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HOW TO IMPROVE THE TRAIN TRAVELLING EXPERIENCE AND TRANSFER SMOOTHNESS USING REAL-TIME DATA

Use Case

TELESTE

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INTRODUCTION

Passengers today expect to receive an increasing amount of information about their train journeys through a variety of communication channels. They also expect traffic information that is accurate in all situations.

The importance of the accuracy of passenger information is particularly emphasised in exceptional situations where the information must be almost in real-time and consistent across all communication channels used by the passenger. The passenger wants to know exactly when and how to change the train at the next station and how the journey will continue after the change, regardless of whether they are on the train or on the station platform. In addition, staff need up-to-date information on what is about to happen and why.

Real-time passenger information also creates benefits for railway operators. Passengers will transfer more smoothly to their connecting trains, which will reduce the risk of further delays and improve passenger safety. In addition, an improved travel experience is clearly a major competitive advantage for operators.

Many countries already have public or commercial IT services whose interfaces provide real-time information on rail and other public transport for operators and passengers. In the UK, for example, there is the rail industry's Darwin service, which provides real-time information including train arrival and departure estimates and platforms, changes to schedules and delays.

TELESTE ON-BOARD SOLUTION

The Teleste On-board solution has been developed over the course of several years in close collaboration with international rolling stock manufacturers and railway operators. With more than 1,000 vehicles in commercial service, the system technology is proven and mature.

The Teleste On-board solution includes a comprehensive selection of standard hardware and software products for the passenger information systems of the public transport.

In the Teleste On-board solution, in-depth know-how of industry standards and specifications has been utilised. The smart and effective Teleste On-board solution fulfils, for example, the requirements for fire and smoke, RAMS and obsolescence management. The high quality also conforms to the railway industry standard ISO/TS 22163 (IRIS) as well as the ISO 9001 and 14001 standards.

PROBLEM STATEMENT

It is not possible to eliminate all traffic disruptions from rail traffic, but we can reduce the number of unplanned disruptions, shorten the duration of disruptions and minimise their effects. For instance, vandalism, exceptional weather conditions or accidents are difficult to predict, but it is possible to prepare for the resulting disruptions.

An unforeseen disruption is an unpleasant situation for the passenger. It lowers passenger satisfaction and, as a result, has a longer-term impact on passenger numbers on trains and declining ticket revenues for railway operators. A dissatisfied passenger easily switches to a competitor's trains or uses another mode of transport.

SOLUTION

Teleste RDMS is a modern software platform especially designed for train-to-ground communication and data management. It securely connects trains to ground IT systems to enable remote management of the on-board passenger information system and two-way data transmission between the train and the ground.

Teleste RDMS can collect stream-based and per-request accurate passenger information from external sources.

An RDMS land server can be connected to different data sources, such as Darwin (UK), PubTrans (SWE) and Digitraffic (FIN), using plugins. Plugins make it possible to combine, filter and manipulate data and efficiently transfer it to trains for the on-board passenger information system. In addition to trains, real-time data can be exported to external systems such as Connected Driver Advisory System (C-DAS).



TELESTE ON-BOARD PASSENGER INFORMATION SYSTEM CONNECTABLE TO DARWIN API

The Darwin Push Port plugin of Teleste RDMS can combine data from timetable files available via Amazon S3 bucket, snapshot files available through FTP and real-time event stream. On-board Passenger Information System in trains always has the latest consistent data and trains receive a continuous stream of changes.

The Teleste RDMS ground server handles all data synchronisation from different data sources, (e.g. Darwin Push Port), news headlines feeds (e.g. RSS) and weather services. The event stream is read in full without any filtering on the Darwin side. All required filtering is performed by the RDMS ground server and it can automatically detect possible discontinuities in the data stream. Collected Darwin data and filtering rules can be defined on a per customer basis based on use case requirements.

Connecting Teleste RDMS to the Darwin Push Port service makes it possible to display and utilise the following information in trains, for example:

- Schedule updates
- Actual and forecast departure and arrival information (including platforms)
- Connection train information of next station
- Train association information
- Delay estimates and cancellation information
- Station messages
- Notifications (alerts and alarms)



SUMMARY

Train passengers today want to receive real-time information about their journey and they expect accurate traffic information in all situations.

Many countries already have public or commercial IT services whose interfaces provide real-time information on rail for operators and passengers, such as Darwin services in the UK.

The Teleste On-board solution includes a comprehensive selection of standard hardware and software products for public transport passenger information systems.

It is not always possible to avoid disruptions in rail traffic, but we can prepare for disruptions in order to remove them more quickly and minimise their effects and guarantee a smooth service.

The Teleste RDMS software platform securely connects trains to ground IT systems. The platform enables remote management of the on-board passenger information system and two-way data transmission between the train and the ground.

The RDMS land server can be connected to different data sources, such as Darwin (UK), PubTrans (SWE) and Digitraffic (FIN), using plugins.

Teleste On-board Passenger Information System can be connected to Darwin API.

The Teleste RDMS ground server handles all data synchronisation from different data sources, such as Darwin Push Port, news headlines feeds (e.g. RSS) and weather services.

Connecting Teleste RDMS to the Darwin Push Port service makes it possible to display and utilise all kinds of information in trains.

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About Teleste

Teleste offers an integrated product and service portfolio that makes it possible to build and run a better networked society. Our solutions bring television and broadband services to your home, secure your safety in public places and guide your use of public transport. With solid industry experience and drive for innovations, we are a leading international company in broadband, security and information technologies and related services. We connect with our customers through a global network of offices and partners. In 2019, Teleste's net sales reached EUR 235 million and it had 1,330 employees. Teleste is listed on Nasdaq Helsinki. For more information see www.teleste.com and follow @telestecorp on Twitter.

ABBREVIATIONS

API	Application Program Interface
C-DAS	Connected Driver Advisory System
FTP	File Transfer Protocol
RAMS	Reliability, Availability, Maintainability, and Safety
RDMS	Remote Data Management System
RSS	"Really Simple Syndication" or "Rich Site Summary", a family of web feed formats



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