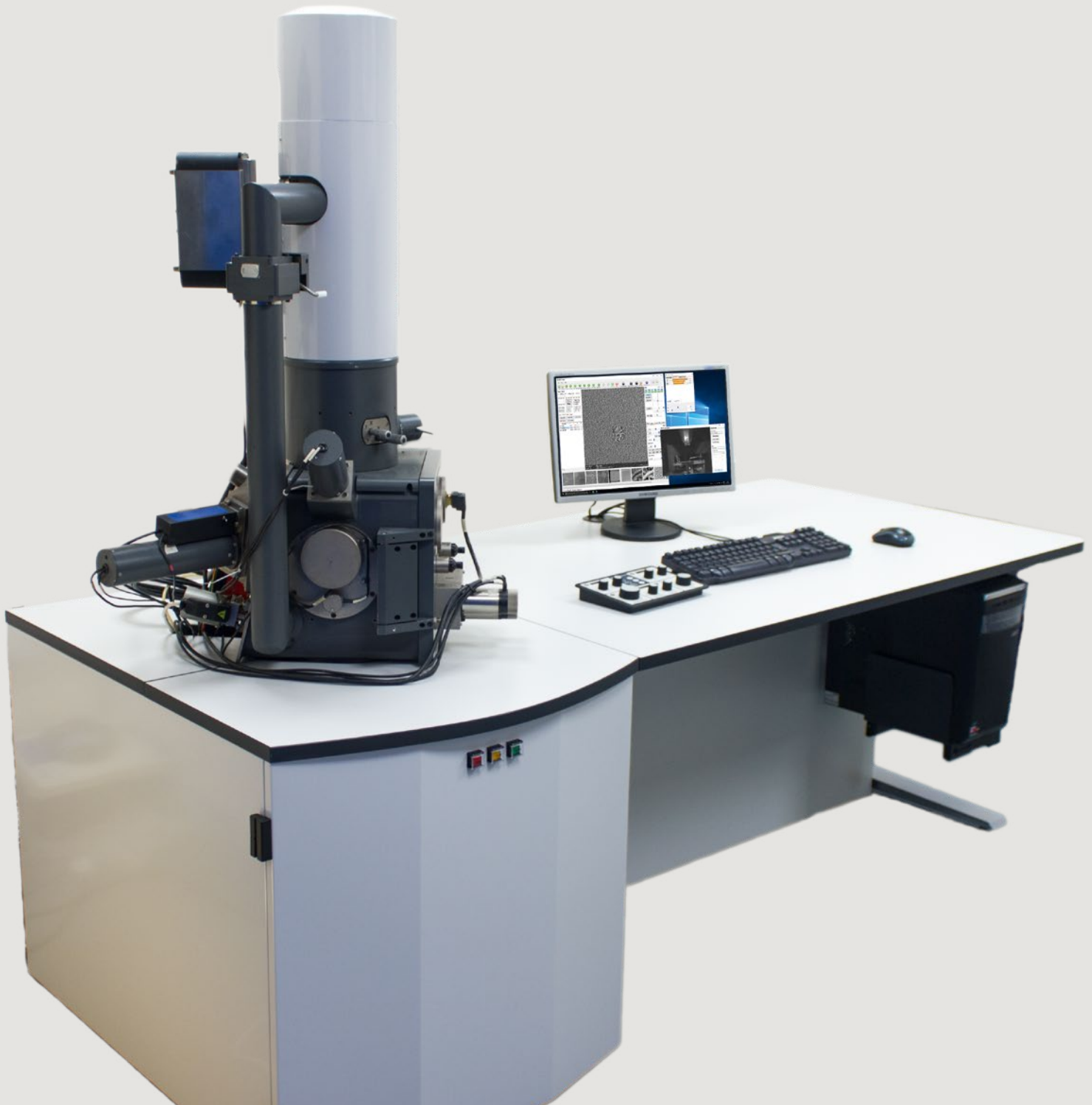




The SEM upgrade path

Complete electronics and software upgrades for all SEM types.



SEM upgrade

5 reasons for upgrading your SEM.

Increased performance

- High resolution image acquisition is required, beyond the ability of the original SEM electronics.
- Simultaneous acquisition is needed for SE, BSE, CL, STEM, however SEM is restricted to one signal per scan.
- New auto functions, including Focus, Brightness & Contrast, Stage, Gun, Vacuum, etc..

Network compatibility

- Network connectivity is required for shared storage, but SEM PC is outdated and no longer compatible/allowed.
- SEM screen must to be viewed/shared remotely, however SEM software does not allow video capture.
- New installation requires that the SEM must be operated remotely because of space or safety restrictions.

New techniques

- High quality image acquisition is needed for complex illumination and colour composition.
- New analysis requires new detectors, such as SE, BSE, EBIC, EBAC, RCI or EDS.
- New degrees of automation are need for large area mapping, video acquisition or surface topography.

High-value attachment or workflow

- Cost of moving or reacquiring the analytical equipment is prohibitive compared with the cost of upgrading the SEM.
- Established/certified analytical workflows must be maintained beyond the OEM service.
- Operator training and support needs to be standardised for all SEM types.

Acquisition or service costs

- Extending the lifetime of existing SEM is more cost effective than acquisition of a new microscope.
- SEM return is maximised after the upgrade, as downtime is minimised.
- SEM service cost is reduced after the upgrade.

SEM upgrades tend to follow a path of incremental steps.



1st stage – the acquisition upgrade

- Microsoft Windows 10 or less, with network compatibility
- Simultaneous signal acquisition for SE, BSE, EDS, WDS, etc
- Optional PC and display(s) or laptop



2nd stage – the controls upgrade

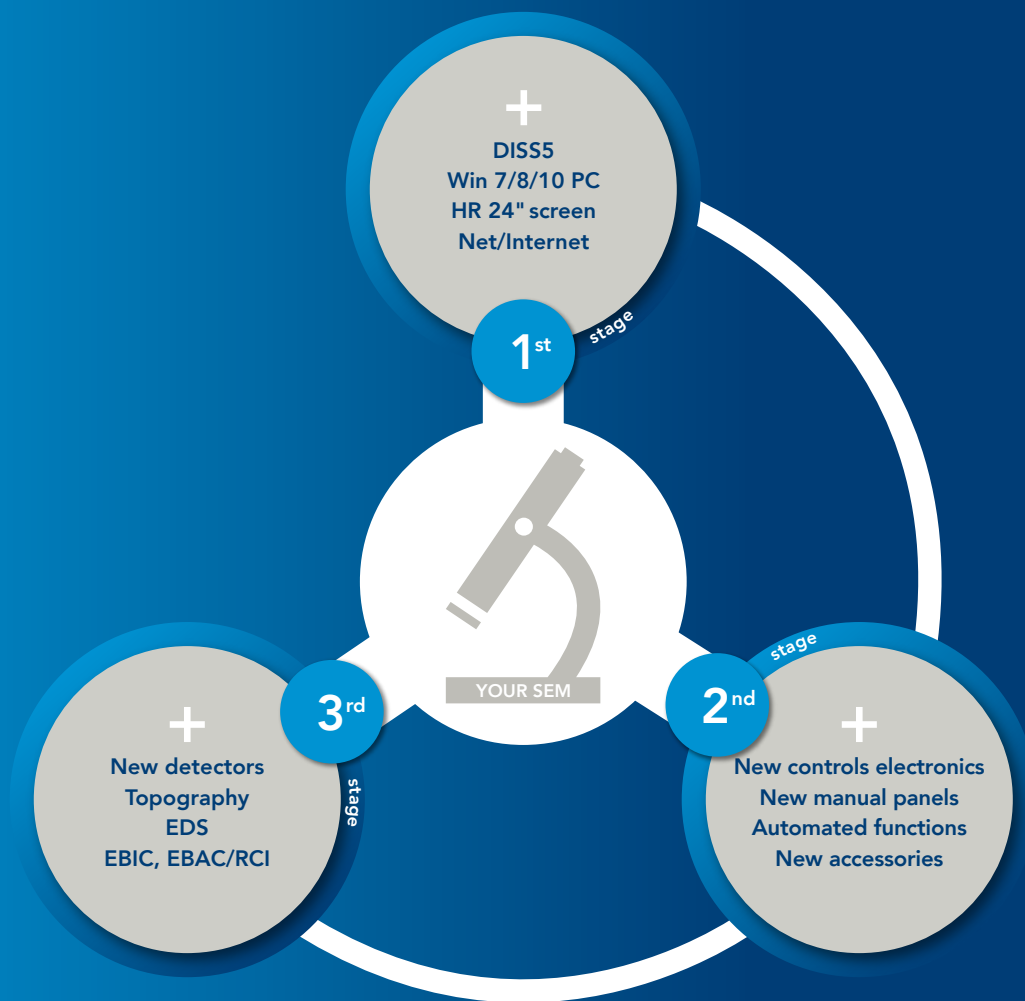
- New SEM control electronics and software
- Complete electronics for the SEM column
- Automatic vacuum, gun, stage, detector controls
- New manual control panels and accessories



3rd stage – the techniques upgrade

- Atomic-number discrimination with BSE detectors
- Topography measurements from shape-from-shadow reconstruction
- Micro-analysis with EDS detectors and mapping
- Physical failure analysis with EBIC and EBAC/RCI

The SEM upgrade path



Financial benefits

- extended lifetime
- reduced/no down-time
- 10 years spare-part-support
- maintain your proven workflows/applications
- reduced service costs

Technical benefits

- most powerful and versatile image acquisition system
- MS Windows 8/10 & network compatible
- simultaneous acquisition of multiple signals
- fully integrated automatic functions
- high quality panels for manual control

Optional control panels for increased speed and productivity

- SEM panel with magnification, focus, image shift, brightness, contrast, stigmatism...
- Stage panel with trackball/joystick, XYZR locks and store/recall functions
- USB2 controlled and fully integrated with the microscope controls software

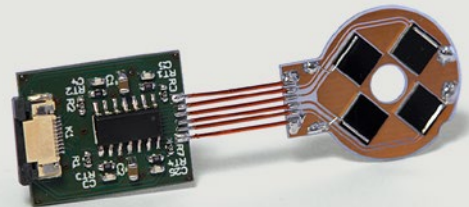


Optional stage controller for automatic positioning and rotation

- Integrated click-and-move, rotation and large area map acquisition
- Configurable software limits for collision avoidance
- USB2 controlled and fully integrated with the microscope controls software

Optional SE, BSE and EDS detectors for new techniques/applications

- High performance SE detector electronics
- Standard and low-kV BSE detector and electronics
- Practical and affordable EDS for SEM and STEM



Optional video processor for extended imaging channels

- Channel independent controls for brightness and contrast
- Hardware mixed output for simultaneous acquisition with SE, CL or EDS
- USB2 controlled and fully integrated with the acquisition software



Optional IR chamberscope for added flexibility and safety

- In situ mount for optimum orientation and view angle
- PC display or standalone monitor
- USB2 controlled and fully integrated with the microscope controls software

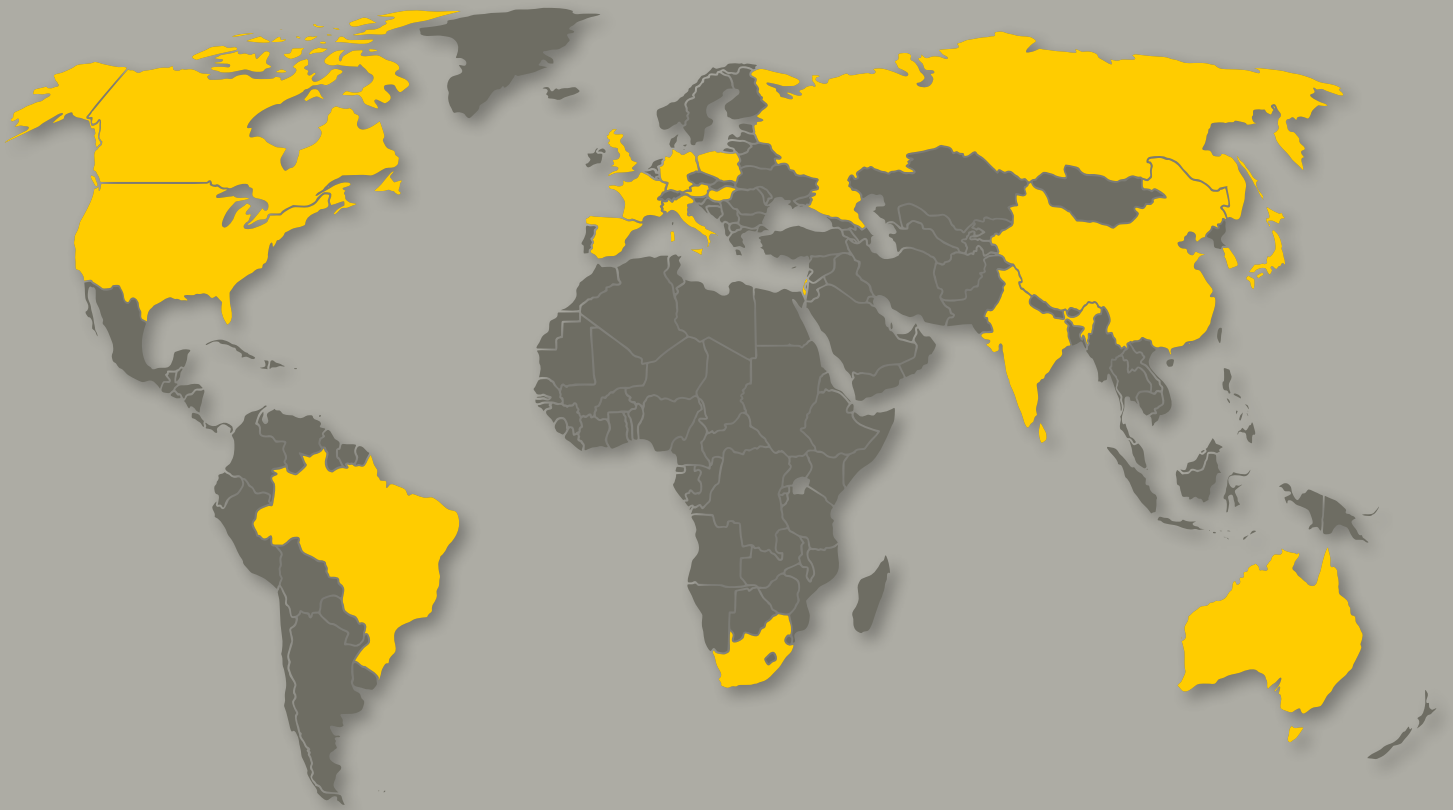


SEM upgrade

Optional microscope monitor for detailed information and preventive maintenance

- Automatic acquisition and compression of microscope operation parameters
- 16x 16-bit analogue signal inputs, and software API for software parameters and events
- Live and offline viewer with PDF export
- USB2.0 controlled and integrated with the microscope controls software





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