ÖBB

How ÖBB was able to reduce its administrative overheads and optimise the business process – with a customised solution for mobile devices and the S&T' service2go package!

S&T service2go – the platform for mobile solutions, which also have to operate offline

In order to ensure a safe and punctual operation, the ÖBB railroad engineers are provided with exact rail duty rosters, where, amongst others, departure times and travel speeds are determined. Until recently, these rosters were occasionally used as hard copy "updates" due to road works or delays. The ÖBB Management decided to have this complex process replaced with a straightforward, safe and paperless solution, and assigned the implementation to AMIT (S&T AG). Since the implementation of the S&T service2go platform based solution, ÖBB has been benefitting from a faster, easier and more efficient service, along with significantly lower administrative overheads.

The task: An electronic management of up to 8 GB data for each of the 4,500 railroad engineers

ÖBB has around 4,500 railroad engineers, who operate up to 1,600 trains around the clock. The timetables available as hard copies until recently contained, amongst others, travel times, notes on road works and speed limits, and they had to be updated on a regular basis. The administration of these critical operational instructions requires continuous, complex and manual maintaining, resulting in significant expenses and an organisational work-load (e.g. printing out schedules for every train).

In order to simplify the process, the customer wanted to introduce a fully electronic solution, therewith significantly reducing the administrative overheads.

The desired solution should be designed for portable devices convenient for operating conditions. Moreover, it should operate, even when a stable network connection is not possible due to high travel speed or reception interruptions in tunnels.

Challenges

The biggest technological challenge was the huge amount of data that needed to be synchronised in a timely and reliable manner. Each of the 4,300 railroad engineers has to receive several million rows on his device during a large timetable update. The timeframe during which all clients need to be brought up to date is around one week. And yet, the uncompressed data volume is between 1 and 2 gigabytes per terminal device. In addition, smaller incremental updates are to be carried out, which occur throughout the year, and whose data volume is several hundred megabytes large.

Austrian Federal Railways (ÖBB) operates a thousands of kilometres long rail network with 43,000 employees in Austria and the Principality of Lichtenstein. The ÖBB is active in passenger services and freight traffic throughout numerous countries with 1,230 locomotives and over 3,000 waggons for passenger transport alone.

„The S&T service2go - Mobile Enterprise Application Platform (MEAP) is a development environment that provides tools and middleware for the development, software deployment, management and operation of mobile applications. The S&T service2go also enables an easy and efficient data synchronisation between systems, such as ERP, CRM and mobile terminal devices."

Harald H. Egerth, Amit CTO

All this data is transmitted over wireless network connections. In light of the potential unreliability of mobile phone networks in moving vehicles, it is important that the download process can be safely resumed in the event of an unexpected disconnection. In addition, the entirely time-consuming synchronisation process should be handled preferably in the background, so it does not distract the railroad engineer from his responsible work.

The processing of the offline database required for the solution is also complex for modern hardware in the mobile terminal devices. Furthermore, the system must work with regard to electricity consumption. Therefore, it was indispensible to make optimisations for ensuring high insert speeds during the synchronisation, without slowing down access for reading during the normal operation. In addition, it is also necessary to ensure an appropriate and consistent data transfer and data availability on the terminal device.

The project and the solution: Replacing the paper solution with mobile terminal devices

The customer developed the mobile solution TIM ("Triebfahr-zeugführer-Informations-Management"), in order to entirely replace the paper-based process. The UI client application and the program were developed in-house. The mobile application platform S&T service2go was chosen and implemented as a synchronisation component.

The S&T service2go server automatically detects changes in the database and synchronises them with the Clients on a regular basis. In order to speed up this process, the data to be changed is formatted package-like with regard to transactions and compressed with particular efficient algorithms. The user can also use other applications on the device, based on software capacity, whilst the relevant data packages are received and decompressed in the background.

Benefits

- Elimination or significant reduction of costs
- A paperless solution
- Elimination of double administrative activities
- A quick transfer of safety relevant warnings
- Integration with other solutions
- Process standardisation

About S&T AG

The publicly quoted company S&T AG (Security Code Number: A0X9EJ ISIN: AT0000A0E9W5) as a system house and manufacturer of IT systems is one of the leading IT solution providers in Central and Eastern Europe, with around 1,600 employees, branch offices in 19 Central and Eastern European countries and an extensive portfolio of proprietary technologies.

As a well-known solution supplier, S&T AG's core business includes amongst other things the development, implementation and operation of customer-specific solutions as well as outsourcing, integration and consultation within the IT field. In addition, as a well-known IT manufacturer, S&T scores points with a broad portfolio of proprietary products, which range from PC and server hardware and mobile solutions to hardware and software based special systems, such as highly professional security appliances.

Well-known customers in most diverse branches trust S&T's IT-solutions and professional services, respectively, in the fields of hardware and software, or consulting, integration and outsourcing. The strong regional presence of S&T AG enables an almost region-wide and cross-national service delivery for customers and partners with international orientation in Central and Eastern Europe.

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