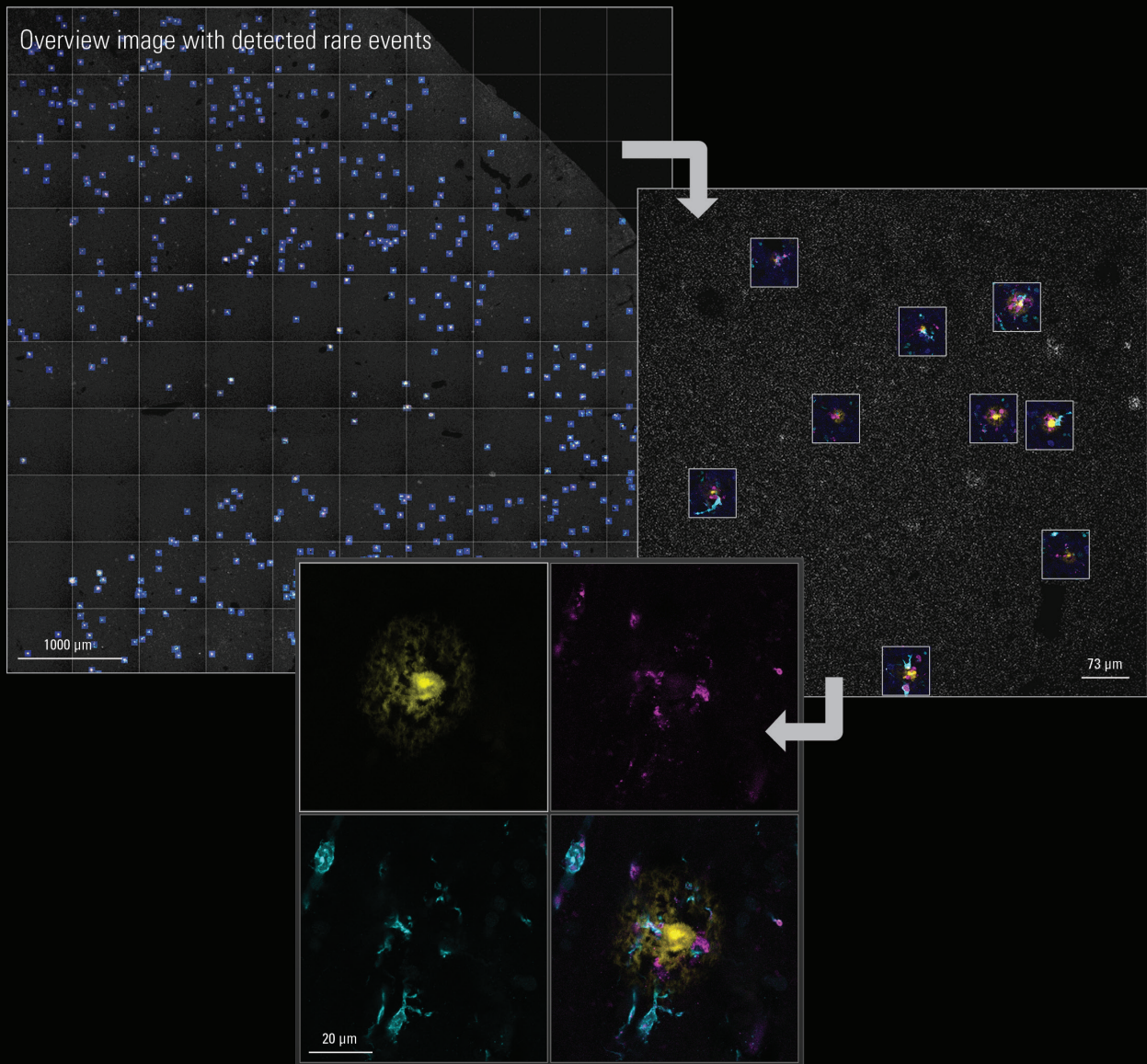


## ACCESS DATA THAT MATTER!



NEW AI-BASED RARE EVENT DETECTION WORKFLOW FOR LIFE SCIENCE:  
ENABLE HIGH-QUALITY RESULTS WITH AUTONOMOUS MICROSCOPY  
POWERED BY AIVIA.

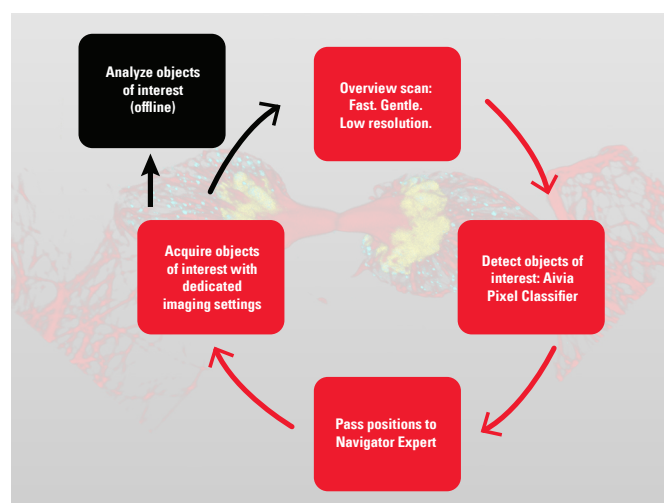
## WHY CHOOSE AUTONOMOUS MICROSCOPY POWERED BY AIVIA FOR RARE EVENT DETECTION

Autonomous Microscopy powered by Aivia allows users to perform advanced experiments on biological samples in a highly economical way. After the initial setup of the experiment, the AI-based workflow on the STELLARIS confocal platform allows automated detection of any target object without additional need for human interaction. Moreover, the workflow gets to high-quality results in considerably shorter time.

The possibility to automate complex microscopy workflows grants users access to advanced applications that could not be addressed before, or only with considerable manual effort.

Autonomous Microscopy powered by Aivia allows you to:

- > Reduce the total time and effort spent in front of the microscope by up to 75%
- > Radically shorten acquisition times of high-value data by up to 70%
- > Eliminate storage of low-quality data by up to 90%
- > Increase the reproducibility of your rare event detection
- > Increase data quality with AI
- > Make rare event workflows feasible: Detect up to 90% of rare events



Rare event detection workflow

### How does the workflow work?

For the rare event detection, two powerful components on the STELLARIS work hand in hand:

The navigation and image acquisition software LAS X Navigator Expert creates a 2D overview scan at low resolution and transfers the data to the AI-powered image analysis software Aivia.

Employing a pre-trained pixel classifier, Aivia autonomously detects the objects of interest and sends their locations back to Navigator Expert.

Navigator Expert images the objects of interest in 3D and high resolution.

Data that are highly specific to the object of interest are generated and available in a statistically relevant number.

Title image: Study of proteins involved in neurodegenerative diseases. Visualization of microglial activity (TSPO) and engulfment (Homer1 and CD68) around Amyloid-plaque (MX04) in 50 µm thick human brain sections (Alzheimer disease donors). Duration of automated image acquisition: ~5h. Objects of interest: 3D high-resolution image stacks of 516 detected rare events. Sample courtesy of Prof. Dr. Jochen Herms, Center for Neuropathology and Prion Research, DZNE, LMU Munich, Germany.

Connect with us!

Leica Microsystems CMS GmbH | Am Friedensplatz 3 | 68165 Mannheim, Germany  
Tel. +49 621 70280 | F +49 621 70281028

[www.leica-microsystems.com/products/confocal-microscopes](http://www.leica-microsystems.com/products/confocal-microscopes)

