Materialise

- **Company**
  - Established 1990
  - Leuven, Belgium
  - ±850 employees
  - Worldwide presence
Materialise, a Global Presence

Offices                  Agents                  Home Offices

Japan                  Ukraine                  India                  Malaysia                  China

USA                  Venezuela                  Czech Republic                  Germany                  Austria

United Kingdom                  Belgium                  France                  Spain

Portugal                  Italy

Sweden                  Sweden

United Kingdom                  Belgium                  France                  Spain

Portugal                  Italy

Sweden                  Sweden

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The Structure of Materialise
We are Materialise
Moving you with certainty

AM enabling systems
What is Streamics?

• AM automation system
  • A whole set of tools and customizable workflows with one goal in mind: saving you time and money

• AM control system
  • Traceability in all aspects: user login, easy and centralized access to project data such as specifications, CAD/STL-files, etc.
Streamics offers

- 100% Magics compatibility
- Timely and custom reporting
- Automation of file operations
- AM machine planning
- Easy task assignment
- Secure, central AM data access
- Power API to integrate with existing systems
- Quality control and traceability
AM market: some clear trends

• within AM, the strategic importance of *Manufacturing* increases with respect to *Prototyping*
  ➔ *emphasizing importance of repetitive quality*

• more *competition* between different AM service providers
  ➔ *pressure on process optimisation*

• AM & “trad. manuf. techn.” (like CNC,...) are no longer separate areas: similar parts can be made in various technologies
  ➔ *total production cost as differentiator !

➔ current critical drivers are: *cost & quality ...* 

... requiring more *automation & control*
Understanding the Process

let’s look inside ...

AM Service Bureau or Department
Market drivers vs. current process: for a typical AM service provider

**your daily Challenges?**

- relying on intense internal verbal communication
- difficult file revision control
- complex machine planning
- de-localized data storage
- customers continuously calling for status
- manual project follow-up (incl. quotes,...)
- typical current working methods:
  - lot of manual (paper) work
  - multiple systems, not integrated,
  - systems not tuned to AM process
  - inhouse developed systems requiring heavy maintenance

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**Manual report generation**

**Process subject to human errors**

**Labor intensive traceability**
Consequences of process system not tuned to AM process requirements ...

it not only affects the *products* and the *processes*, but it also affects *people’s lives*

*You printed the wrong part!*

*how valuable is your time?*

*we truly believe there is a solution which takes into account all factors ...*
... main factors to be taken into account and linked to each other ...

→ only 1 central software system tuned to the AM process can take that role
Our AM consultancy study experience lead to 20 generic basic requirements which 3 are important for you personally?
2 core goals for AM process coverage

control

~ quality

automation

~ cost

linking it back to the above 2 critical AM market drivers...
integrating all your teams with 1 system
AM BUILD module:
- easy AM machine planning
- AM production status real-time affecting order status
- optional real time AM machine monitoring

COMMUNICATION module:
- advanced AM quote/order management via customer specifications linked with CAD-files
- automatic parameter/preview extraction (optional also basic price calculation)

DATA PREPARATION module:
- automated & standardized file preparation
- effective task distribution/assignment in CAD-team
- automatic Magics file revision control

REPORTING module:
- one-click business & production reporting

POST-PROCESSING module:
- intuitive & fast tracking of production status of non-AM steps
One Single System

RESEARCH, VALIDATION & APPROVAL CYCLE

DESIGN PROCESS

AM BUILD PROCESS

POST-PROCESSING PROCESS

PRODUCTION CYCLE

QUALITY ASSURANCE
automation and control system
The solution for Materialise’s AM patient-specific surgical guides
Improved procedure with surgical guide

Online Management System and Traceability

Scan Patient

Construct 3D models

Plan the surgery

Design & build guides

Enter the OR

Scan

Patient

Construct 3D models

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Enter the OR
Improved procedure with surgical guide

Online Management System and Traceability

Scan Patient → Construct 3D models → Plan the surgery → Design & build guides → Enter the OR

Improved procedure with surgical guide
Mimics Solutions

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Materialise
innovators you can count on
3-matic®

Online Management System and Traceability

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- Design automation
Online Management System and Traceability

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• Optimize/automate preparation
• Production management
  • Planning
  • Monitoring
  • Tracking
  • Communication
  • Reporting
  • Data handling
Online Management System and Traceability

- Post-processing
- Quality Control
- Material
Improved procedure with surgical guide

Online Management System and Traceability

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Online Management System

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- OMS guiding whole process
Quality in all we do

- ISO quality management labels related to the industries in which we work
- Appropriate regulatory registrations for our medical solutions
Immediate Solution

• Centralized Database – Traceability
• Web-Portal – Improved Communications
• File Handling Robot – Increased Efficiencies
• Automatic Notifier – Improves Communication
• Reporting – Process and Resource Assessment
Reporting Example: Quality Analysis

structured and complete data source

Y=f(a,b,c,...)

use data in calculations

powerful real-time reports

e.g.: Materialise Orthopaedic has ISO-certified process that relies on e-Solutions and an integrated webportal
Reporting Example: Process Analysis & Improvements

Generate Reports:

- Builds
- Machine Utilization
- Material consumption
- ...
Why Streamics™

AM automation & control system

- Single-click businesss reports
- Configurable modules
- 100% integrated with Magics
- An AM tuned backbone system
- Automation and standardization
- Advanced traceability
- Central AM data access
- Based on 20 years of AM in-house experience at Materialise
Questions?