Closed Loop Scheduling

Enabled by The Industrial Internet

BIO

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► Background: Research and Industrial Automation
► www.rob-ex.com (NOVOTEK scheduling site)
► www.novotek.fi
Agenda

Top- and bottom-line

Closed loop production scheduling

Industrial internet enabling scheduling

Top 3 scheduling ROI’s

- Reduce labour costs
- Increase revenue
- Reduce capacity costs
Closed loop scheduling

ERP business

MES operations

Control process

Scheduling
Discrete Manufacturing
• Metal Machining
• Hydraulic components

Batch processing
• Food & Beverage
• Yoghurt

Project Manufacturing
• Equipment Manufacturers
• Food processing lines

About the production schedule
Who produces what and when
Sequence operations on workcenters
Synchronize operations
Resolution minutes
Horizon shifts to months
Respect constraints
Fulfill production goals
Executable
Overview
The scheduling challenge

Constraints

Due dates
Cost
Capacity
Sequence
Regulations

Variation

Work order changes
Process
Demand
Ressource availability
Material supply and properties
Closed loop scheduling

Closed loop scheduling and the Industrial Internet
Industrial Internet facilitating scheduling

System level scope
- Internal supply chain
- External

Quality in data
- Frequent
- Precise
- More parameters

Enabling progressive roll-out
- Add sensors like OEE
- Add more powerful apps dealing with scheduling related OEE root causes
- Connect with people
- Basic scheduling app
Closed Loop Scheduling

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Thank you