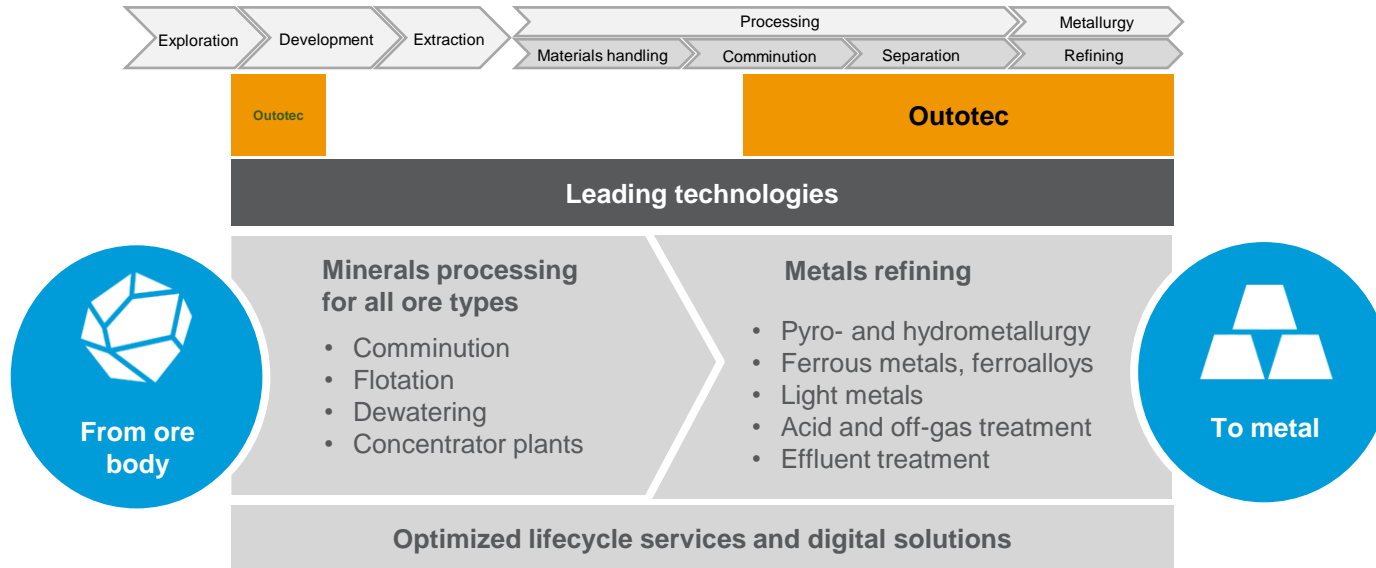


PI System As A Core Of Outotec's Remote Services

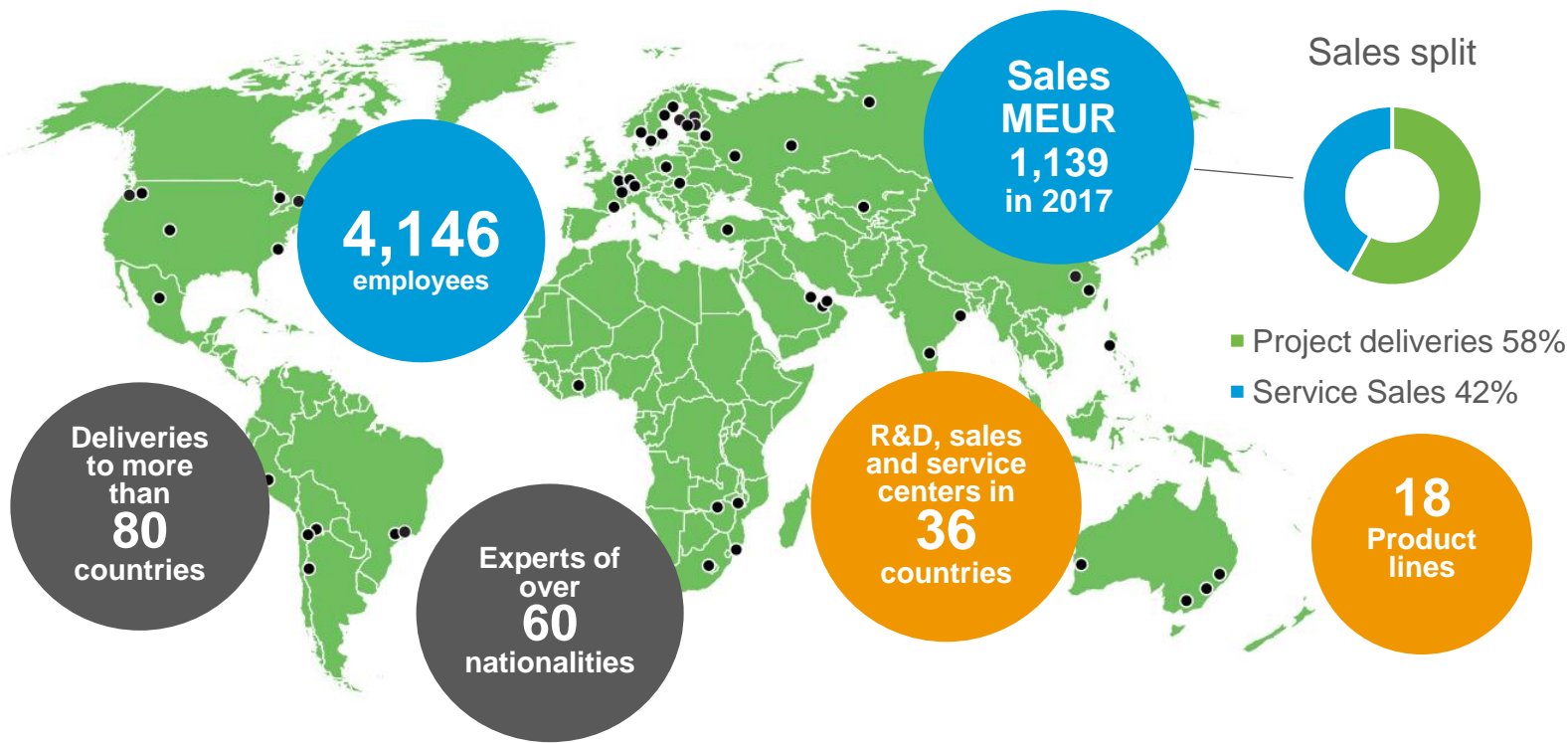
Mikko Paakkolanvaara
Manufacturing Information Systems Specialist
Outotec

Outotec – a process technology company

- Global leader in minerals and metals processing technologies



Local operations, global presence



Remote Services

Expertise, reachability, continuous improvement



Together for the same goal

- Long-term continuous improvement improving customer productivity
- Fast resolution to production issues



Reachability

- Fast reaction upon request
- Best expertise on Outotec technology

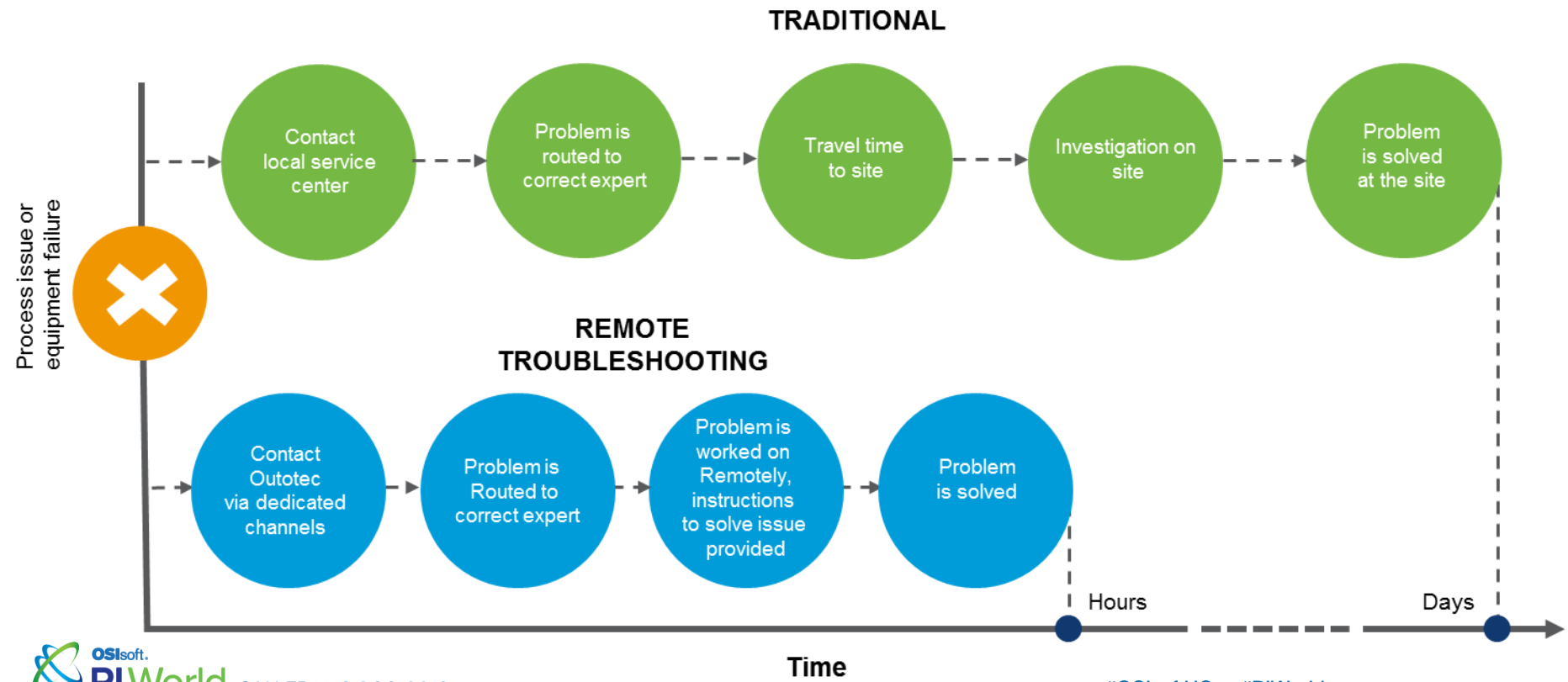


Compliance with regulations

- Information security ensured
- User Access Management
- Environmental Reporting

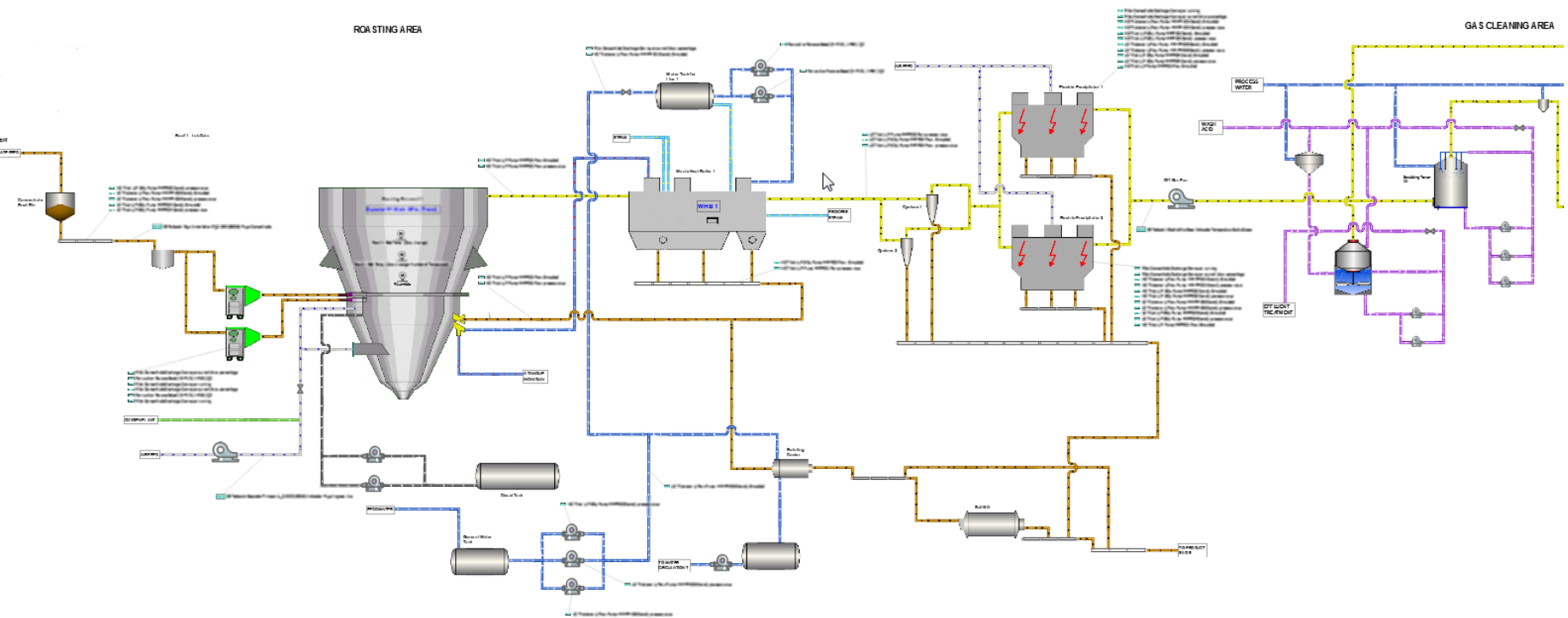
Remote Troubleshooting

Fast way to recover production

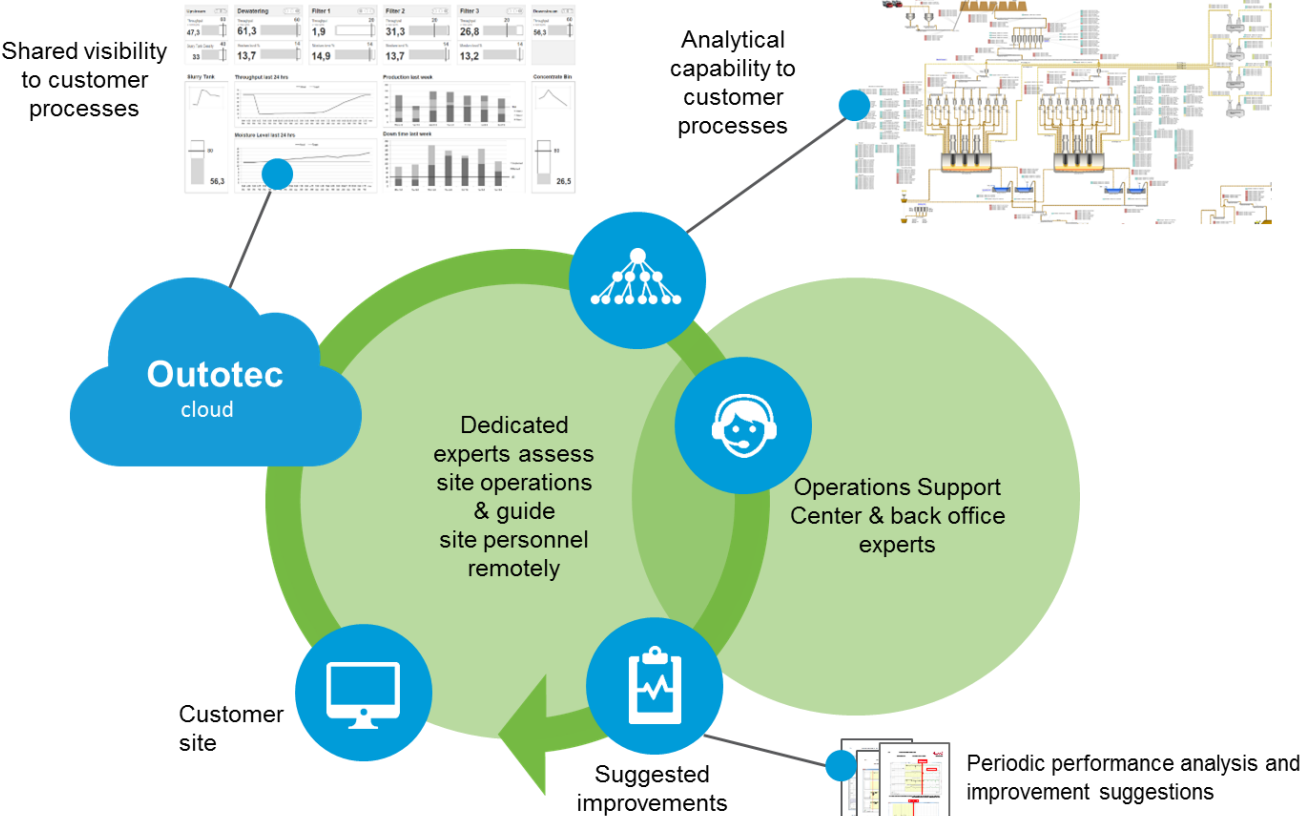


Wedge

Advanced analytics based on process data

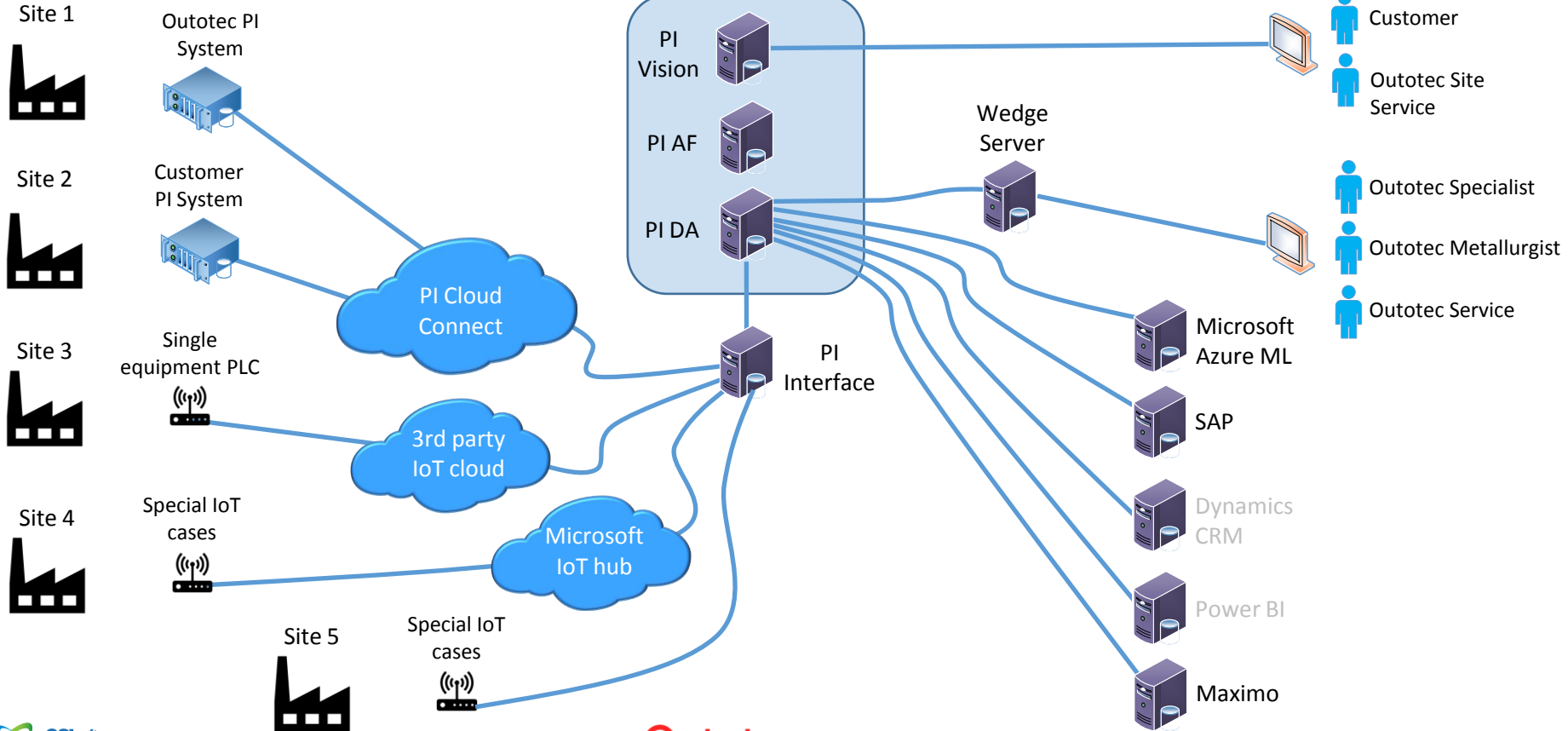


Remote Assessment



Outotec global PI System

Remote Service Portal



Asset Framework Enabling fast Deployment

• Customer template

vs.

• Outotec Template

The screenshot shows the 'Customer template' interface. On the left, a tree view lists elements under 'Rootnode' and 'WSML', including 'Larox1' with sub-elements like '231Comp1', '231CQ001', '231DTS10', '231LIT110', '231PT001', '231PT002', '231WIT601', '231ZM034', 'WetTonnes', 'Larox2', 'Larox3', and 'Larox4'. Below the tree is 'Element Searches' and 'Element Attribute Search Results 1'. The main panel shows a table with columns 'Name' and 'Value'. The table is filtered by 'Category: <None>'. The table lists various attributes such as 'Air Filter DeltaP', 'E-Stop', 'General Service', 'General Shutdown', 'General Shutdown Warning', 'General Start Fault', 'General Warning', 'Local', 'Mechanical Status', 'Oil Separator DeltaP', 'Pressure', 'PreWarning', 'Running hours', and 'Temperature'.

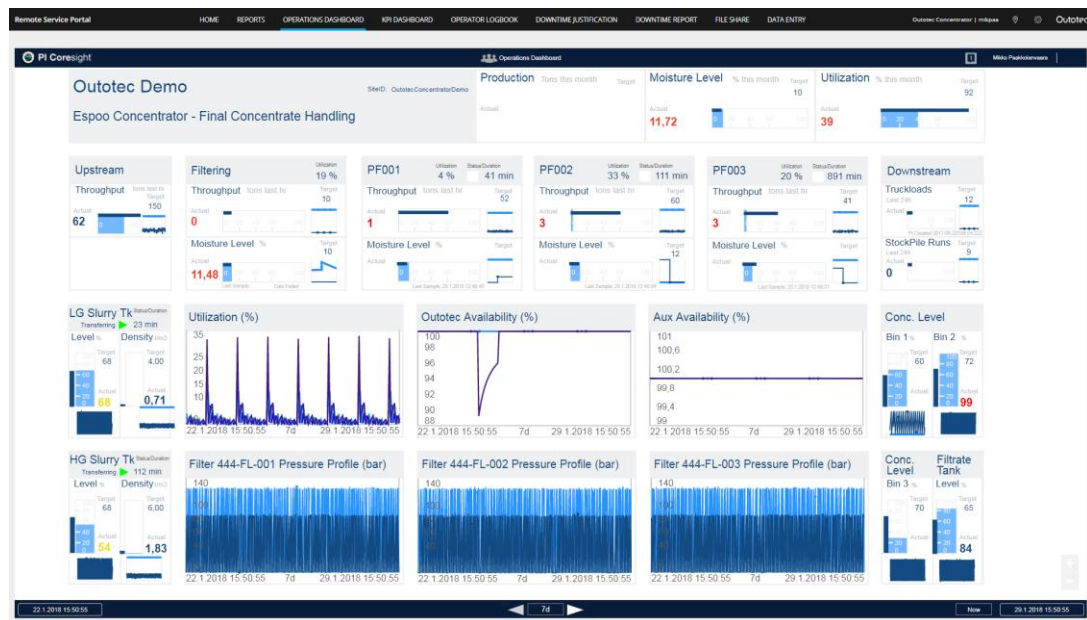
- Different raw data templates from different sites
- **Outotec template enabling fast deployment**
- Universal naming
- KPI's calculated the same way between sites

The screenshot shows the 'Outotec Template' interface. On the left, a tree view lists elements under 'Elements', including 'Esaho', 'Concentrator Plant', 'Dewatering', 'Filtering', 'Filtrate Tank', 'Higher Grade Filter Feed Tank', 'Lower Grade Filter Feed Tank', 'PF001 Concentrate Bin', 'PF001 Discharge Conveyor', 'PF001 HG Feed Pump 1', 'PF001 HG Feed Pump 2', 'PF002 Concentrate Bin', 'PF002 Discharge Conveyor', 'PF002 Feed Pump 4', 'PF002 HG Feed Pump 3', 'PF002 PF 144/144 M1 45', 'PF003 Concentrate Bin', 'PF003 Discharge Conveyor', 'PF003 Feed Pump 5', 'PF003 Feed Pump 6', 'PF003 PF 144/144 M1 45', and 'Thickener'. Below the tree is 'SimulationRootNode', 'Element Searches', and 'Element Attribute Search Results 1'. The main panel shows a table with columns 'Name' and 'Value'. The table is filtered by 'Category: Availability and Utilization Data'. The table lists various attributes such as 'Auxiliary Availability Day', 'Auxiliary Availability MTD', 'Chute Choke Day', 'Chute Choke MTD', 'Outotec Availability Day', 'Outotec Availability MTD', 'Overall Availability Day', 'Overall Availability Hour', 'Overall Availability MTD', 'Standing Without Feed Day', 'Standing Without Feed MTD', 'Utilization Day', 'Utilization Hour', 'Utilization MTD', and 'Downtime Consequential Day'.

Remote Service Portal

Shared insights and tools for day-to-day operations

- Process Book and Coresight dashboards published via web browser
- Fast deployment of recurring projects
- User role based dashboards
- Manual data entry forms
- Reporting
- Logbook functionalities
- Selected customer reference:
 - Anglo Platinum South Africa



INCIDENT REPORT

☒ Incident report
☐ Shift handover

SHIFT GROUP: Group 1
 DATE: 04/04/2018
 TIME: 4:08:53 PM
 CREW:

☒ Use current time

CATEGORY: Operation
 TYPE: Status
 ITEM: Concentrator Plant

STATUS: Open

DESCRIPTION:
 Enter report description

CORRECTIVE ACTIONS:
 Enter corrective actions for the incident

ATTACHMENTS:
 The maximum file size is 15 MB
 + ADD FILE

CANCEL SAVE

Example 1:

- Logbook
- Incident reports and shift change over forms

Example 2:

- Downtime justification and downtime reporting

Downtime justification

PF001 PF 144/144 M1 45

Justified events < March, 2018 > Ascending

Breakdown	Other Unidentified	42min
<input checked="" type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/24/2018 12:01 PM - 1:00 PM
<input type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/24/2018 3:10 PM - 4:00 PM
<input type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/25/2018 1:09 AM - 2:00 AM
<input type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/25/2018 12:09 PM - 1:00 PM
<input type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/25/2018 3:10 PM - 4:00 PM
<input type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/26/2018 1:09 AM - 2:00 AM
<input type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/26/2018 12:01 PM - 1:00 PM
<input type="checkbox"/> Short Break Automatically set short break Acknowledged automatically		03/26/2018 3:10 PM - 4:00 PM

PF001 PF 144/144 M1 45
 Justified on 03/28/2018 1:20 PM by System

DOWNTIME REASON:

Breakdown	Automation
Planned Maintenance Plant Breakdown Wait Time Short Break	Mechanical Operation Other

Electrification terminal box X12 (upper frame)
 Electrification terminal box X22 (in moving plate)
 Electrification terminal box X32 (right side)
 Electrification terminal box X42 (left side)
 Electrification HH-unit
 Electrification terminal box X1 (control unit)
 Electrification terminal box X2 (in filter)
 Electrification terminal box X5 (in hydraulic unit)
 Sensor failure
 Communication failure
 Automation failure (PLC, Touchscreen)
 Other

DOWNTIME DESCRIPTION:
 Acknowledged automatically

UNJUSTIFY REVERT SAVE

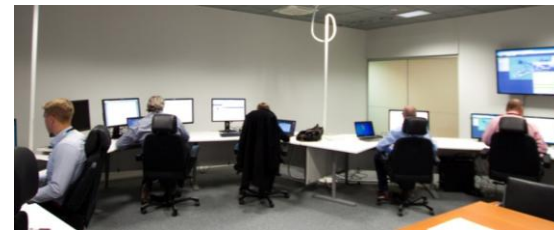
Remote Service Offering in Future

- Outotec's strategy: PI System as an ERP for process data
- Enhanced portal monitoring capabilities
 - Processes
 - Systems
 - Data flows
 - Notifications and alarms based on process conditions
- LIMS module
- Predictive maintenance, Asset performance management
- Integrated machine learning capabilities

PI System As A Core Of Outotec's Remote Services



Outotec is a global process and technology provider operating in minerals, metals and energy field. The goal is to improve customer value and productivity via developing data driven services.



CHALLENGE

No or poor visibility to online/history data

- Remote or isolated site locations
- Long response times to service requests

SOLUTION

Globally centralized database with online process data. One truth!

- Full PI system taken into operation
- Remote Service Portal available
- Advanced analytics based on process data

RESULTS

Faster response and recovery times. Improved operational capability

- Reduced need to travel on site
- Shorter operation downtime during process issues
- Fast deployment of service

PI System As A Core Of Outotec's Remote Services



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- Manufacturing Information Systems Specialist
- Outotec Oyj

Questions

Please wait for the **microphone** before asking your questions

State your **name & company**



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Merci

谢谢

Спасибо

Danke

Gracias

Thank You

감사합니다

ありがとう

Grazie

Obrigado

Optional: Click to add a takeaway you
wish the audience to leave with.