

SIGNIFICANT REDUCTION  
IN ANALYSIS TIME

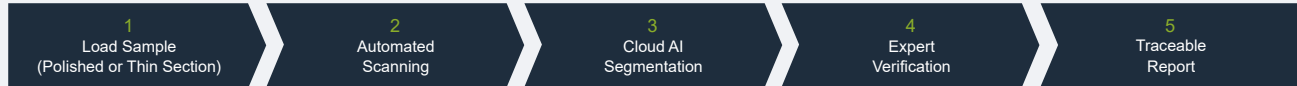
INCREASED  
LAB CAPACITY

**1 day** COMMISSIONING  
TIME

**AI** BASED MATERIAL  
SEGMENTATION

Traditional microscopic air void analysis of concrete, whether on **polished plane sections** or **thin sections**, is a labour intensive, manually demanding process prone to operator fatigue and result variability. **SegMater** by Lateral Engine replaces hours of optical traverse counting with fully automated scanning and AI-powered segmentation workflow, delivering **faster, more consistent, and more reliable results** with additional improvement on ergonomics for the lab staff.

### AUTOMATED WORKFLOW - FROM SAMPLE TO REPORT



#### CHALLENGES OF TRADITIONAL METHOD

- ▶ Manual linear traverse analysis is slow and physically demanding
- ▶ High operator dependency leads to inconsistent results between analysts
- ▶ Eye strain and fatigue after prolonged microscope sessions
- ▶ Limited throughput constrains lab capacity and project timelines
- ▶ Difficult to document and audit analysis decisions
- ▶ No structured database for historical sample comparison

#### SEGMATER SOLUTION

- ▶ Fully automated image acquisition and stitching across the full section
- ▶ Deep neural network segments entrained air voids, entrapped voids, aggregates and cement paste simultaneously
- ▶ Supports both thin section and polished plane section analysis
- ▶ Analysis results in cloud, accessible from anywhere
- ▶ Intuitive user interface
- ▶ Hot and cold database with full traceability

### KEY BENEFITS AT A GLANCE

**Remarkably Faster**  
5 min scanning time  
15 min analysis time  
1 min active operator time

**Consistent Results**  
Significantly reduced result variability  
between analysts and sessions

**Better Ergonomics**  
No more hours at the eyepiece  
Verify AI results on the screen

**High Data Quality**  
Calibrated imaging at 3.3 μm  
resolution and full traceability

### TECHNICAL SPECIFICATIONS

#### IMAGING AREA

120 x 120 mm  
Full section coverage in one automated scan

#### RESOLUTION & LIGHTING

3.3 μm (backlight)  
1.6 μm (top bright field / dark field)

#### SUPPORTED STANDARDS

BY72 (thin section), SFS-EN 480-11,  
R003-00-2010

#### ANALYSIS PLATFORM

Cloud AI-segmentation  
Local/Edge deployment option

#### AI TECHNOLOGY

Deep neural network segmentation

#### COMMISSIONING

Operational within one working day,  
minimal training required

!! Verifying AI segmentation on screen is far more pleasant and less fatiguing than performing a full optical analysis manually. With SegMater the results are more consistent and fully traceable. Labs running routine air void analysis have reduced their analysis time significantly while increasing throughput without adding headcount

