MES 6.4 (only for galvo systems)

Stability

- Improved stability of electronic system
- Improved stability of camera
- Bugfixes
    - eliminated instability at hardware state changing and ZStacks
    - improved point management and background pool handling at Virtual ZStacks
    - camera video recording

User experience

- SampleStage button on Focusing panel
- Improved position loading functionality
- Improved TIFF export

New features

- Warning signal when PMT signal level is too high

MES 6.3

User experience

- Highlighting Virtual coordinates (on setups with tilting objective unit)
- Fixed hotkeys for Adjuster window used in Line scan and ROI selection
- User friendly DoCallback module settings
- Emergency function stops all configured handwheel axes
- Minimum LUT range to prevent amplifying the noise: LUT window/Functions/Set LUT ranges

Stability

- Fixed bugs at homing
- Fixed freezes and errors during Curve analysis export function
- Shutter handling fix on SMART systems (shutter checkbox appeared with no shutter configured)

New features

- "Elbow" support for tilting objectives

MES 6.2

New features:

- Controlling motorized tilting objective
  - Redesigned Focusing GUI with controls for Femtonics X/Y stage and motorized tilting objective unit
  - A visual guide can be opened from the Focusing panel to help better understand the available handwheel modes
  - New Virtual mode for focusing and navigating with a tilted objective
  - More detailed movement range limiting allowing for a wider tilting range
- Photostimulation
  - Usage of several patterns at AO special scanning modes to perform photostimulation
- The Behaviour importer module now handles velocity data (.vlg files) recorded with Femtonics Gramophone devices
- CurveGenerator window to insert user specified curves to selected channels inprotocol window
- Electrophysiology measurement can be performed in camera mode without scanning

New analysis features:

- Improved and faster motion correction algorithm for Femto3D AcoustoOptic microscopes' chessboard scanned measurement units
  - With more intuitive parameter set
  - Units can be transformed to the same reference image
  - Motion correction batch process can be called from command line as well
  - Offset curves in X and Y direction are saved into .mat files
  - See also Translational Motion correction batch

User experience:

- 3D visualization and navigation
  - Simplified GUI and new visualization mode for Femto3D AcoustoOptic (AO), and Piezo objective positioner specific 3D scanning features in the cases of Femto2D and FemtoSmart systems
  - Navigation commands (step left/right/up/down/Z-up/Z-down, zoom in, zoom out, fixed and free zoom) work in reference of the actual viewport, even in rotated cases
  - Protocol editor shortcuts for setting the most relevant parameters
  - Rotation controls moved to Navigation panel
  - In case of rotated planes the (0,0) coordinates are shown at the center of FOV
  - Fast Z-stack gives a warning if the selected values aren't reachable with the AO focus or piezo
- Improved features in Folded Frame viewer
  - The borders of Folded Frame fields can be made visible in the viewer window of the measurement unit
  - The borders of user selected ROIs (i.e. which pixels belong to the selection) can now be visualized
  - The recalculation of curves from user selected ROIs can now be turned off with the checkbox above the graph

    - Advanced ROI selection and adjustment in FF viewer (ROIs can now be adjusted on a one-by-one basis)
- Z-stack mode chooser in synchron with handwheel modes
- Warning 1 week before license expiry
- Line scan: warns when less than 4 pixels are selected (to avoid kpm2 error)
- Redesigned InfoView window
- The 4D scan settings panel can not be closed when 4D scanning is enabled
- Settings menu items
    - the different settings will no longer be saved with a separate menu item
    - the windows that are closed with Save button will save the settings immediately (or close the application)

Stability:

- Improved stability for camera handling
- KGOLE object ungrouping image quality loss fixed

MES 6.1

New features:

- Sine pattern generator for the protocol editor window (open source)

User experience:

- Resolved flickering bug during Live scan

Stability:

- Reduced distortions in full field scanning
- Bugfix at protocol input synchron field
- Support for recent PES firmware version

MES 6.0

New features:

- Improved translational motion correction
- Batch process for translational & non-rigid motion correction module
- Binning option in camera control
- Configurable PMT warm-up time
- Improved 4D scan window in rollercoaster module
- Simplified control for 3D anti-motion scanning modes
- Speed mode button for AO raster scan and Z-stack
- Application for automatic sender of log and setting files (troubleshooting)
- Improved Look Up Table GUI with support of full numeric pad shortcuts and display names of colormap
- The last edited LUT channel is saved and next time it is automatically selected
- Auto button also sets the middle slider on LUT window
- GUI: separate views for simplified and full functionality

- Orthoslicer module functionality is integrated into the standard MES release

User experience:

- New 'Simplified view' switch affecting raster scan, Z-stack, Line scan and AO line scan
- Vertical PMT voltage sliders, PMT voltage sliders of unused PMTs are hidden
- Arbitrary names for Laser and PMT voltage sliders can be set in Service Tools
- Progress bar for longer calculations at curve analysis
- Optimized handwheel smoothness
- Save image (a.k.a. „Photo") button now moved to the Immediate window top left corner

Stability:

- Curve analysis window at partial filter
- Curve analysis window FWHM for negative peaks and spectrogram
- Importing abf files
- Various bugfixes
- Support for MATLAB 2017b

MES 5.0

New features:

- Electrophysiology importer supports Intan RHD format
- Electrophysiology importer supports CNT format

User experience:

- Auto LUT for camera
- Improved protocol structure and GUI
- Multi ROI broken view for FoldedFrame measurements

Stability:

- New camera driver and interface
- Automatic packaging and sending debug data to Femtonics if requested
- Support for MATLAB 2015b

MES 4.6

New features:

- 4D scanning with rollercoaster
- DoCallback module: endless possibilities
- dGpR module: new R compensated dG/G calculation mode
- AO scanning: support for v5 AO driver cards
- Improvements to Cell3DFinder module: finding cells with nuclear exclusion

- Load arbitrary curves into protocol and use them for output generation during line scans
- Metaprotocol handles devices and can capture images and z-stacks at multiple positions
- Support to Sutter MP285 stages
- New module: bpodimporter imports signals from the BPOD behavioral control device.
- Support for tilting objective
- Intrinsic imaging and VisStim (visual stimulation) support
- Support for holographic stimulation
- Support for PClamp 10.6., ABF 2.03 and Windows 10 for Electrophysiology importer
- New module MCTeleClient performing MultiClamp700B telegraphing.

User experience:

- Global cursor helps identifying same locations on different images.
- FoldedFrame can draw more flexible regions: transverse direction is calculated per ROI.
- Improvement for software-controlled beam coupling adjustment (uncage upgrade - laserintapt module)
- AutoROI function on FoldedFrame (XYT) viewer window
- Point to line setting dialog: it is possible to configure multiple patterns to replicate
- Multiple Immediate windows supported: real time parallel display of multiple channels

Stability:

- Bidirectional scanning correction on the main GUI
- New device drivers for PES, LuigsNeumann and APT- increased stability

MES 4.5

New features:

- Support to export data to large HDF5 files
- Spectrogram calculation in curve analysis
- Form XYT measurement unit from time lapse images captured by metaprotocol
- Motion artefact correction function for galvo XY or XYZ images.
- Improved point management GUI: multiple separate point groups
- Improvements to PipetteManipulation module: supports hardware other than LuigsNeumann

User experience

- Curve analysis display preferences
- Bulk XYZ and XYT export to multiTIFF
- Adjuster GUI helps fine positioning selections in 3D
- Image statistics calculates histogram
- Convenient PMT enable button