

# Autonomous Interventions: Paver

SESSION 5: Smart intervention

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Final Event

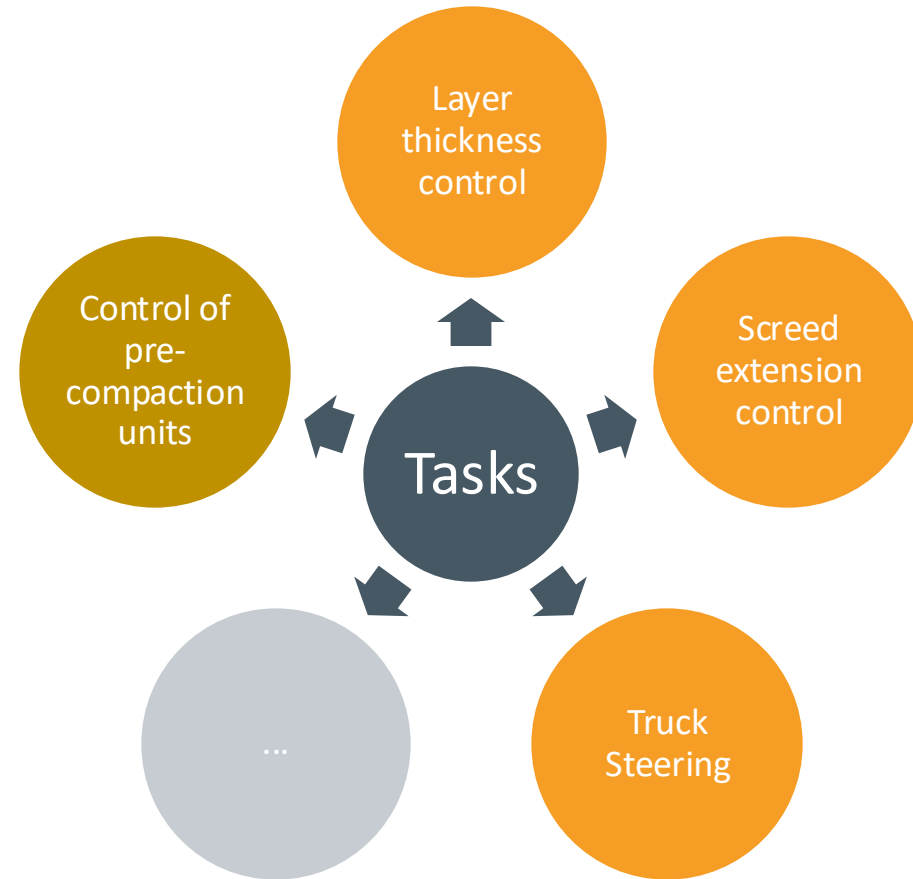
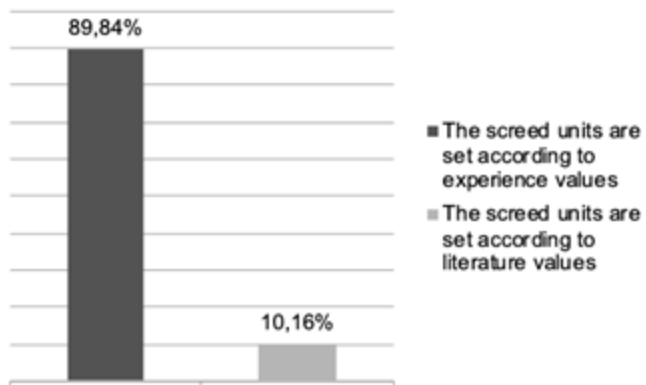
Madrid, Friday, 31 January 2025



# Introduction

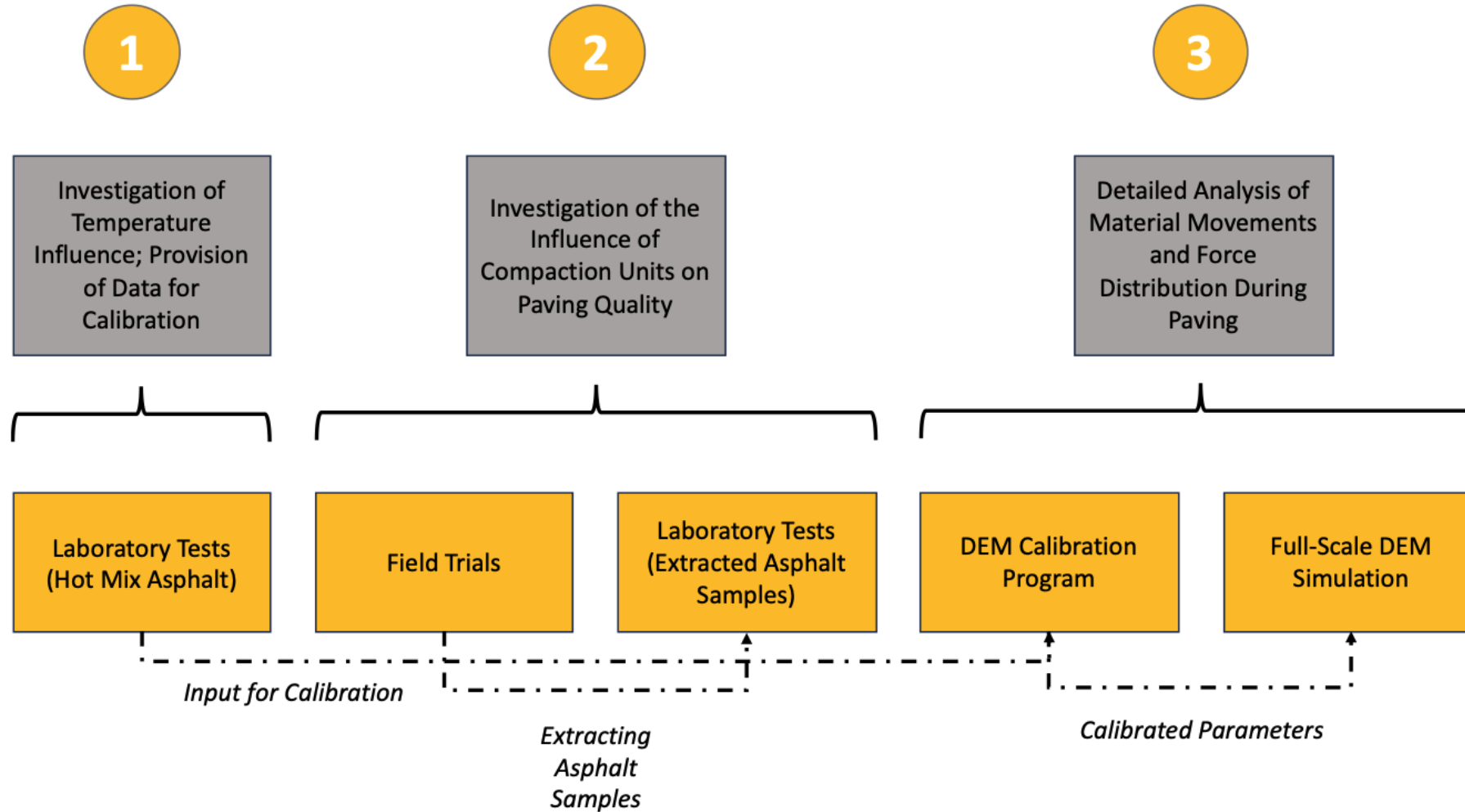


How do you generally proceed when adjusting the screed units?



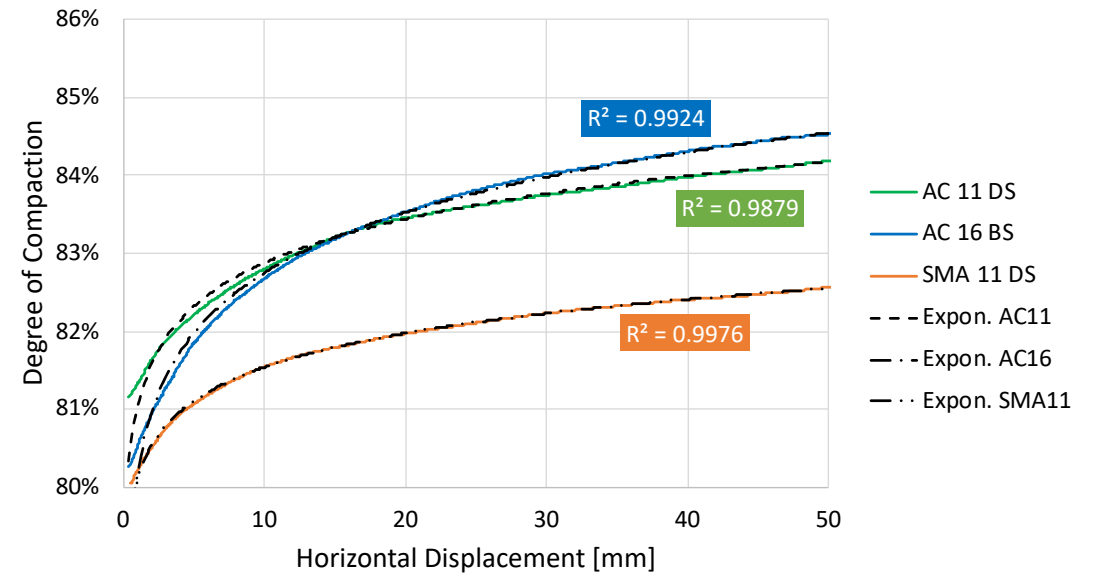
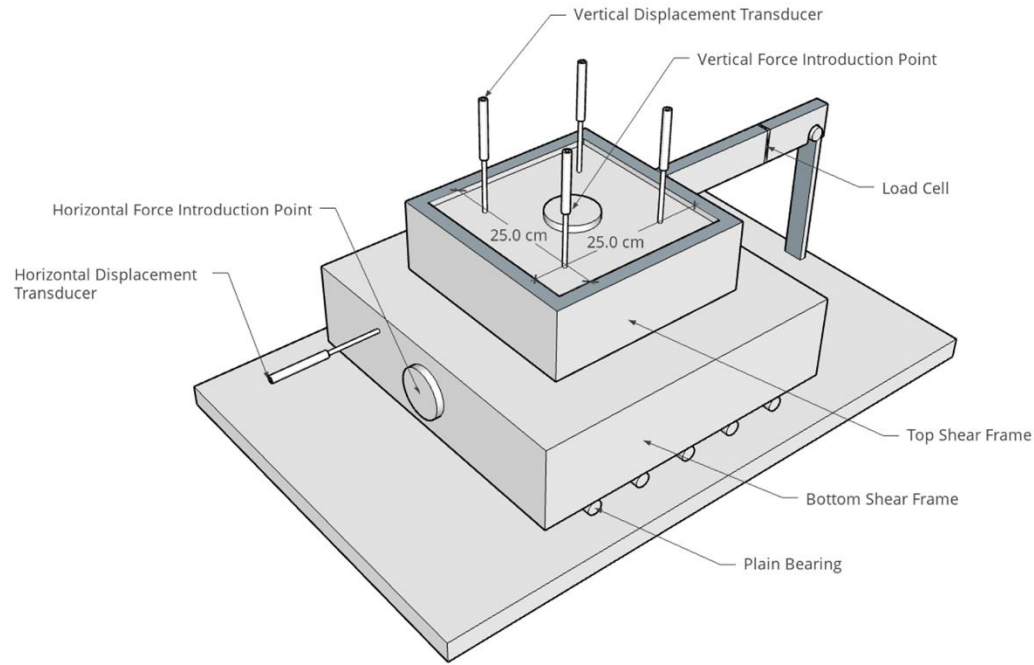
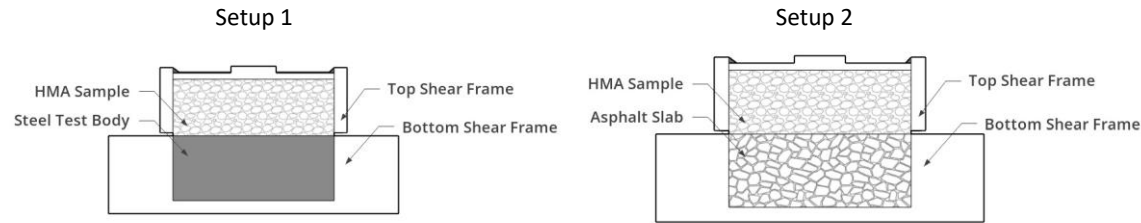
*Maintaining integrity, performance and safety of the road infrastructure through autonomous robotized solutions and modularization*

# Research Program



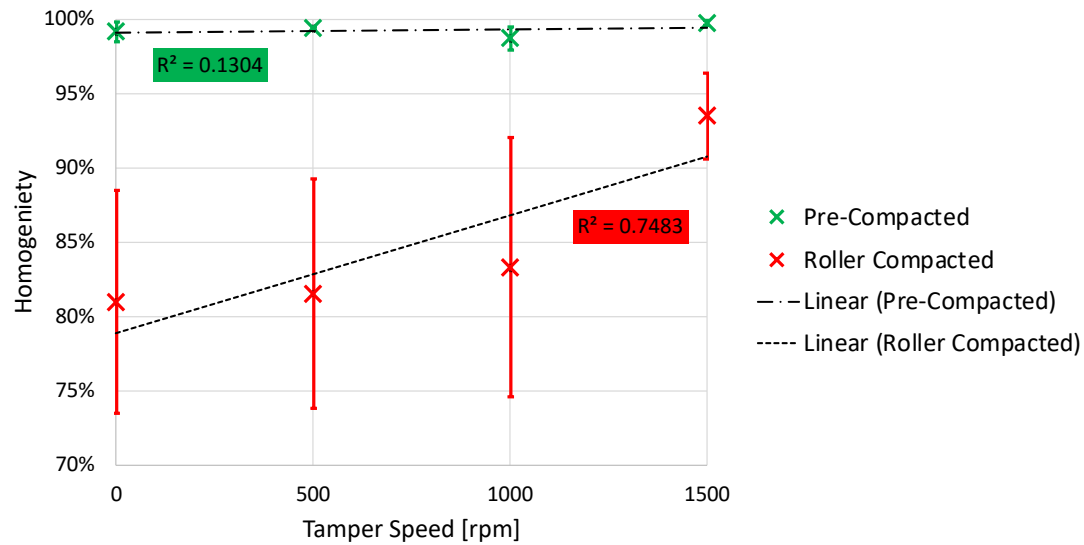
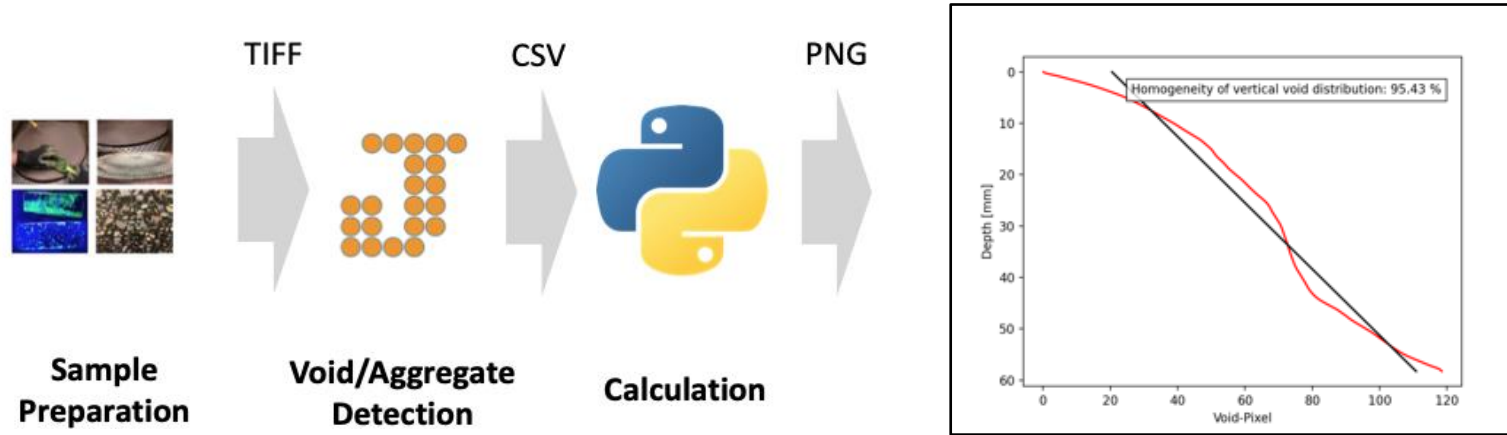
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# Exemplary Results – Laboratory Tests (HMA)



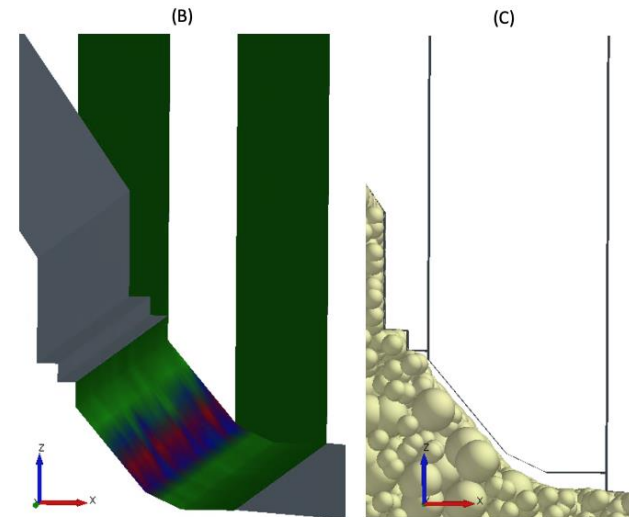
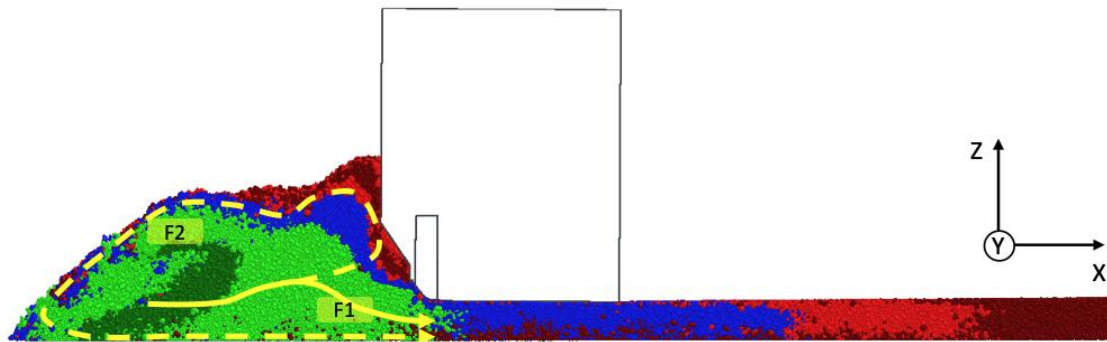
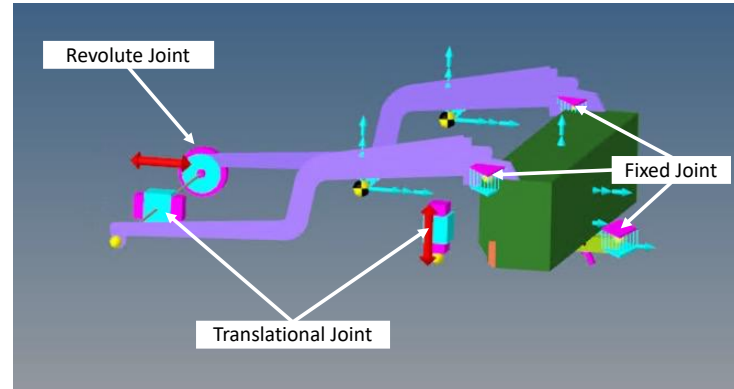
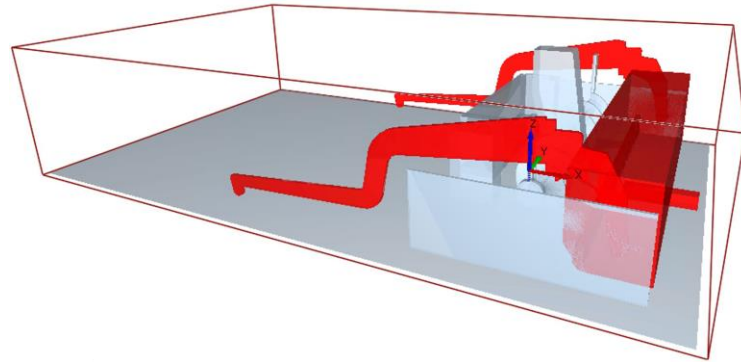
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# Exemplary Results – Field Test



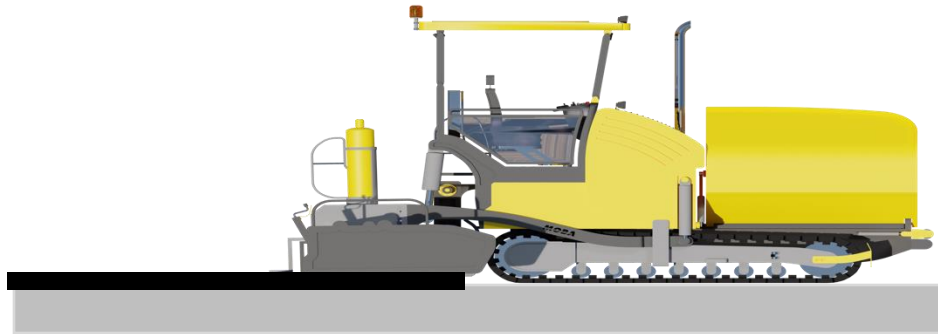
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# Exemplary Results – DEM Simulation

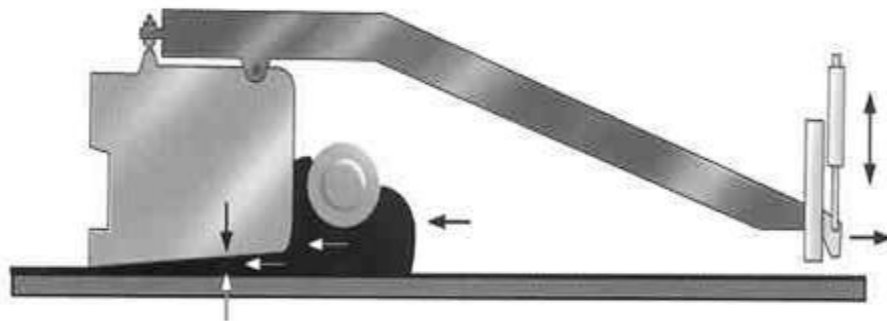


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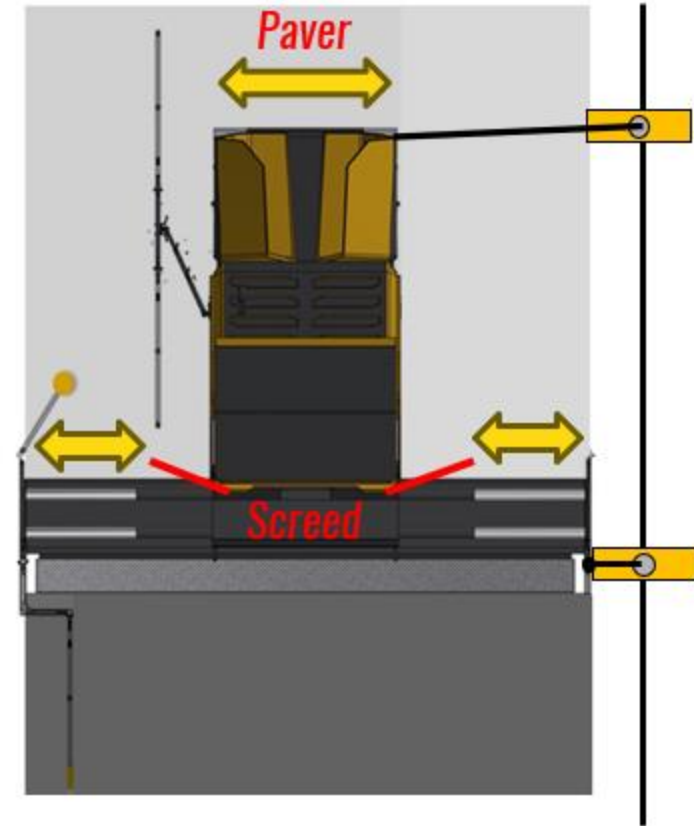
# Functions of autonomous paving



Levelling a new surface



Steering  
paver & screed



# Demonstration in Austria

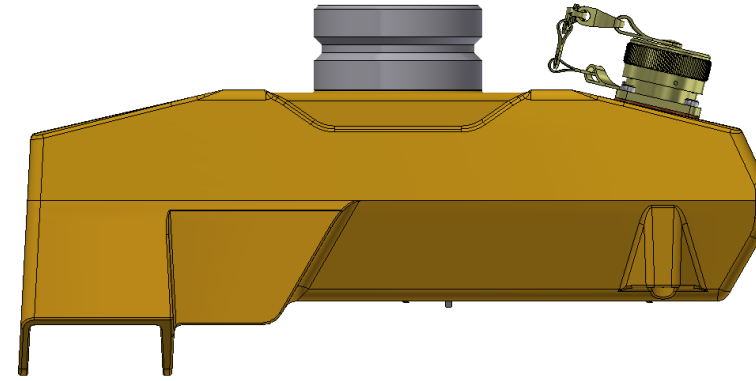
Paver & screed was steered with EdgeTracker

## First Edge

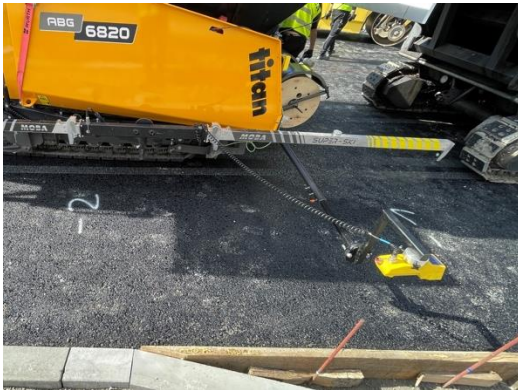
Concrete border with wooden formwork.

## Second Edge

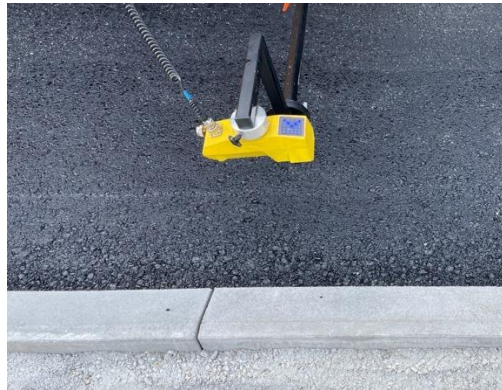
Edge of the first lane.



EdgeTracker



First Edge



Second Edge





# Steering

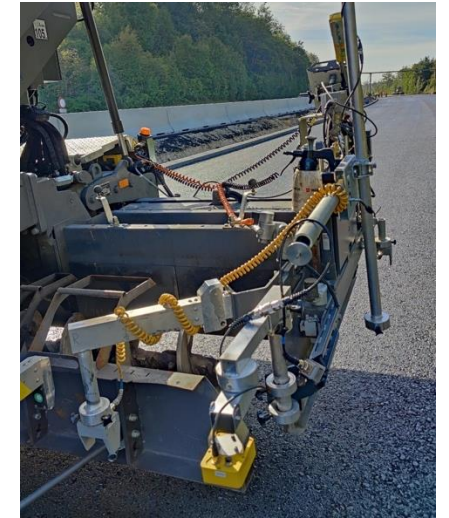
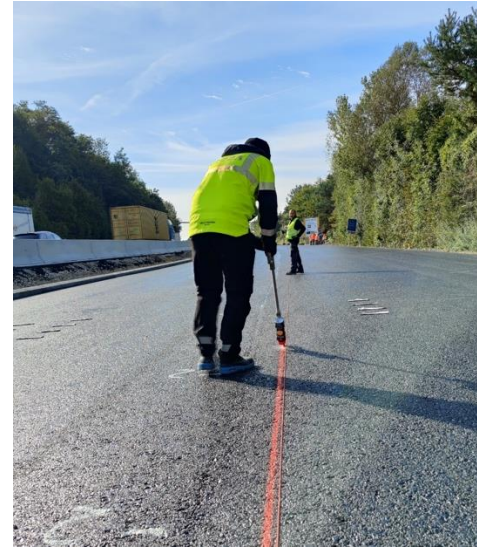
Steering the screed

Right side = EdgeTracker

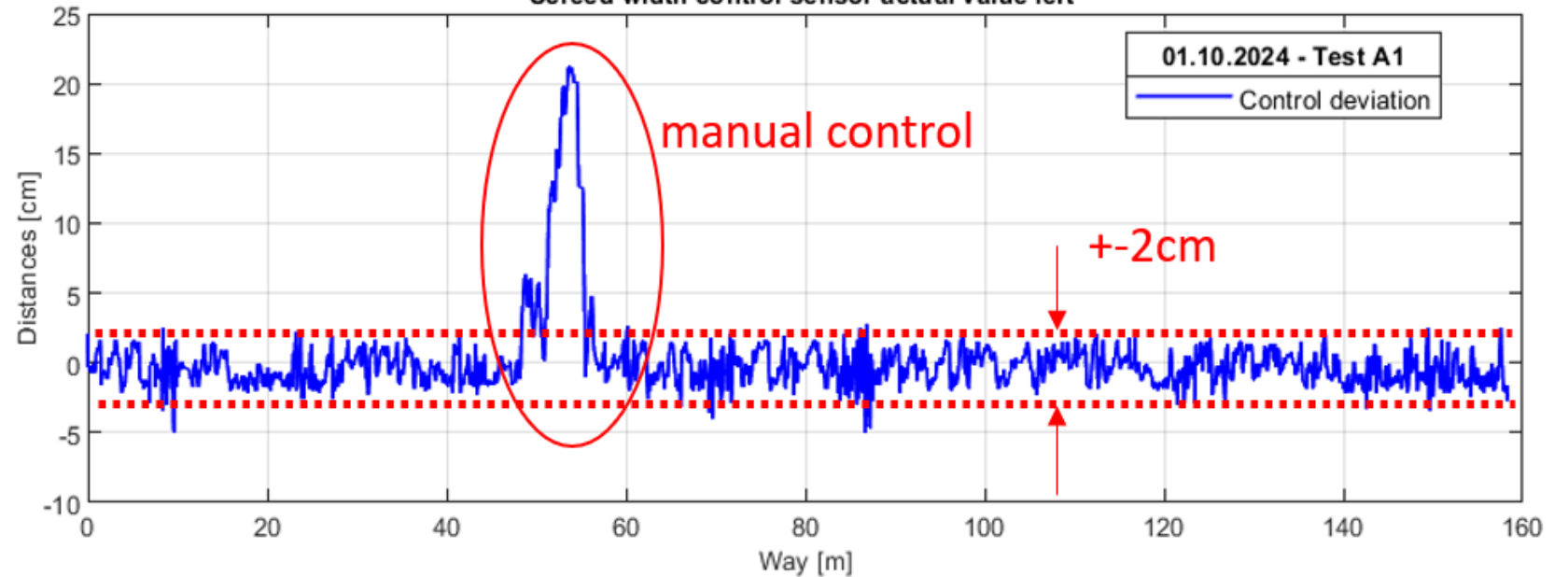
Left side = LineTracker

Sensor precision  
Range of mm

Precision over all  
+/- 2cm



Screed width control sensor actual value left



# Levelling



Obstacles in the reference are a big problem for autonomous work

Super-Ski from MOBA ignore many obstacles

LONG DISTANCE AVERAGING VIA =  $\frac{S1+S2+S3+S4+S5}{5}$

- Profen US Technology
- Optimized Evenness
- Lightweight design
- Fast Installation
- Visualization Modes & Indicators
- PLUG & PLAY



# Levelling

## Thickness control

- long time layer thickness change
- “Advanced Levelling” set the set point of levelling



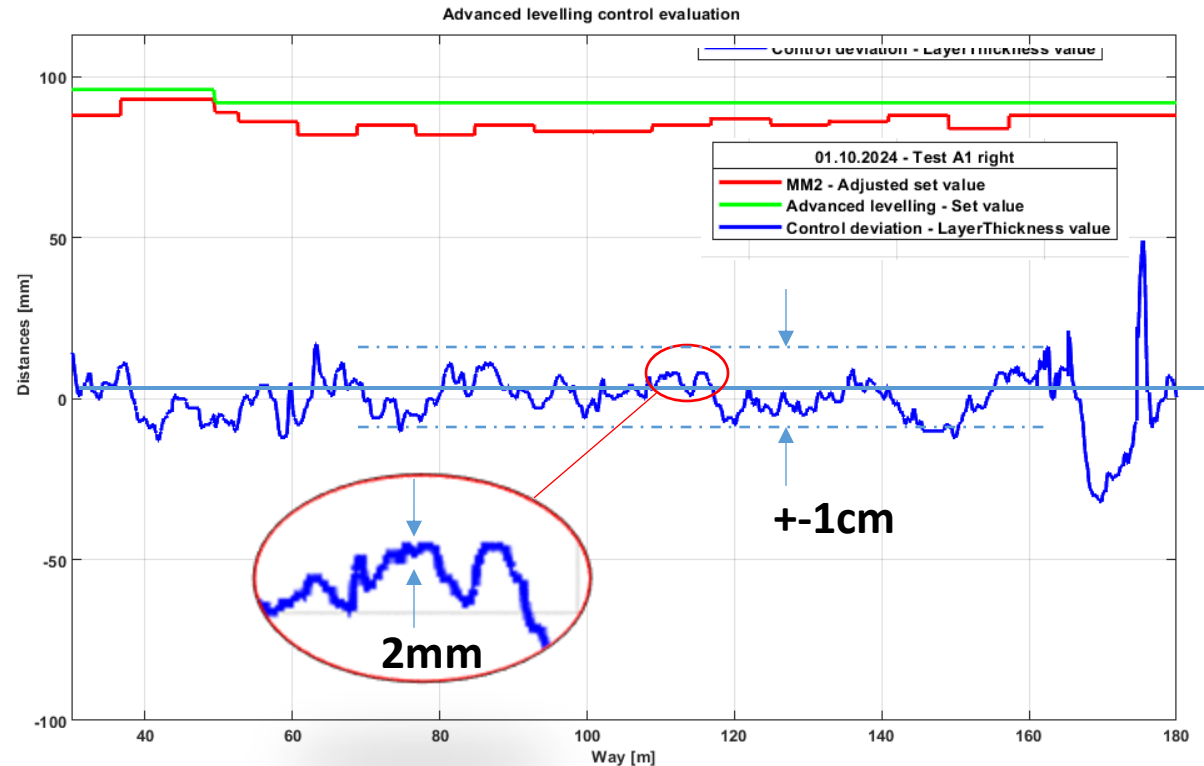
Thickness control



Joint Match

## Joint Match

- Joint Match Sensor detects height of the first lane
- No edge between the two lanes



# Thank you for your attention



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of the road infrastructure through an autonomous  
robotized solutions and modularization*

## Project Partners

Universida de Vigo

TinyMobileRobots



Technology  
Arts Sciences  
TH Köln

