

Putting the Space into Logistics

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Providers of logistics services face a lot of challenges: fierce competition, relentless cost pressures, ever-increasing energy prices, stringent emissions legislation and the requirement for accurately-measured carbon footprints. This can put a lot of strain on such organisations, so in order to provide assistance in this respect the Deutsche Bahn subsidiary DB Schenker is developing a transport and logistics solution together with T-Systems and GAF AG. This delivers real-time data based on satellite navigation, earth observation and satellite communication technologies. The project is funded jointly by the European Space Agency's Integrated Application Promotion (IAP) programme (<http://artes-apps.esa.int/>) and Deutsche Telekom.

Cutting CO2 emissions and saving fuel

The main objective of the solution that is being developed is to help drivers achieve an eco-friendly driving style. Rapid near real-time feedback allows the drivers to adapt their behaviour accordingly.

A smartphone app makes use of GPS to capture information about location, speed, acceleration and driving times, including breaks and stoppages. Based on the specific freight, vehicle weight and predefined reference profiles, this data can be used to calculate the precise fuel consumption, which is then integrated into the parameters for the route. The logistics company and the driver immediately receive the same metrics via a T-Systems server.

To enhance the accuracy of the results, GAF is implementing high-quality Digital Elevation Models based on satellite earth observation images to achieve an even more precise calculation of CO2 emissions and fuel consumption.

This leads to reductions in emissions and also saves fuel, which helps to reduce the overall costs for the providers of logistics services. An additional benefit is that an efficient driving style also reduces the amount of maintenance required on the vehicles and thereby helps to increase their periods of active usage.

Tracing and Tracking

So is the driver forecasted to arrive early, on time or late? Using information from satellites, the solution provides information at all times about the exact location of the driver and the vehicle's load, thereby enabling dispatchers back in the office to provide accurate updates to customers. Furthermore, interruptions to the journey are clearly recorded. Have perishable goods been kept refrigerated? Is the vehicle at a secure, guarded parking area or a remote road-side lay-by? The technology provides the head office with an around-the-clock bird's-eye-view of all potential threats and total cost transparency.

Tracking of humanitarian transports

A satellite communication channel will be available in particular for the provision of humanitarian logistics services. This will help the logistics provider when entering disaster affected areas that lack mobile telephone communications and in which route infrastructure may also be damaged. Earth observation data can be used to identify destroyed infrastructure and traversable routes.

In the case of shipments with high security requirements, a satellite-based communications network can also be used instead of the terrestrial network to ensure a reliable tracking. An example of such a case is the transportation of valuable goods.

About GAF AG – Germany

GAF AG is a leading solutions-provider with an international reputation as a skilled provider of data, products and services in the fields of geo-information, satellite remote sensing, spatial IT and consulting for private and public clients. GAF offers solutions in the sectors of mining and geology, natural resources, water and environment, security, land, agriculture, forestry and climate change. Over the past 28 years, the company has been active in more than 500 projects in over 100 countries throughout Europe, Africa, Latin America and Asia. GAF is also a one-stop-shop for the provision of Earth observation satellite data. The company is part of the Telespazio Group, which belongs to Finmeccanica and Thales, two European technology leaders.

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