8TH MAY 2025

DRIVING PROJECT EXCELLENCE AND OPERATIONAL EFFICIENCY WITH ADVANCED AUTOMATION

Viksit Gujarat: Viksit Bharat@2047

ENGINEERED TO OUTRUN

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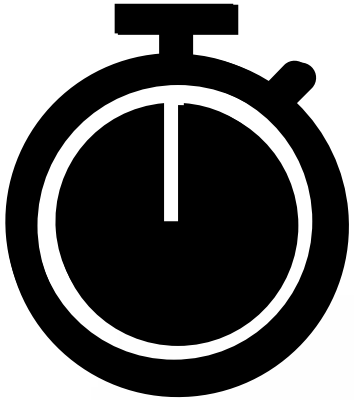
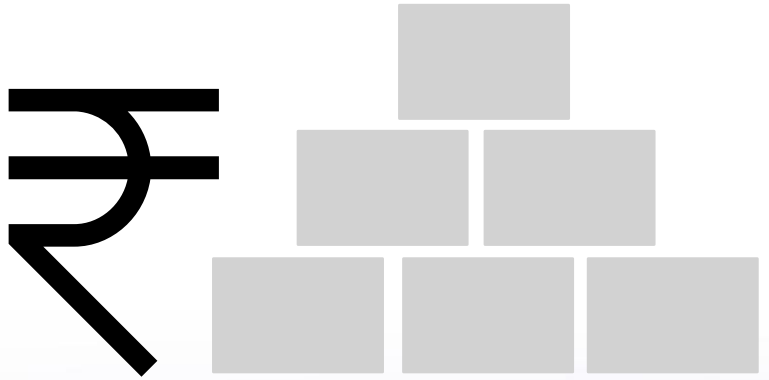
CHEM & PETCHEM Project Challenges

Minimize Schedule



Minimize Investment

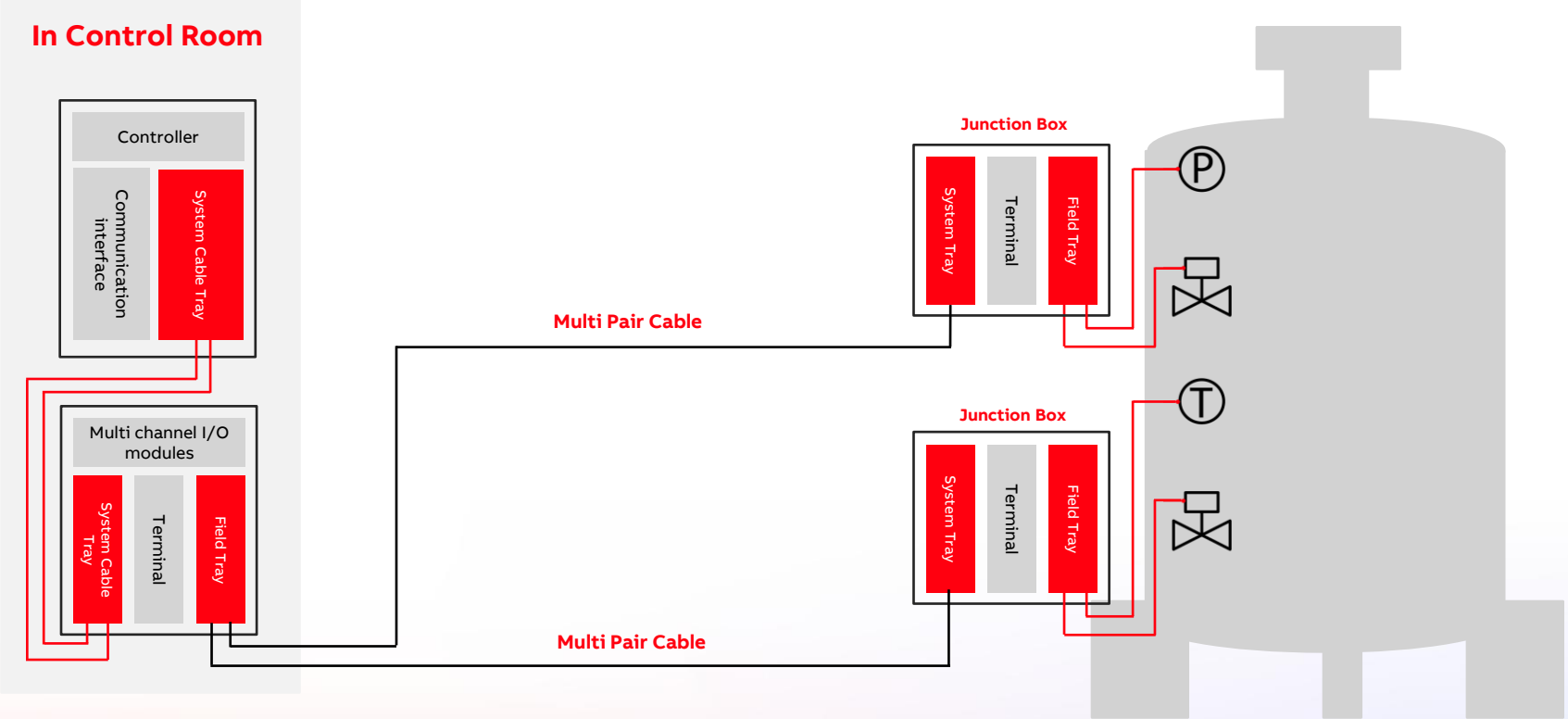


01

IN FIELD REMOTE I/OS

Traditional Approach

I/O Marshalling in Control Room

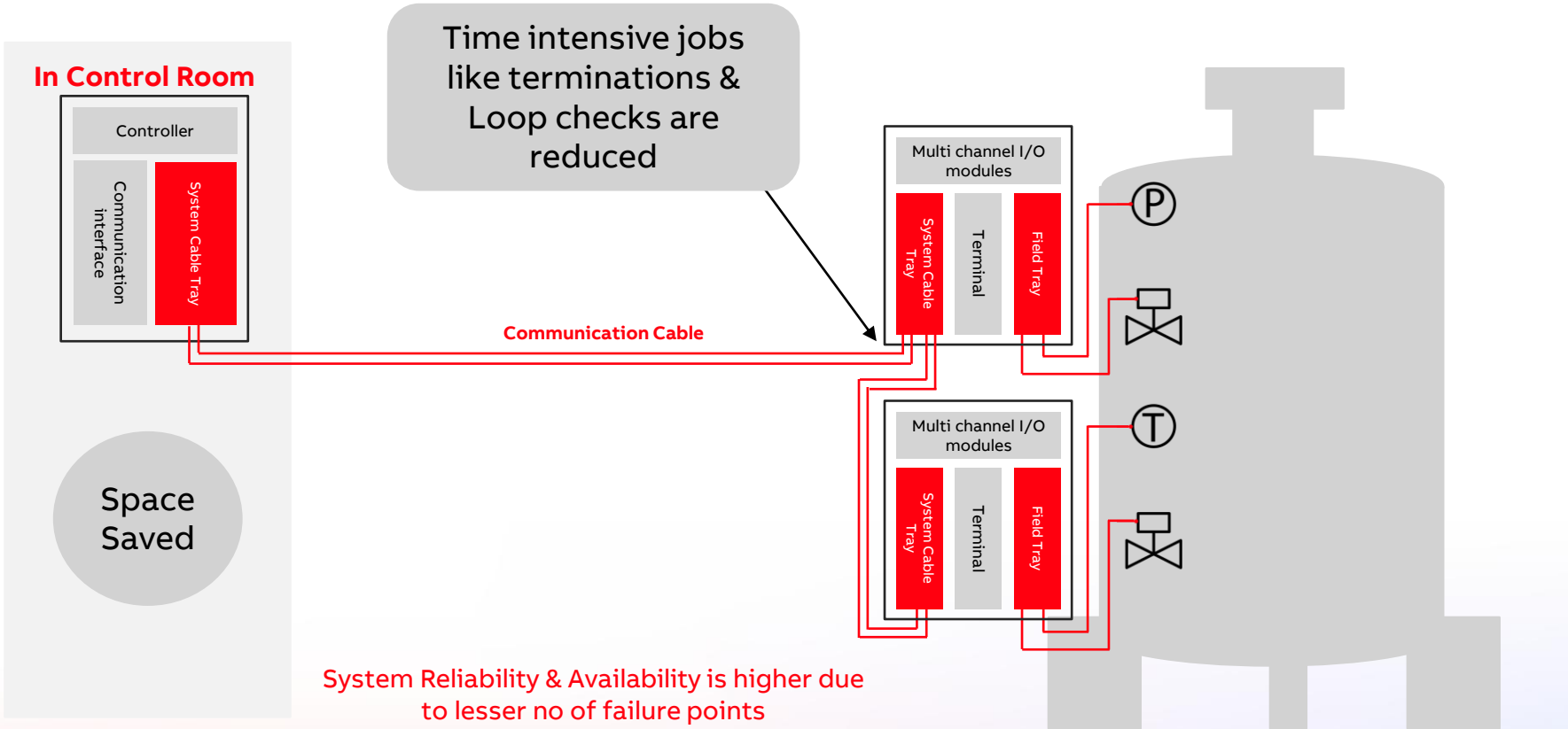


Changes Necessitate More Investment and Time

- Traditional Marshalling architecture is rigid
- Field wiring schedule drives need for marshalling cabinets
  - Costly late changes are inevitable
  - Dependencies drive a ‘sequence’ approach.
  - Updates to OEM equipment
  - Capacity balancing / partitioning
  - New equipment being added
  - Signal type changes
- Traditional I/O design creates dependencies
- Late changes create costly change orders

Remote Marshalling

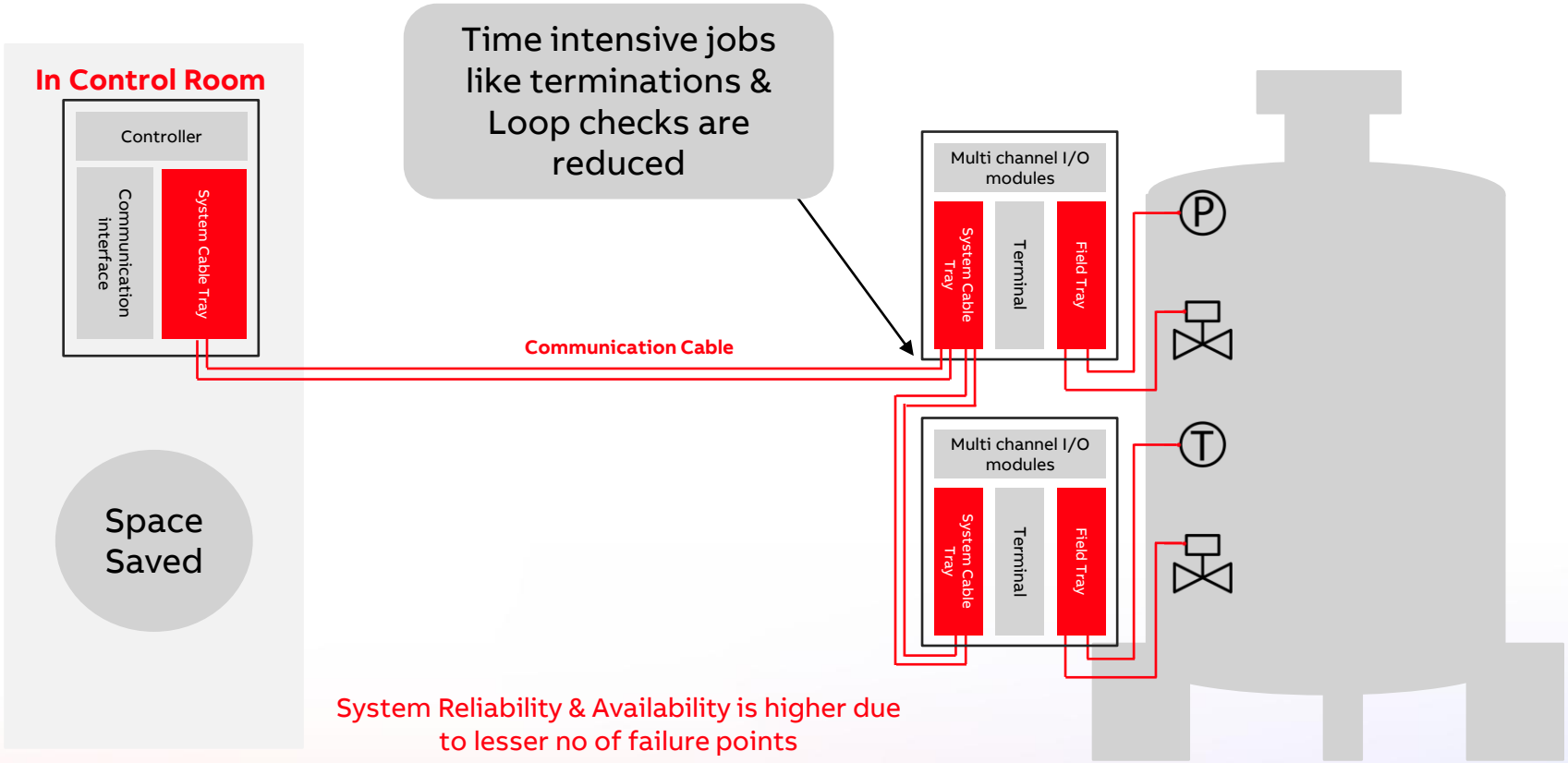
I/Os in Field



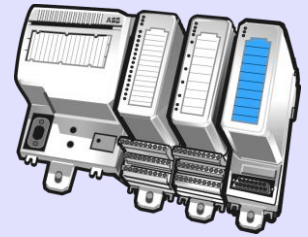
- Reduces Cable, cable trays, Junction Box, Erection activity
- Quicker installation & commissioning schedule
- Scalable & Modular
- Late changes can be accommodated without impact
- Smaller Footprint

Tailored Fit to meet the Dynamic Demands of Chemical Industry

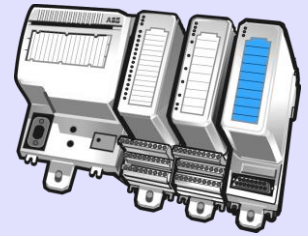
Remote Marshalling
I/Os in Field



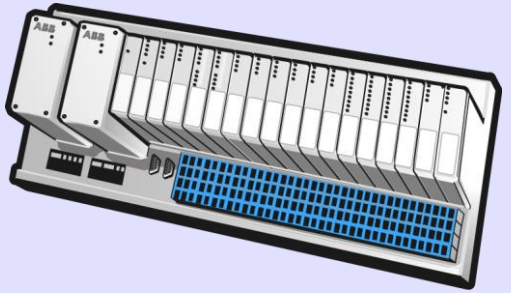
- **Safe Area**
  S800 I/O series



- **Zone-II Area**
  S800 I/O series



- **Zone-I Area**
  S900 I/O series



Tailored Fit to meet the Dynamic Demands of Chemical Industry

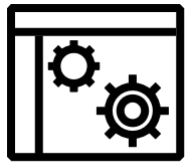
ABB’s Remote I/O footprint (Partial) 12 Lakh + I/Os

Enabling lean project execution schedule

Make Your Projects & Operations Smarter

Utilize ABB Remote I/Os solutions

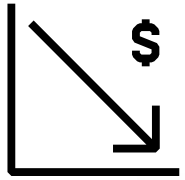
Plug & Play engineering & commissioning



No additional configuration or math blocks

I/O channel level integrated diagnostic

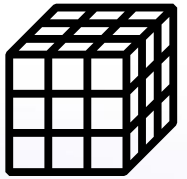
Ease of maintenance



Lowest Total Cost of Ownership

Best In Class & Longest Lifecycle

Integrated Hart Management



Flexible & Scalabile

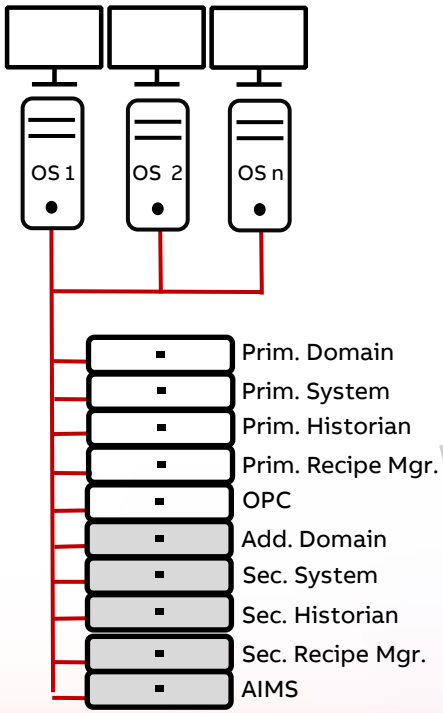
02

IT HARDWARE: VIRTUALIZATION

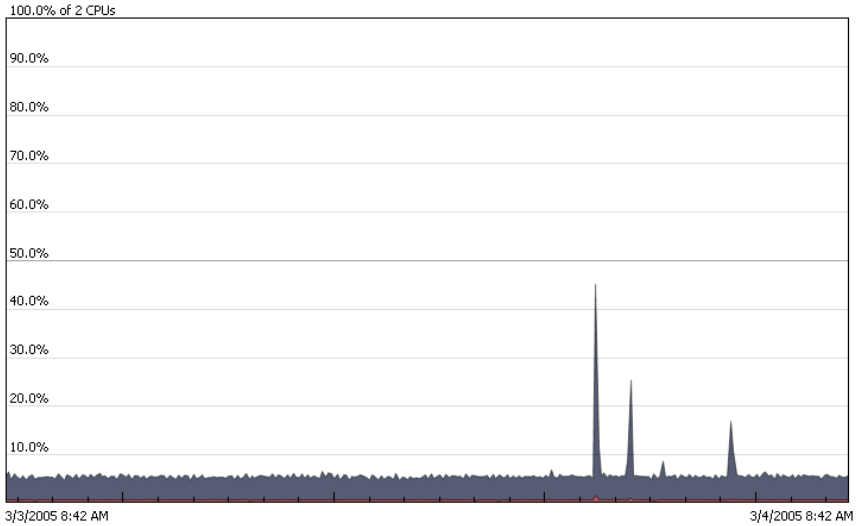
ABB Ability ™ System 800xA Virtualization

Leveraging IT for enhanced Productivity and Profitability

Traditional architecture



CPU Utilization



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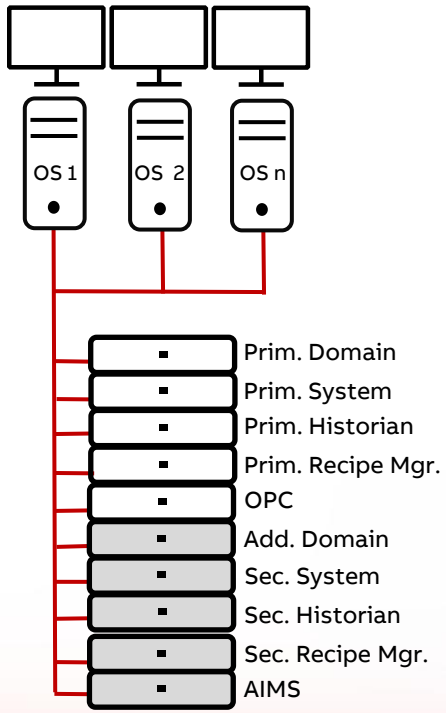
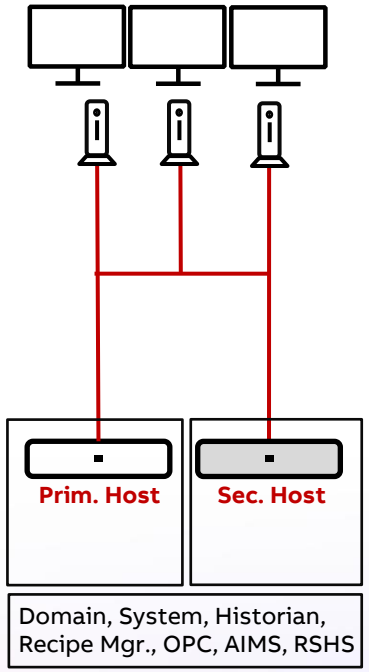


Virtualized architecture



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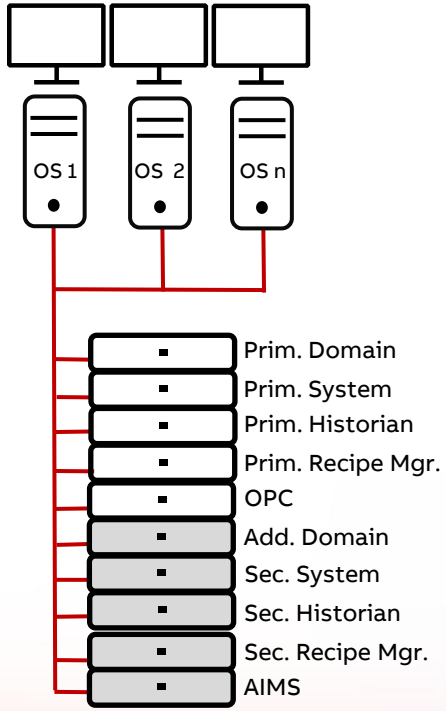

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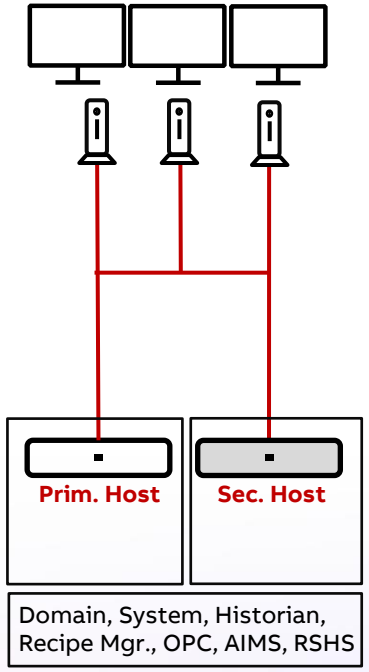

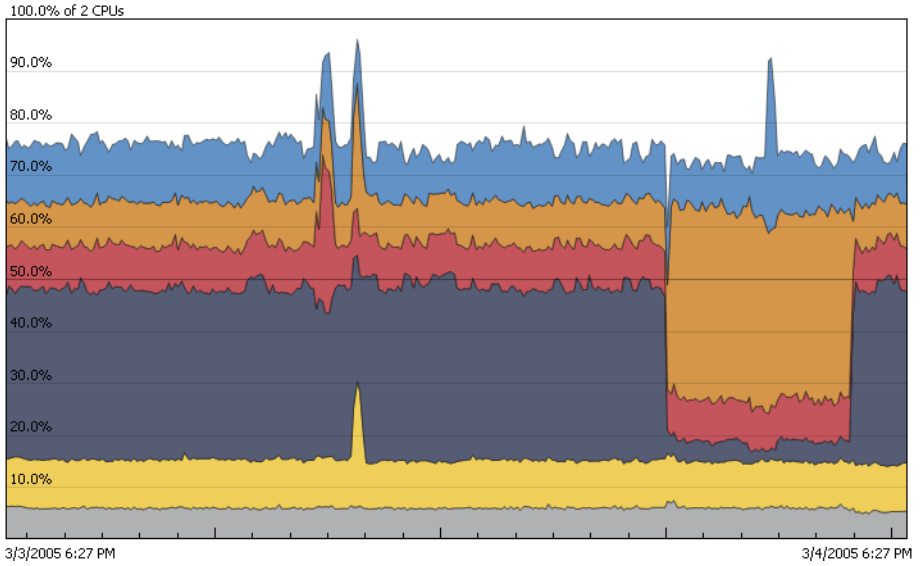

CPU Utilization

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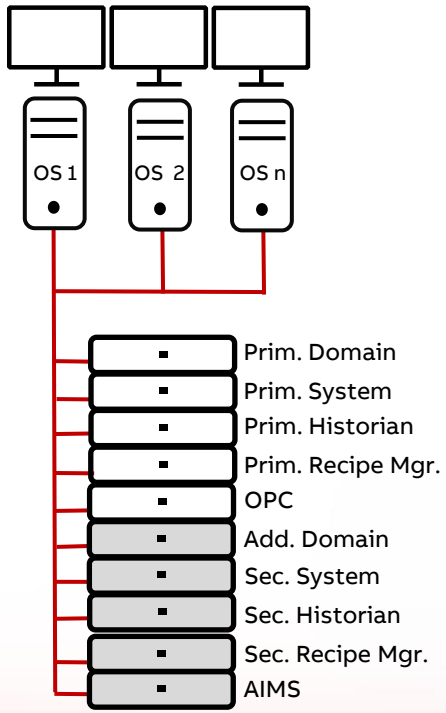
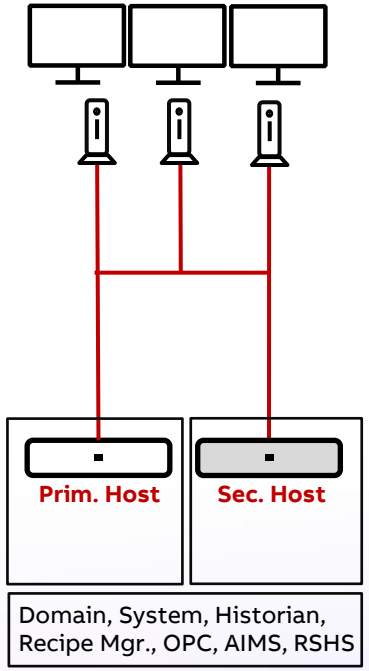
Traditional architecture



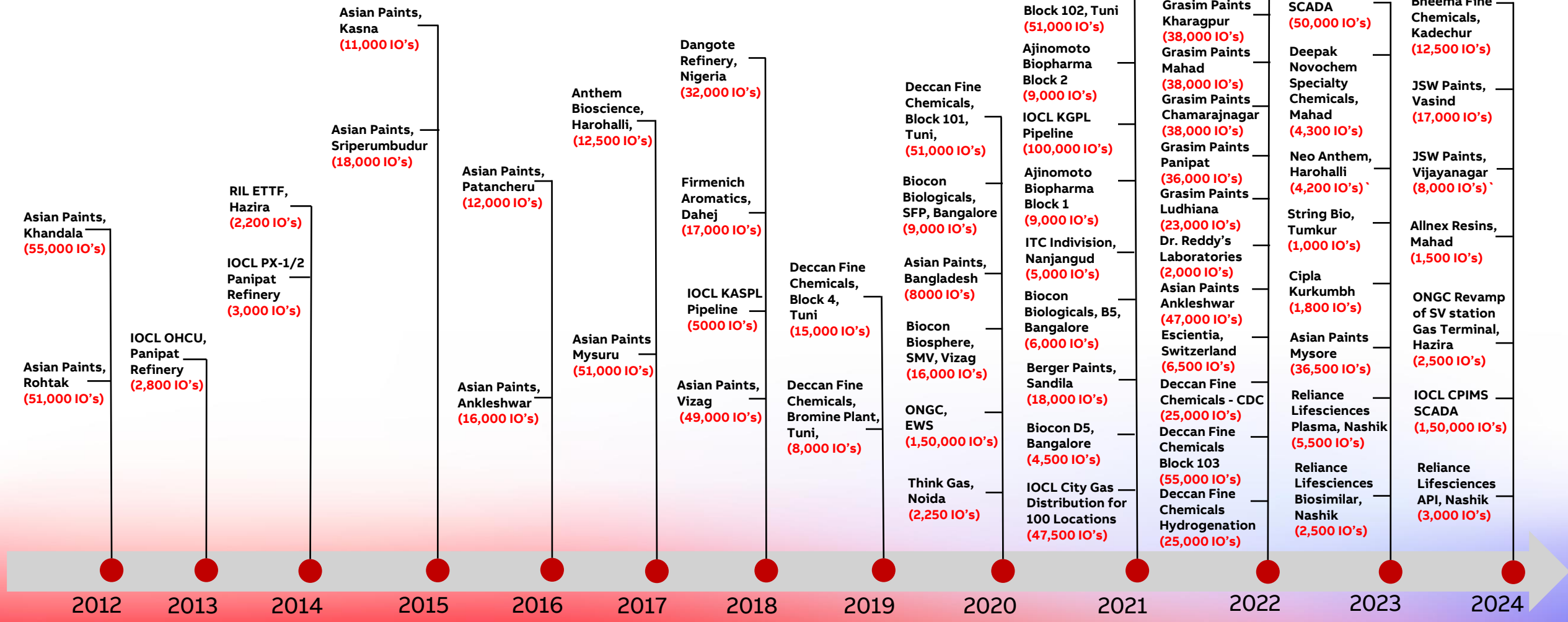
Virtualized architecture



- Future Proof
- Energy Efficient
- Cost Saving
- Flexibility and Scalability
- Servers & Clients virtualization
- Freedom to choose IT assets
- Cyber Security
- Customer Value

ABB India Virtualization Experience

15 Lakh+ I/Os delivered On Virtualized Systems

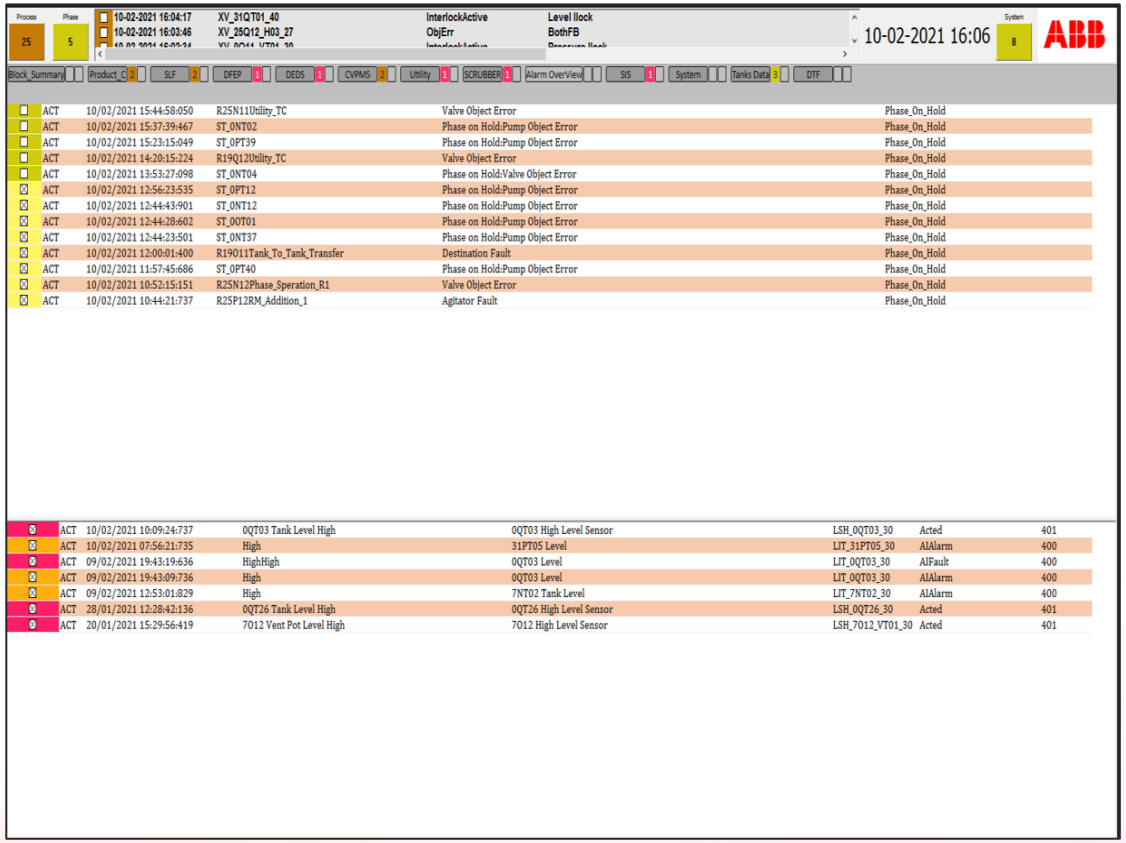


03

OPERATIONAL PHILOSOPHY

Doing more with Less - Exception based Operations

Single Plant – Single Operator



Doing more with Less - Exception based Operations

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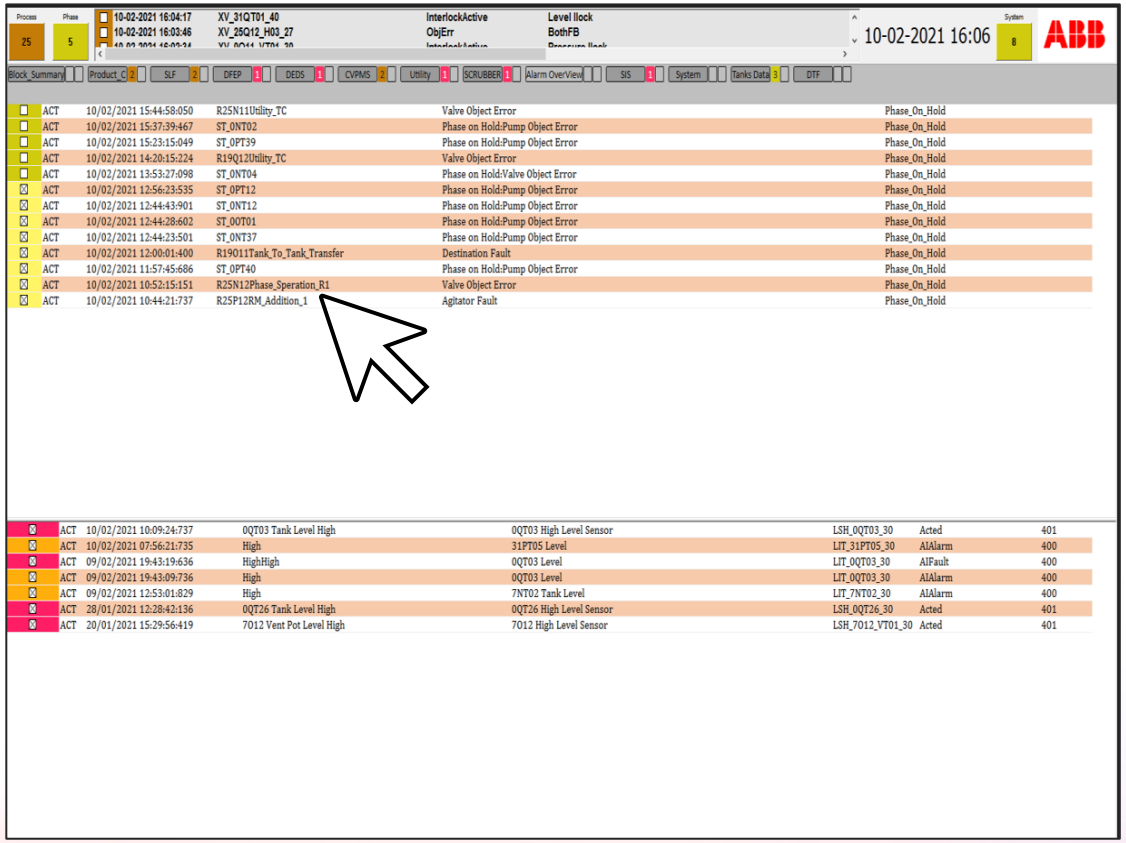
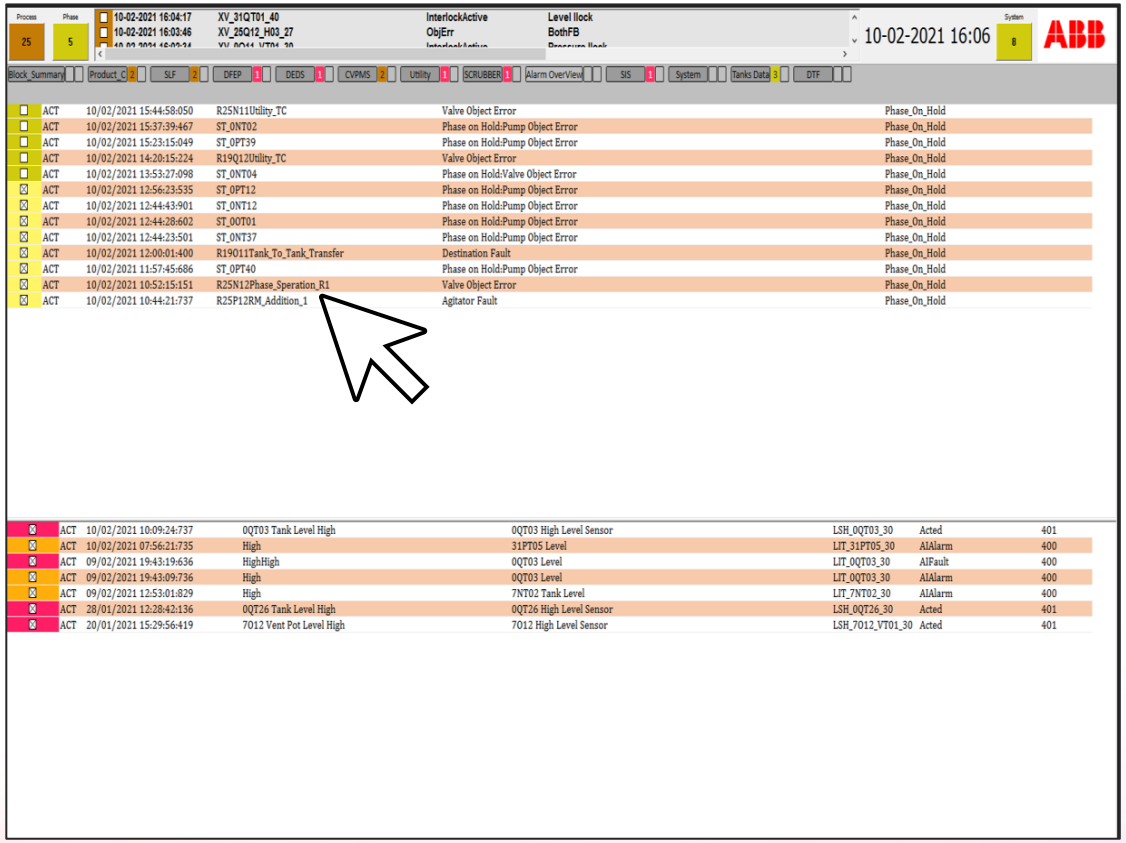
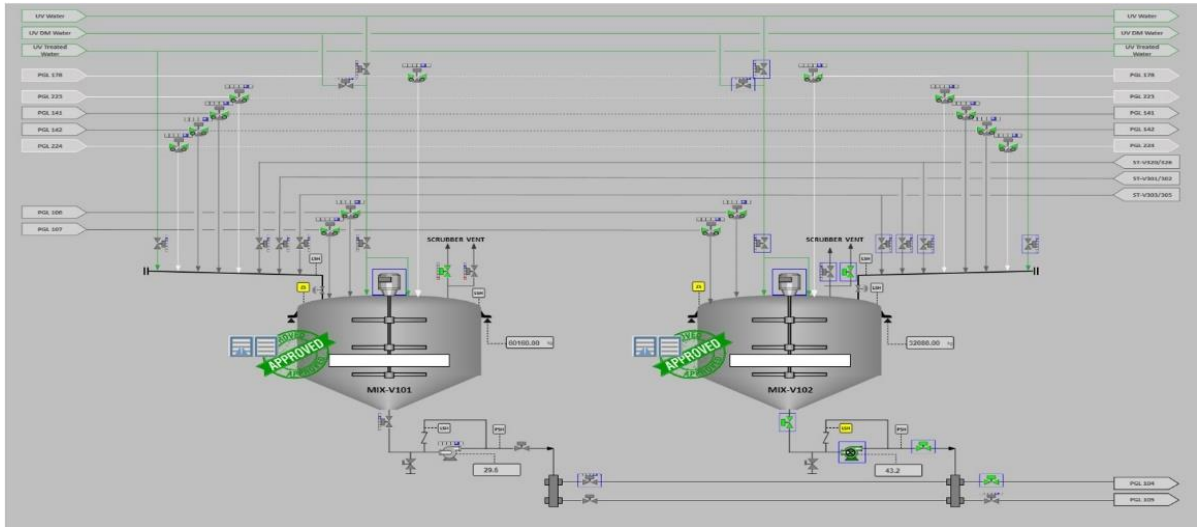
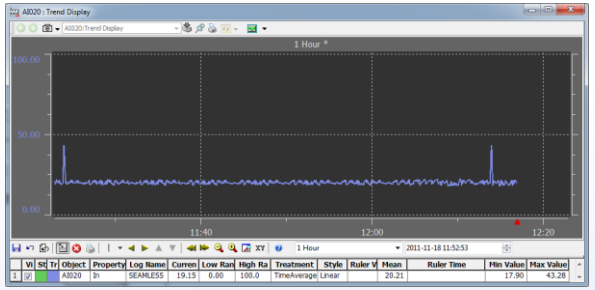


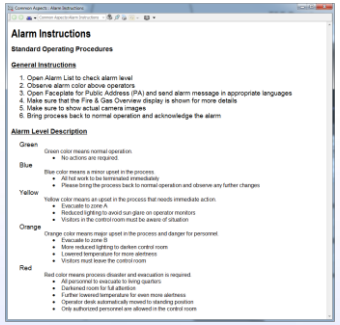
Doing more with Less - Exception based Operations

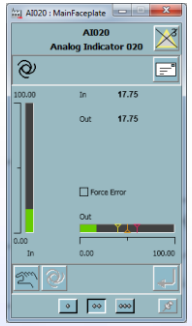
Single Plant – Single Operator











Exception Based Operation

Single Plant – Single Operator

Focused - drawing attention to the most important issues.

Relevant- providing a non-spurious high-operational-value warning

Unique- not duplicating another alarm

Timely - occurring soon enough for an operator to respond effectively

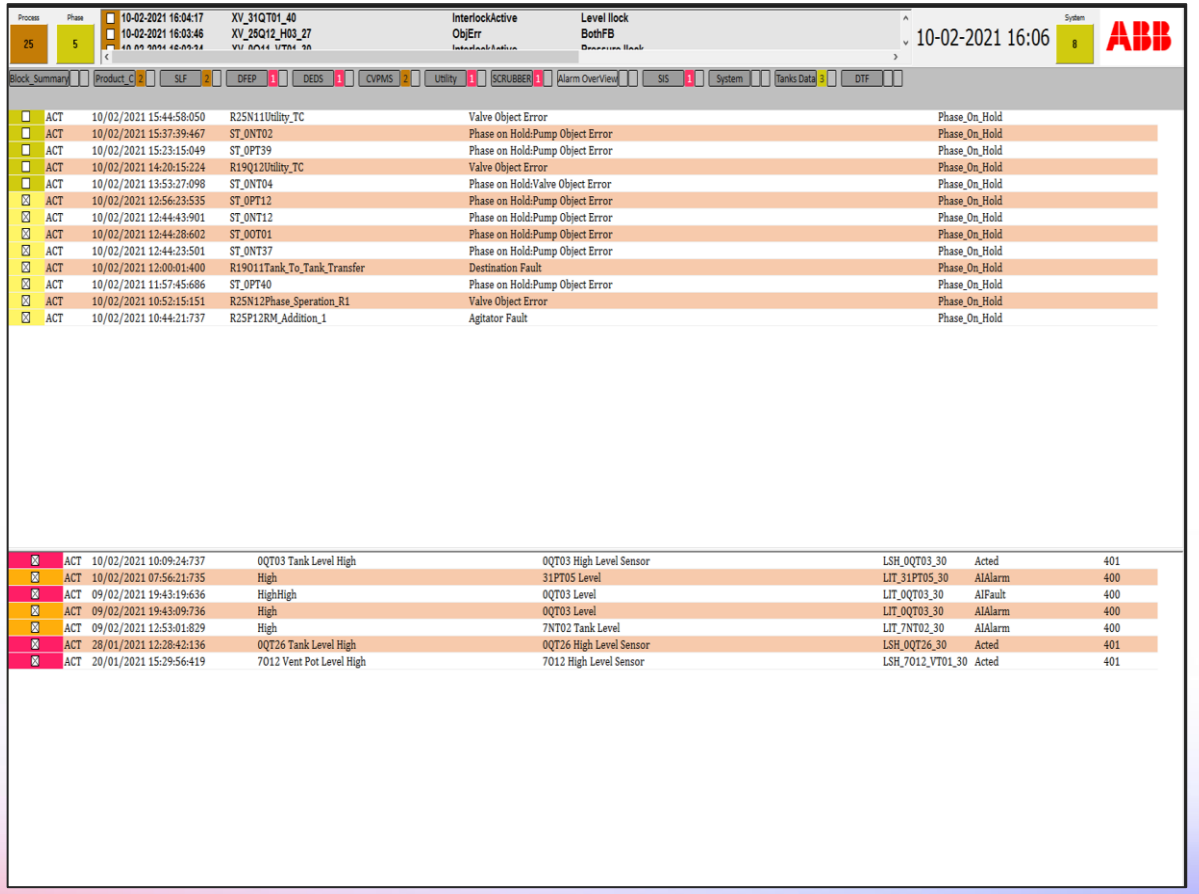
Prioritized - indicating the priority an operator should give the alarm

Understandable -having a clear and easy-to-grasp message

Diagnostic- identifying the problem that has occurred

Advisory - giving an indication of the action required

When interruption in the normal process, operator needs support to shorten the time from the alarm occurring to finding the root cause and taking corrective action.

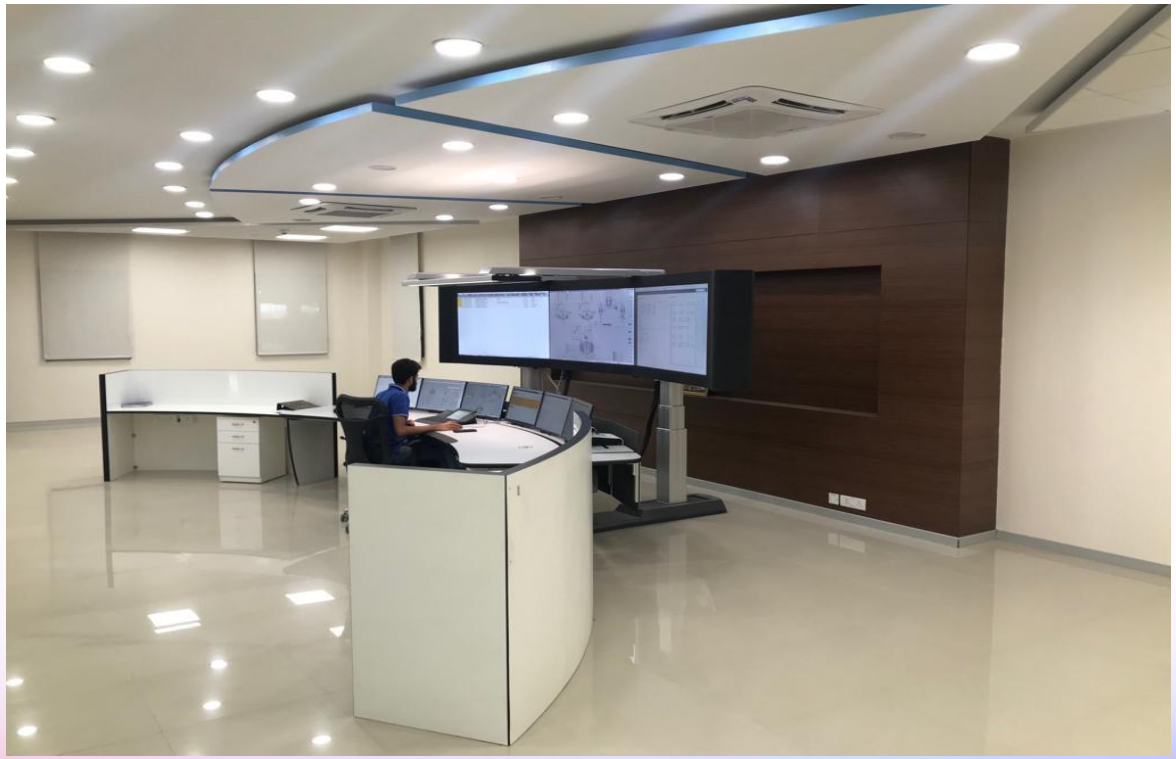


Exception Based System

Enhancing Process Operations – One Plant One Operator

Highlights

- Exception based Operations successfully deployed since 2018
- Exception based Operations adopted at more than 20 large Process Plants in India
- Complex Processes with frequently changing recipes
- Critical processes involving many hazardous chemicals
- Ease of Operation with optimization of resources – Manpower & Space
- Ease of Maintenance & troubleshooting



One Plant of >50,000 I/O's & > 150 Equipment = One Operator

ABB’s Remote I/O footprint (Partial) +

Enabling lean project execution schedule

Overcome project changes and complexity ™

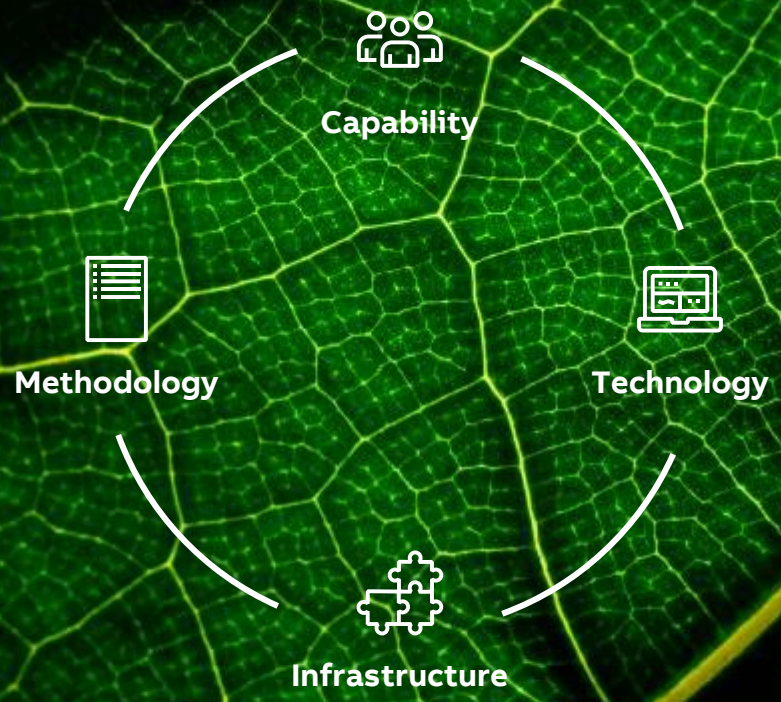
By integrating expert capability, reliable infrastructure, emerging technologies and proven methodologies, **ABB** transforms capital projects with evolved approach to design, delivery and support throughout the entire project life cycle.

It’s the missing link between project possibilities and project results:

CAPEX savings of
15% to 40%

Schedule compression of
10% to 30%

Reduce start-up hours by
up to 40%



CONTACT

Mayank Roy

Sales Manager

mayank.roy@in.abb.com

8197783097

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