

EMPOWER YOUR ANALYTICS WITH OPERATIONAL DATA
2019 OSISOFT MUMBAI SEMINAR

Critical Insight on Real Time Data in Specialty Chemicals

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Agenda





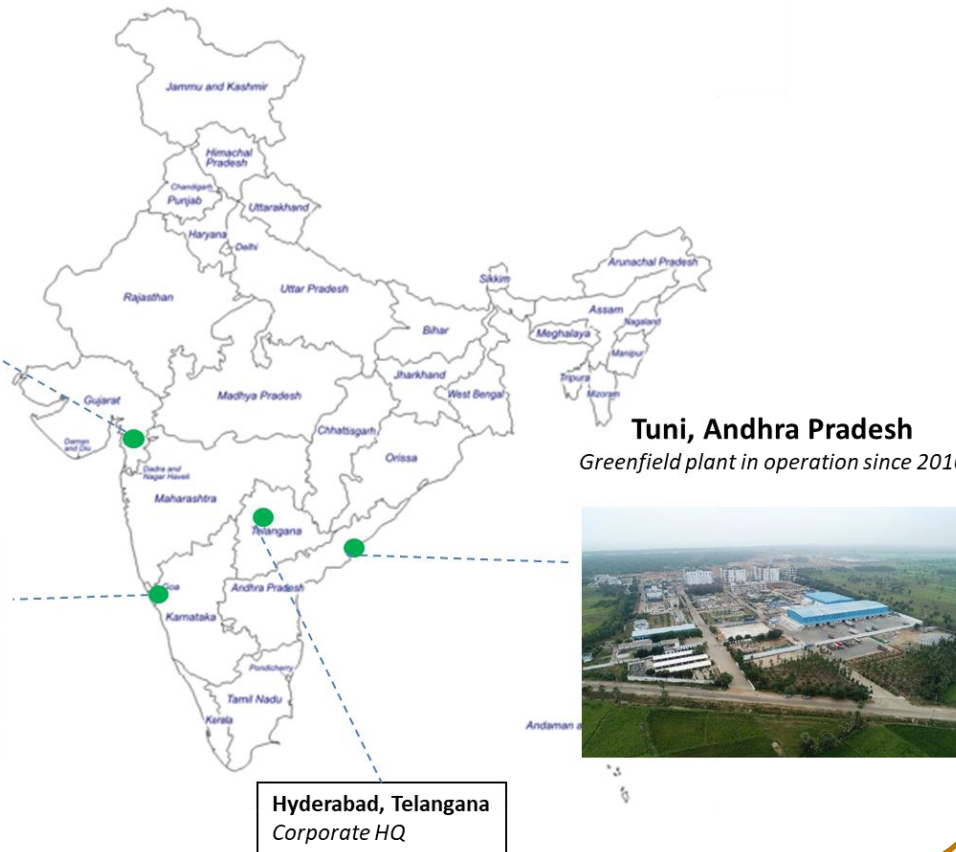
Ankleshwar, Gujarat

Acquired from Bayer in 2014



GOA

Acquired from Syngenta in 2016



- Leading custom manufacturer in agrochemicals – in Global Top 5.
- Key supplier to the agrochemical companies in the Global Top 5.
- Highly automated multi-purpose plants: ~110,000 IOs.
- Fast growing, doubling capacity in next 5 years.

Business needs



Operational Efficiency

Minimize Inventory

Effective Financial controls

Improve asset utilization

Throughput

Reduce batch cycle times

Reduce equipment downtime

Process Efficiency

Improve yields

Improve quality

Digitalization



Step 1: Streamline operations



Step 2: Process insight



Step 3: Process optimization & control



Benefits, Phase I



Finances

Vendor advances reduced: **\$3M**
Effective cash flow management



Process Improvements

Ph I Savings: **~\$0.5M/month**



Optimal Production plan

RM inventory reduced: **\$6M**



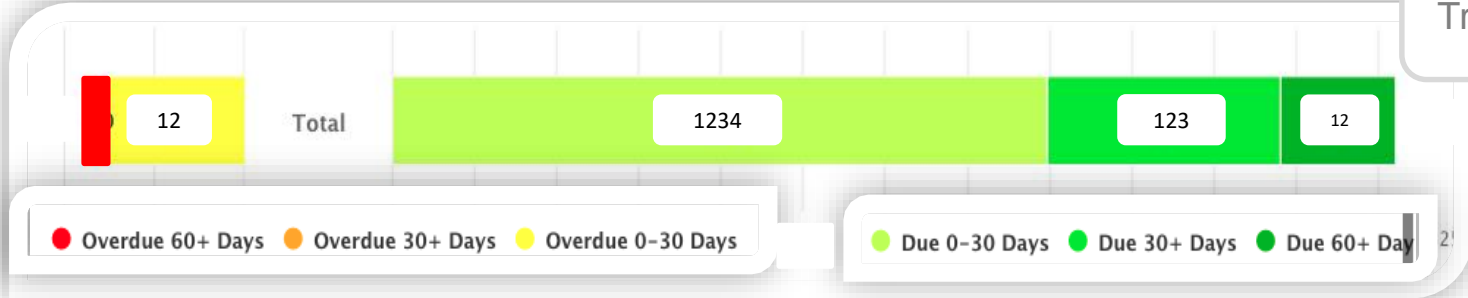
Inventory Control

Excess inventory(180+ days) identified: **\$10M**

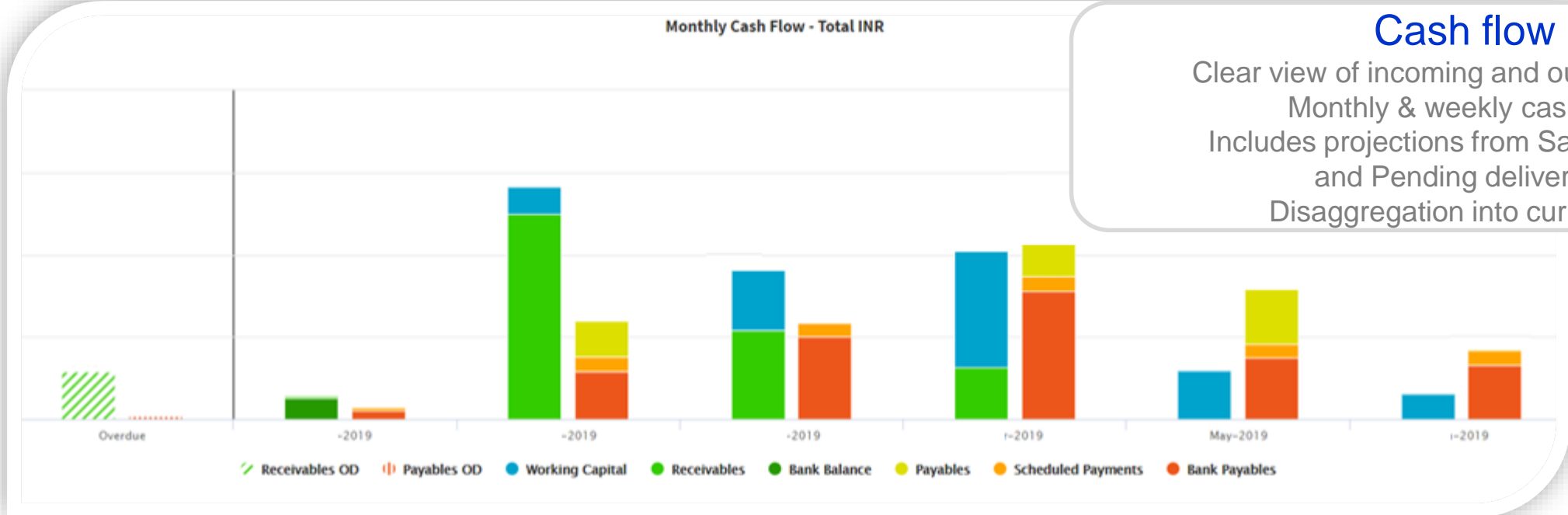
Financial controls



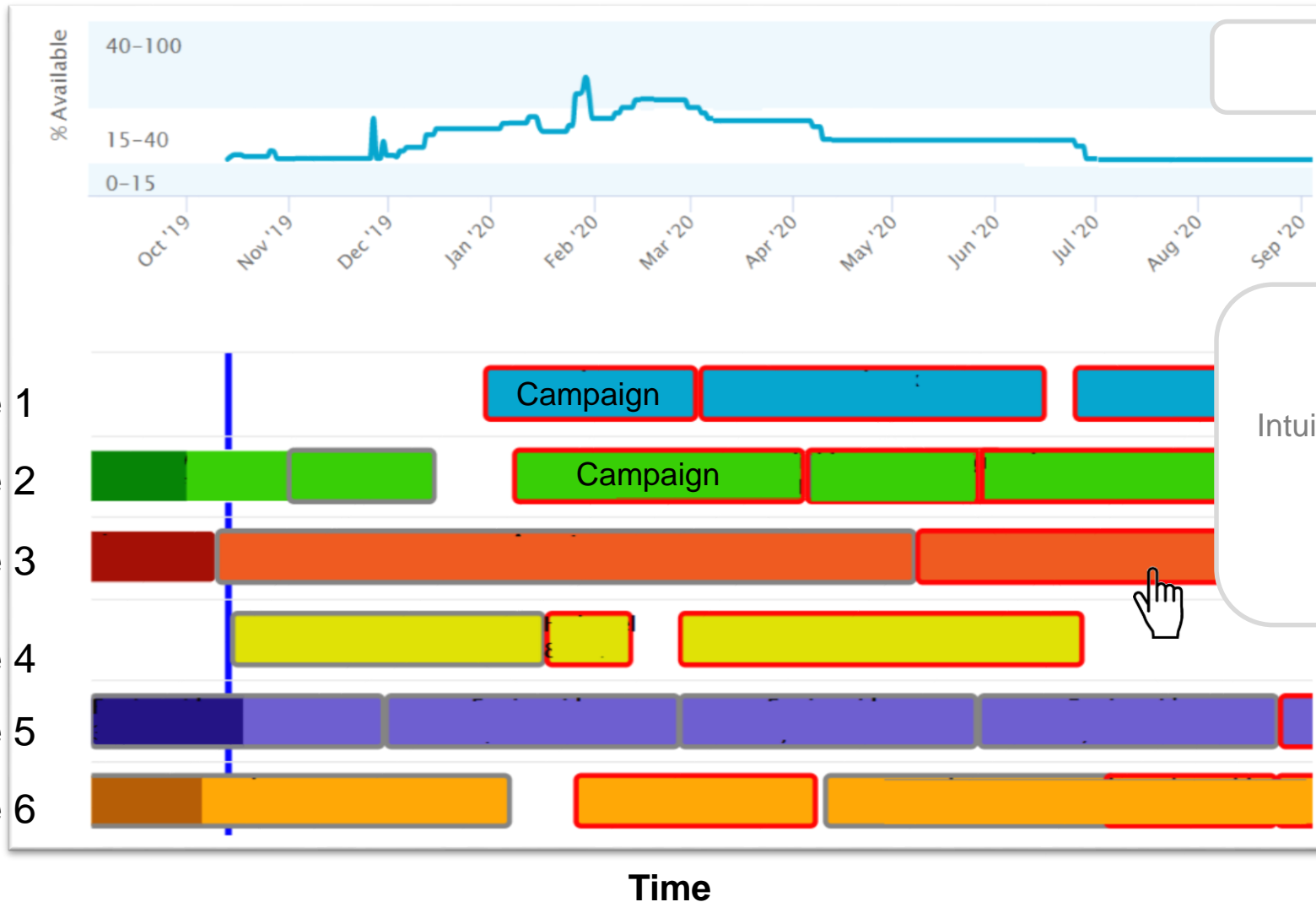
Receivables & Payables control
Track receivables and control pending orders to manage the payables.



Cash flow
Clear view of incoming and outgoing funds
Monthly & weekly cash flow
Includes projections from Sales forecast and Pending deliveries.
Disaggregation into currencies



Production planning

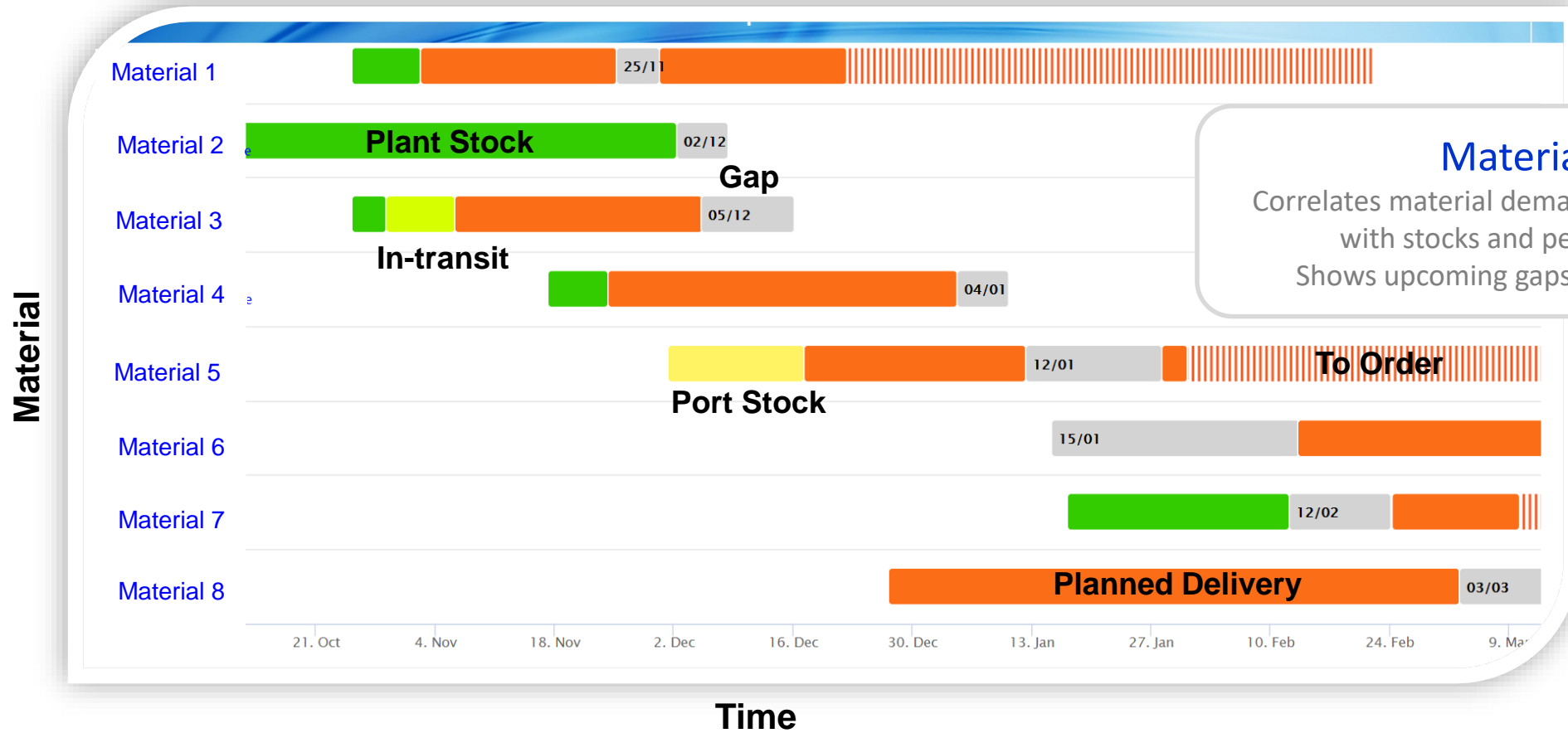


Equipment availability

Production Plan

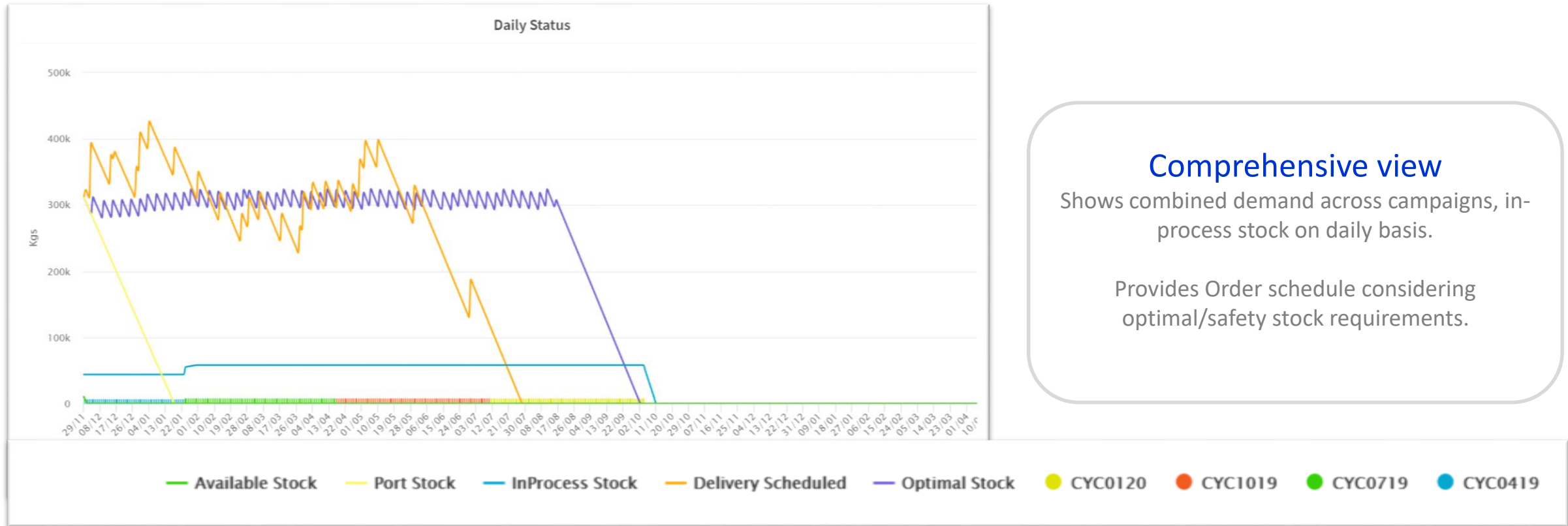
Intuitive view showing Line occupancy, Raw material gaps, Pending orders.
Integrated with live production data
Instantly identify available capacity

Material plan



Material Plan
 Correlates material demand across all campaigns with stocks and pending deliveries. Shows upcoming gaps and missing orders.

Material Status

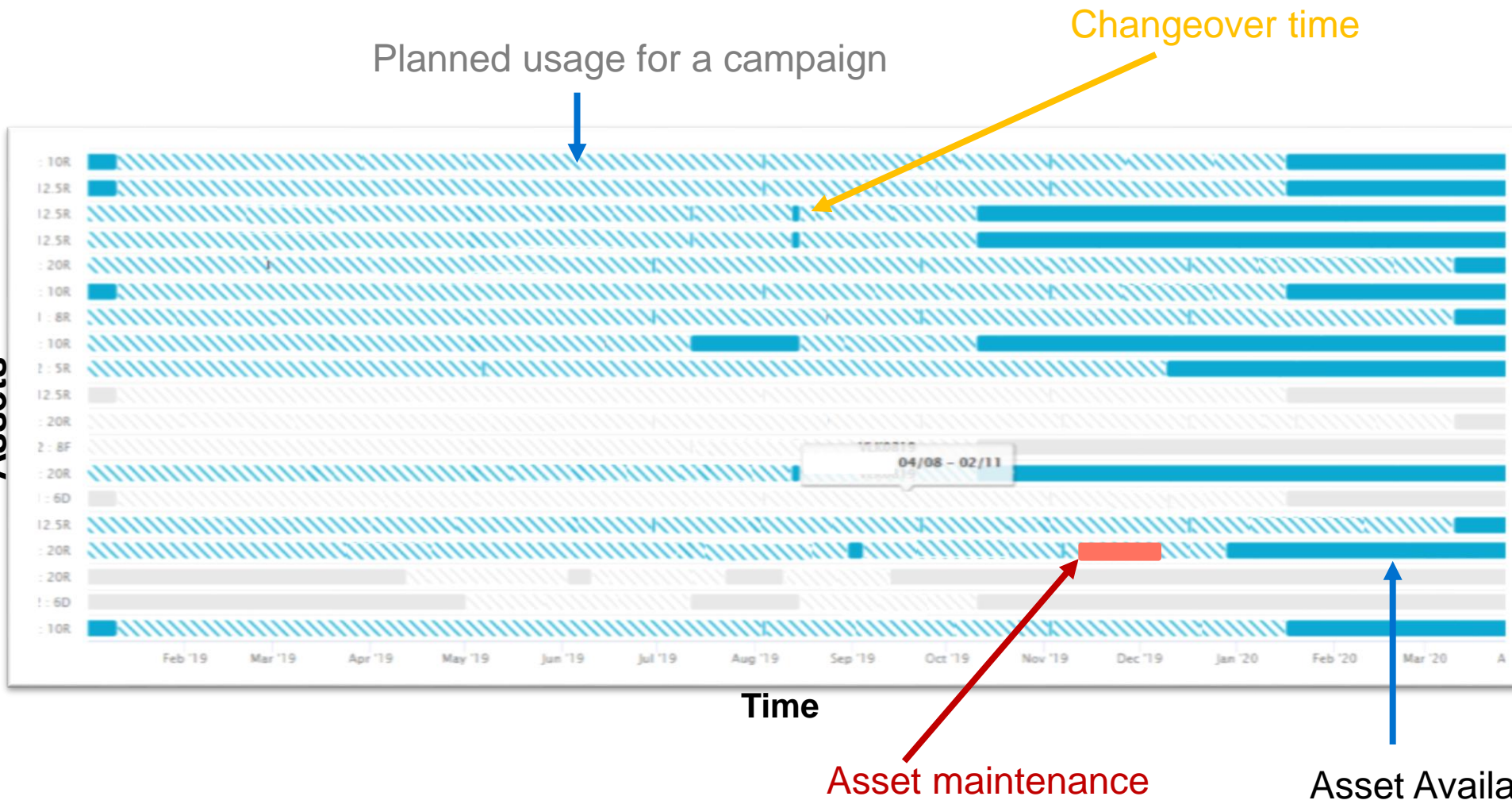


Comprehensive view

Shows combined demand across campaigns, in-process stock on daily basis.

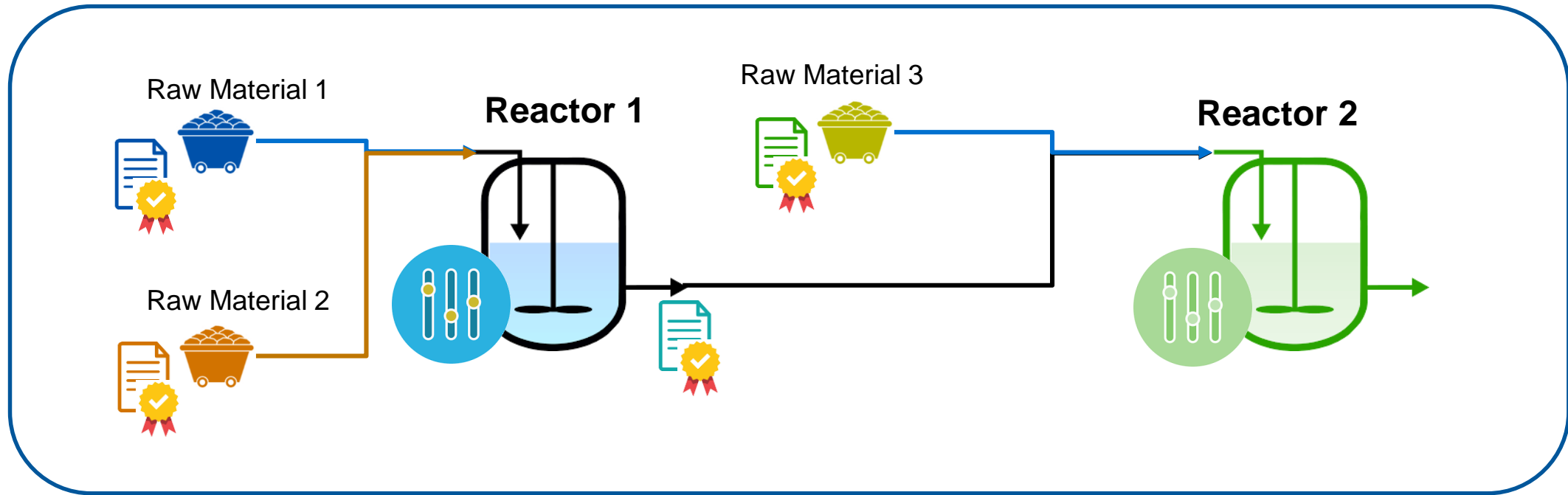
Provides Order schedule considering optimal/safety stock requirements.

Visibility in asset utilization



- Utilization metrics
 - Equipment type
 - Campaign & time
 - Capacity
 - Location
- Search available assets
- Integrated with Production scheduling

Raw material sensitivity



Sensitivity analysis to identify raw materials which affect the FG quality the most

PI System Architecture

Deccan Corporate Network

Enterprise Command Center

PI Vision



Data Center

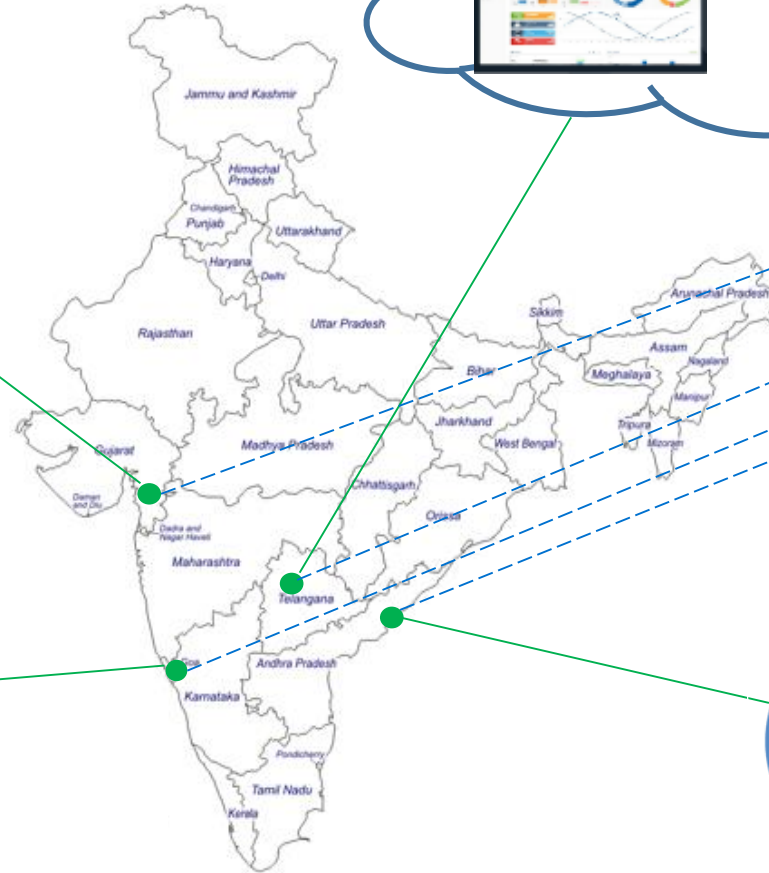
Emerson Delta V & Yokogawa Centum, 20,000 IOs



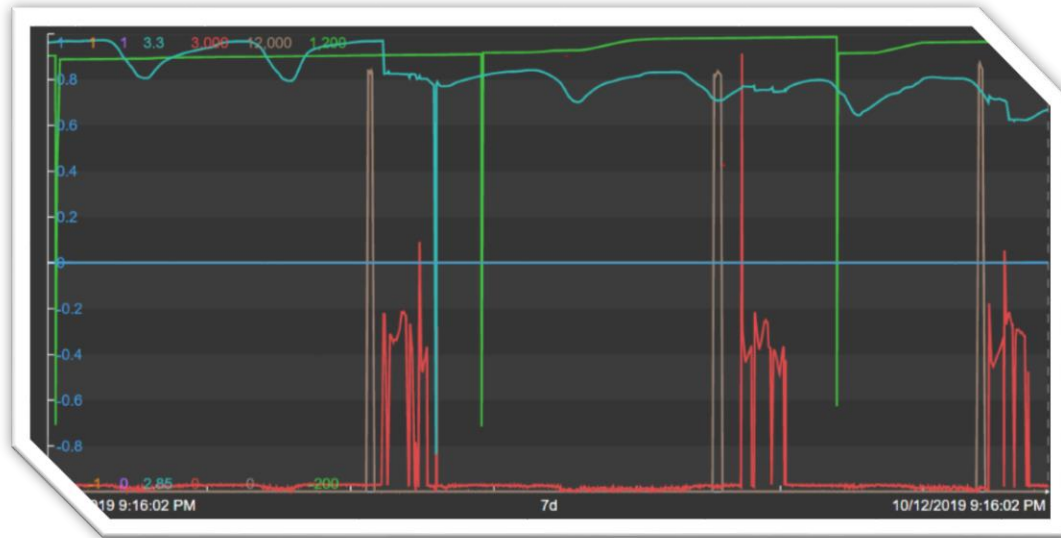
Yokogawa Centum & Emerson Delta V, 27,000 IOs



ABB System 800xA & Siemens PCS7, 65,000 IOs

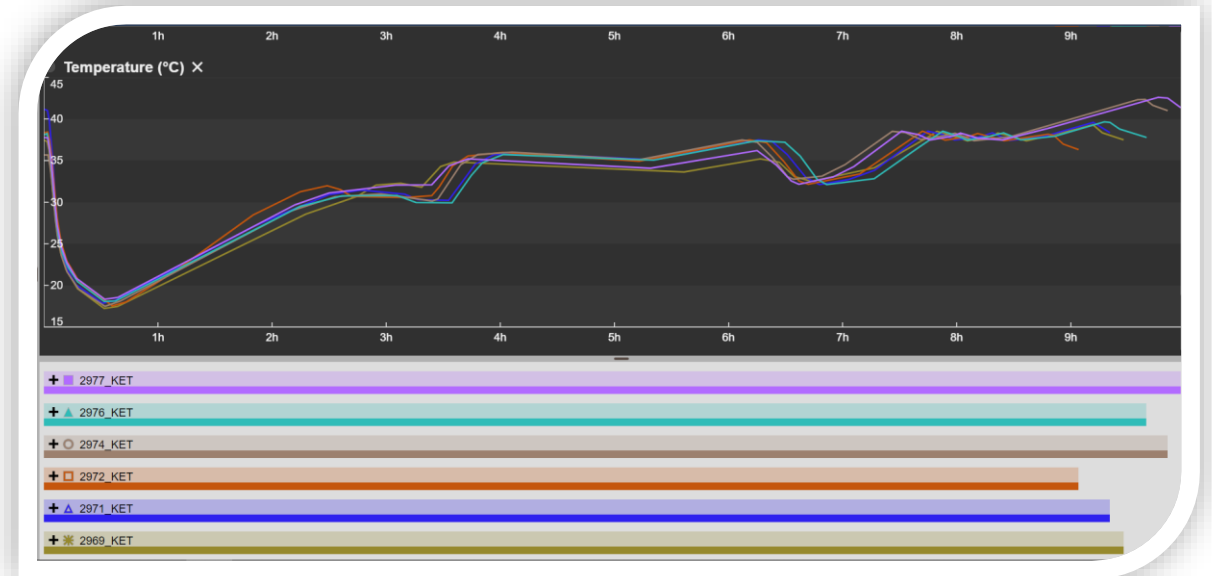


Process visibility

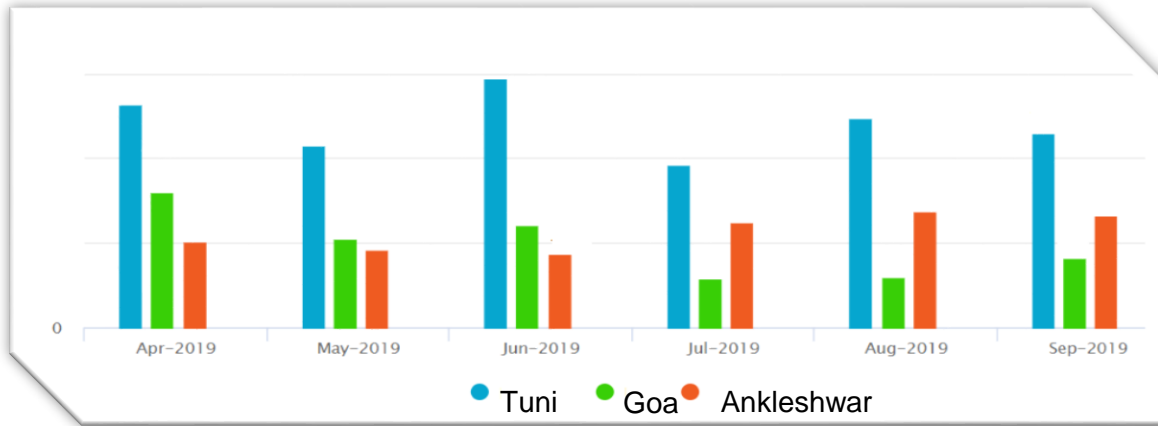


Remote Process monitoring

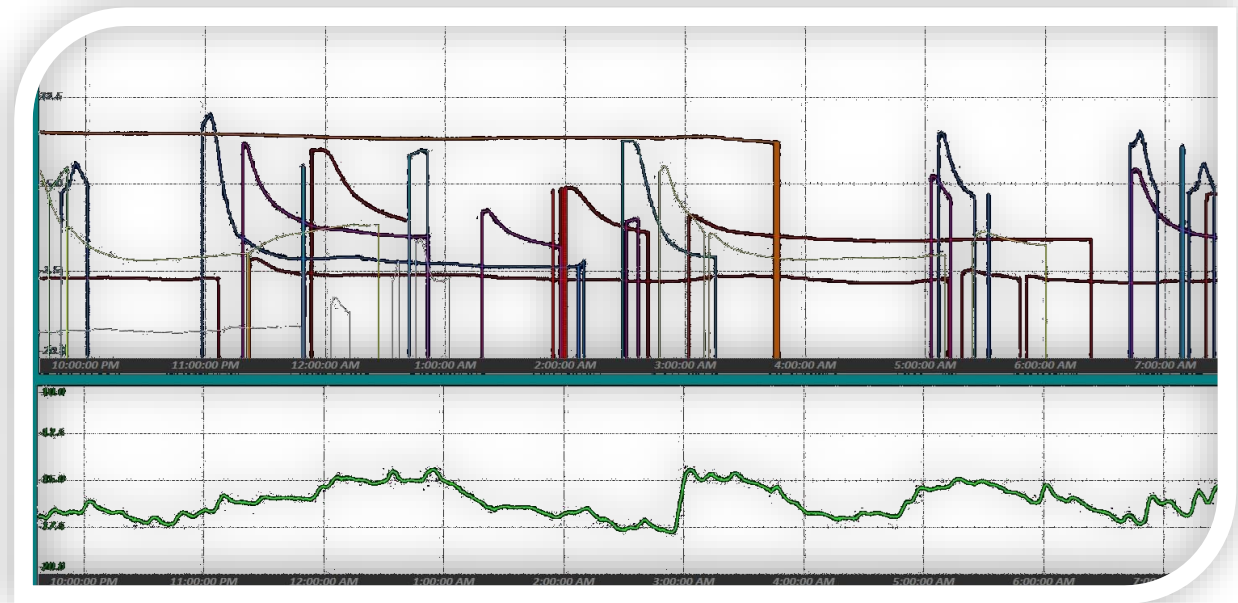
Remote access to live process data
Batch cycle deviations



Process visibility



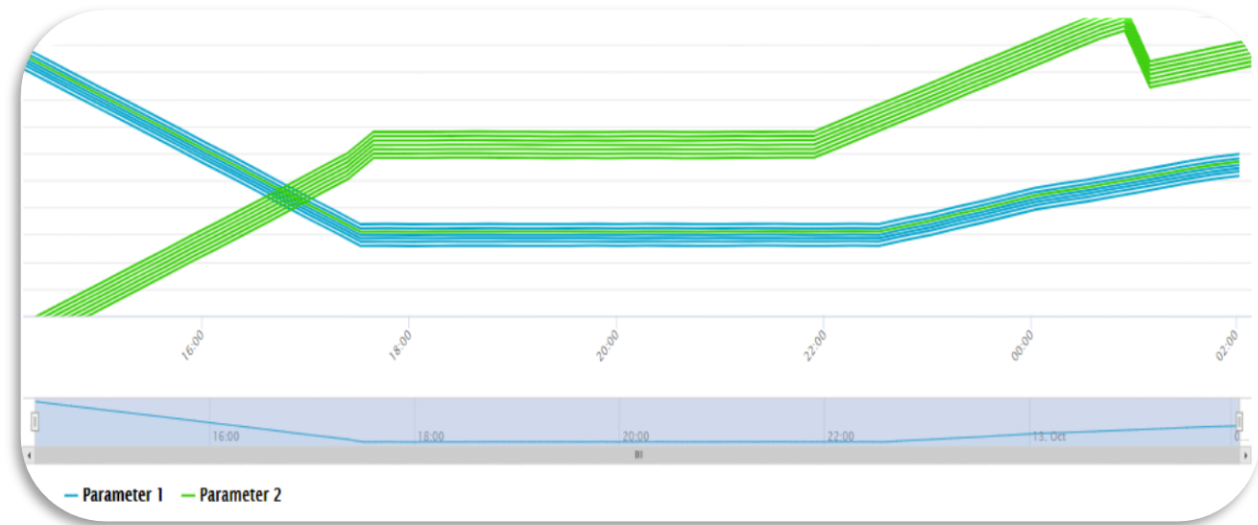
Alarms & interlock activations
Executive level plant wise visibility for interlock activation



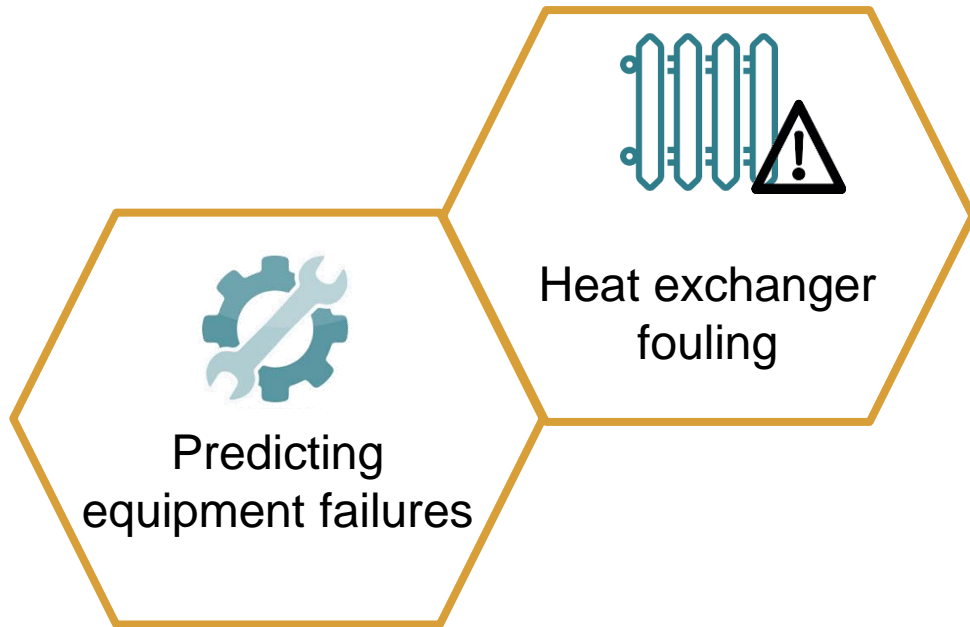
Peak utility management
Monitor and manage concurrent loads

Process optimization

- Pick trends of batches with better yields and time cycles.
- Create a golden band of process parameter trends.
- Drive the process within the trend envelope.



Predictive analytics



- Using PI Web API client libraries and Python ML libraries
- Start with detection of Condensers fouling.
- Extend to Reactor fouling detection and other equipment failure detections in the future.

Lessons learned



- Integration with multiple vendors
 - Each DCS vendor has different requirements.
 - Batch interface is specific to each vendor.
 - Took longer than anticipated.
- PI Web API is extensive and easy to use to build custom applications.



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Bringing manufacturing
& IT together

Eco system



Technology partner

KYNEA

Implementation partner

謝謝

KEA LEBONA

TAPADH LEIBH

고맙습니다

DZIĘKUJĘ CI
NGIYABONGA

БАЯРЛАЛАА

MISAOTRA ANAO

OBRIGADO شكرا

DANKON TANK TAPADH LEAT

SALAMAT

KÖSZÖNÖM

DANKIE TERIMA KASIH

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GO RAIBH MAITH AGAT

БЛАГОДАРЯ GRACIAS

ТИ БЛАГОДАРАМ

TAK DANKE

MAHADSANID

THANK YOU

DANKJE

ΕΥΧΑΡΙΣΤΩ GRATIAS TIBI

AČIŪ

SALAMAT

MAHALO IĀ 'OE

TAKK SKALDU HA

RAHMAT

MERCI

GRAZZI

PAKKA PÉR

ありがとうございました

ДЗЯКУЙ

GRAZIE

HATUR NUHUN

PAXMAT CAҒA

SIPAS JI WERE

TERIMA KASIH

DI OU MÈSI

ĎAKUJEM

MATUR NUWUN

CẢM ƠN BẠN

UA TSAUG RAU KOJ

WAZVIITA

ТИ БЛАГОДАРАМ

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