

AVEVA PI WORLD

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# Production scheduling in metals refinery with PI and SCADA

Metso Outotec case study

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**AVEVA**

Here with You Today



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ROIIMA

AVEVA



# The Partner of Choice for

AVEVA MES & SCADA & OSISOFT | AVEVA ENDORSED SI | OSISOFT PREMIER PARTNER | PROCESS EXPERIENCE

# About the Company

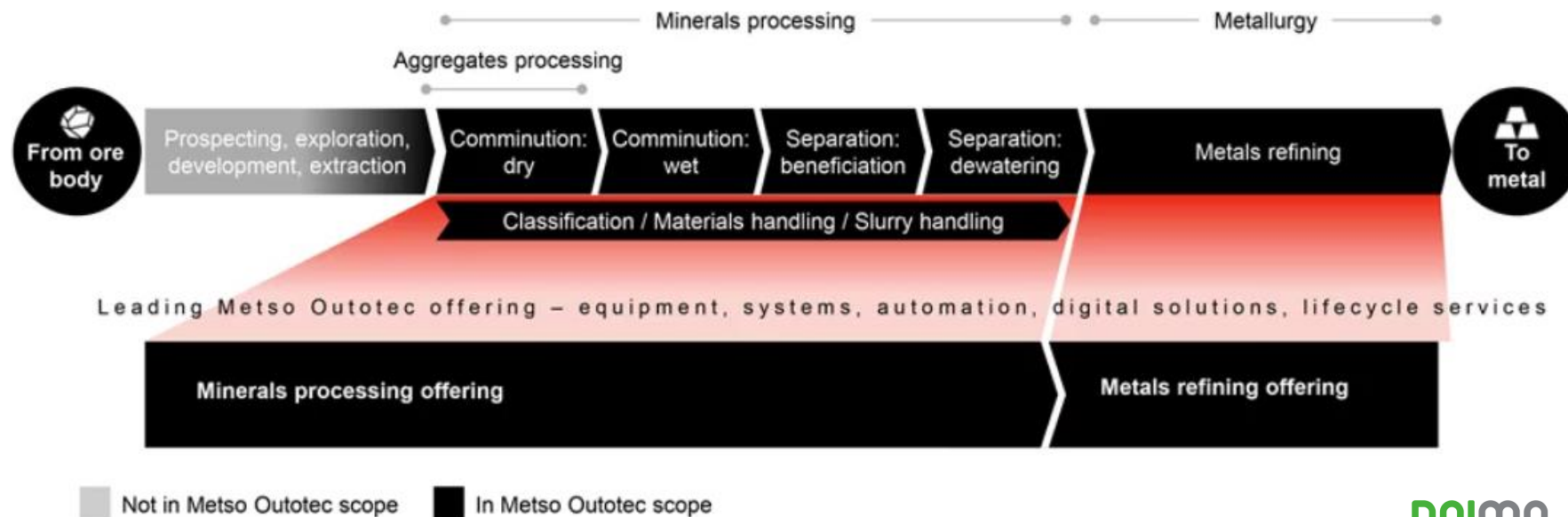
## Metso Outotec

- Metso Outotec was created through the combination of Metso Minerals and Outotec on June 30, 2020
- Technologies, solutions and services for the aggregates, minerals processing and metals refining industries

# Metso:Outotec

## Key figures

- 15000+ employees
- EUR 3.9 billion sales in 2020
- 50+ countries with presence
- 8<sup>th</sup> on the 2021 Global 100 list of the world's most sustainable companies



# Background

## Optimization Opportunities in Electrolytic Refining Process

- Metso Outotec has a long history of delivering process equipment and knowhow for hydrometallurgical processes, including electrorefineries
  - Process design, machinery, digital services etc
- Example: A modern electrorefinery
  - Continuous electrochemical process and multiple independent fully automatic machines
  - Key production units: Around 150 electrolytic cells, each containing about 100 cathodes and anodes, 2 cranes, 2 Cathode Stripping Machines, Anode Washing machine
  - Optimization of
    - Capacity (machines & operating personnel)
    - Efficiency (electrical current & time)
    - Quality
- There is a need to optimize and coordinate the operations for the whole plant
- Exceptional situations are common → manual follow-up and monitoring is difficult
- Metso Outotec equipment deliveries commonly include PI system for real-time data analytics and reporting

Metso  
Outotec

Integrator  
(Roima)

End  
customer

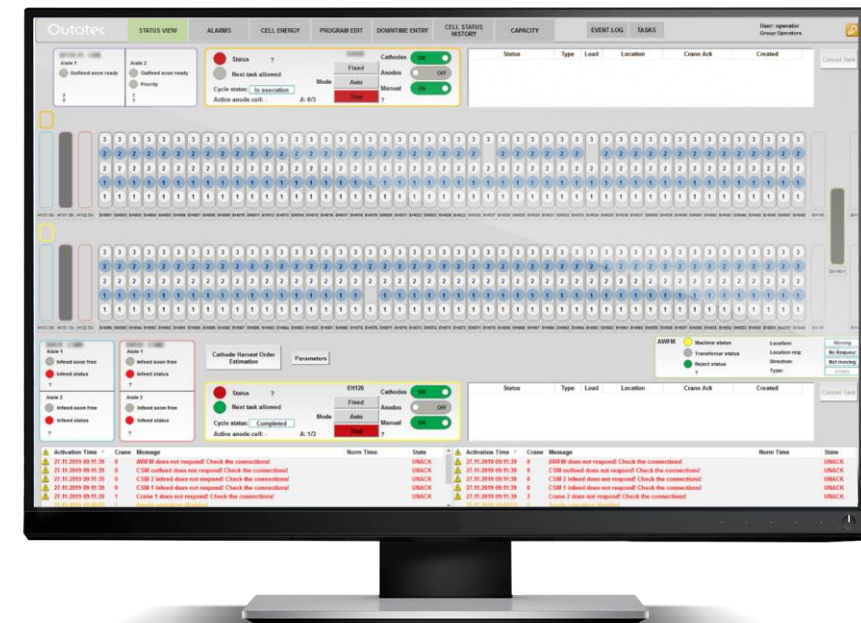
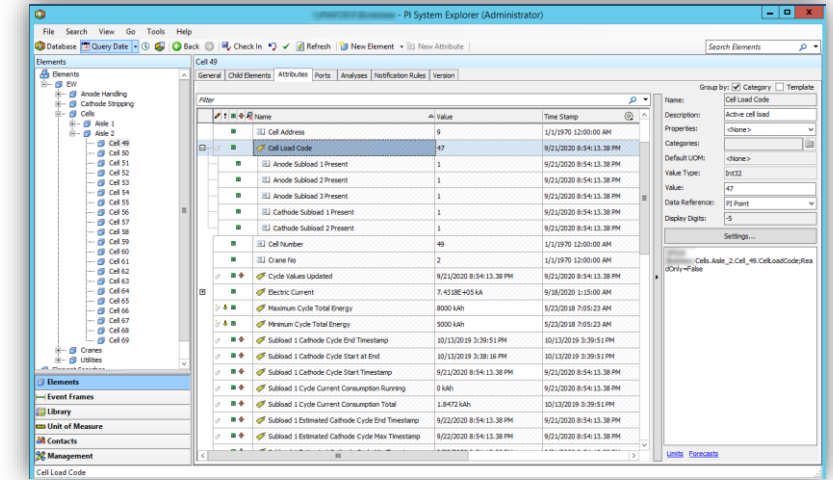
End customer  
3rd party suppliers



# Enabling solution

## PI System Integrated with AVEVA SCADA

- Extensive process knowhow and optimization with close-cooperation between different stakeholders
- Using the existing templated PI System for real-time data collection from different machines and process control system
- Roles
  - PI System
    - Data collection & Data storage
    - Asset Framework templates, incl. KPI analysis
    - Production Reporting
  - AVEVA Edge SCADA
    - Operator UI
    - Machine Interface for control
    - SQL based optimization module for logic extension

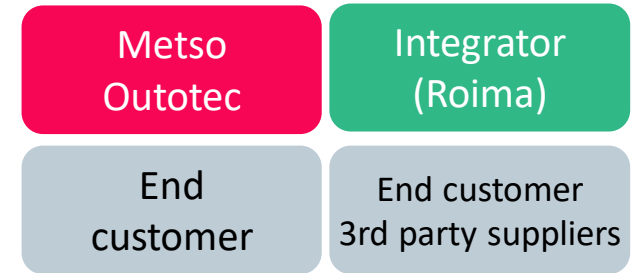


# Results & Status

- Existing PI System implementation for the industry was extended to control and execution using AVEVA SCADA (MIS to MES)
- Implementation is proven in practice and is in 24/7 production use
- Solution enables fully automatic operation of the plant
- Optimal production schedule is in use
  - Better time efficiency
  - Machine capacity is used optimally
    - Maintenance tasks created dynamically based on capacity
  - Energy consumption is lower
- Ability to adjust production based on governmental requirements or availability of raw materials
- Overall view to the process is always available
- End-user experience is adjusted based on feedback
- Machines run more smoothly

# Key take-aways

1. Co-operation between all stakeholders is the key for success
2. Using standard SCADA for Operator UI enables easy and cost efficient modification capability to meet end-users requirements
3. Solution is suitable for OEM business and can be deployed with small modifications to other similar processes
4. AVEVA and OSIsoft products can be integrated using standard interfaces



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