



# PAVE-IR SOLUTIONS

**MOBA**<sup>®</sup>  
MOBILE AUTOMATION

# THERMAL SEGREGATION - ONE OF THE LEADING FACTORS IN PREMATURE ROAD FAILURE

## THE PROBLEM: THERMAL SEGREGATION

Temperature differentials in asphalt paving, otherwise known as thermal segregation, refers to the differential cooling of asphalt mix during placement. This results in an asphalt mat with uneven temperatures, and can lead to localized failures and a shortened service life for the roadway. On a typical asphalt pavement, thermal segregation can reduce the service life by up to 40 %, taking a serious toll on costs over the long term.

MOBA PAVE-**IR** provides companies and public authorities with the possibility to detect thermal segregation during the paving process, allowing modifications to address the issue. Once action has been taken, continued monitoring can confirm success or dictate further mitigation.

The system generates complete temperature profiles or individual, targeted temperature measurements throughout the entire paving operation.

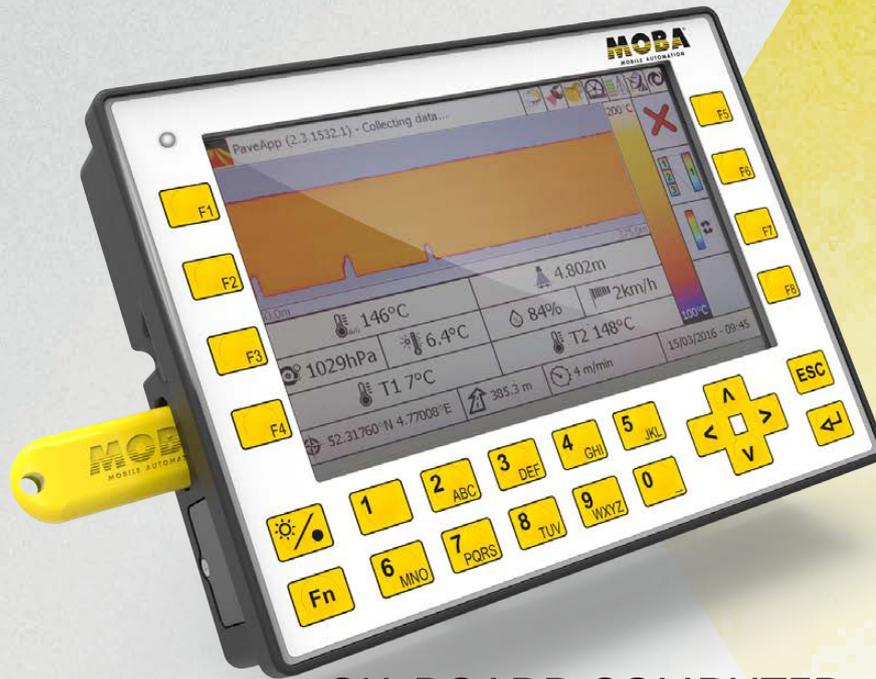
The current temperatures are displayed and also recorded on the panel. Further post processing of saved data is easy thanks to specially developed software.

With MOBA PAVE-**IR**, companies can prove that, while paving with asphalt, no significant temperature differences occurred and that the material temperatures complied with the specifications throughout the entire paving project. This serves as evidence of quality assurance for agencies and authorities. Minimizing thermal segregation is obtained through best practices in the paving process from the plant through laydown and best practices means a more refined and efficient operation for contractors.

## POSSIBLE PROBLEMS - **BECAUSE OF THERMAL SEGREGATION**

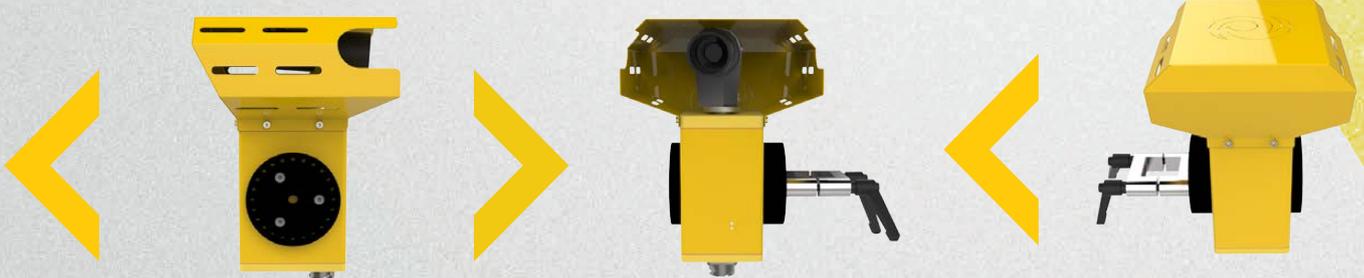
- » Thermal segregation can be the result of material segregation
- » Inhomogeneous compaction or non-uniform densities
- » Additional machine wear
- » Premature road failures
- » Cold chunks of asphalt
- » Bad surface structure
- » Burned bitumen
- » Uneven surface
- » Cold / Hot spots

# PAVE-IR SYSTEM - THE SOLUTION TO DETECT THERMAL SEGREGATION



ON-BOARD COMPUTER  
THE “HEART” OF THE SYSTEM

IR-SCANNER  
ASPHALT QUALITY CONTROL





“

*Tools such as PAVE-IR help achieve the construction of better quality, longer lasting pavements, benefitting the traveling public, of which we are all members.”*

**[Stephen Sebesta, Texas Transportation Institute]**

“

*For the Missouri Department of Transportation and the Contractor, the Infrared Scanner produced by MOBA provides an excellent Quality Control Technology.*

*Real-time data allows the contractor to monitor the operation from the back of the paver and at the plant location, allowing the plant manager to update operations such as speed of paver and scheduling the arrival and number of trucks delivering asphalt. These improvements in operations and adjustments to asphalt temperatures through the use of this technology will reduce asphalt segregation and ultimately result in better quality long-term pavements for the public.”*

**[Bill Stone, Research Administrator, Missouri DOT]**

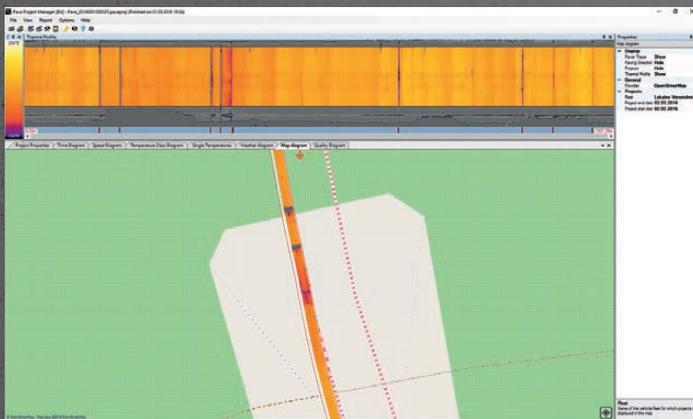
# IR-SCANNER

## DETECT THERMAL SEGREGATION

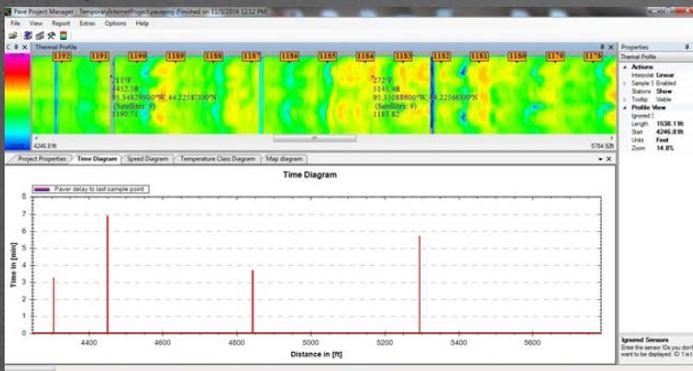
# PAVE PROJECT MANAGER - THE SOLUTION TO DETECT THERMAL SEGREGATION

## OVERVIEW OF MODULES

- » Time diagram, e.g. for paver stops
- » Quality factor diagram
- » Speed diagram
- » Map view
- » Report generation
- » Export functionality
- » Future functionalities can be added easily for your needs



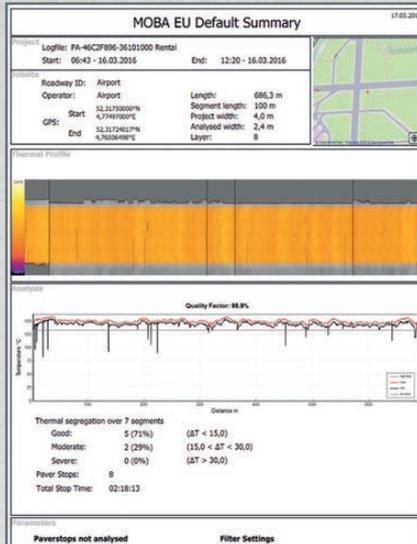
QUALITY FACTOR DIAGRAM



SPEED AND TIME DELAY DIAGRAMS



THERMAL IMAGE

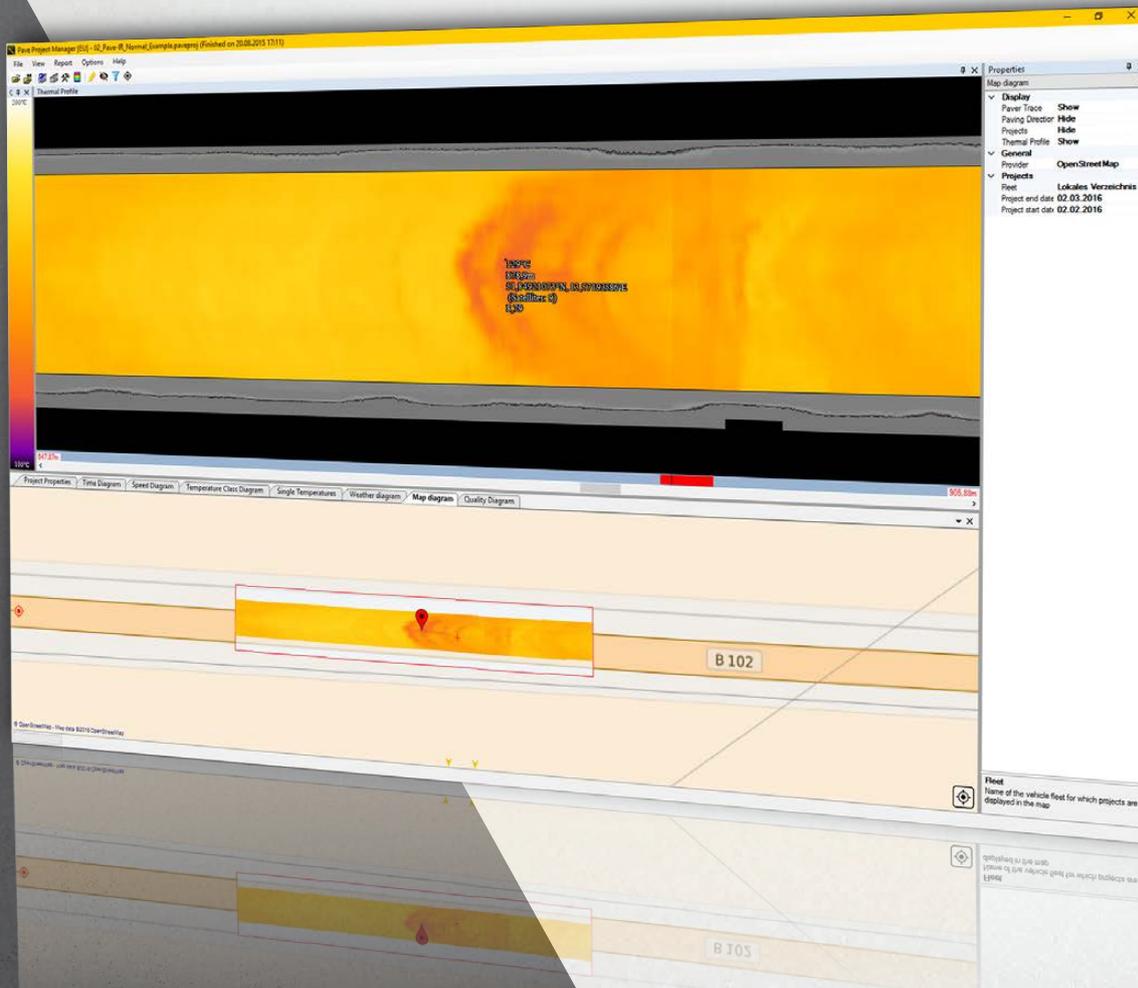


Time	Distance	Latit
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16.03.2016 09:02	445	52,
16.03.2016 09:02	445	52,
16.03.2016 09:02	445,25	52,3
16.03.2016 09:02	445,5	52,3
16.03.2016 09:02	445,5	52,3
16.03.2016 09:02	445,75	52,3
16.03.2016 09:02	446	52,3
16.03.2016 09:02	446,25	52,3
16.03.2016 09:02	446,25	52,3
16.03.2016 09:02	446,25	52,3
16.03.2016 09:02	446,5	52,3
16.03.2016 09:02	446,75	52,3
16.03.2016 09:02	446,75	52,3
16.03.2016 09:02	447	52,3

## DATA EXPORT TO OTHER APPLICATIONS

## OPEN INTERFACE FOR THIRD PARTIES

## FLEXIBLE MODULES FOR EVERY TASK



# ONE GROUP - ONE RESPONSIBILITY



◆ HEADQUARTERS    
 ● SUBSIDIARIES    
 ● DEALER

## MOBA GROUP

The **MOBA GROUP** is a leading global player in the world of mobile automation. Close collaborations between the headquarter in Limburg an der Lahn and subsidiaries all over Europe, Asia, North and South America create new perspectives for recent and future developments..

Superior technical know-how and more than 40 years of experience combined with an international dealer network guarantee a premium support – **worldwide. INSPIRING MOBILE AUTOMATION** - this is what the **MOBA GROUP** stands for since more than **40 years**.

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