Tool Lifecycle Management 4.0 –
In line with Industry 4.0 using integrated tool data management solutions

TDM Systems, Robert Auer,
Director of Sales Asia Pacific / Global Partner Sales
TDM Systems - Pioneer Tool Lifecycle Management

- Headquarter Tübingen, Germany
- TDM Systems Inc., Schaumburg, Illinois
- 100 Employees and 10 apprentices
- More than 1,300 Customers and 10,500 Users worldwide
- Markets: Europe, North- and South America, Asia
- 25 years of Experience and Know-How

Technology Competence

Consulting Competence

Software Competence
TDM Systems
within SANDVIK

Digital Center of Excellence

- Technology Development
- Securing new competence
- Culture & ways of working
- Mergers & Acquisitions

Adjacent product offerings
Networking - saving potentials in production

The significance of tools:

- Costs for cutting tools constitute **approx. 3%** of manufacturing costs.
- **Machine utilization can be increased by up to 20%** through logistical tool optimization.
- **20% higher cutting data** can cut **component costs by 10%**.
- Information about tool data can cut **time requirements by 10%** in the planning process of the indirect areas.
Tool Lifecycle Management

TDM
next generation
Tool Lifecycle Management

TDM
next generation

CAM/SIM
ERP
MES
PLM/CAD
MACHINE
PRESETTING
LOGISTIC

ERP
MES
LOGISTIC

Sarah Wiedmann
Sachbearbeiterin Vertriebsin...
Videosequenz 1
Basic Tool Data Management

TDM Base Module

Benefits:
- Quality Improvement
- Cost Savings
- Time Savings

[Diagram showing Basic Tool Data Management with icons for Items, Tool Assemblies, and Tool List]
Basic Tool Data Management

Management of items, tools and jobs
Basic Tool Data Management

Management of items, tools and jobs
3D-Assembly and Ordering

Facility/Ordering/Graphic/Database

Benefits:
- Increased OEE
- Quality Improvement
- Up to 90% time savings generating 2D/3D graphics

Basic Tool Data Management

- Items
- Tool Assemblies
- Tool List

Facility & Maintenance Management

Graphic Tools & Generators
Data Base Utilities
Ordering Management

tdmsystems
3D-Assembly and Ordering
State-of-the-art Tool Lifecycle Management

My tool assembly

Automatischer Zusammenbau
State-of-the-art Tool Lifecycle Management

Am Beispiel TDM Global Line

Automatischer Zusammenbau
State-of-the-art Tool Lifecycle Management

My tool assembly

Automatischer Zusammenbau
State-of-the-art Tool Lifecycle Management

Am Beispiel TDM Global Line

Automatischer Zusammenbau
Interfaces

Videosequenz 3
Interfaces

Benefits e.g.:
- Overall process quality improvement
- Time and cost savings
- Productivity gains
TDM CAM Integration

CAM widget with all installed CAM interfaces
Interconnectivity
Interfaces

- CAM/SIM
- PLM/CAD
- ERP
- MES
- MACHINE
- PRESETTING
- LOGISTIC
- MES

TDM next generation
Tool Crib Management

Benefits:
- Best in class ROI
- Reduced machine down time
- Lower tooling costs
Workflow

Complete Management of Tool Circulation

Tool assembly

Tool crib

Tool Presetting

Machines

Tool disassembly
Workflow

Complete Management of Tool Circulation

Tool Presetting → Tool assembly → Tool crib → Tool disassembly → Machines
Workflow and Tool Life Monitoring

Shop floor management, Machine management (tool life)

Benefits:
- Productivity increase
- Cost reduction
- Efficient, transparent manufacturing process
My individual Homescreen
What's new - My Dashboard

Dashboard

Tool Planning
TDM 2017/1 - Global Line
© 2018 - TDM Systems GmbH

Tips
Did you know? Press Ctrl + Space to get to the Quicksearch.

Shopfloor Status
Average status of all shopfloor orders

51%

Shopfloor orders

<table>
<thead>
<tr>
<th>State</th>
<th>Order / Operation</th>
<th>Machine</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>finished</td>
<td>03044989</td>
<td>18460581_M62</td>
<td>03.02.2018</td>
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<tr>
<td>80%</td>
<td>03044989_KOS</td>
<td>18460581_M61</td>
<td>05.05.2018</td>
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<tr>
<td>75%</td>
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<td>DMU 70 VL LEFT ROOM</td>
<td>03.05.2018</td>
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<td>delayed</td>
<td>302002STDOOL</td>
<td>18030200</td>
<td>21.04.2018</td>
</tr>
</tbody>
</table>

What's new - My Dashboard

Tool Assemblies Overview
195 tool assemblies in total

Tool Items Overview
744 tool items in total

New Equipments
See the new equipments for the past months

Top 5 - Most used items

- CLGR-HRO033
  Basic holder HSK-A/C 63...
  26

- CLGR-HRO028
  Pull stud M24-shape A...
  24

- CLGR-2227
  Grooving insert ap=3.1
  20

- CLGR-10020
  Indexable insert shape C
  13

- CLGR-100230
Workflow and Tool Life Monitoring

TDM
next generation

CAM/SIM
PLM/CAD
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MES
LOGISTIC
MACHINE
PRESETTING
Workflow and Tool Life Monitoring

Am Beispiel TDM Global Line

Workflow Designer – Flexibilität per Drag and Drop
Am Beispiel TDM Global Line

Workflow Designer – Flexibilität per Drag and Drop
### My machines under control

#### DMC 650 V

**ID:** M100

**Description:** Vertical machining center

#### Tool Status

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>ID</th>
<th>Description</th>
<th>Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twist drill-solid carbide D6.8</td>
<td>CLGR-D0301+HOLEDRILL</td>
<td>SKS0-NTCT60-ER25-ER25-ZYLS8 / Walter</td>
<td>250 min left 15000</td>
</tr>
<tr>
<td>Tap drill M8</td>
<td>CLGR-D0302-HOLETAP</td>
<td>SKS0-NTCT50-SWF-SWE-GEW88 / Walter</td>
<td>250 min left 15000</td>
</tr>
<tr>
<td>Tap drill M10</td>
<td>CLGR-D0305-HOLETAP</td>
<td>SKS0-NTCT60-SWF-SWE-GEW88 / Coromant</td>
<td>250 min left 15000</td>
</tr>
<tr>
<td>Twist drill D12/118°</td>
<td>CLGR-D0304-HOLEDRILL</td>
<td>SKS0-NTCT50-ER25-ER25-ZYLS12 / Walter</td>
<td>250 min left 15000</td>
</tr>
<tr>
<td>Twist drill-solid carbide D6.8</td>
<td>CLGR-D0301+HOLEDRILL</td>
<td>SKS0-NTCT60-ER25-ER25-ZYLS8 / Walter</td>
<td>250 min left 15000</td>
</tr>
</tbody>
</table>
On-premise and cloud solution

The future TDM product areas

Cloud
"The starting point"

TDM Cloud as a quick starting point

On-premise
"The integration"

- Basis TDM 2018
- Expansion to TDM Global Line
- Maximum integration
- Customer-specific adaptations

Data services
"The enabler"

Product data and software tools as services
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Tool Lifecycle Management

TDM next generation

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MACHINE
PRESETTING
Videosequenz 6
Workflow and Tool Life Monitoring
Time for your Questions

Thank you for your attention

More informations:
www.tdmsystems.com