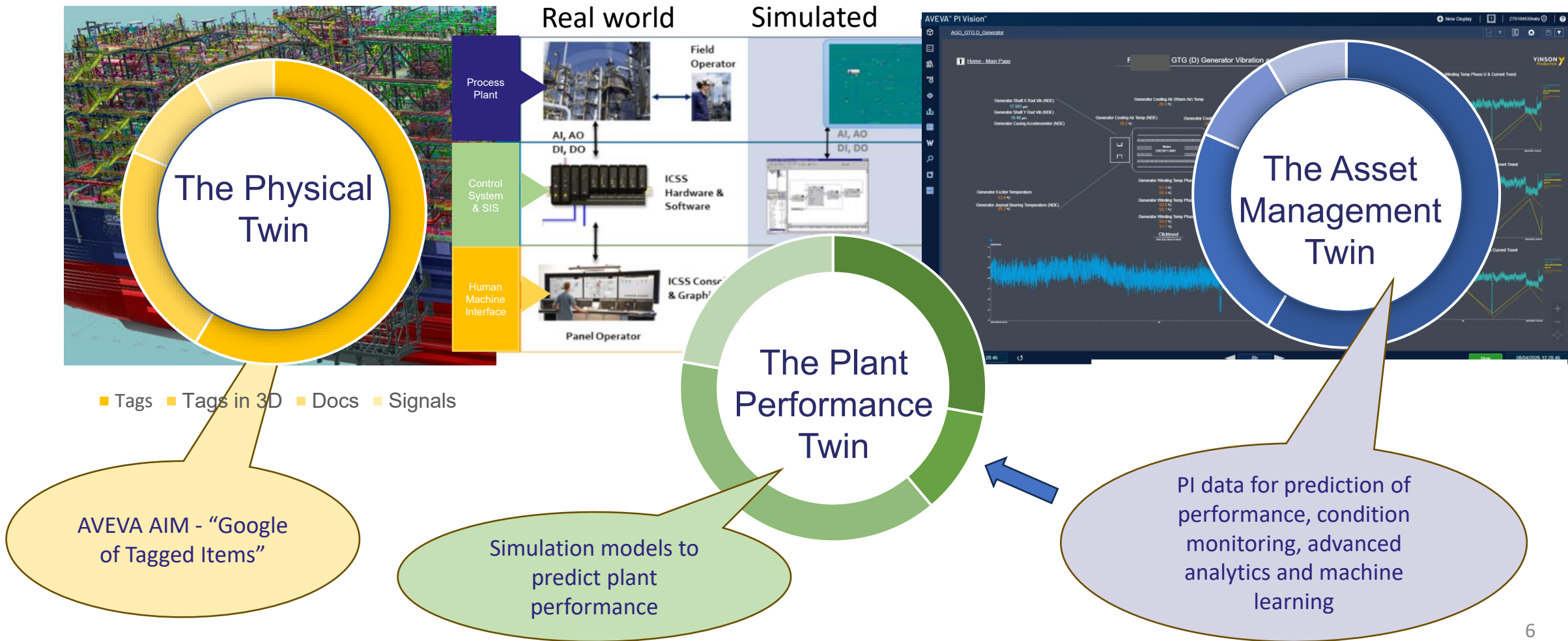
YINSON
Production 

We design, build, own and
operate FPSOs

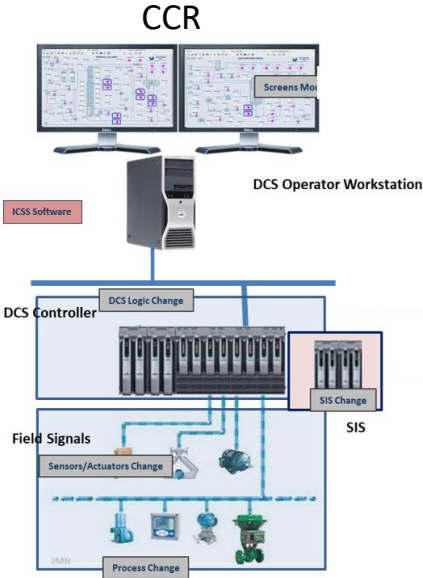
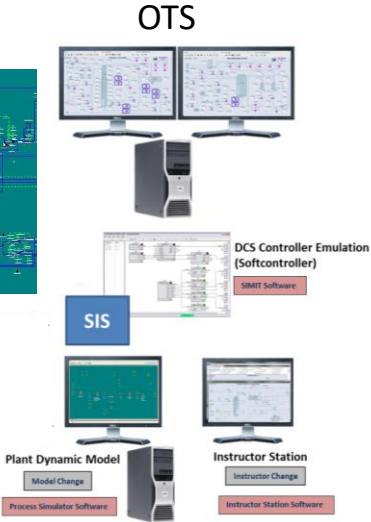
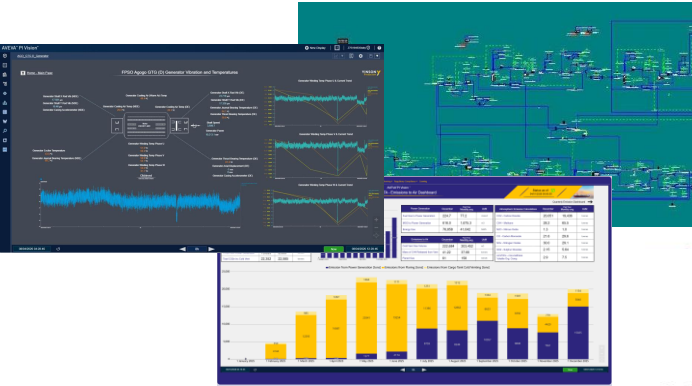
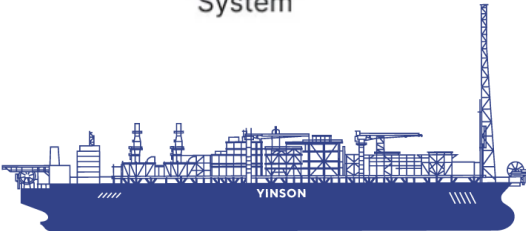
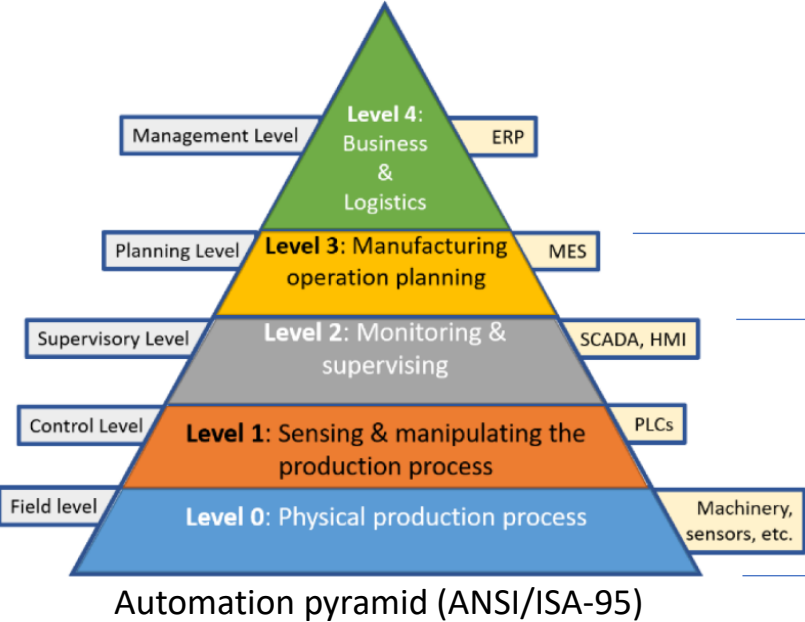
Client focuses on production;
we ensure uptime and safety

Aligned interests and long-term
accountability

The Three Digital Twins



Integrated Operations



Data Architecture

Upstream

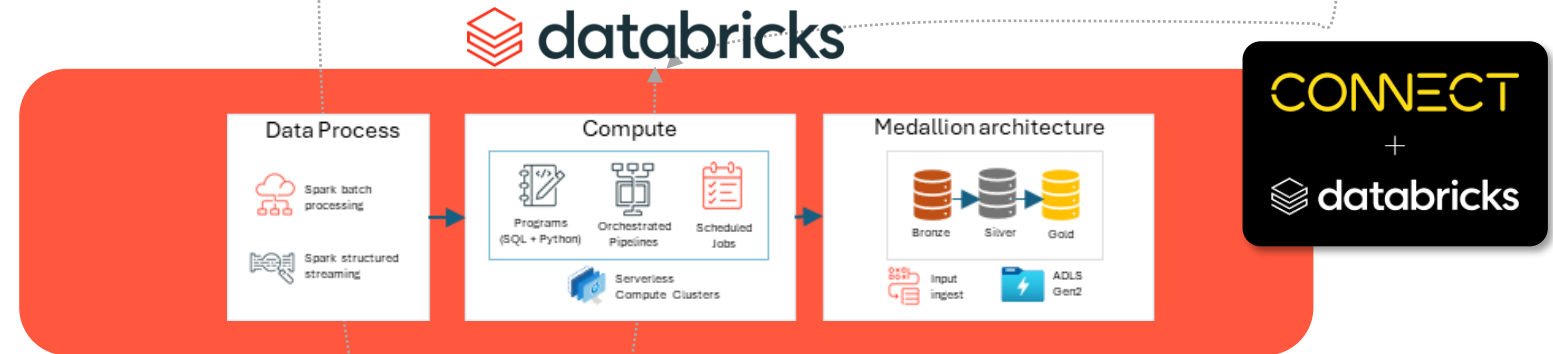
(A) Systems of record (on-prem):



Web-based data (cloud):



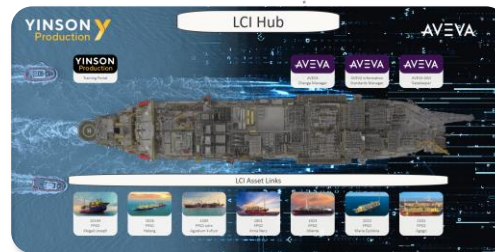
(B) Data lakehouse:



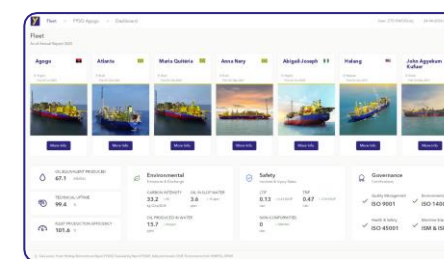
(C) Data consumers:



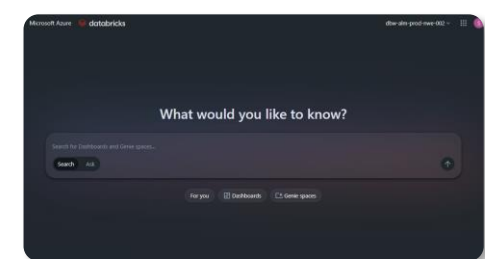
AVEVA AIM (AVEVA NET)



Unified Operations Center (UOC)

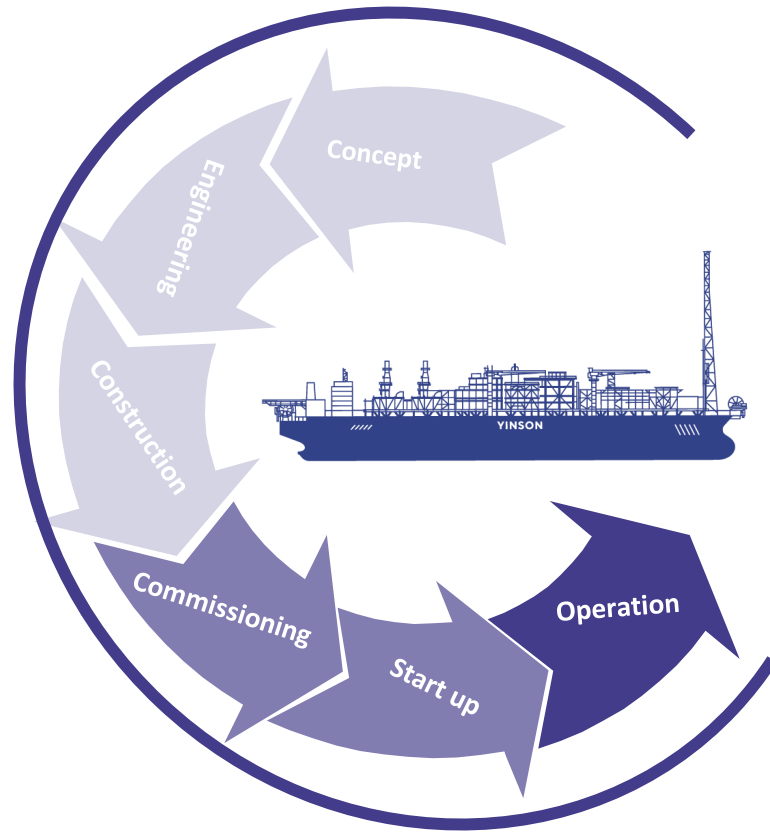


Genie by Databricks



Downstream

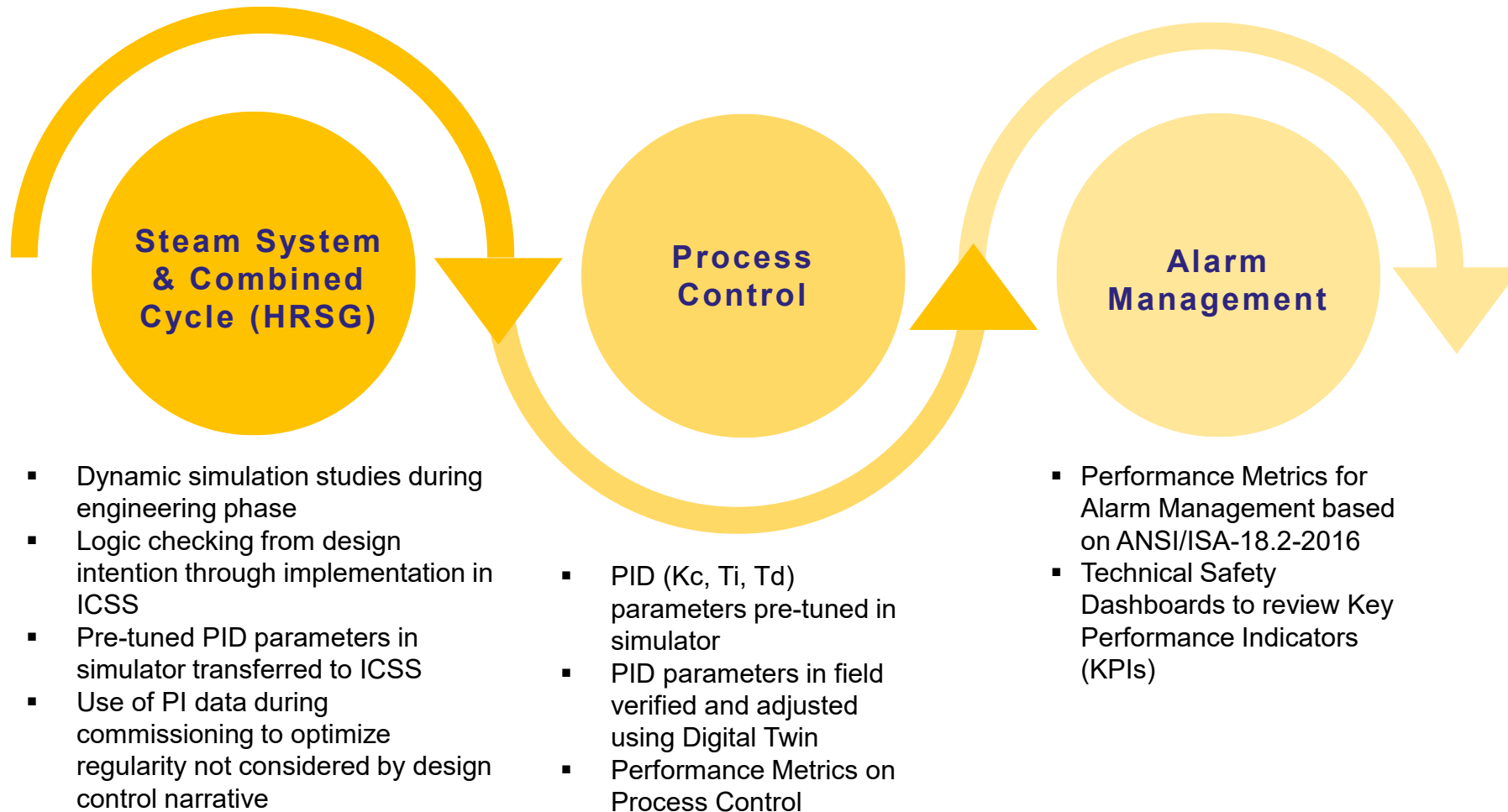
How to achieve INTEGRATED OPERATIONS



- ✓ Control and quality assurance of data from Projects and into Operations
- ✓ Centralized engineering databases
- ✓ Full transparency of data, no silos
- ✓ Data integration through a data lake (Databricks)
- ✓ Feedback to operations for performance optimization

=> Key Performance Indicators

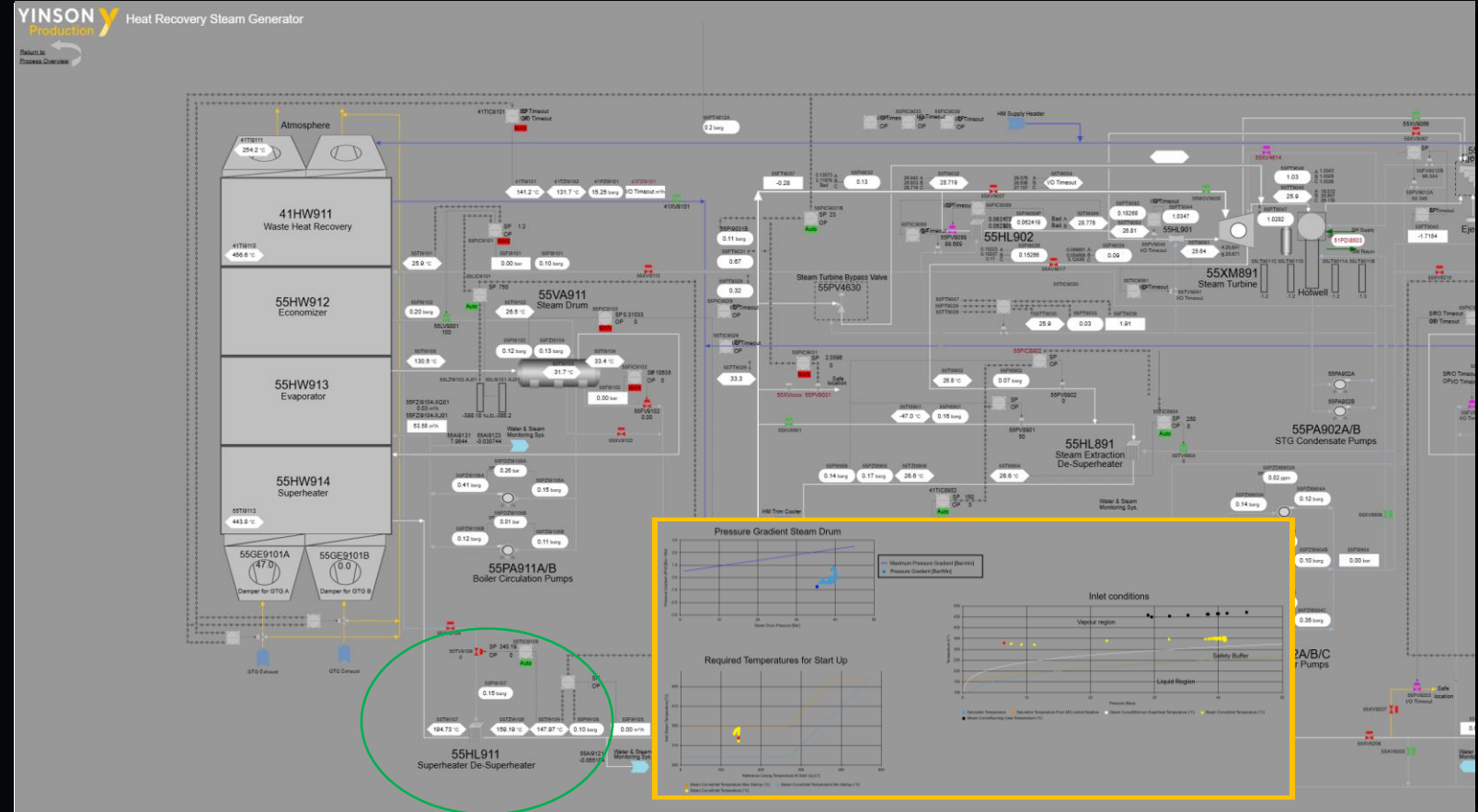
Three use-cases on Integrated Operations



Use of PI data during commissioning to adjust logic and parameter setting for desuperheater control.

Desuperheater needs 3 modes of operation:

- 1) Warm-up phase
- 2) Idle speed of turbine
- 3) Normal operation

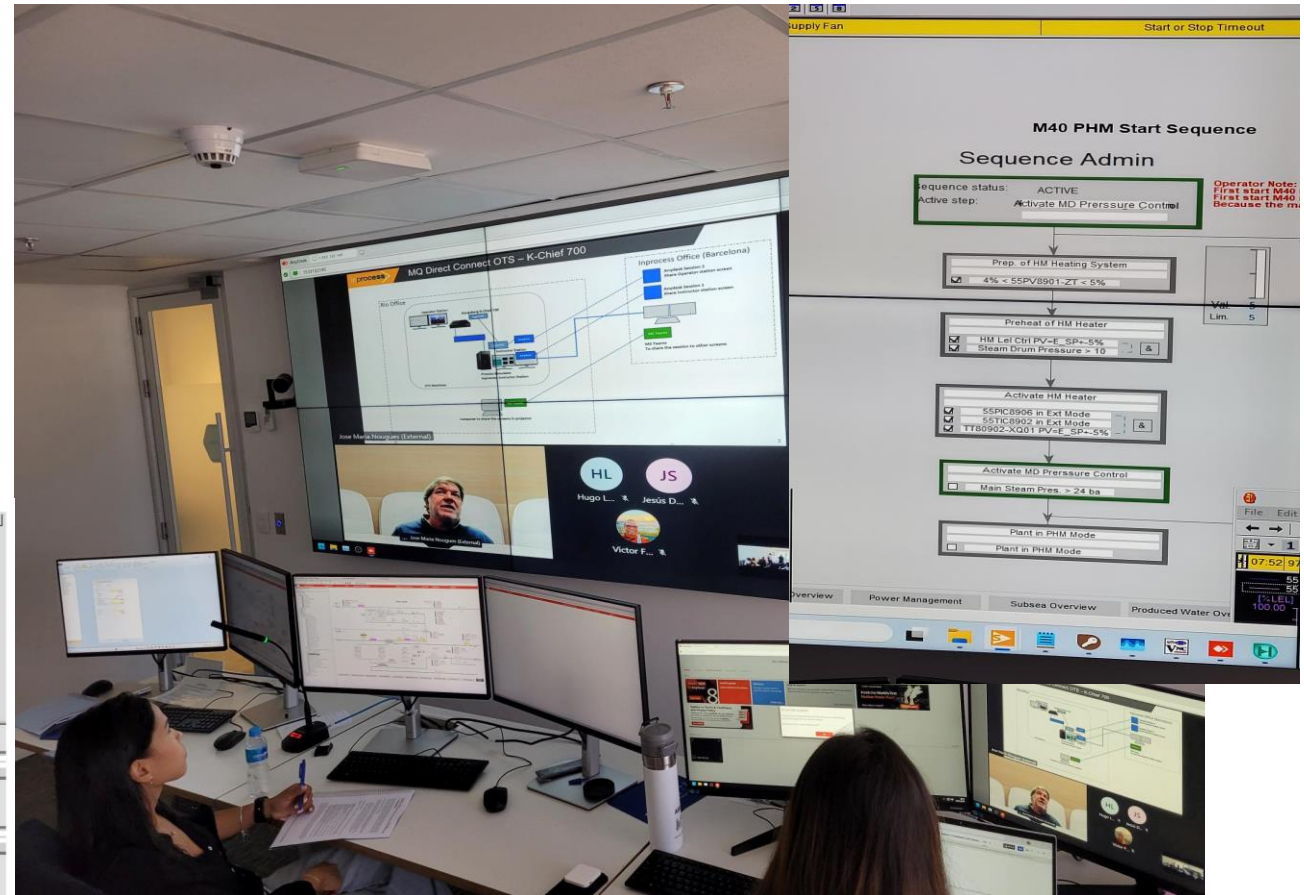
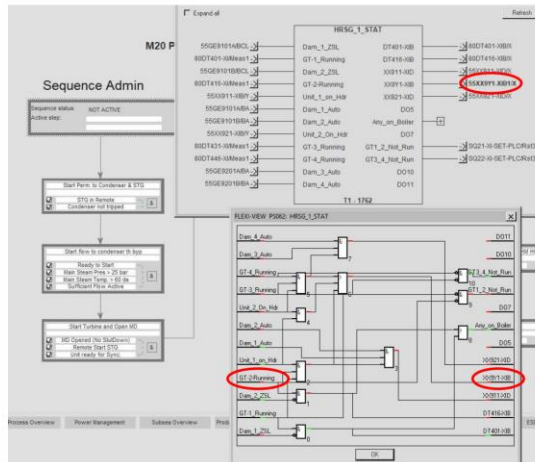


Technical support and training before HRSO operation in field

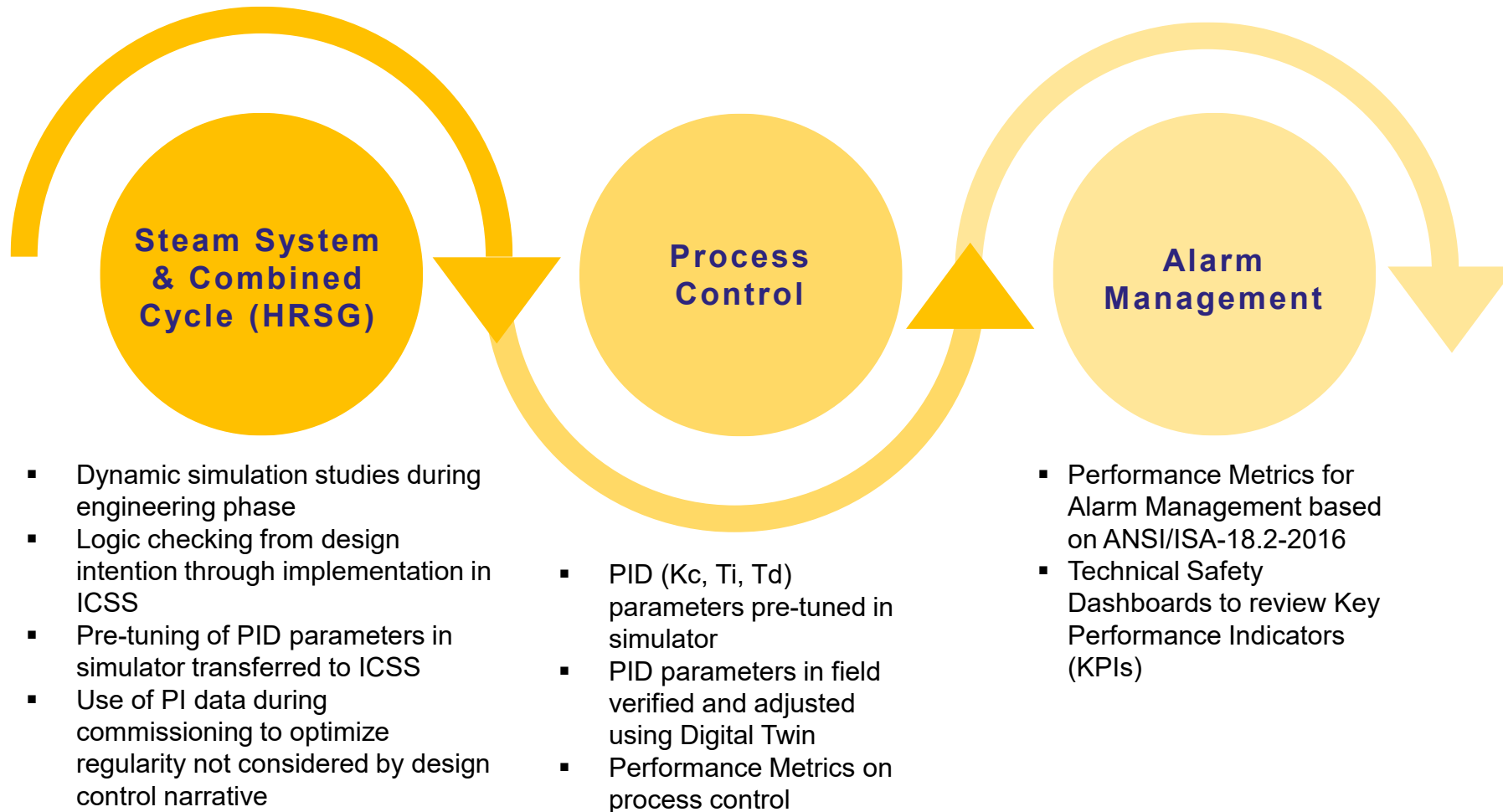
- Virtual commissioning of ICSS using the emulated DCS connected to the simulation model
- Updating logic sequences in real plant
- Verifying all inputs and outputs
- Training operators in a safe environment

55 M40 PHM to CHPM Sequence:

- It is observed that *M20 SQ05 Start Permissive* is missing due to the requirement of the 2nd GTG Running.
- Despite this requirement, *GT-2-Running* signal is inhibited to start the sequence.



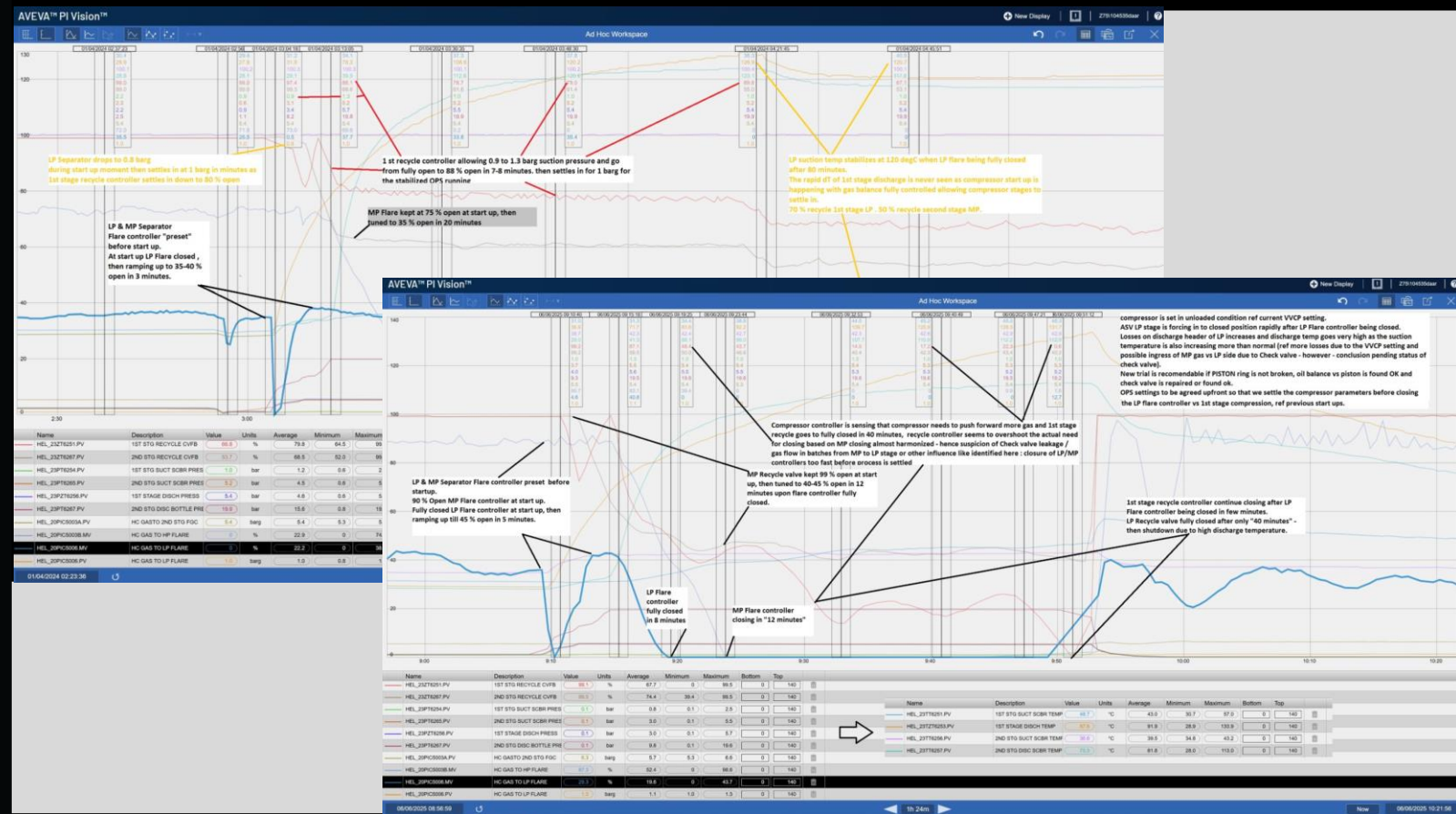
Three use-cases on Integrated Operations



Subject Matter Experts (SMEs) evaluating historical data.

Feedback to Operations to adjust controller settings

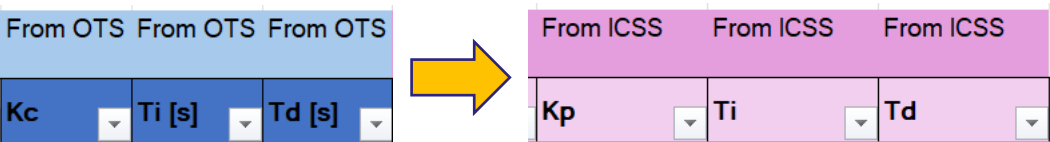
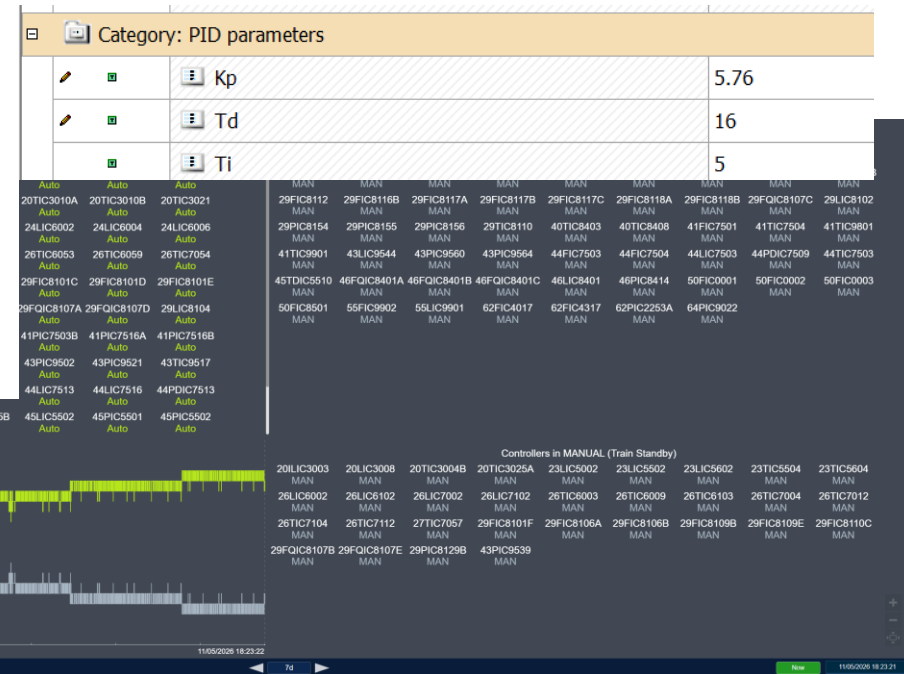
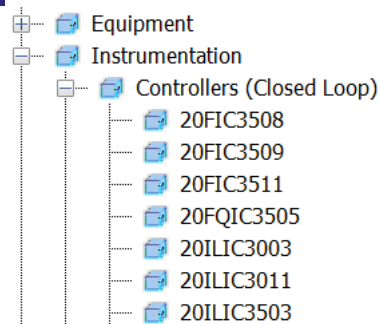
=> Successful running since modifications were implemented.



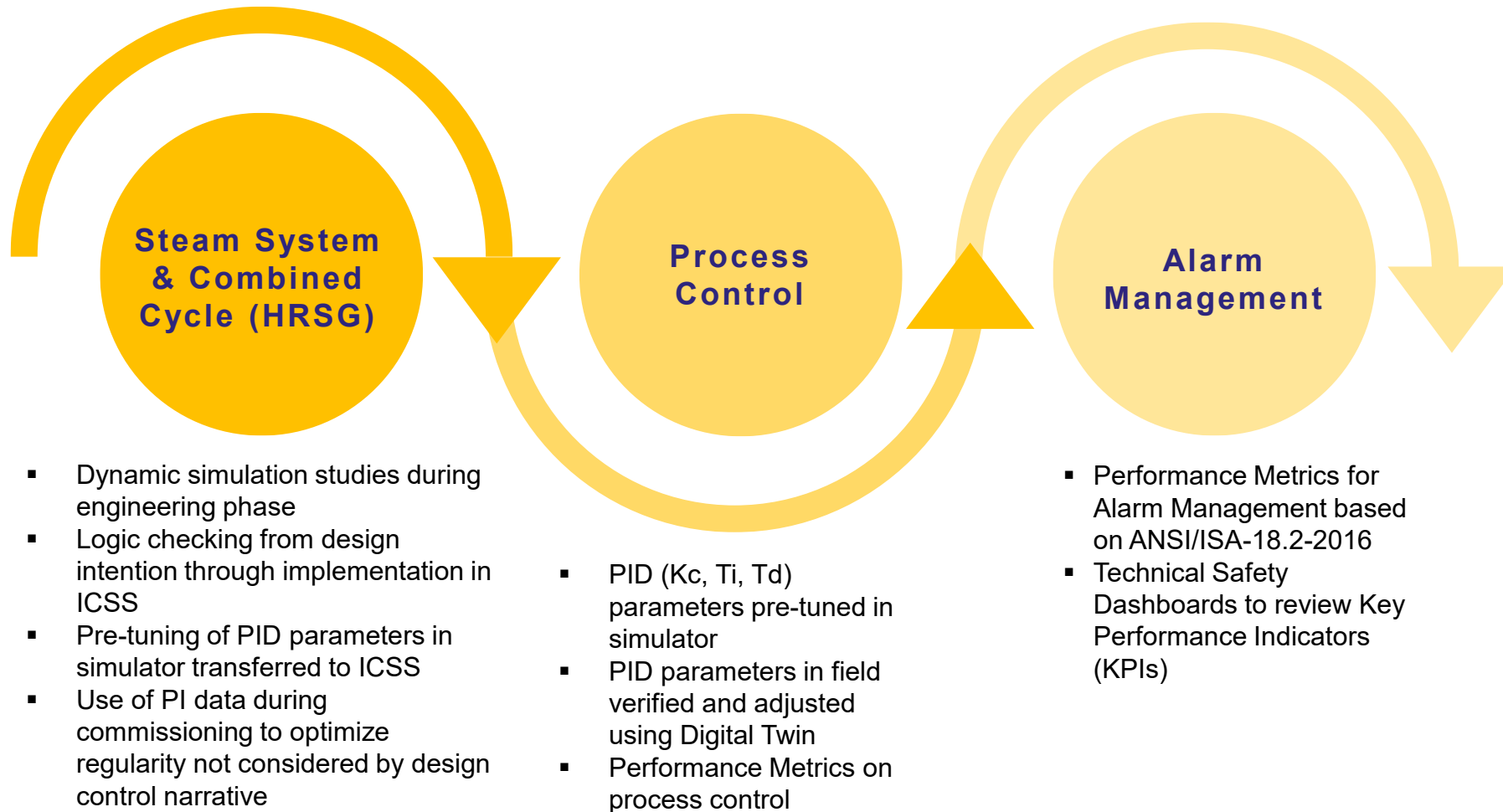
Controller Performance Optimization

- Implementation of controller parameters from simulated environment to real plant
- All Controllers modelled in PI AF with SP, OP, PV, mode (Auto/Man) and PID parameters from field
- Performance Metrics on Controller Performance

PI Asset Framework:



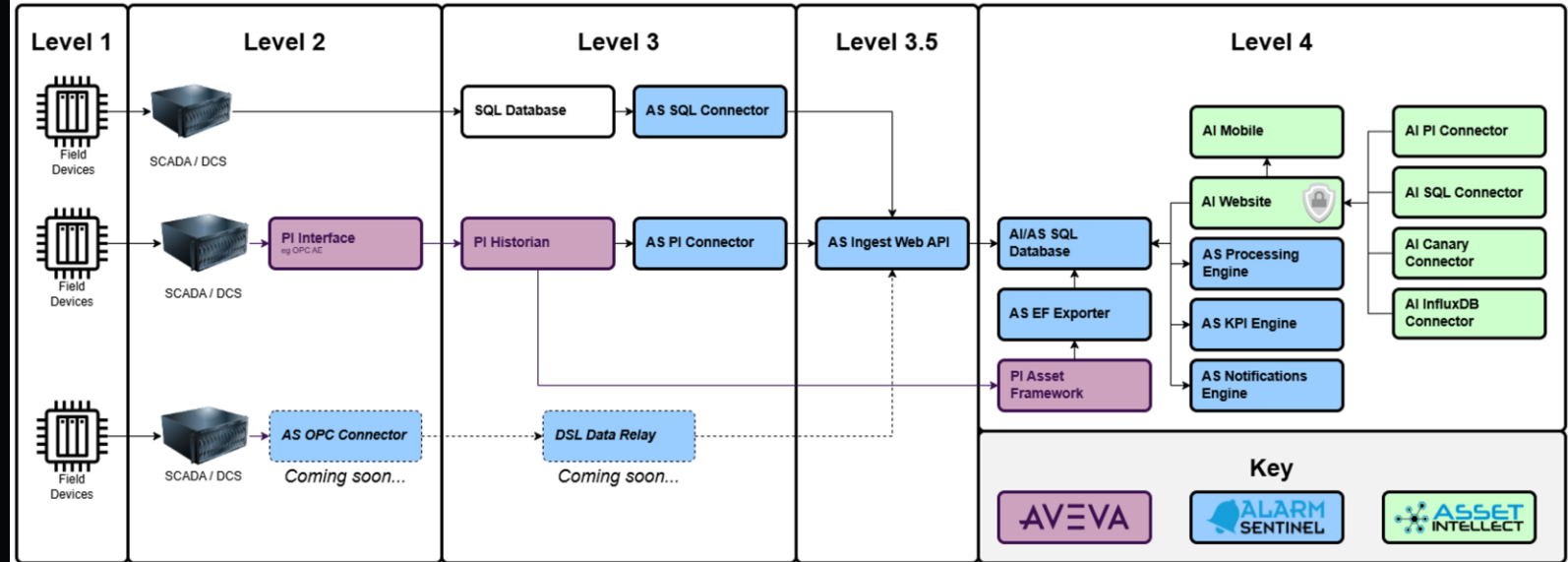
Three use-cases on Integrated Operations



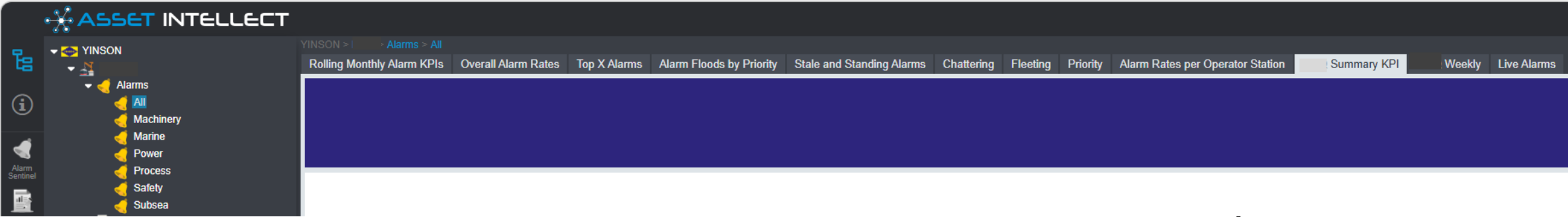
Alarm Sentinel supports ingestion of all alarms from the onboard SCADA/DCS using a single PI tag string per asset.

Visualization, analytics and reporting of Alarm Management KPIs through Alarm Sentinel

Alarm & Events from DCS transmitted via the PI System



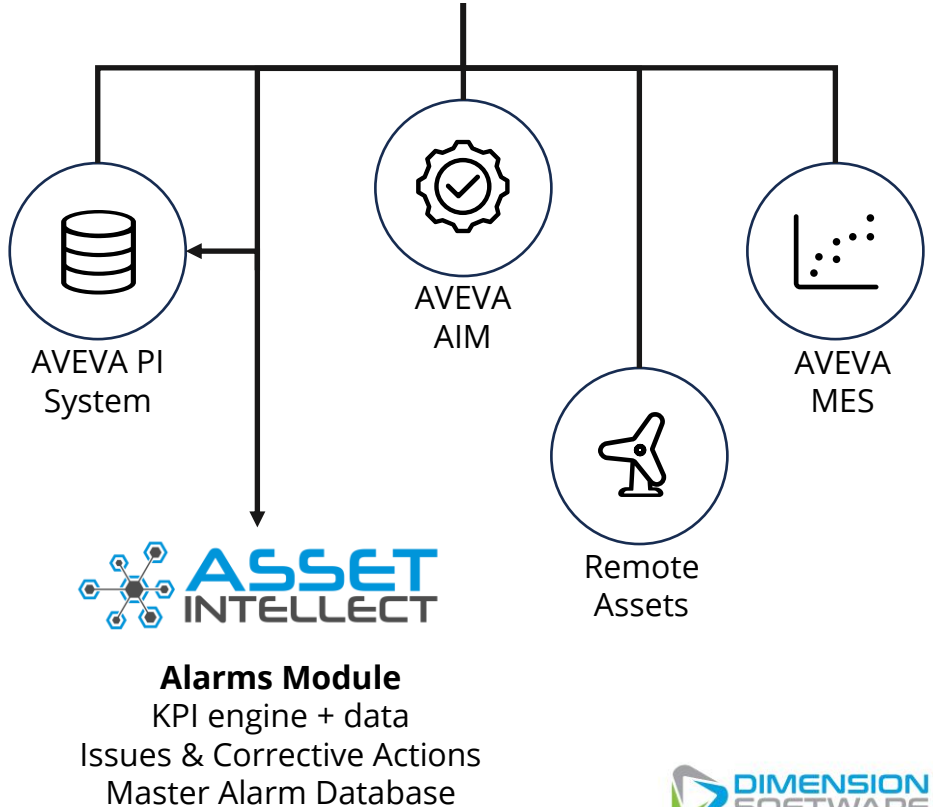
Transformation of Alarm & Events into Actionable Intelligence



Dashboard to review performance:



- Future:
- Extend integration using the Email & Notification Engine and KPI Engine within Asset Intellect, with KPI metrics written back to PI.
 - ICAR-generated outputs to trigger notifications through the Email & Notification Engine, closing the loop between inspection findings and alarm response.
 - Bad Actors identified in Alarm Sentinel to be linked to IFS Work Orders via Databricks, connecting alarm management to maintenance execution.





Integrated digital
solutions enable
operational awareness
and will lead to
improved performance

Optimization of performance through integrated operations

Challenge

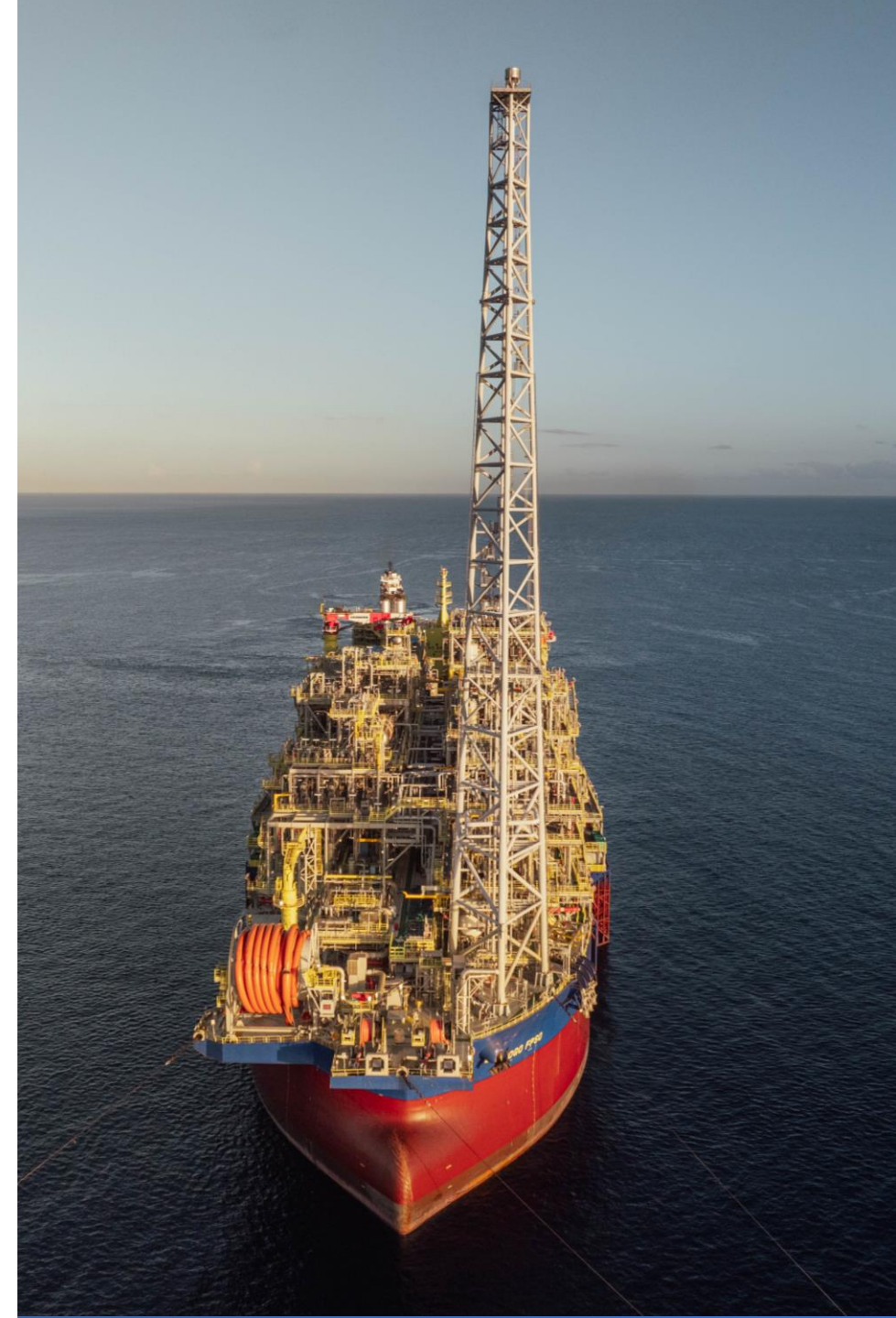
- Human behaviors – it is difficult to change the way we work. And it is difficult to bring the world of analytics back to changed behavior.
- Data. Data does not lie.
- By moving into the world of AI, we need to understand the questions to ask. And we need to know what we want to achieve.

Solution

- Having access to information through integrated solutions with AVEVA™ AIM and defining Key Performance Indicators that are measurable by using AVEVA™ PI System™, integrated with Asset Intellect – Alarm Sentinel.

Results

- Improved access to data.
- Actionable data leading to faster identification of Bad Actors
- By linking controller performance and Alarm and Events with incident reporting through integrated solutions, patterns can be visualized and acted upon, leading to improved performance.



Kari Berte Bye

Operations Analytics Manager

+47 958 81687

kari.berte.bye@yinson.com



Thank you!

Passionately delivering **powerful** solutions

www.yinson-production.com

