DXQ (Digital Intelligence by Dürr)
Gluing Symposium 2019

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Bietigheim-Bissingen
www.durr.com

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Do you want to improve the KPIs in your production?

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PLANT AVAILABILITY
Do you want to improve your plant availability?

PRODUCTION QUALITY
Do you want to improve your production quality (first run rate)?

MAINTENANCE COSTS
Do you want to reduce your maintenance costs?

PROCESS OPTIMIZATION
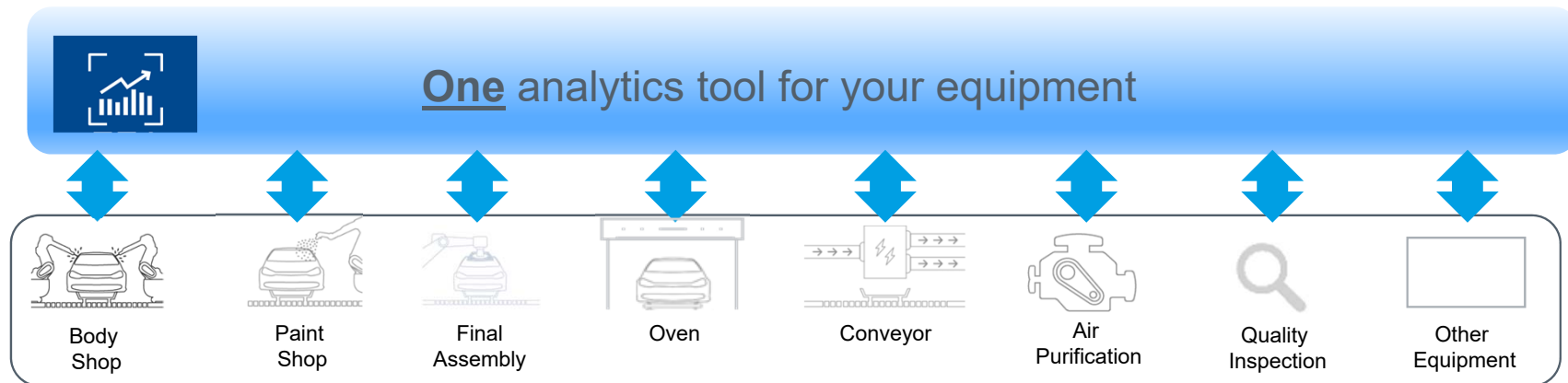Do you want to optimize your production process?

ROOT CAUSE ANALYSIS
Do you want to facilitate the root cause analysis?

OUR SOLUTION:

DXQequipment.analytics
and
DXQequipment.maintenance

DXQequipment.analytics

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One analytics tool for your equipment

| Body Shop | Paint Shop | Final Assembly | Oven | Conveyor | Air Purification | Quality Inspection | Other Equipment |

… gives you a deep insight into the data of your plant for
- root cause analysis
- process and equipment optimization

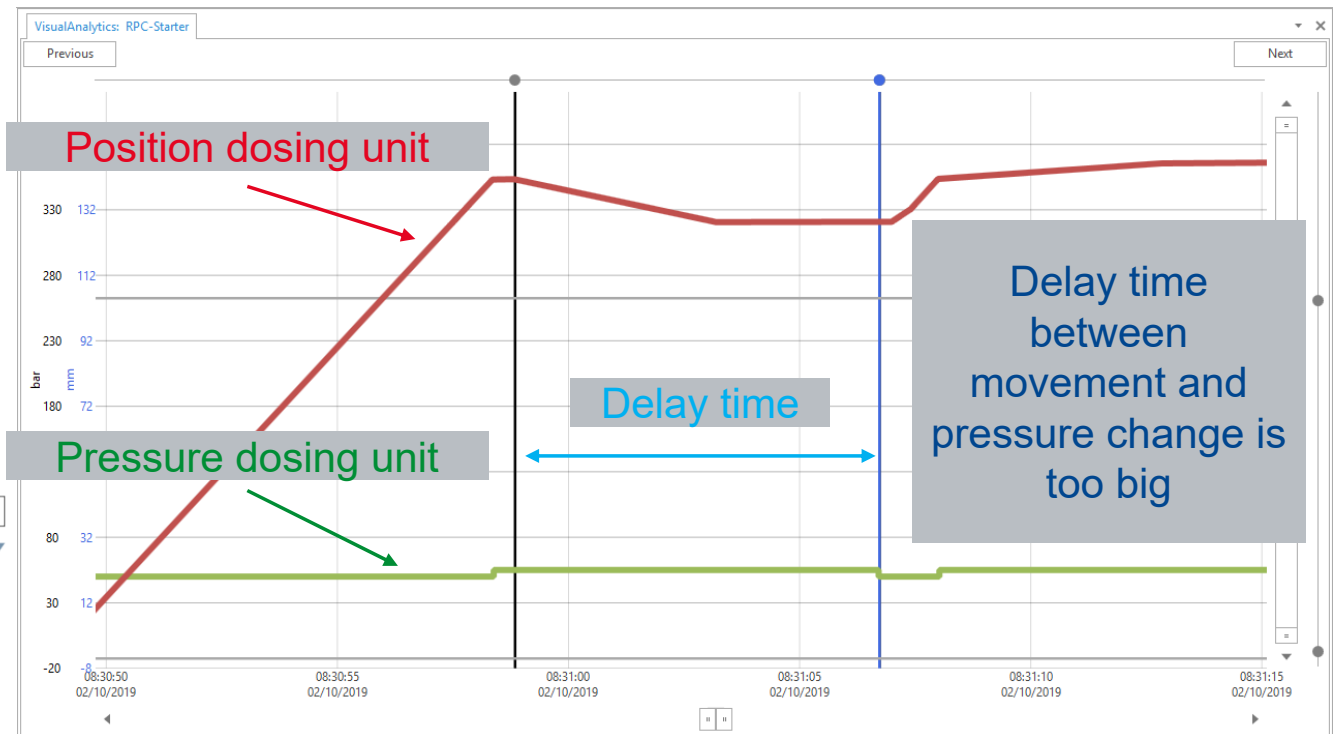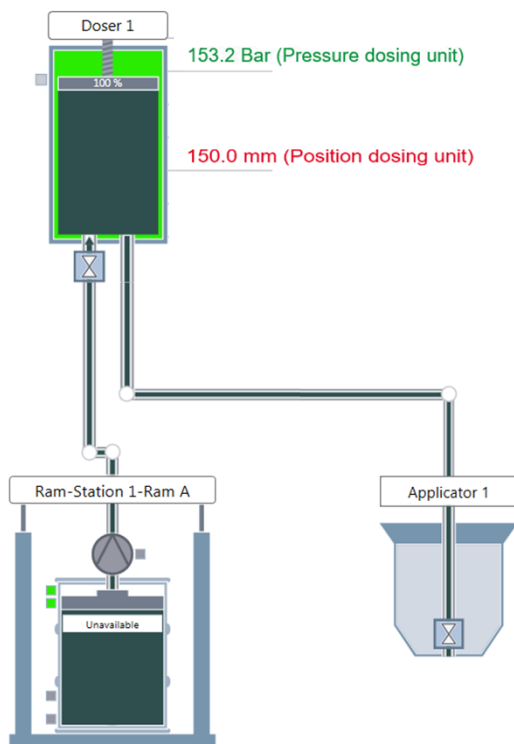**… provides solutions to improve your quality & first run rate**

… provides solutions to improve your plant availability

DXQequipment.analytics
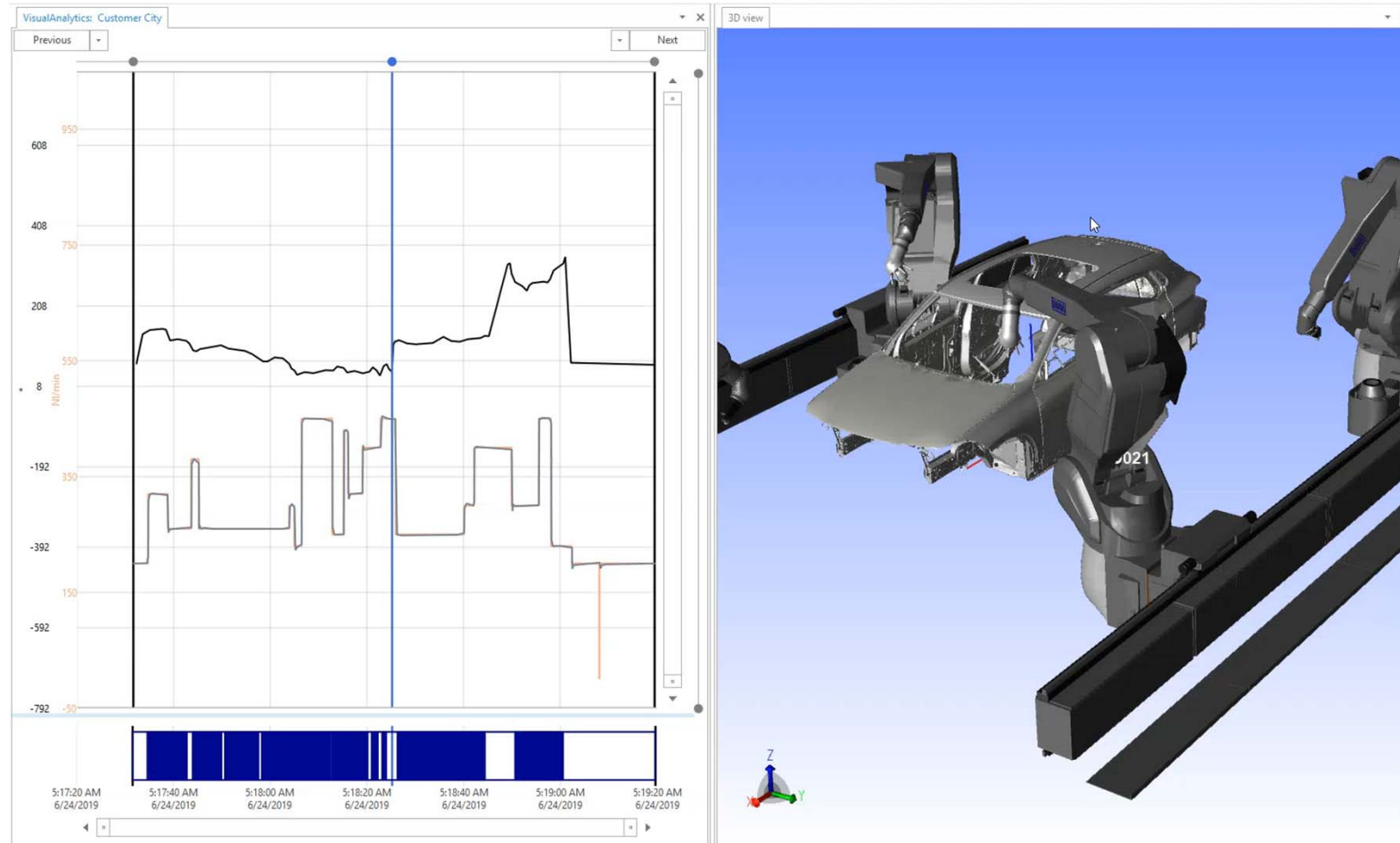## Faster troubleshooting with Root Cause Analysis

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- Defective pressure sensor
- Situation can be easily recognized with Visual Analytics

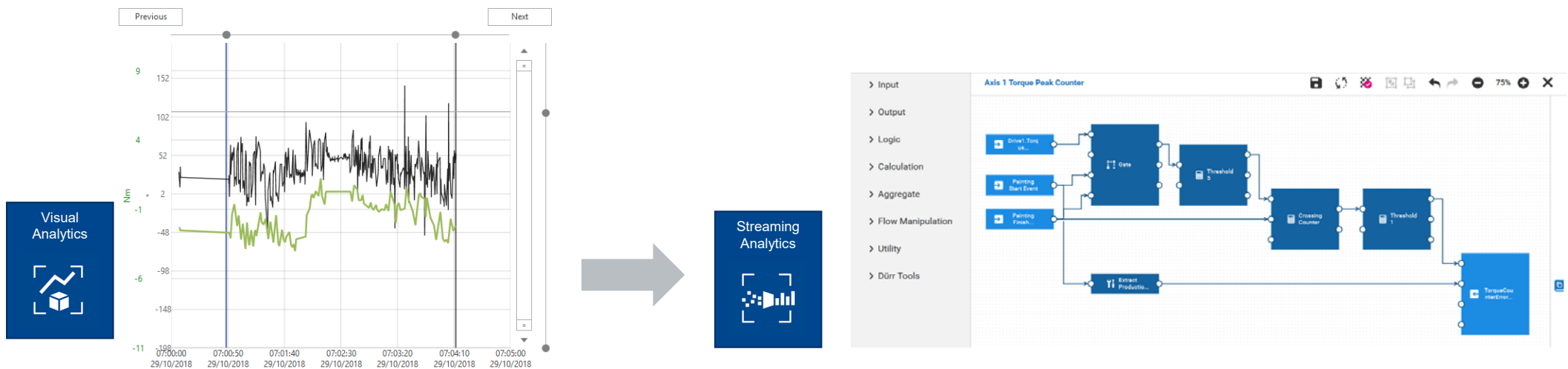# DXQequipment.analytics
Visual Analytics

DXQequipment.analytics

Optimize your equipment with the help of data. Use Visual- and Streaming Analytics.

- Manual Analysis
  - Analyze critical situations, detect patterns, derive thresholds and parameters to change
- Automated Analysis
  - **Create your own algorithms** by drag and drop instead of programming (low code platform)
  - Deploy algorithms and analyze data **automatically** with **direct feedback** to your machine in **real-time**
- Example **Torque Peak Counter**: Set warning if robot axis or dosing drive exceeds defined limit for a defined number of times

DXQequipment.analytics
Analytics toolbox for our customers to create own algorithms

DXQequipment.analytics
Advanced Analytics

- Advanced Analytics provides **fundamentally new** diagnostic possibilities

  - Based on **Machine Learning**

  - Able to detect **long-term** trends and patterns

  - **Out of the box**, no Data Analyst required

- **Condition based maintenance** (predictive maintenance):

  - **Increase availability**: Prediction of failures and problems before they occur

  - **Save money**: Instead of too early replacements, replace components at the end of their useful life time

- Automatic detection of possible **quality issues**

Advanced Analytics – Availabilty modules

| Wear piston | Valve defects | Torque anomalies |
| Trend in signals | ... | |

Advanced Analytics – Quality modules
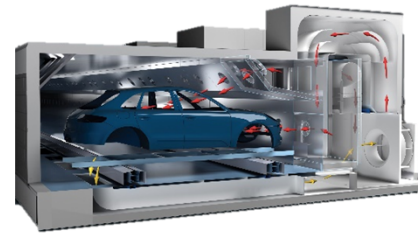
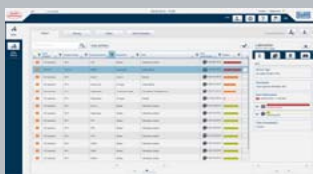| Viscosity problems | Problems air supply | Leakage |
| Generic anomaly detection | ... | |

DXQequipment.maintenance

Maintenance at the right time for the complete body-, paint-shop and final assembly

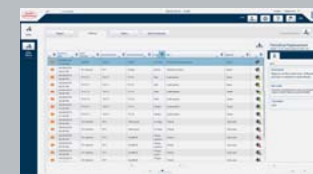## DXQequipment.maintenance

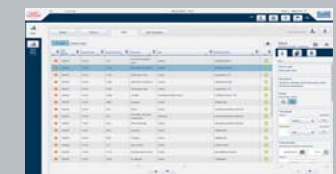| What to do?	When to do?	How to do?	What was done?	How to customize?
Report	**Flexible monitoring**	**Documentation**	**Tasks history**	**Tasks editor**

DXQequipment.analytics and DXQequipment.maintenance
Modules for the digitalization process

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Data Acquisition

Collect data from machines / Store data in database

IoT-Connector

Data connections to external systems (on request)

Visual Analytics

Graphical data analysis

Streaming Analytics

Customer toolbox for online quality and equipment supervision

Advanced Analytics

Dürr Smart Algorithms for Historical Analysis and Machine Learning

Maintenance Assistant

From Preventive to Predictive maintenance

Connectivity

See & Understand

Self Learning & Prediction

LEADING IN
PRODUCTION
EFFICIENCY

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