EXPERT PAINTSHOP INSIGHTS FOR OPTIMIZED PRODUCTION AND QUALITY MANAGEMENT

EMS SUMMIT
Berlin
November 4th, 2019
Smart Design – Impact on internal processes with the aim of drastically reducing plant delivery times

IOT System – Recording and data analysis for a more efficient paint shop through sensors and processing capabilities that are superior compared to the past

Production Flexibility – Technologies that allow the plant to adapt to real production needs

Smart Plant Management – Technologies that enable human-machine cooperation within the paint shop

Smart Energy Management System – Technologies that monitor energy consumption and effectively support paint shop activities

J-Suite – The brain of Paintshop, a digital platform that manages communications
J-Suite

Factory Integration

Quality Operations Management

Production Order Management

Maintenance Operations Management

Predictive Maintenance

J-SUITE

Energy Efficiency

J-Doc

Live Image Recognition

Big data Analytics

PES

Many other digital solutions...
OUR COMPANY

A Scientific Company

Combining Science, Technology and Art for a sustainable society

17,000 passionate people

- 130 nationalities
- 179 sites
- One global R&D, 64 labs
- Game-changing 3DEXPERIENCE® solutions

230,000 Customers

- 11 industries in 140 countries
- 25 million users

12,600 Partners

- Software, Technology and Architecture
- Content and Online Services
- Sales
- Consulting and System Integrators
- Education
- Research

Long-term driven

- Majority shareholder control
- Revenue: $3,488 million*
- Operating margin: 31.8%*

* Figures as of FY 2018 / Non-IFRS
DELMIA brings together the Virtual (V) and the Real World (R)
3DEXPERIENCE® Covering all operational processes

COLLABORATE

MODEL
- PROCESS ENGINEERING
- FABRICATION
- ERGONOMICS
- ROBOTICS
- GLOBAL PROCESS MANAGEMENT

OPTIMIZE
- ANALYTICS & PREDICTIVE INTELLIGENCE
- SALES & OPERATIONS PLANNING
- LOGISTICS PLANNING
- MASTER PLANNING
- DETAILED SCHEDULING & RESCHEDULING
- TRANSPORTATION PLANNING
- WORKFORCE PLANNING

PERFORM
- LEAN MANUFACTURING
- PRODUCTION
- QUALITY
- WAREHOUSE
- PLANT MAINTENANCE
- FIELD & MAINTENANCE OPERATIONS
- ASSET TRACKING
- SERVICE EXECUTION
- DELIVERY MANAGEMENT

IoT/IIoT EDGE INTEGRATION LAYER

PHYSICAL WORLD of INFRASTRUCTURE and ASSETS
INDUSTRY RENAISSANCE is happening now

The end-to-end solution we built with Geico - Taikisha will provide to Car Body Painting Customers cutting edge solutions to manage their painting processes with latest technologies available on Digital Manufacturing, this will permit to accelerate their evolution towards the Factory of the future.

- **Digital Continuity Impact**
  - Expand digital continuity with closed loop product data and process flows
  - Improved product quality and customer responsiveness to meet demands

- **Best in Class Manufacturing Operations Management**
  - Visibility, control & synchronization across all paint shops
GEICO TAIKI-SHA
**KPI DASHBOARD FOR THE CENTRAL CONTROL ROOM**

<table>
<thead>
<tr>
<th>Process name</th>
<th>Car bodies</th>
<th>Values</th>
<th>Current status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Treatment Degrease</td>
<td>341 / 500</td>
<td>Temperature 60°C / 65°C Liquid 106.5 m3 Energy 250 kW/body</td>
<td>✓</td>
</tr>
<tr>
<td>Pre-Treatment Phosphate</td>
<td>349 / 500</td>
<td>Temperature 54°C / 57°C Liquid 106.25 m3 Energy 240 kW/body Power consumption 19 KwH</td>
<td>!</td>
</tr>
<tr>
<td>Electronic Deposition E-coat</td>
<td>339 / 500</td>
<td>Temperature 28.5°C / 30°C Energy 440 kW/body Electroplate 465 A / 1000 A</td>
<td>✓</td>
</tr>
<tr>
<td>Electronic Deposition UF Rinse</td>
<td>337 / 500</td>
<td>Liquid 105.5 m3</td>
<td>✓</td>
</tr>
<tr>
<td>Pre-Treatment 1 Wash</td>
<td>339 / 500</td>
<td>Liquid 106 m3</td>
<td>✓</td>
</tr>
<tr>
<td>Electronic Deposition DI Water</td>
<td>336 / 500</td>
<td>Liquid 42 m3</td>
<td>✓</td>
</tr>
<tr>
<td>Paint Booth BC</td>
<td>335 / 500</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
OPERATOR SCREEN: LINE PROGRESS

SKIDS DONE: 8

1. SK 0001
   PT 0001
2. SK 0002
   PT 0002
3. SK 0003
   PT 0003
4. SK 0004
   PT 0004

1. IDLE
   Body washer
   TANK-T1
2. IDLE
   Dip Degreasing
   TANK-T2
3. DIPPING
   First Stage
   TANK-T3
4. DIPPING
   Rinse 1
   TANK-T4
5. DIPPING
   Rinse 2
   TANK-T5
6. DIPPING
   Body washer
   TANK-T6
7. IDLE
   Dip Phosphate
   TANK-T7
8. IDLE
   Rinse 3
   TANK-T8
9. IDLE
   Passivation
   TANK-T9
10. IDLE
    Dip DNH
    TANK-T10
11. IDLE
    Dip DNH 1
    TANK-T11
12. IDLE
    Dip DNH 2
    TANK-T12
OPERATOR SCREEN: QUALITY CHECK

From EQUIPMENT FOCUSED PRODUCTION MODULE to EMPLOYEE FOCUSED COMPLEX PROCESSES
PREDICTIVE MAINTENANCE

J-SUITE

- Energy Efficiency
- J-Doc
- Live Image Recognition
- Big data Analytics
- Many other digital solutions...

Sensor data:
- Temperature
- Pressure
- Voltage
- Errors
- ...

Alerts
Dashboards
Algorithms and AI

ERP
All relevant Paintshop Execution information and management tools in a single solution

One set of credentials to log in on any device

Role and Responsibility-based visibility of features and actions
INTEGRATE WORK INSTRUCTIONS SEAMLESSLY INTO BUSINESS PROCESSES

From J-SUITE to J-DOC 4.0
BENEFITS OF J-SUITE

Paintshop Execution System
Leverage the full knowledge and knowhow of GeicoTaikisha in digital form.

Production Order Management
Benefit from the integration of ERP and PLM systems (e.g.) to manage production orders.

Digital Factory Integration
Create deep insights into the Paintshop with various types of digital twins.

Ultimate Production Flexibility
Manage a fleet of J-Rovers in seamless harmony with the J-Suite PES in an era of mass customizations.

Management
Integrate maintenance work instructions seamlessly into business processes for the

Quality Operations
Management
With the AI and categorization of J-Detect, it becomes possible to identify
WE SEE BEYOND.
FUTURE IS NOW.

GOVERNED BY ETHICS AND AFFECTION
We are determined to be actively a Value Driven Team of people truly committed to be effectively understanding and pursuing our Customers Critical Expectations while respectful to our people, community and environment. Living by Resilience.
THANK YOU
FOR YOU ATTENTION

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