



Představení portfolia, přístrojového vybavení

Martin Kopecný 
vedoucí divize mikroskopie
Pragolab s.r.o.

Microscopy workflow



High End Widefield microscopy, THUNDER systems



Top Confocal microscopy STELLARIS platform



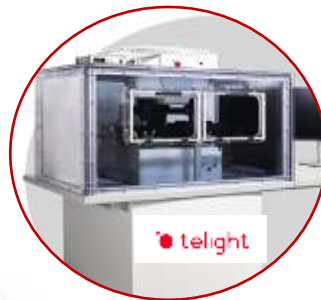
NEW Leica MICA Imaging HUB



Sample preparation cooperation with Specion s.r.o.



Basic and routine microscopy



Real Holographic microscopy Q-Phase, quantitative. LiveCODIM SR module



TEM Electron microscopes from Delong Instruments, Bench top



New software analysis AIVIA with AI



CELL Dive Multiplex from Cytiva multiplex imaging



CryoCLEM, THUNDER, STELLARIS solution with transfer

Large **porfolio**, solutions for your research



Get Closer to the Truth - Confocal Microscope Platform **STELLARIS**

New STELLARIS Confocal platform

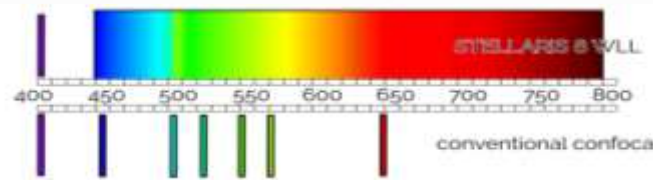
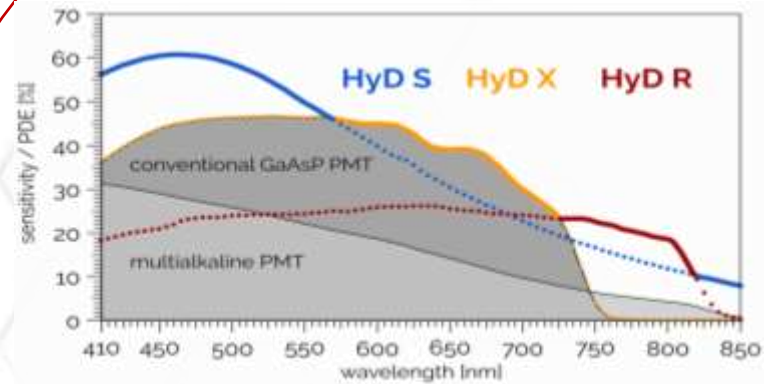
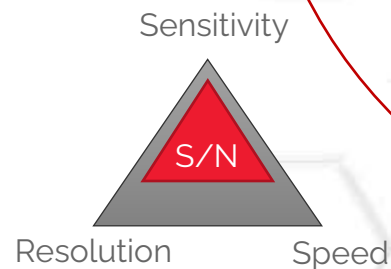
- > Unique and new confocal microscopy platform by Leica Microsystems
- > Open for different application needs
- > Focused on Power, Potential and Productivity
- > New life-time concept for confocal imaging



Get Closer to the Truth - Confocal Microscope Platform **STELLARIS**

Power HyD™ S The new standard for STELLARIS

- > All-round detector, high performance throughout the spectrum
- > Leica Si-based technology, hybrid analog/photon counting modes
- > 58% QE



Power HyD™ X The new eXcellence in functional imaging

- > Specialized for fast FALCON and τ -STED in the visible range up to far-red range
- > Leica GaAsP-hybrid technology

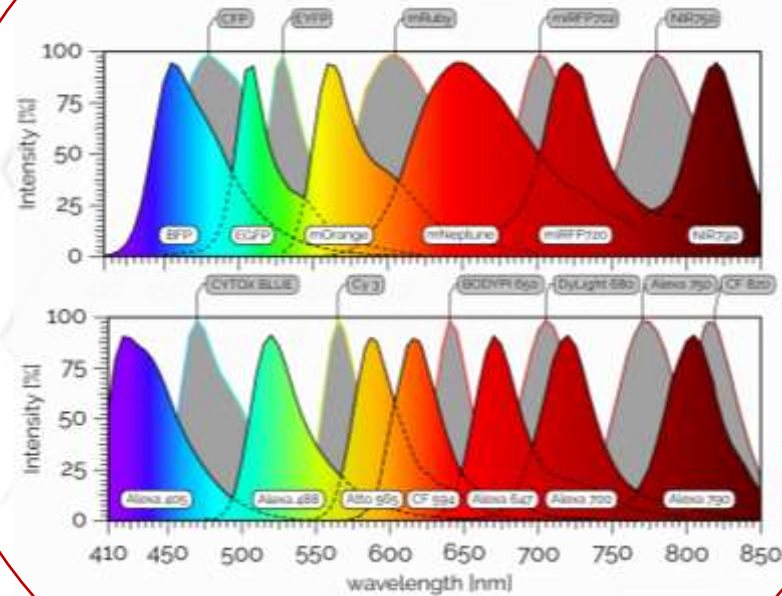
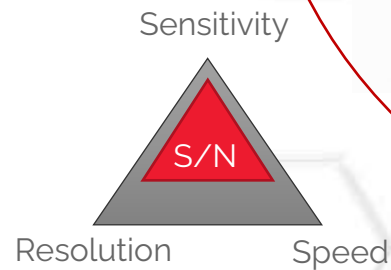
Power HyD™ R The new choice for near infraRed detection

- > Specialized for fast FALCON and τ -STED in the Near-Infrared range
- > Leica GaAsP-hybrid technology

Get Closer to the Truth - Confocal Microscope Platform **STELLARIS**

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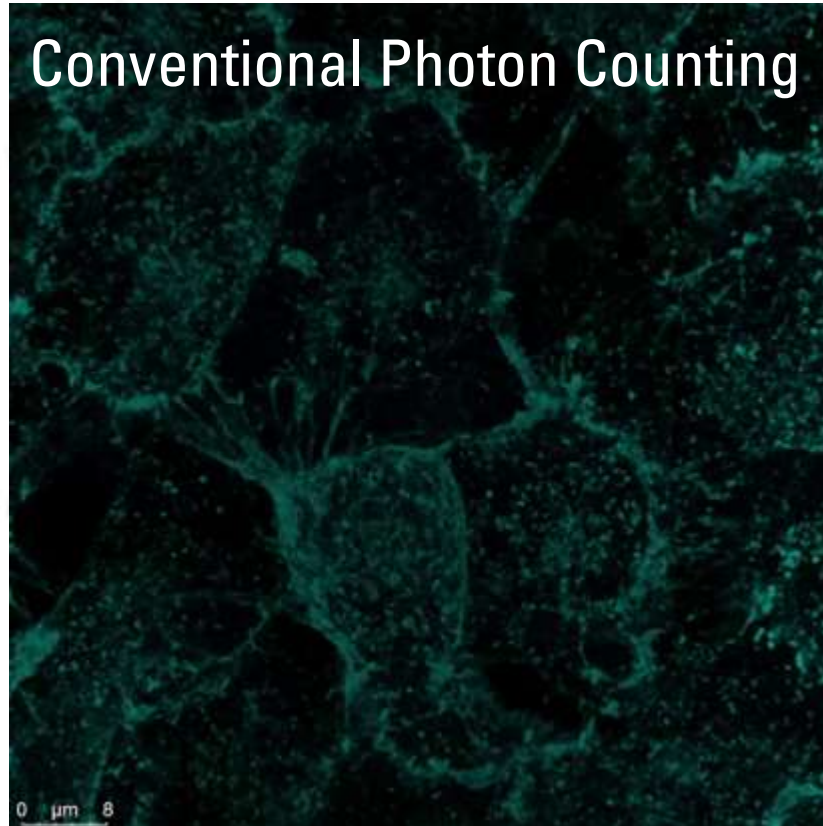
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Power HyD™ R The new choice for near infraRed detection

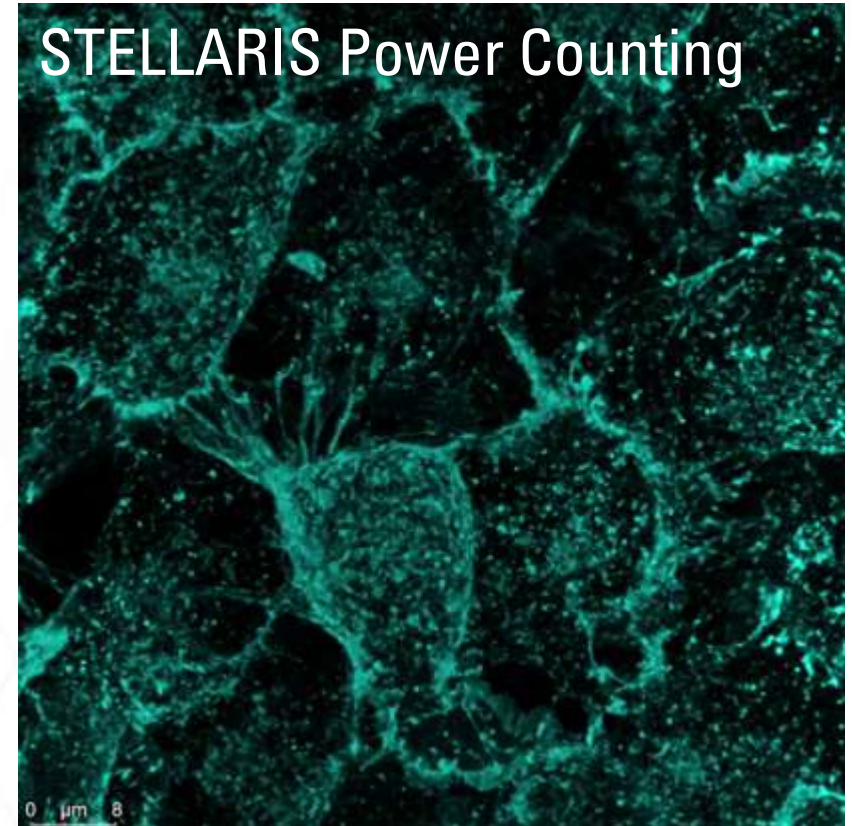
- > Specialized for fast FALCON and τ -STED in the Near-Infrared range
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Get Closer to the Truth - Confocal Microscope Platform **STELLARIS**

Conventional Photon Counting



STELLARIS Power Counting

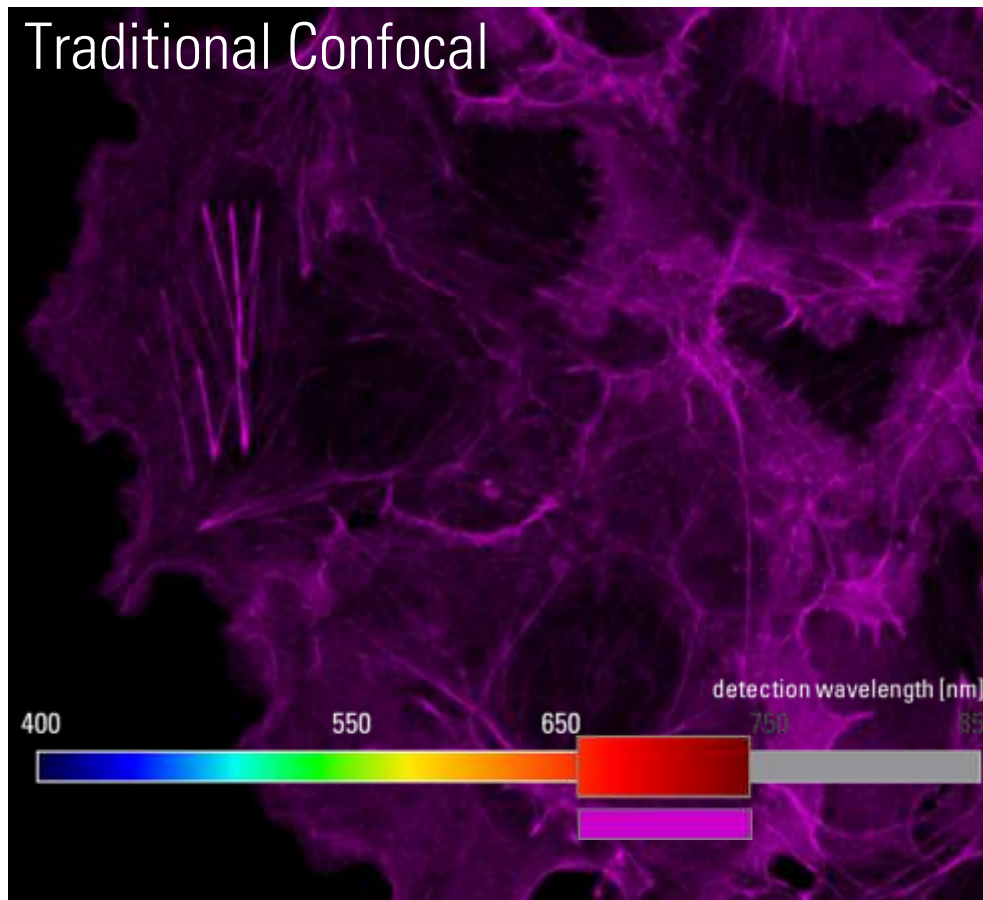


Power Counting Extends
Significantly Dynamic
Range And Linearity

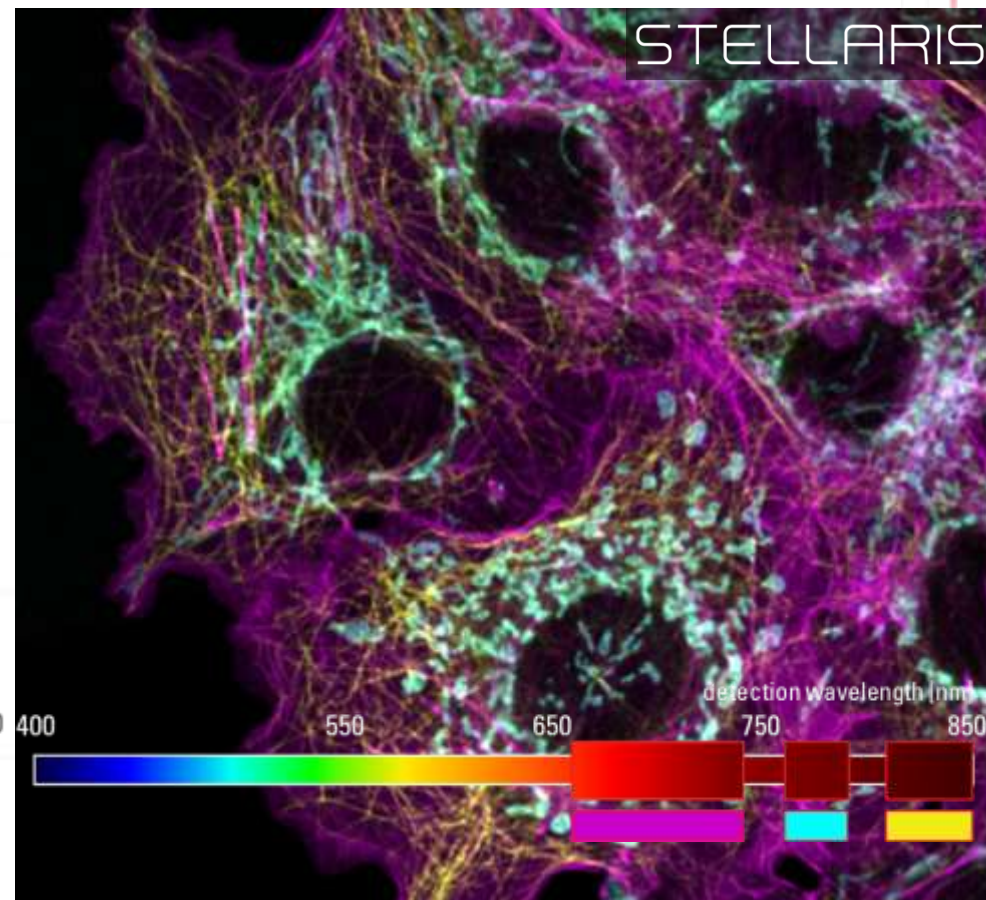
HeLa cells, CF488-WGA (497-600 nm), 12kHz resonant scanner, maximum projection of z-stack;
LIGHTNING processed.

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Traditional Confocal



STELLARIS



STELLARIS Gives
You Expanded
Multicolor
Flexibility

COS7 cells. Actin (magenta, SiR-Actin 657-740 nm), Mitochondria (cyan, AF750 760-790 nm), Microtubules (yellow, AF790 810-850 nm)
Sample Courtesy: Jana Döhner, Urs Ziegler, University of Zurich

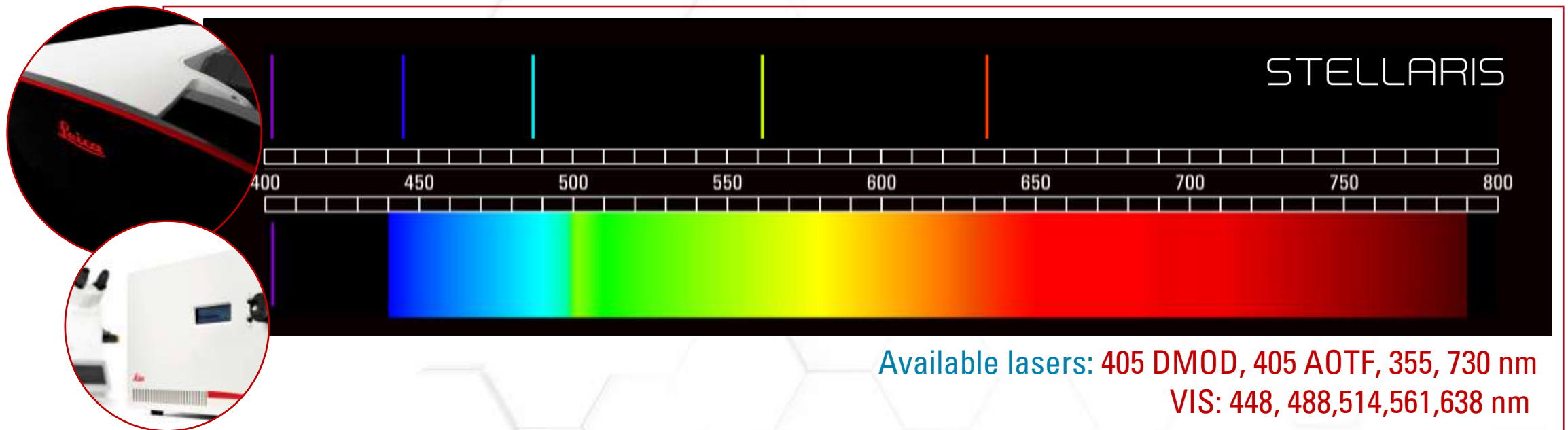
Get Closer to the Truth - Confocal Microscope Platform **STELLARIS**

New AOBS

New WLL3 White Light Laser

More options STELLARIS5 or STELLARIS8

- > Expanded Multicolor Flexibility!
- > Combine CW & Pulsed lasers



Get Closer to the Truth - Confocal Microscope Platform STELLARIS

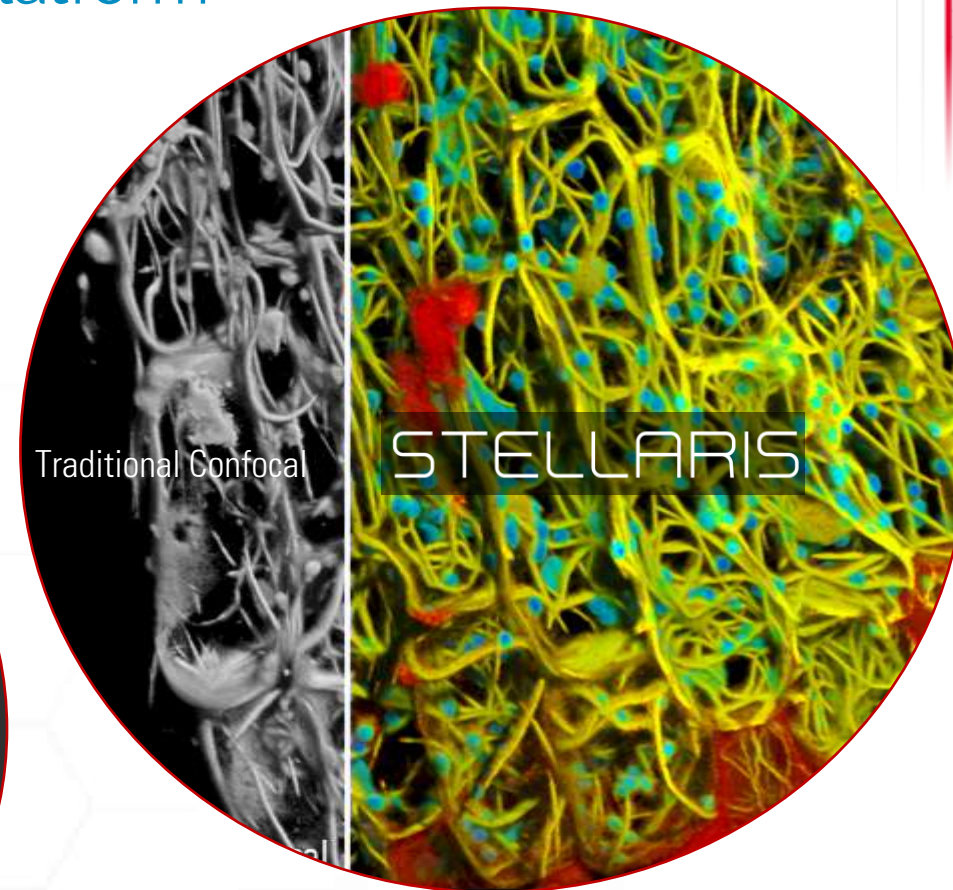
TauSense™

- > TauContrast Gives Instant, Pixel-by-Pixel AAT, With Every Image (Live/Acquired)
- > The Technology Behind STELLARIS Potential

tauCONTRAST

tauGATING

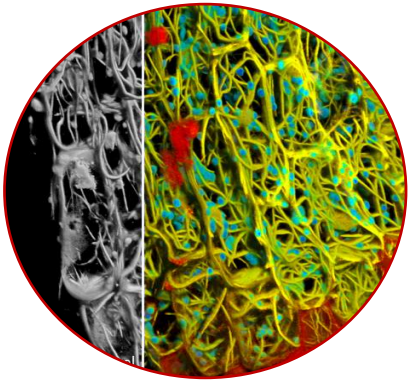
tauSEPARATION



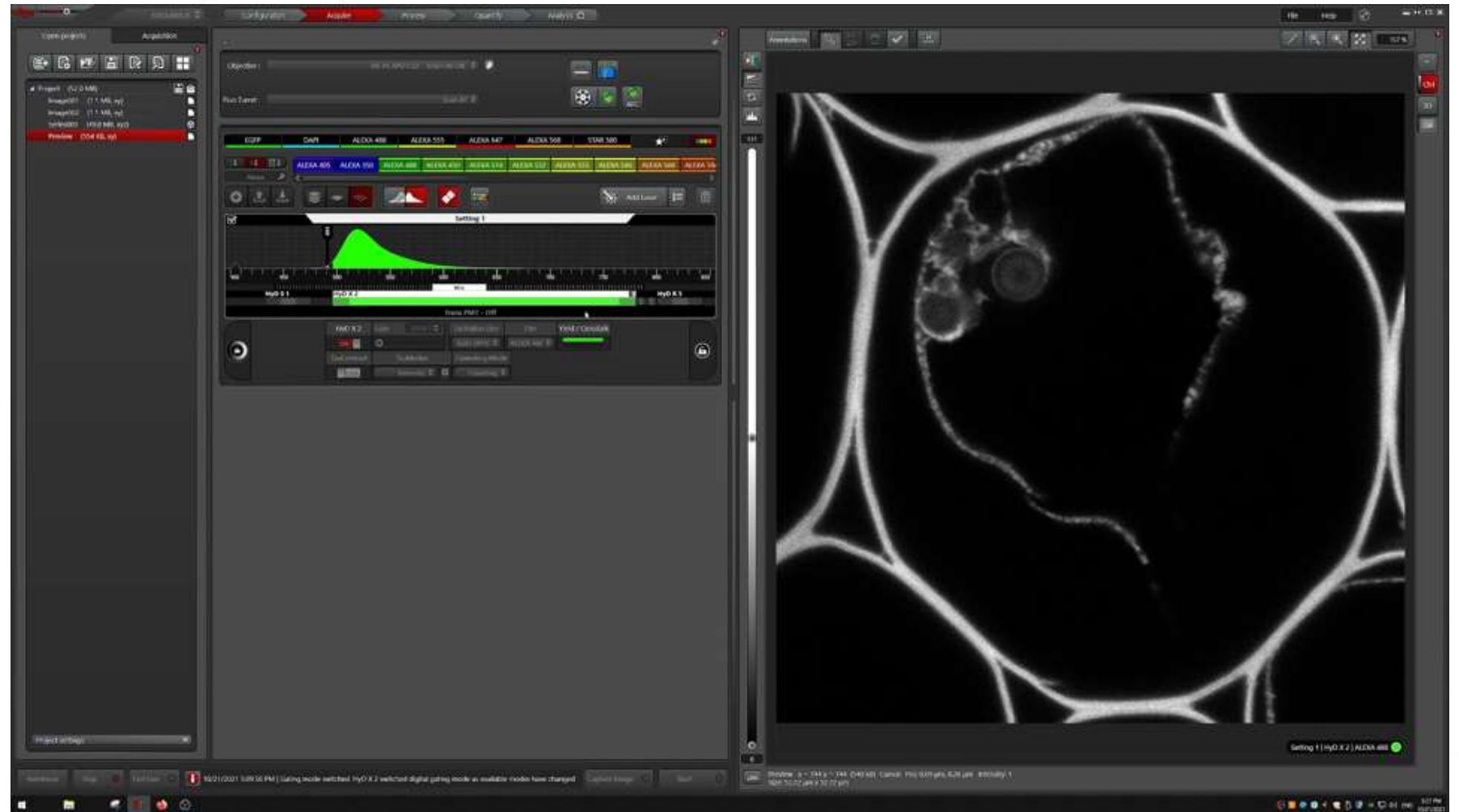
- > Root-hypocotyl-junction of Arabidopsis thaliana. Chloroplasts (endogenous fluorescence); actin (Life-Act Venus: Era et al. Plant Cell Physiol., 2009); membranes (Propidium iodide). Sample courtesy: Melanie Krebs, COS, University of Heidelberg.

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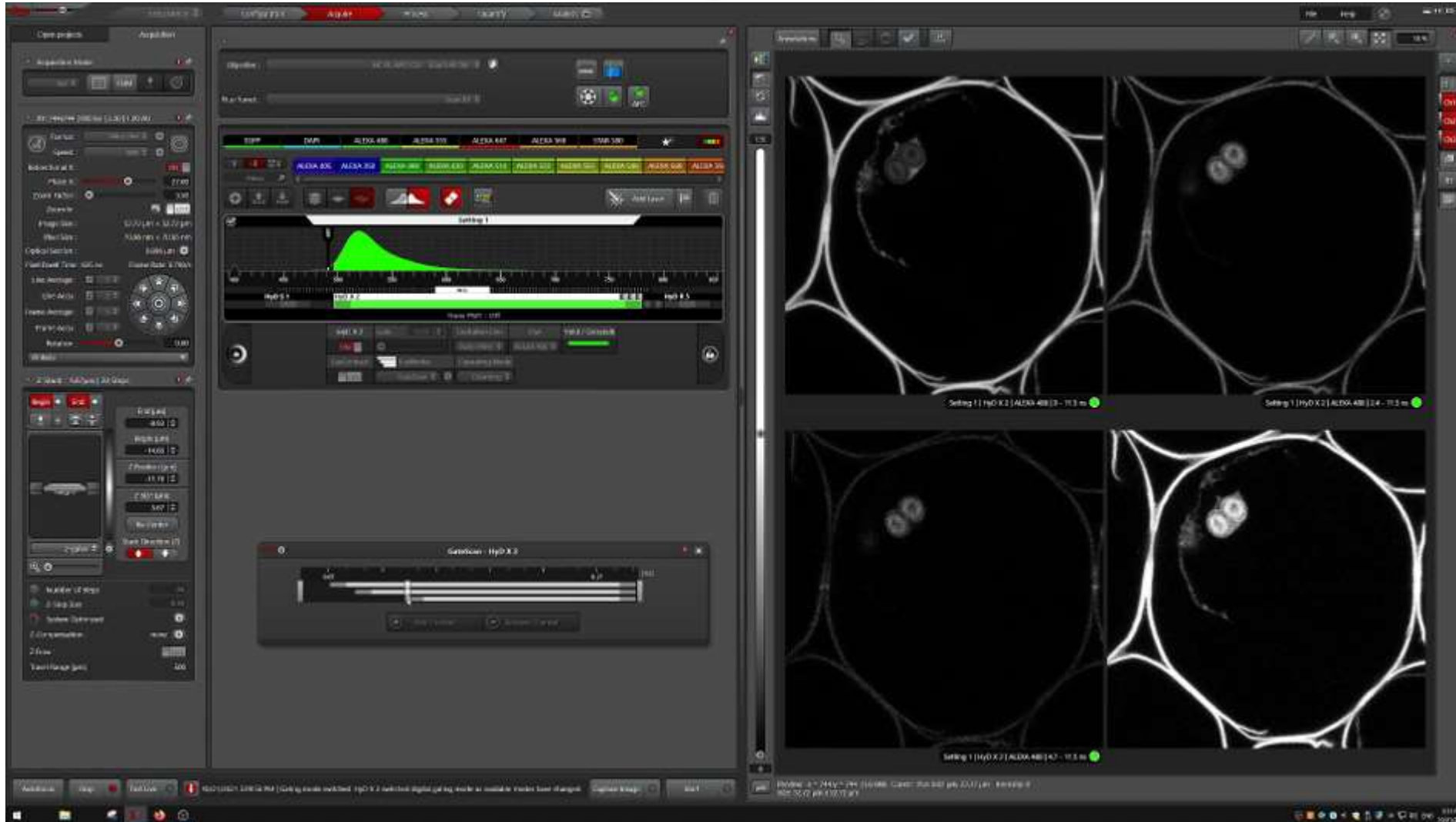
TauContrast



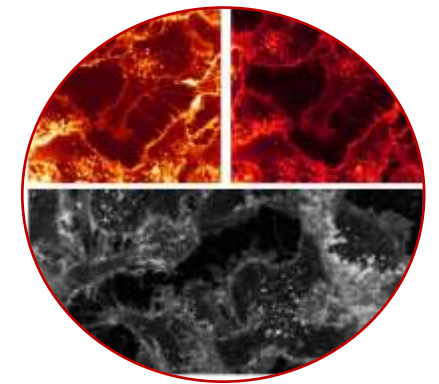
Qualitative / Semi-quantitative information
Is there a change in microenvironment? Is
FRET happening?
Changes over time (x-fold $\uparrow\downarrow$ compared to
baseline)



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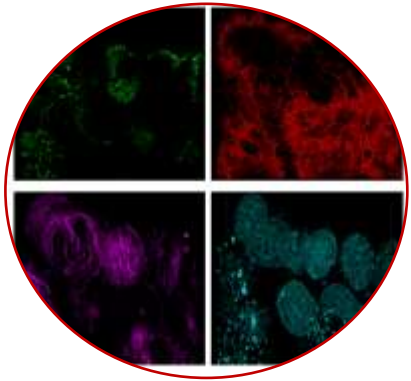
TauGating



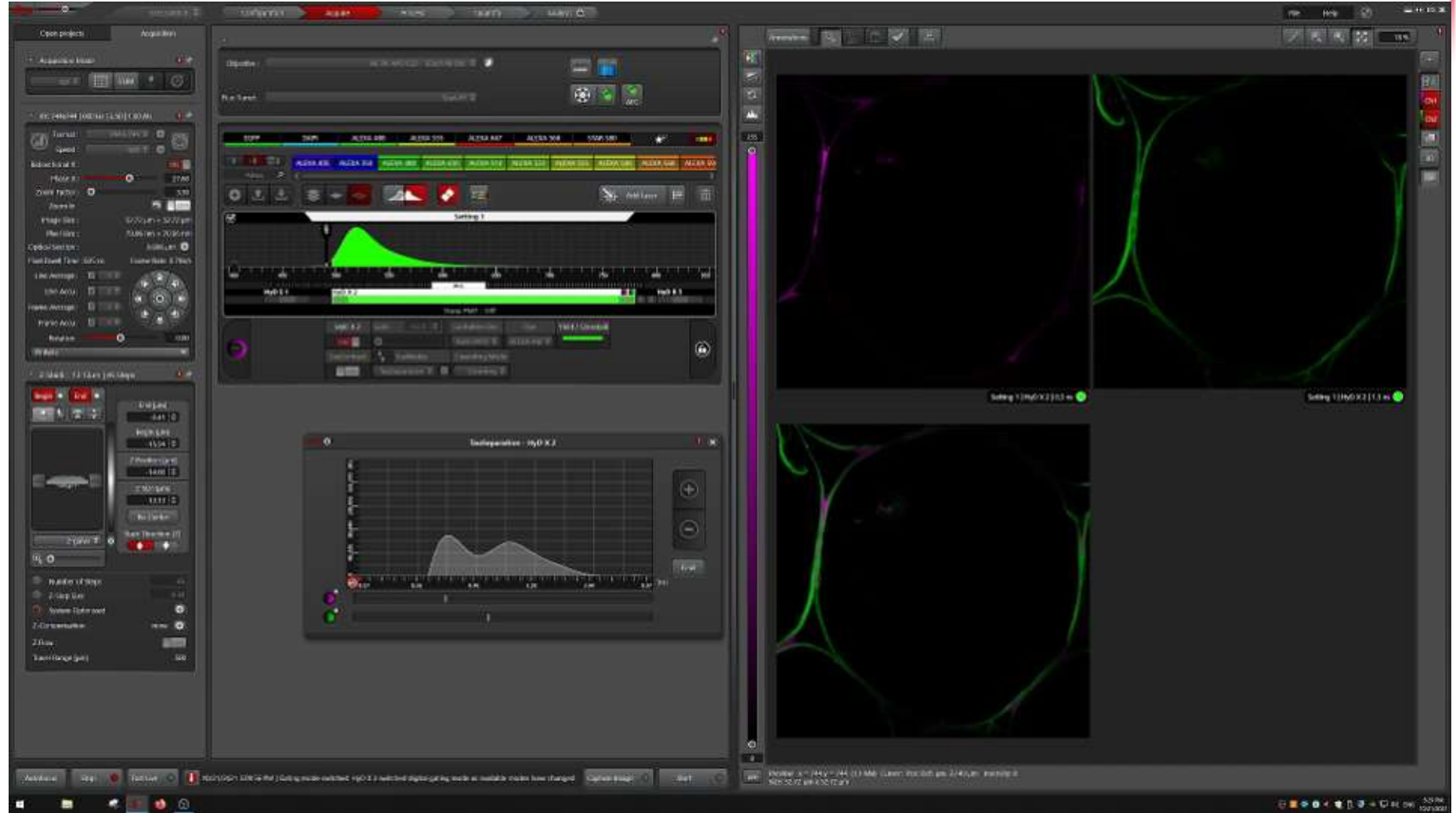
Explore sample with gates
Remove reflections
Remove unwanted
fluorescence contributions

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TauSeparation

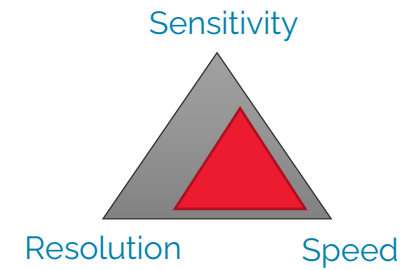


Separate species with
different lifetimes

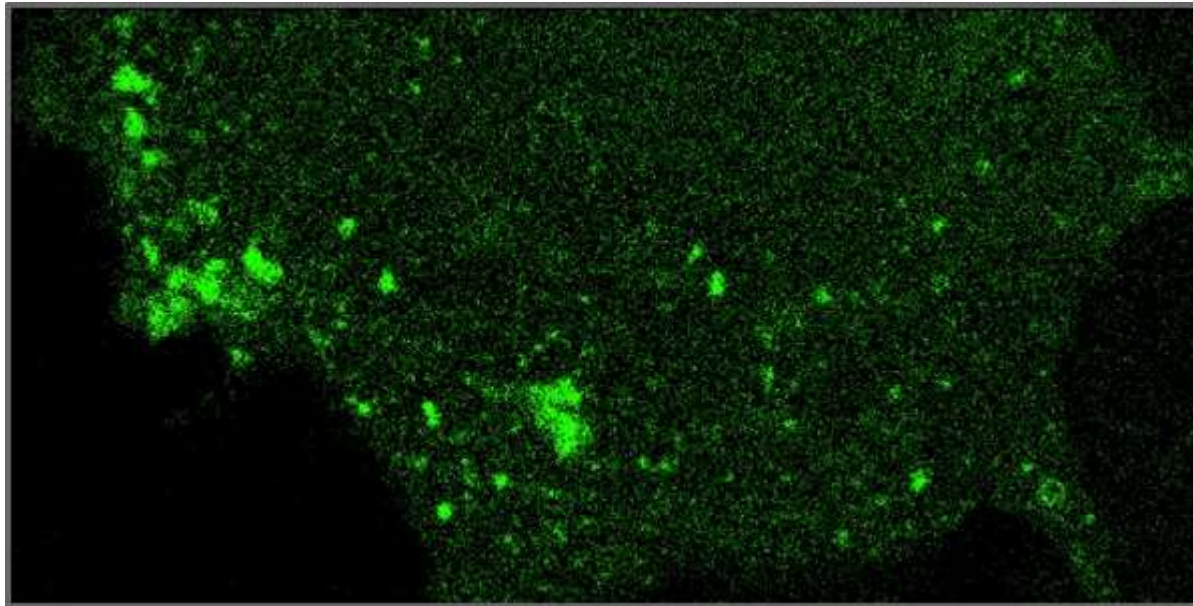


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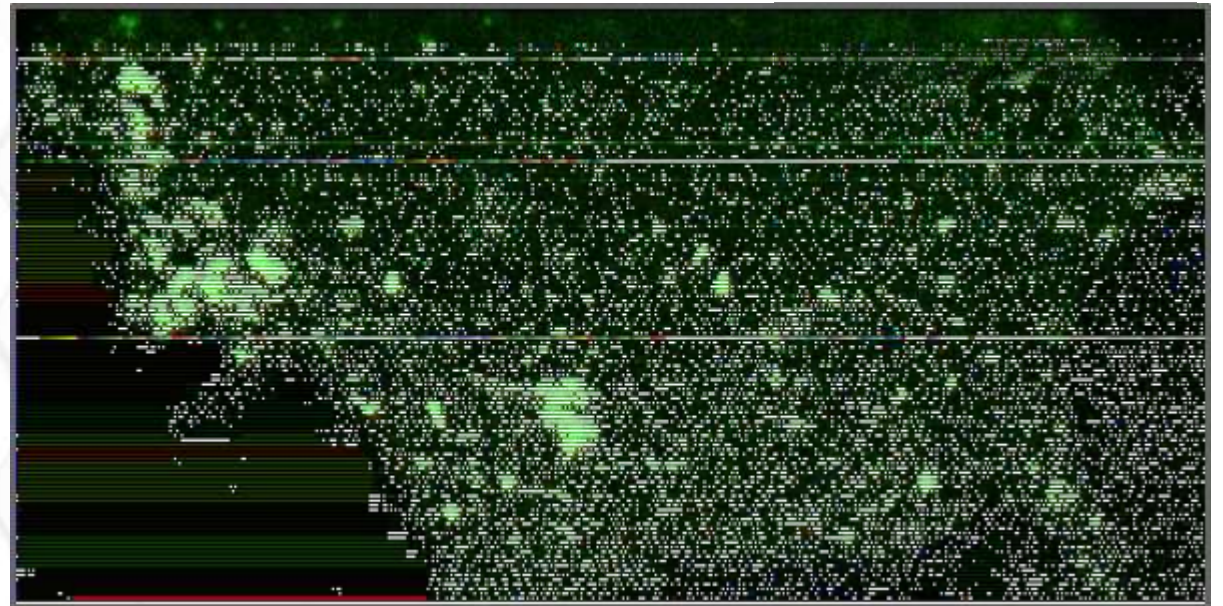
Resonant DSE (Dynamic signal enhancement)



50 fps, Resonant Scanner, DSE



50 fps, Resonant Scanner, DSE

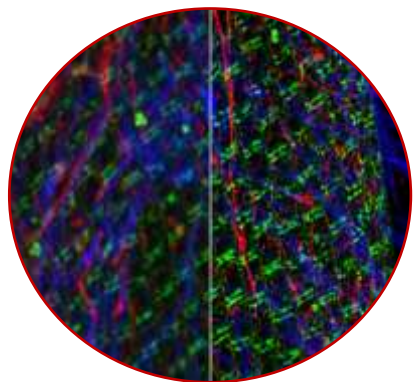


Hrab5a_GFP, vesicle dynamics in live cell imaging, Sample Courtesy of Dr. Sandra Ritz, Microscopy & Histology Core Facility, Institute of Molecular Biology gGmbH (IMB), Mainz, Germany. Transfection of EGFP by Marino Zerial

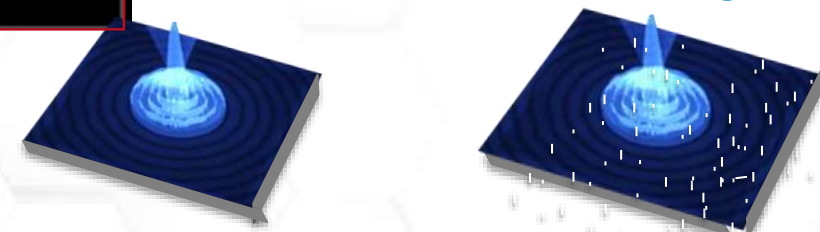
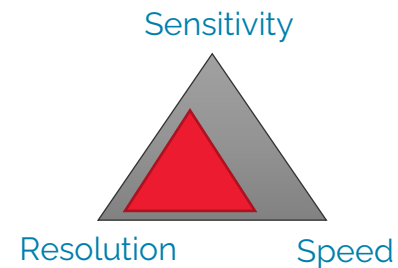
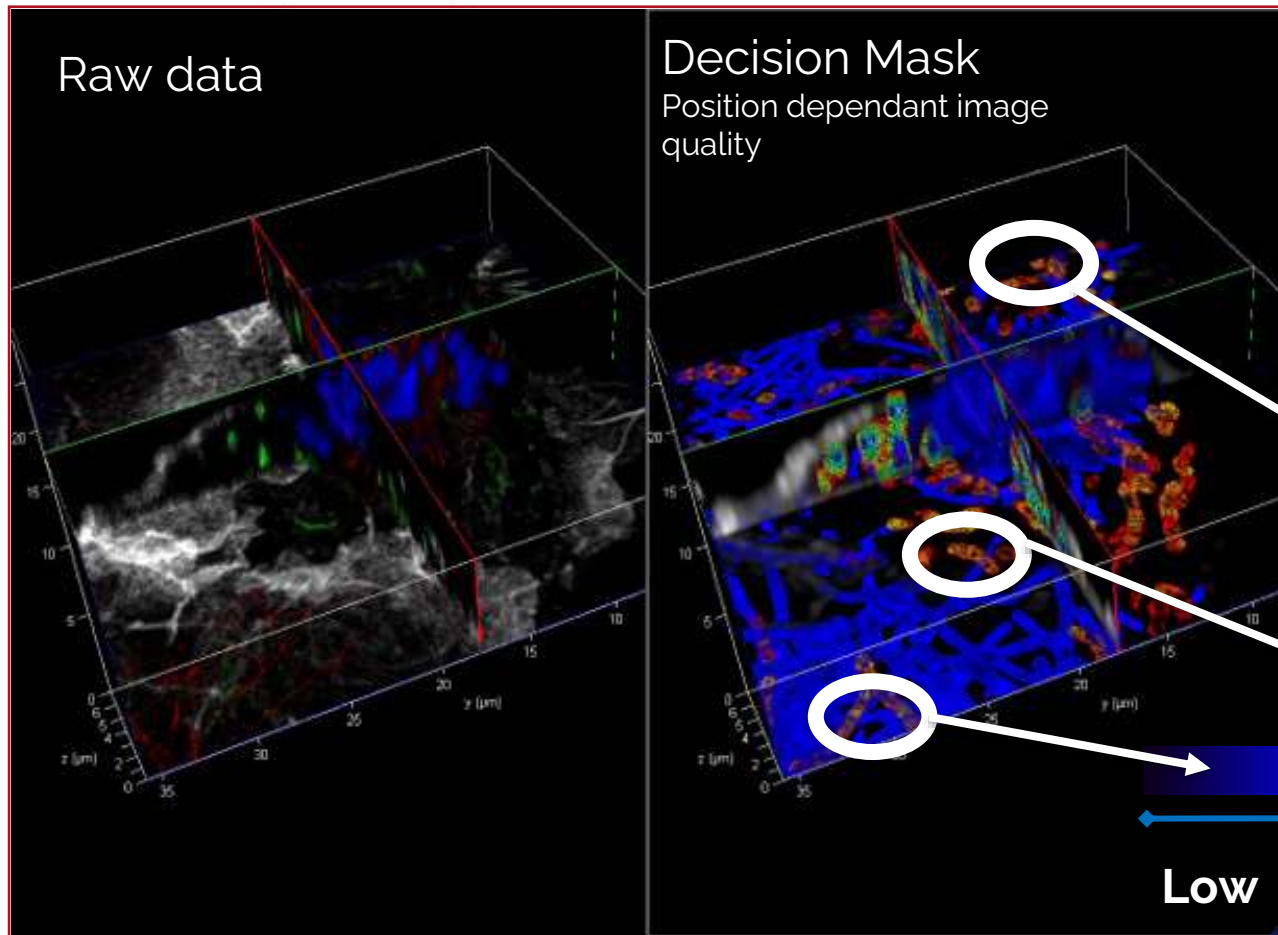
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Lightning

Image Information Extraction



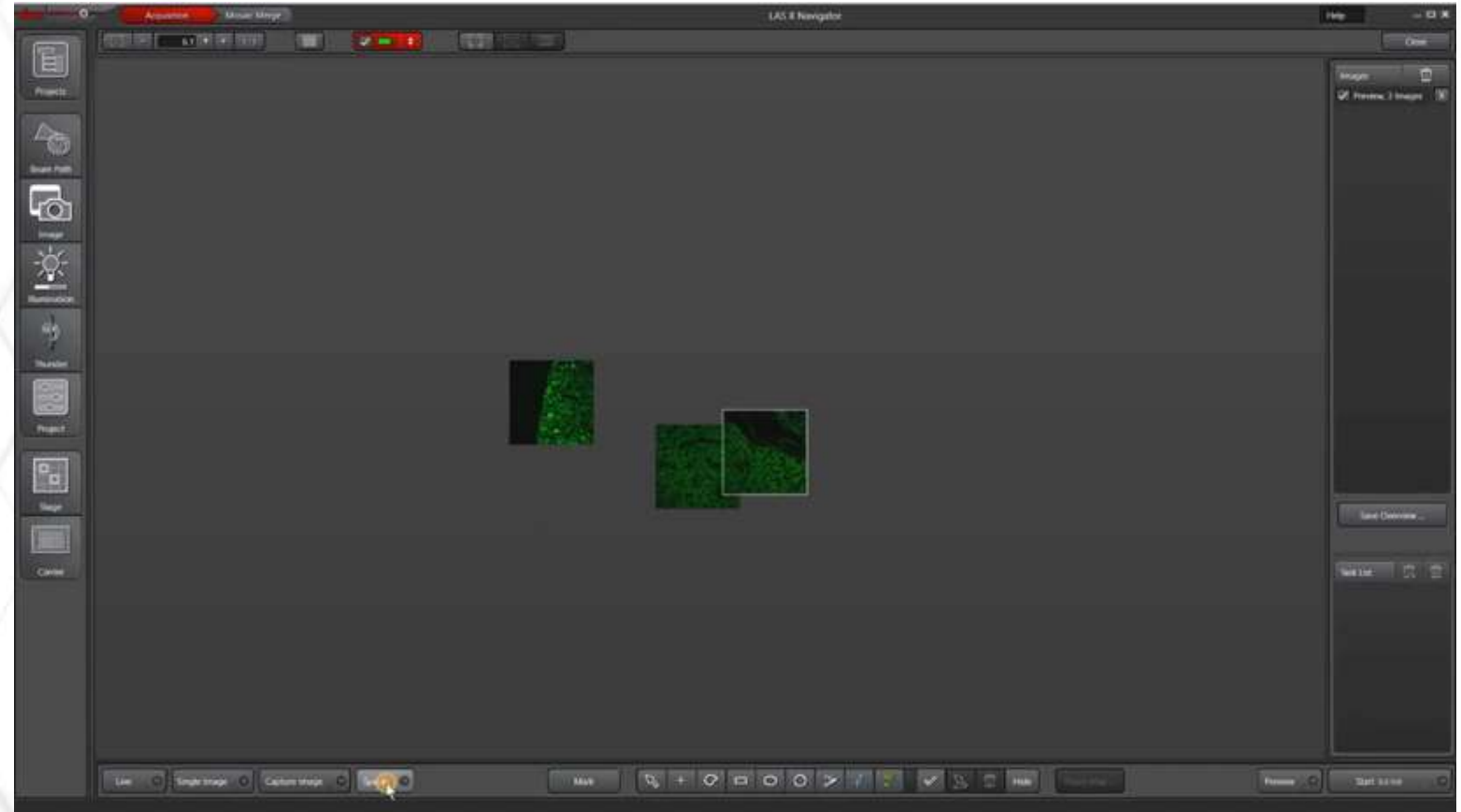
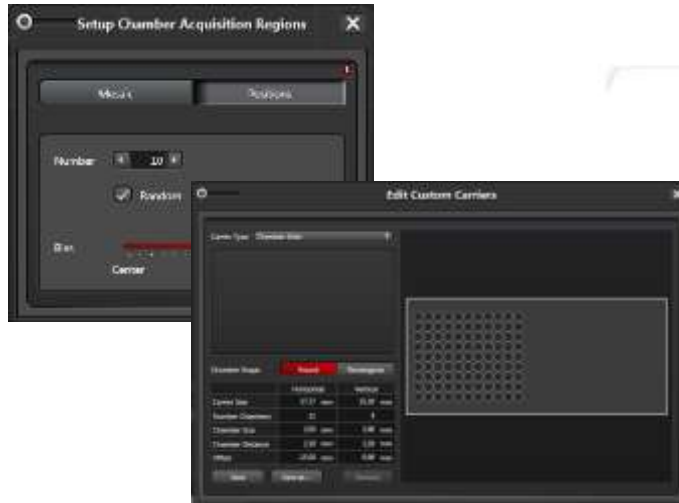
Super-resolution module
down to 120nm XY, 200 nm
Z, same speed for all
channels



Get Closer to the Truth - Confocal Microscope Platform **STELLARIS**

LAS X Navigator

- > Easy use and navigate in your system
- > Go from widefield into confocal with the same sample
- > Take a picture by mobile and import into LAS X and scan
- > Assay Editor for your own sample carrier



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The screenshot displays the STELLARIS B software interface, which is divided into several functional panels:

- Left Panel (Acquisition):** Contains settings for Acquisition Mode (xyz, FLIM), XY stage parameters (512x512, 600 Hz, 3.91 AU), Format (512 x 512), Speed (600), Bidirectional X, Zoom Factor (3.91), Zoom In, Image Size (47.25 μm x 47.25 μm), Pixel Size (92.47 nm x 92.47 nm), Optical Section (0.896 μm), Pixel Dwell Time (961 ns), Frame Rate (0.231/s), Line Average, Line Accu, Frame Average, Frame Accu, Rotation (0.00), Pinhole (Airy 1), Emission λ (580 nm), and Z-Stack parameters (Begin, End, Z Position (-3.25 μm), Z Size (0.00 μm), z - Galvo, Number of Steps, Z-Step Size, System Optimized, Z-Compensation (none), Galvo Flow, Travel Range (500 μm)).
- Top Panel (Configuration):** Shows Objective (HC PL APO CS2 63x/1.40 OIL) and Fluor Turret (SCAN SF 2).
- Channel Selection:** A list of channels including ALEXA 633, ALEXA 635, ALEXA 647, ALEXA 647 (selected), ALEXA 660, ALEXA 680, ALEXA 680, ALEXA 700, ALEXA 700, ALEXA 750, and ALEXA 7.
- Line Scan Graphs:** Five graphs labeled Setting 1 through Setting 5, each showing intensity profiles across different channels (HyD x.2, HyD x.3, HyD x.4, HyD x.5) and Trans PMT. Setting 1 shows a blue peak, while Settings 2 and 3 show green peaks.
- Right Panel (Annotations):** A large empty area for image annotations, with a 3D view button on the right.
- Bottom Panel:** Includes Autofocus, Live, Fast Live, a status bar (18/03/2020 12:34:25 | Information: Stabilizing Laser Power Output...), Capture Image, and Start buttons.

Get Closer to the Truth - Confocal Microscope Platform **STELLARIS**

Summary

New confocal platform

New Power HyD Family

New WLL3

AOBS3 Version

New TauSENSE™

New DSE for Tandem Scanner

LAS X Lightning – SR module

LAS X Navigator

New Drag&Drop functions

New AIVIA analysis



Options

STELLARIS STED for Super-resolution
STELLARIS DIVE MP system

FLIM&FCS STELLARIS with FALCON

STELLARIS DLS (Light-Sheet)

Sensitivity

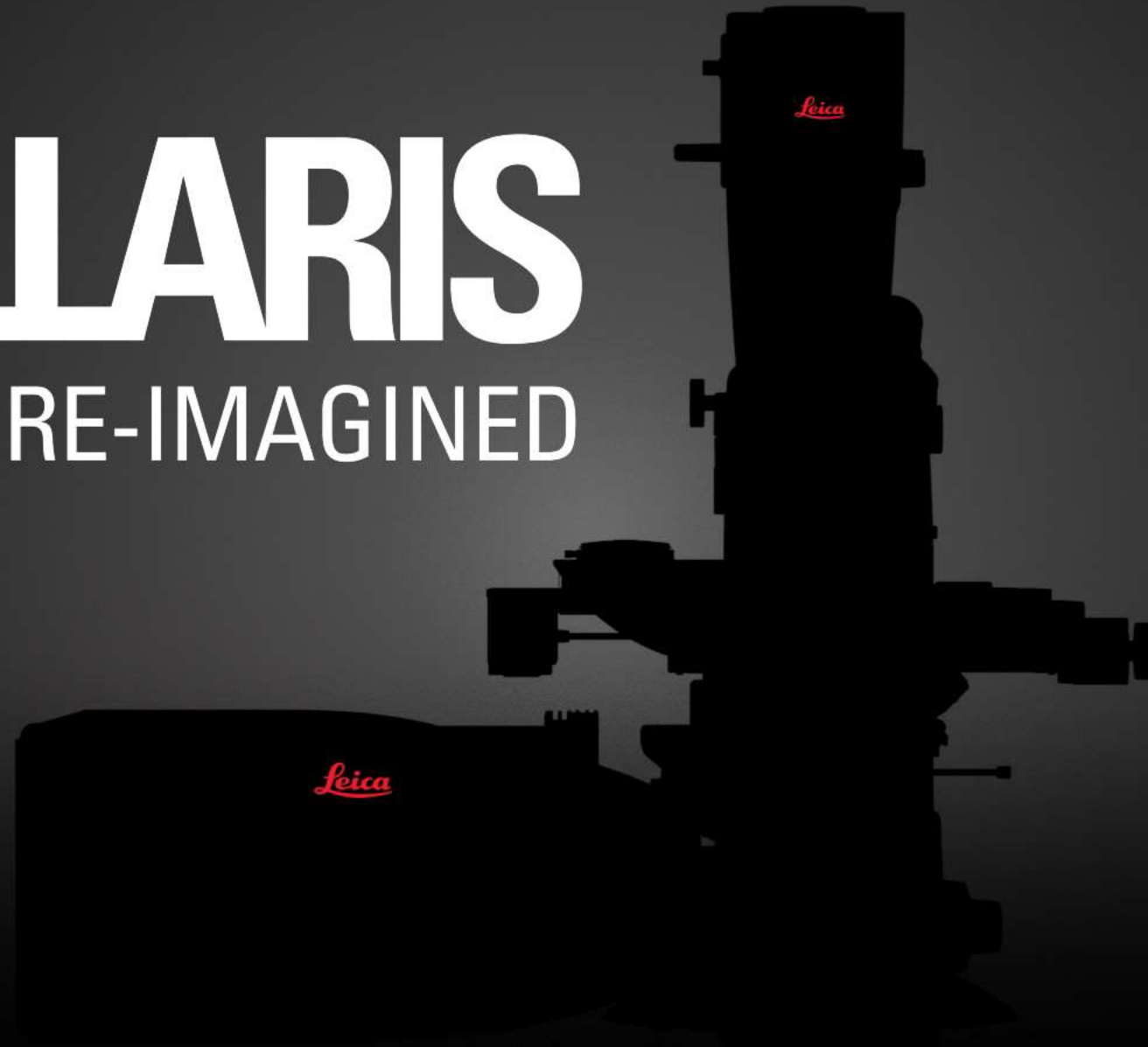


Resolution

Speed

STELLARIS

CONFOCAL RE-IMAGINED



Thank you for attention



Martin Kopecký
vedoucí divize mikroskopie
kopecky@pragolab.cz
+420 736 622 585

