ASPHALT

The primary benefits of the outcomes of **ASPHALT** are an increasing quality of the road and decreasing maintenance measures. A potential road lifetime extension by 10% would result in cost savings of EUR 4.5 billion per year.

Secondary cost saving factors are the reduction of traffic jams, resource consumption, air pollution, and CO_2-emissions due to less often maintenance operations. Furthermore, the **safety** will increase, due to lower risk of uneven surfaces with puddles on wet roads and better ride comfort for all users of the road.

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ASPHALT

Advanced Galileo navigation system for asphalt fleet machines

The research leading to the results of the ASPHALT project has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement no°247976 of the European GNSS Supervisory Authority.

ASPHALT

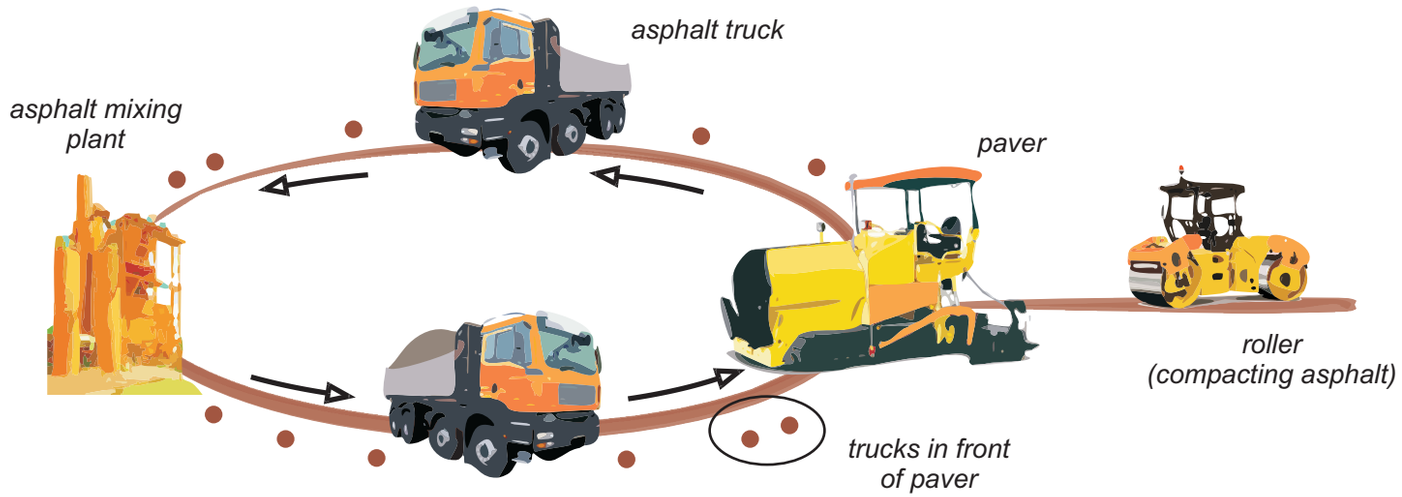
More than 90% of the European road network has an asphalt surface which must be regularly repaired or rebuild. Constant monitoring and control of parameters during **road construction** are significant for the quality and durability of the road. An increasing lifetime will result in a reduction of costs of **road maintenance**.

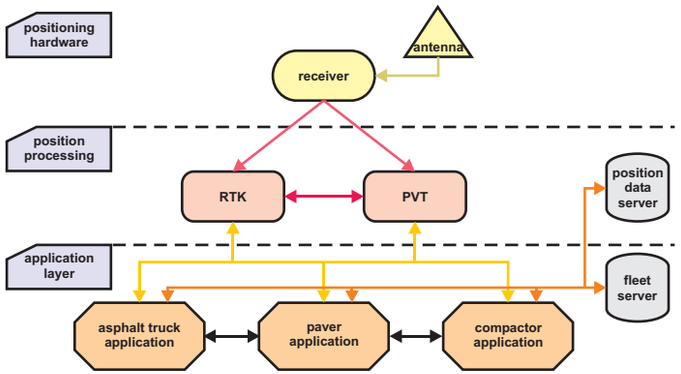
Key factors during road construction are to optimally manage truck fleets, operate the paver, and steer the compactor. Any sub-optimal operation within this chain may lead to a reduction in **road quality**, what results in reconstruction or decreased lifetime - both cost-intensive.

The **ASPHALT** project aims at developing a cost and precision optimized solution taking advantage of the future Galileo system and EGNOS. Further, the positioning system is closely coupled with the machine control and monitoring system.

ASPHALT addresses different applications in the context of the paving process on a road work site:

- mass flow control from asphalt plant to the paver
- asphalt temperature measurement while paving
- asphalt compaction
- paver steering
- thickness and evenness measurement and control





Depending on the application different position accuracies are required: centimetre, decimetre, or metre level.

The **GNSS receiver** to be implemented within ASPHALT is based on a triple-frequency approach combining E1/L1, E5a/L5, and E5b of Galileo, GPS, and EGNOS signals.

The numerous signals on multi-frequencies of different systems will foster faster and more robust **real time kinematic** (RTK) position solutions.

Beside the implementation of an RTK solution, the receiver will process EGNOS data of signal in space or the data access service - **EDAS**. This will provide increased position accuracy for applications where the high accuracy RTK solution is not needed.