3D PATH

3D HISTOPATHOLOGY, MADE ROUTINE

3DPATH is pioneering the first 3D tissue scanner for routine clinical use, advancing diagnostic accuracy and strengthening Europe's leadership in medical innovation.

Partners

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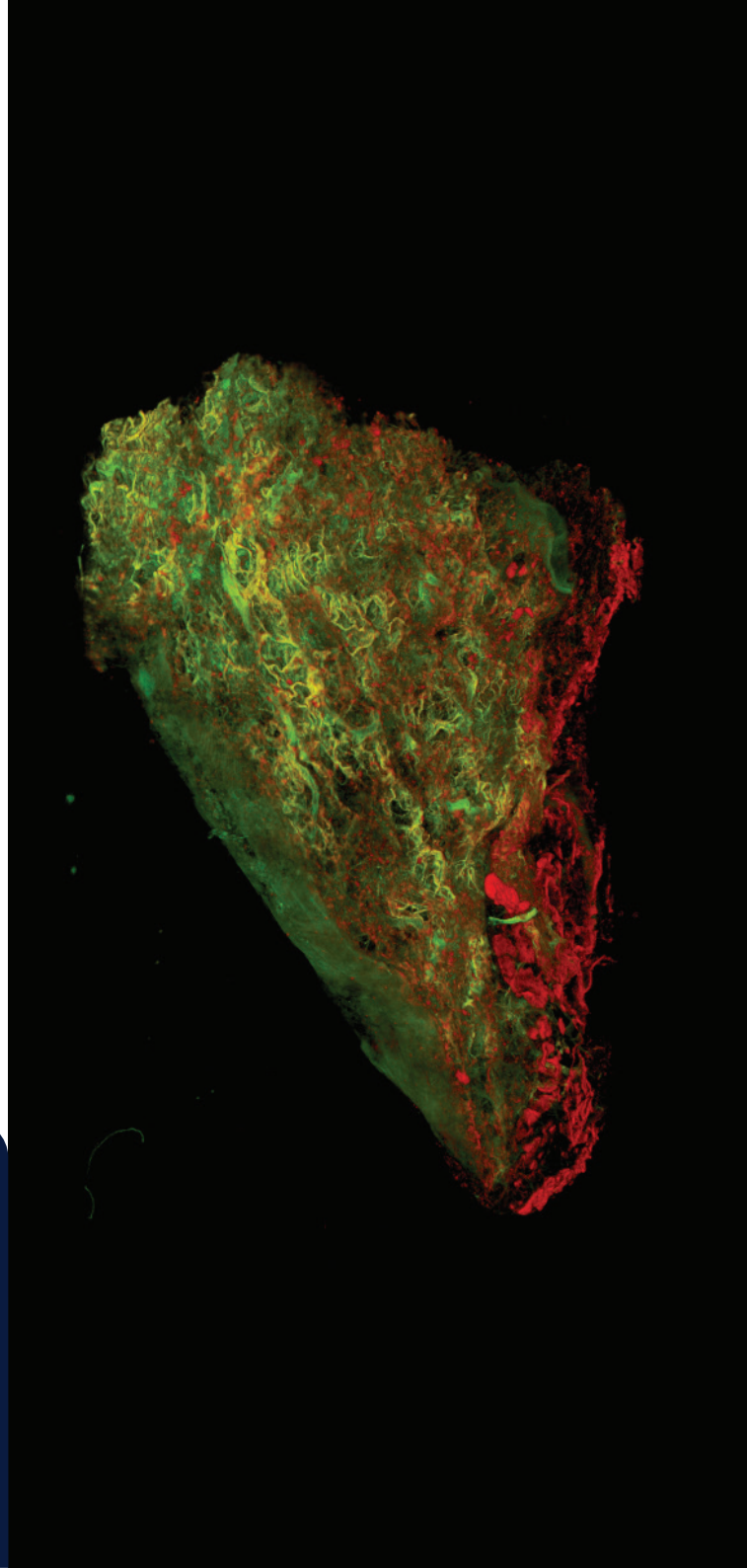
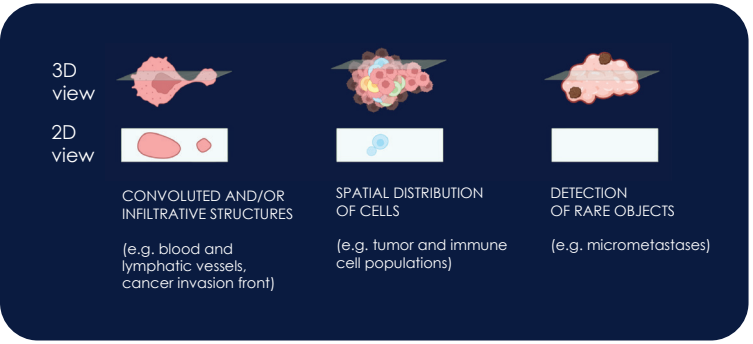


Histopathology, the gold standard for cancer diagnosis, relies on 2D tissue slices, which can limit accuracy and affect treatment decisions. Although volumetric analysis offers clear advantages, the field still depends on 2D methods.

Light-sheet fluorescence microscopy (LSFM) shows great potential for 3D imaging, but its adoption has been slowed by technical challenges.

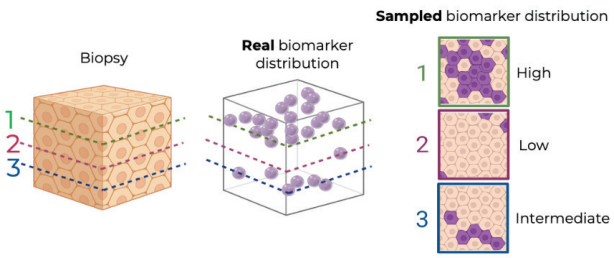


The EIC-funded 3DPATH project will use advances in LSFM and data analysis to build a clinical 3D tissue scanner, enabling more accurate diagnoses, better patient care, and positioning Europe at the forefront of next-generation diagnostics.

One clear use case is biomolecular scoring, where 2D analysis risks misinterpretation. Since spatial heterogeneity cannot be fully captured in 2D, results may range from high to low depending on the slice, distorting the perceived distribution.

This is critical, as it can ultimately lead to an incorrect diagnosis.`

Sample → True 3D spatial distribution → 2D slice perception (slice-dependent)



Our advanced technology enables rapid, high-resolution, non-destructive 3D analysis of histological samples, setting a new benchmark beyond current methods.

Based on light-sheet fluorescence microscopy—a volumetric imaging method several orders of magnitude faster than confocal microscopy—the technique illuminates samples with a thin sheet of light, reconstructing them plane by plane.v

This project will advance the current technology to TRL6 and validate it on more than 300 histological samples, with the ultimate goal of developing a CE-IVD–certified scanner.

Throughput
20X Speed-up: we can afford 25 samples/day

Reliability
High Quality Everywhere we guarantee high-resolution across the entire 3D sample

Scalability
Dedicated Infrastructure: data management and AI-based analytics up to PB scale