"Technical information management system"

Asset 360

Harri Ranta

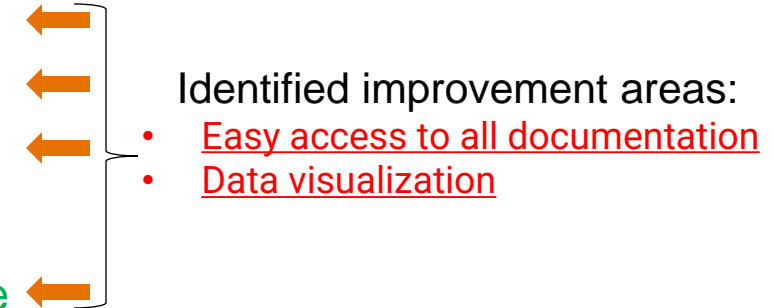# Operating environment (Espoo, Kirkkonummi ja Kauniainen)

>30 production related units
Operation and maintenance planning are mainly done centrally from Suomenoja

# The good quality and easy availability of technical information enables:

- **Safety**
- Identification and marking of <u>process equipment</u>
- Recognition of the work area <u>environment and conditions</u>
- Quality of isolation design and marking and <u>visualization of isolations</u>
- **Maintainability**
- Up-to-date documents and maintenance instructions that are <u>easily accessible</u>
- Technical data of equipment and maintenance history
- Spare parts associated with the equipment
- Preventive maintenance programs and work planning
- **Availability**
- Identification of emerging fault situations before they lead to failure
- Fault and disturbance reporting, root cause analysis, and corrective actions
- **Properly Timed Replacement Investment**
- Maintenance and downtime costs
- Condition reporting

Identified improvement areas:
- <u>Easy access to all documentation</u>
- <u>Data visualization</u>

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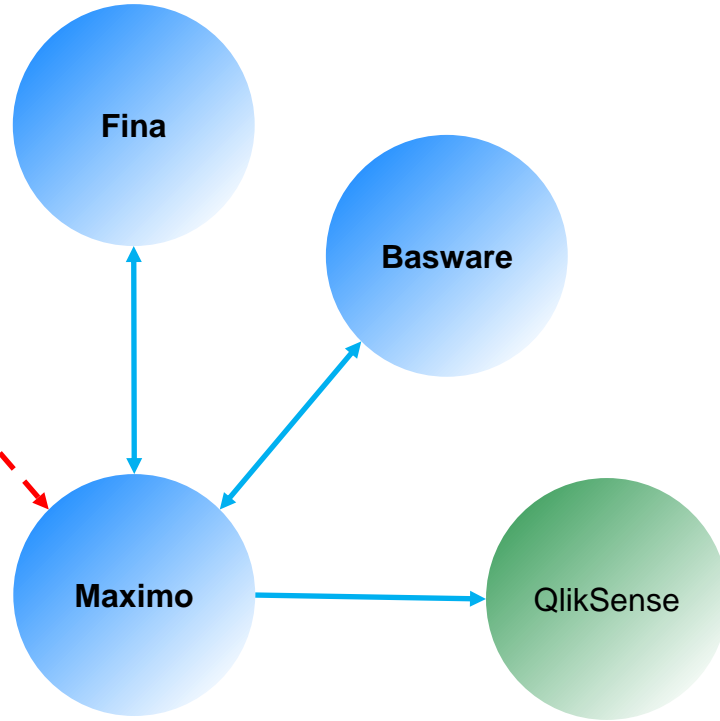# Maximo Location is a <u>common metadata key</u> for all data

The following Maximo metadata information
is also attached to the documentation:
- **Crew**
- **Work Order**
- **Project ID**
- **Company**
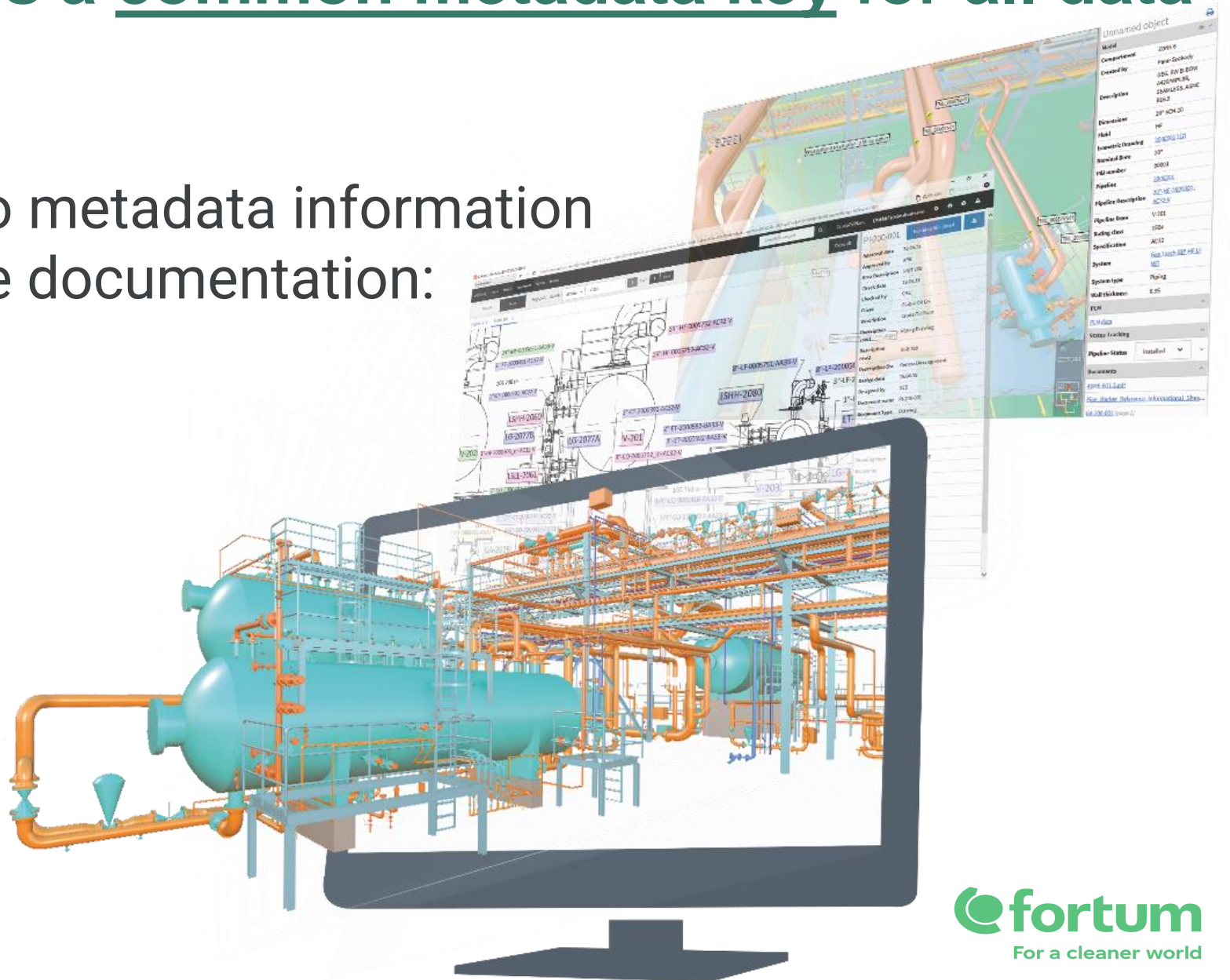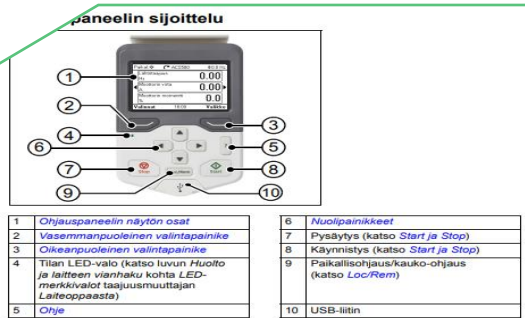
The information model / Before

QR code in field equipment

Fina

Basware

ProjectWise

Maximo

QlikSense

- LTF monitoring (Budget)
- Cost reports
- Availability reports
- KPI reports

20 years history:
~90 000   Work Order
~76 000   Invoices
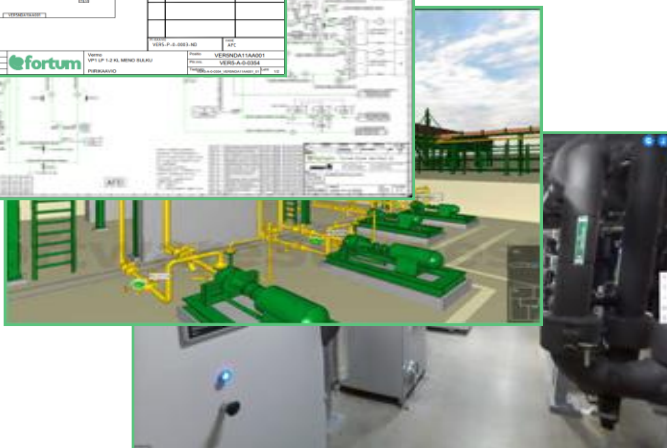~2 500 000 working hours

- Technical data
- PM-Plans
- Spare parts
- Project history
- Maintenance history
- Procurement history
- Unavailability history
- Cost history

~100.000 documents:
- Documentation
- PI- diagrams
- 3D-models
- Point clouds
- 360 images

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The information model / Today

QR code in field equipment

Fina

Basware

M-Files

Maximo

QlikSense

- LTF monitoring (Budget)
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eShare

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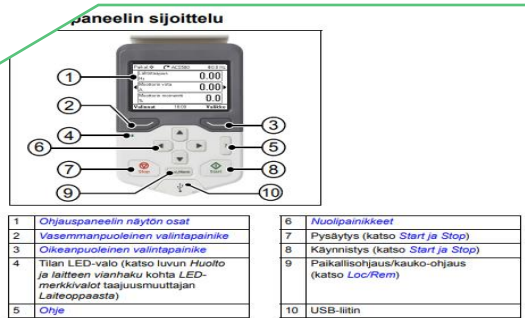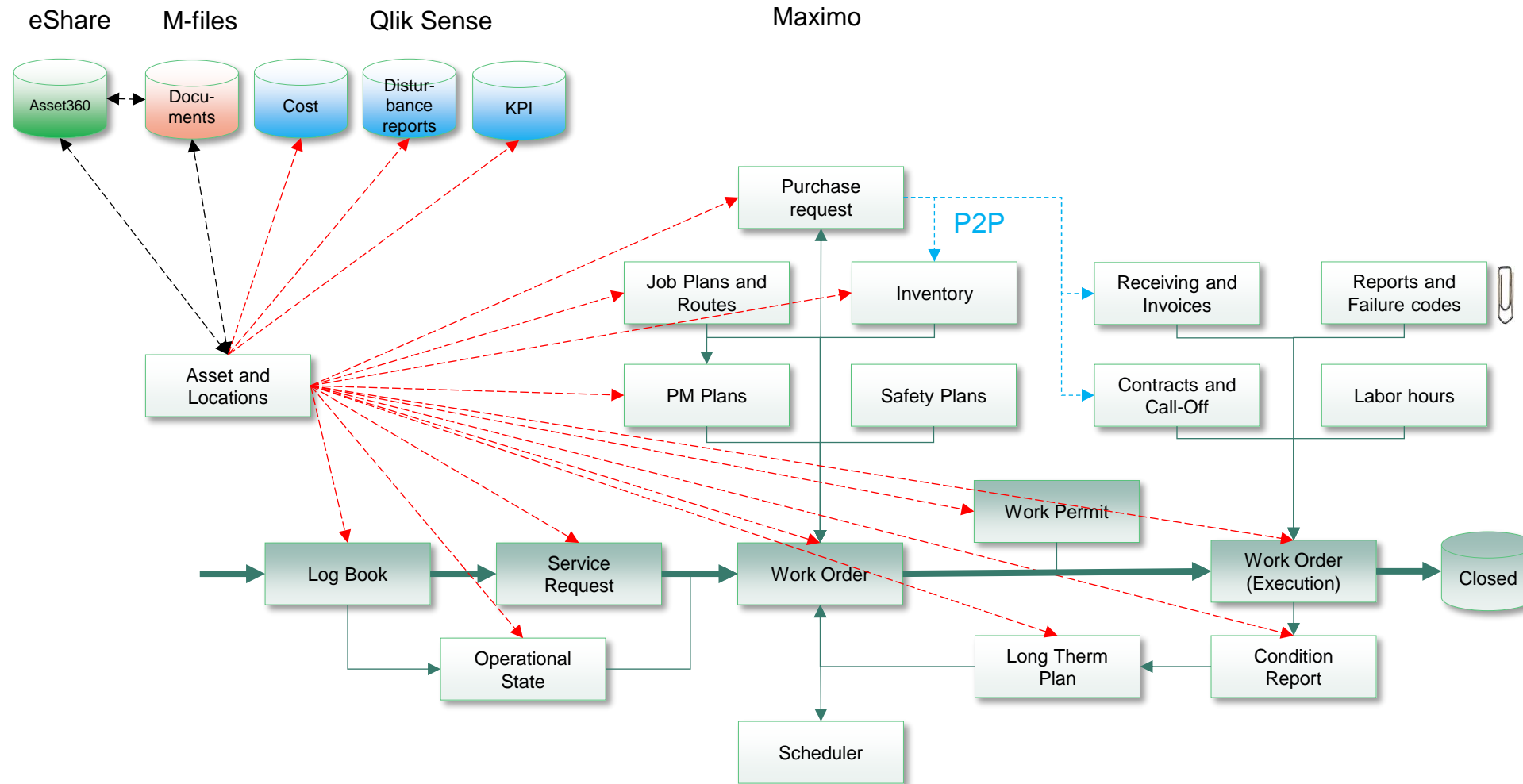- Project history
- Maintenance history
- Procurement history
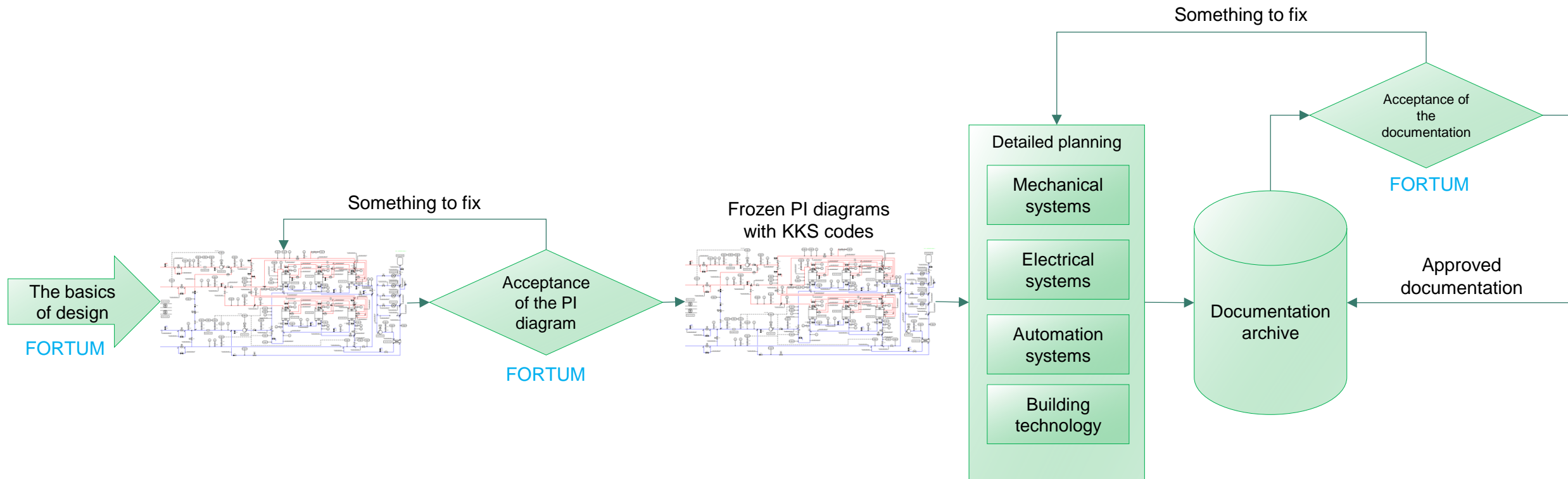- Unavailability history
- Cost history

~100.000 documents:
- Documentation
- PI- diagrams
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- 360 images

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The quality of operation and maintenance process = Asset 360

eShare M-files Qlik Sense Maximo

Asset360 Docu-ments Cost Distur-bance reports KPI

Purchase request

P2P

Job Plans and Routes

Inventory

Receiving and Invoices

Reports and Failure codes

Asset and Locations

PM Plans

Safety Plans

Contracts and Call-Off

Labor hours

Work Permit

Work Order (Execution)

Log Book → Service Request → Work Order → Work Order (Execution) → Closed

Operational State

Long Therm Plan

Condition Report

Scheduler

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The quality of <u>planning process</u> and documentation metadata

Something to fix

Acceptance of
the
documentation

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Detailed planning

Mechanical
systems

Something to fix

Electrical
systems

The basics
of design

Acceptance
of the PI
diagram

Frozen PI diagrams
with KKS codes

Approved
documentation

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Automation
systems

Documentation
archive

Building
technology

8

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Processes that need to be in order:

Data quality is improved by harmonizing metadata of documentation
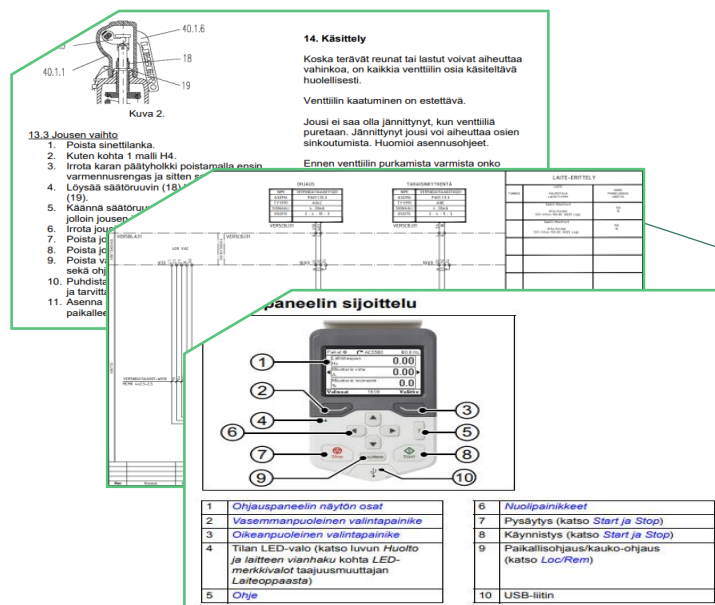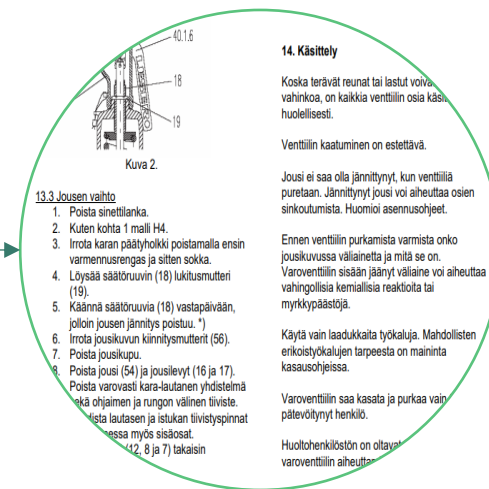
Data quality is improved by harmonizing PI diagrams

A bunch of old PI Diagrams
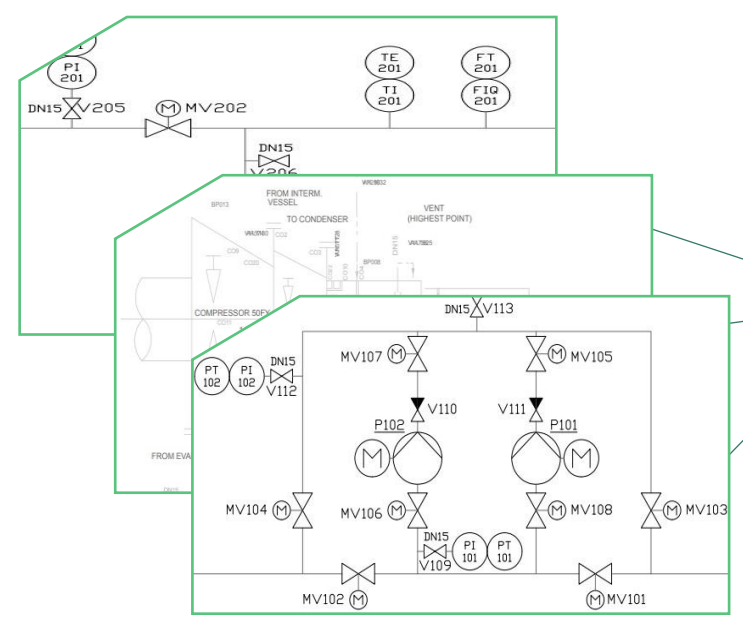
Harmonization of PI diagrams
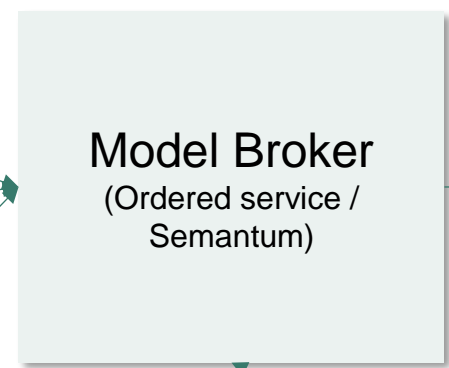
Up to dates to PI diagrams

eShare compatible and "smart" PI Charts

Model Broker
(Ordered service / Semantum)

Cadmatic P&ID
(Fortum's own application)
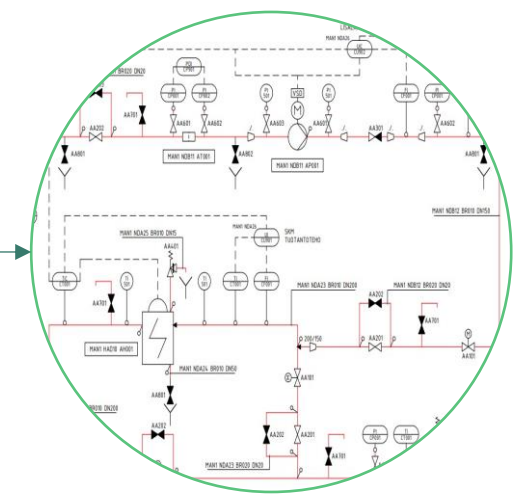
Unified symbol library:

GateValve	
AngleValve	
AngleBallValve	
BallValve	
ButterflyValve	
CustomOperatedValve	
GateValve	

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The next goal is the visualization of the isolation plans

Approved isolation plan