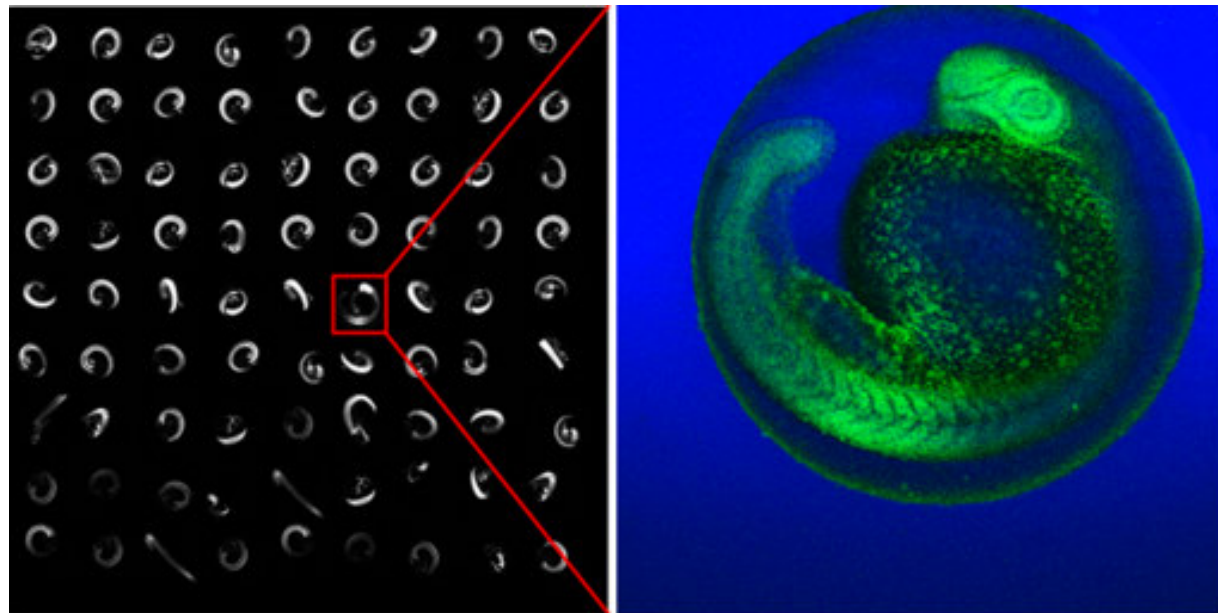


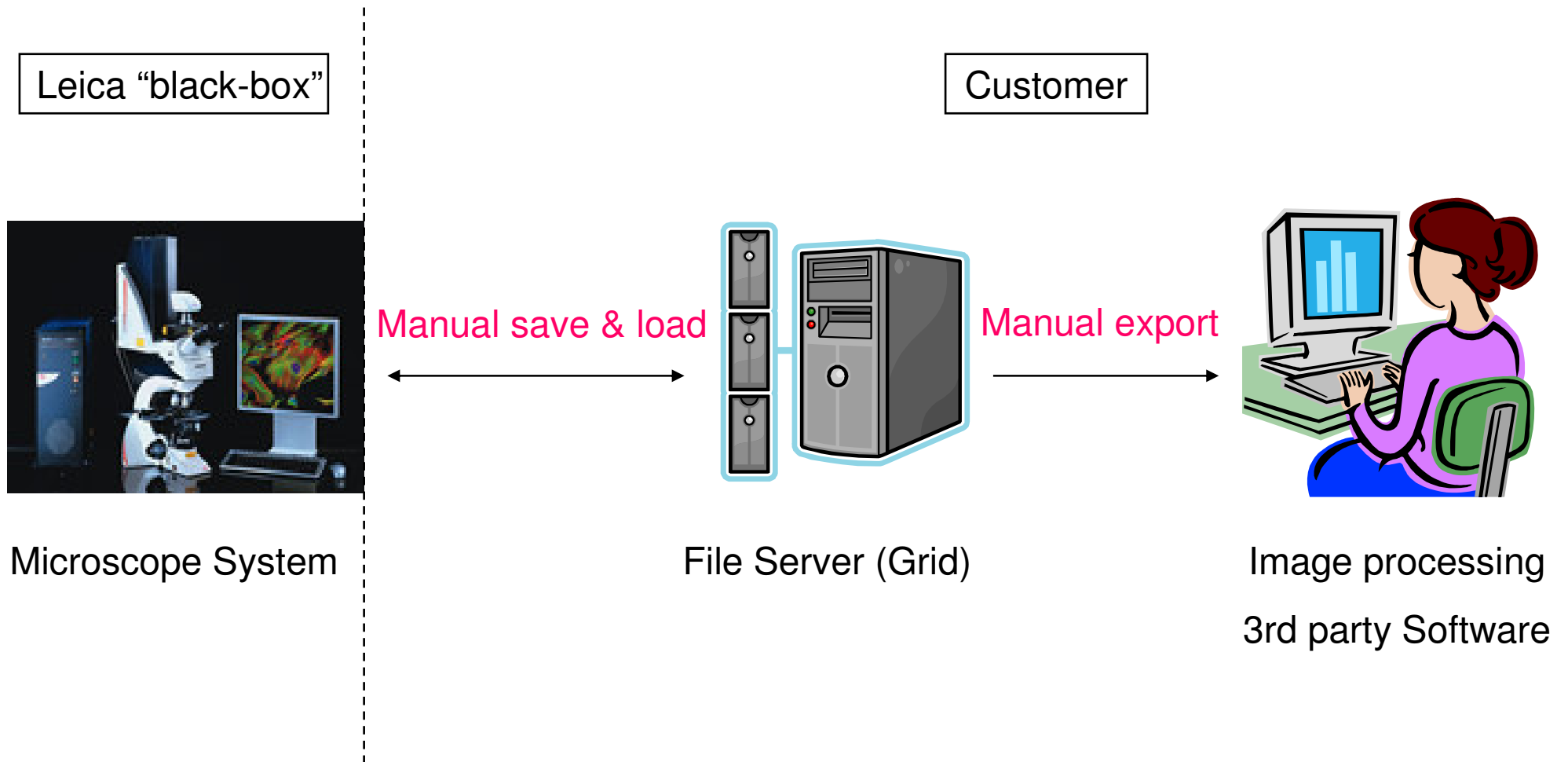
Leica High Content Screening Automation (HCS A)



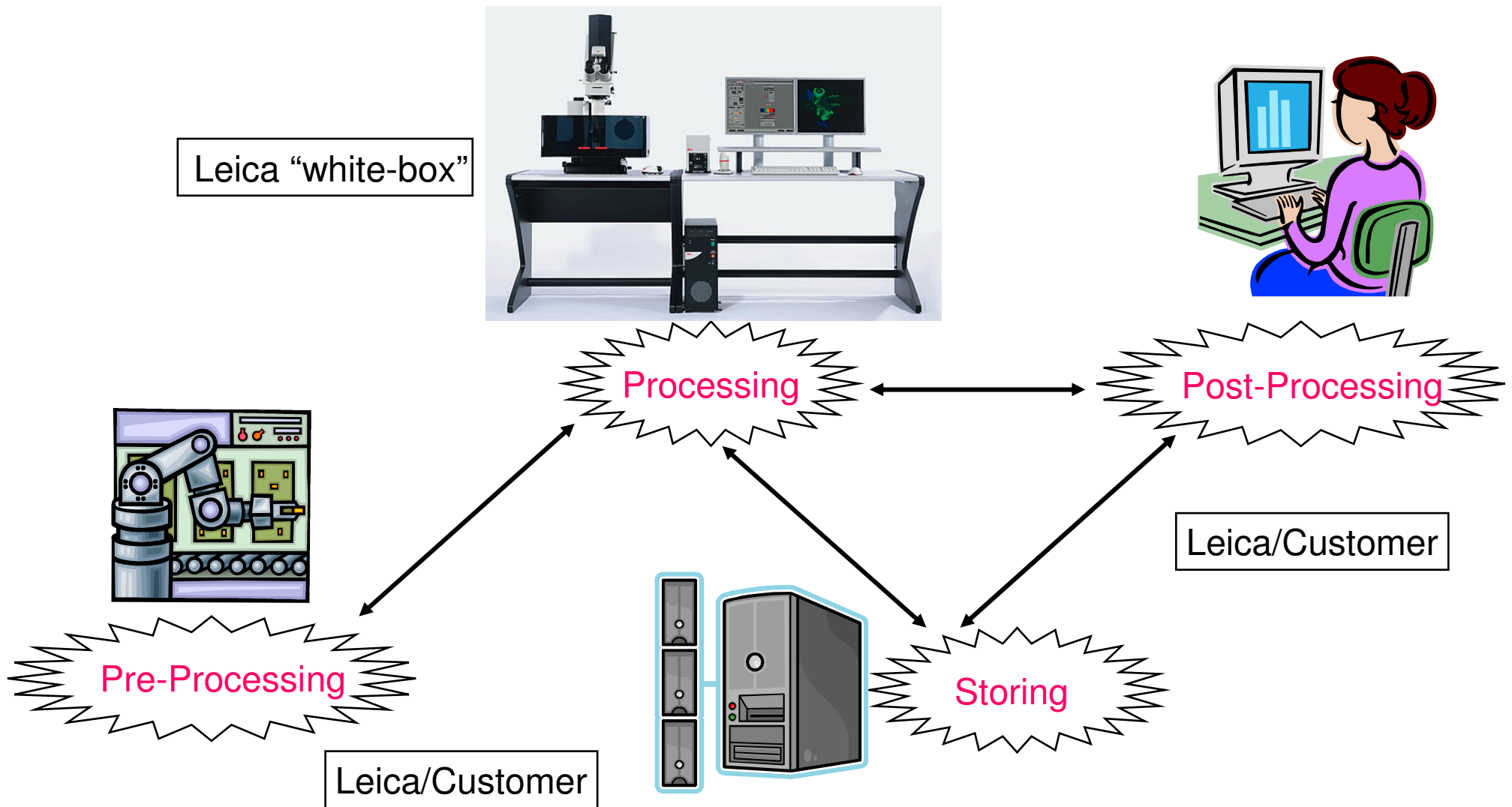
Supporting OME and Open Standards

Stefan Schek, R&D Project Manager,
Leica Microsystems CMS, Mannheim, Germany

Until now: “Leica Microscope System”



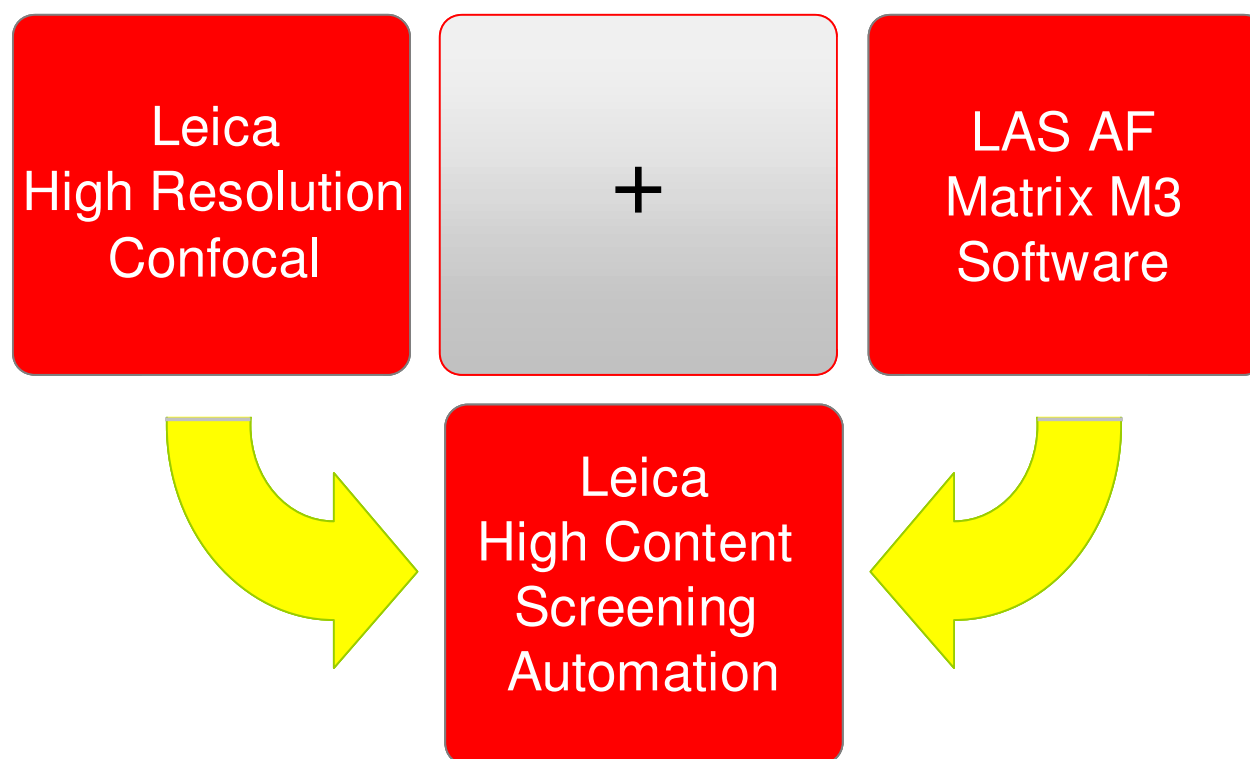
New: "Leica Microscope in a System"



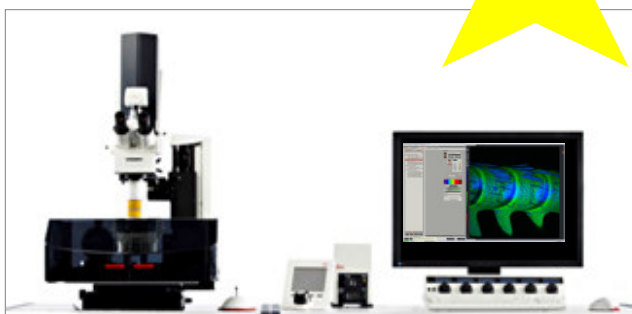
“Microscope in a System” – High-Content & Automation Systems

- Interfaces for Pre- and Post-Processing environment.
- Enable OPEN INTERFACES by:
 - Acquisition and Storing of data on the fly
 - Long term experiments → data can be processed before finish
 - Immediate image processing allows interactive control:
 - Look for rare events and react appropriate
 - High resolution scan of interesting regions
 - Trigger& control external devices (spotter, robots, pipettes, patch clamp)
 - Support Open File Format
- **Leica provides links from the Microscope to the outside world!**

High Content Screening Automation (HCS-A)



Leica's powerful platform:



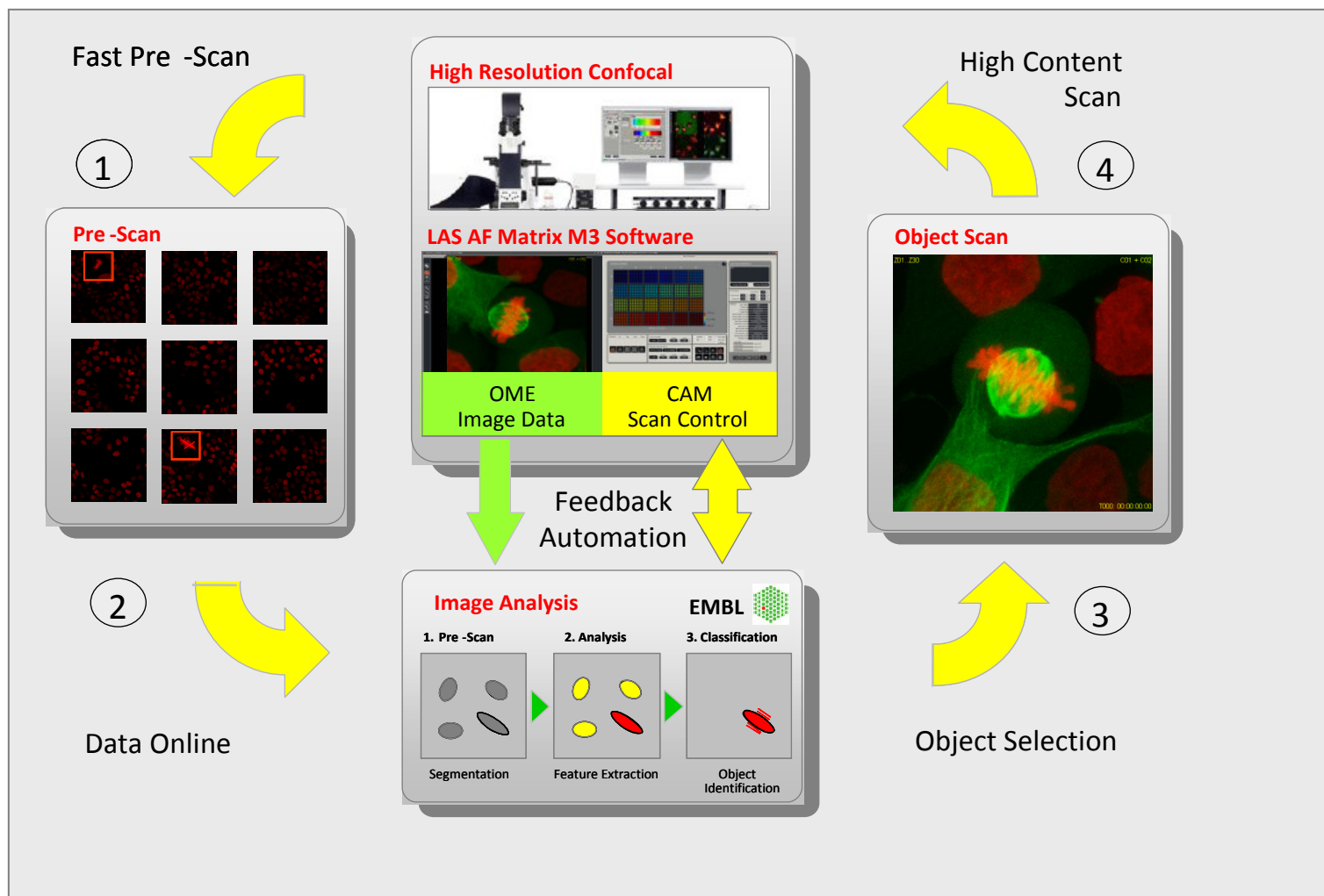
TCS SP5 II
Broadband

TCS LSI - III
Micro plus Macro

TCS SPE - II
Easy & Robust



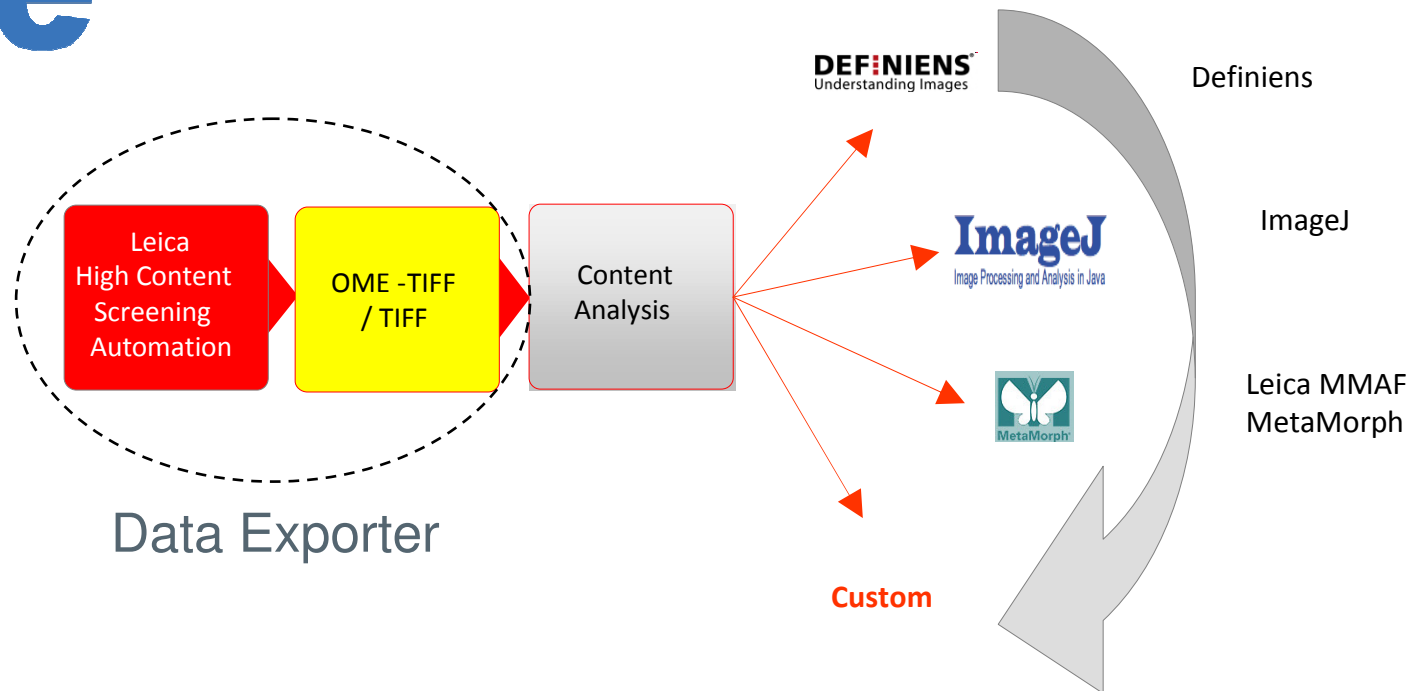
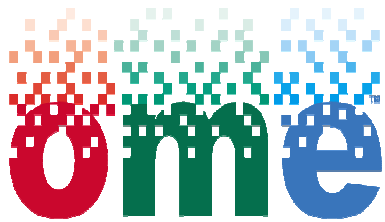
Use Case: Detect rare mitosis events fully automatically!



Check out:
mitocheck.org

Customer application solutions: Pre-Scan and Secondary Scan

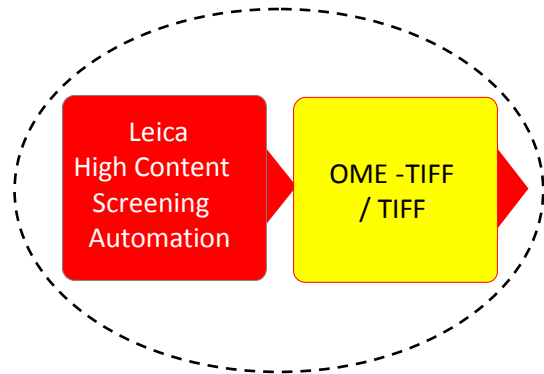
Support open data format OME-TIFF → Image Analysis



Profit from existing software in the lab!

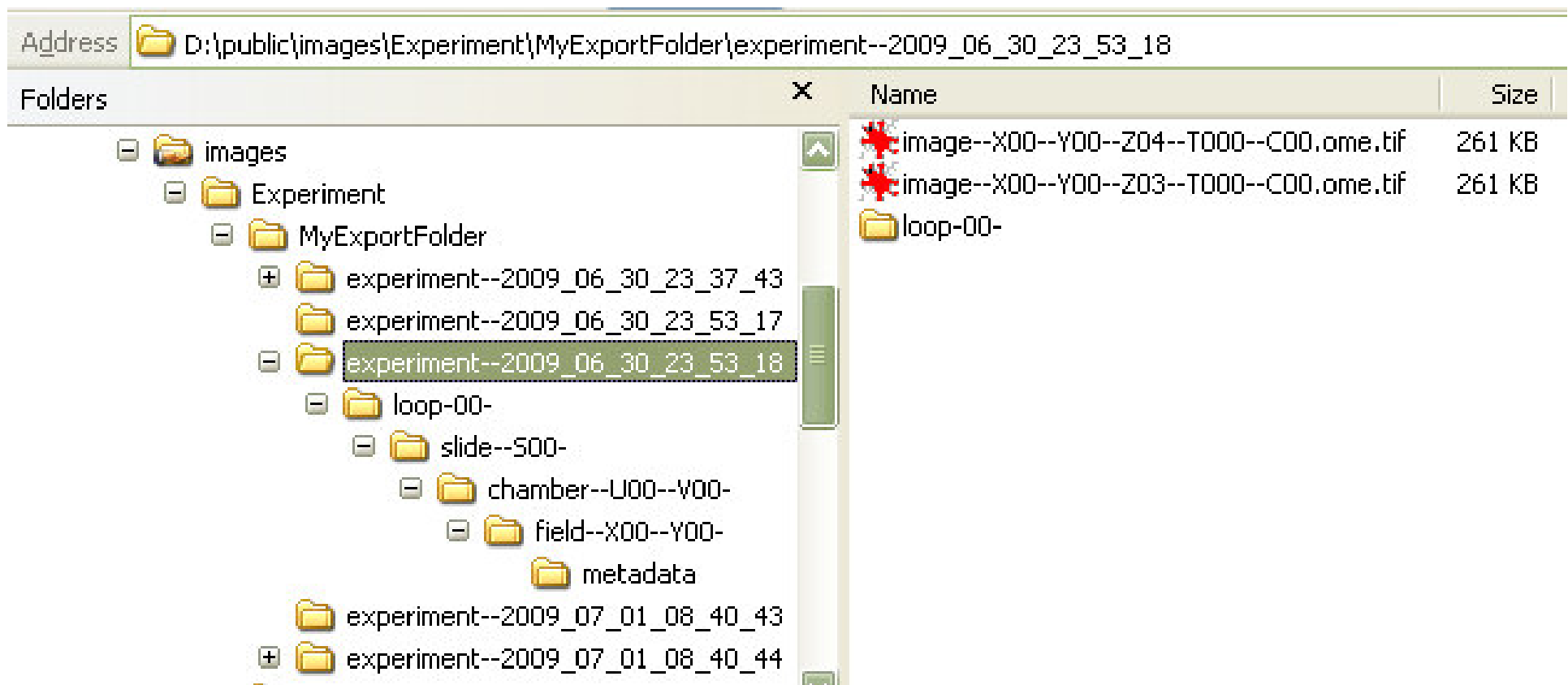
Definiens® is a Registered Trademark of Definiens AG.² ImageJ is a public domain Java image processing program inspired by National Institutes of Health, NIH Image for Windows, Mac OS, Mac OS X and Linux. MetaMorph® is a Registered Trademark of MDS Analytical Technologies. Huygens Professional® is a Registered Trademark of SVI Scientific Volume Imaging. Open Microscopy Environment (OME) is a collaborative effort among academic laboratories and a number of commercial entities that produces open tools to support data management for biological light microscopy initiated at the Dundee, NIA Baltimore, and Harvard Medical School and LOCI. In addition

LAS AF Data Exporter Module



- Supporting on the fly creation of OME.TIFF files (during acquisition)
- Focus: High performance and long time stability
- Produced OME.TIFF's are validated with "OME Validator"
- Two way storing option (local and/or network)
- Fault tolerance in case of network failure

LAS AF Data Exporter Module: Folder structure



- High flexibility in the file & folder naming and creation (xml file)
- Complete Leica metadata in separate folder (“metadata”)

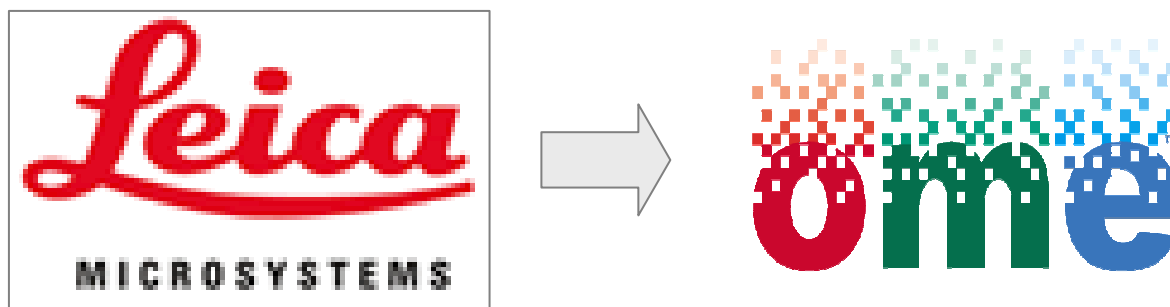
Data Exporter Module: Experiences with OME integration

- Built C++ wrapper to latest OME XML schema specification
- High effort to achieve high performance and long time stability
- Difficulties to map **all** instrument metadata to OME
- Experienced many different versions of OME.TIF implementations

Data Exporter Module: Outlook

- Extension of OME format to whole confocal platform
 - What is the best approach (short term / long term)?
- Leica welcomes OME compliant specification
 - Goal: meet the “OME compliant specification” and more...

Leica opens up to free solutions !



→ Get Connected !

