BSc and MSc projects in the ASPARi research unit

Company and Location	
Type of project	Bachelor
Title of topic	
Project background / context	The cooling process of Hot Mix Asphalt (HMA) mixtures is a critical parameter that affects quality of the constructed road. Monitoring and data collection of asphalt mixture cooling process during asphalt construction projects is a vital procedure that need to be accurately defined and setup. An enhanced data gathering strategy can help to reveal and identify the relations between construction project characteristics such as: the type of the HMA, the number of asphalt layers, layer thickness, thermal conductivity, weather conditions, asphalt team setup (number of pavers, rollers and their types); and the HMA cooling process. In addition, accurate actual data sets about the asphalt cooling process can be used during the project preparation stage and for the predictions of possible ways of mixture cooling process. Therefore, there is a need to design and develop a systematic approach to collect real-time HMA cooling process data. The data protocols (and a definite set up on a construction site) need to be developed, tested and implemented, where the set of tools/equipment with the definite setup on a construction site have to be identified.
Main research question	What are the appropriate protocols for real-time collecting and visualizing of asphalt cooling rates during the construction process?
Research method(s)	- Literature study - Empirical study
Main outputs	The data collection protocol i.e. (1) definite setup for the Reference Point/Cooling Station on a construction site (road side, distance from the edge, type and characteristics of the used equipment, distances between several Reference Points/Cooling Stations on site) (2) The methodology for visualizing the collected data and (3) a comparison of cooling rates for various Dutch HMA mixes.
Contact(s) at the company	Boskalis and Roelofs
Start date	ASAP
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