

Swiss Federal Railway Uses MATERNA USSD Gateway for Critical GSM-R Communications

Dialogic® TX Series SS7 Board Provides SS7 Connection for USSD Menu-Based Messaging

CASE SUMMARY

Challenge

Swiss Federal Railway (SBB) wanted to take advantage of the new GSM-R standard for railways and add the convenience of menu-based communications and the efficiency of using USSD messaging.



Solution

SBB chose the MATERNA USSD Gateway for its communications network. The USSD Gateway uses the Dialogic® TX Series SS7 Board to enable USSD functionality.

Challenge

Global System for Mobile Communications - Railway (GSM-R) is an international wireless communications standard for railway communication and applications. GSM-R leverages GSM technology, and aims to become a cost-efficient digital replacement for existing incompatible railway communications networks.

Swiss Federal Railways (SBB) wanted to take advantage of GSM-R and combine its efficiencies with those of Unstructured Supplementary Services Data (USSD), a service which significantly accelerates interactive communication between mobile phone users and various applications within the GSM network. When users select a function from their mobile phone menu, USSD messages are transmitted by the mobile handset. Thus, the handset is not only able to deliver static information menus, such as the ones stored on the SIM card, but may also use dynamically created interactive menus delivered by an application in the network.

An additional benefit of USSD messages is that they are delivered at a very high speed that allows for interactive menu-driven applications that can reply quickly to the client. Also, USSD messages are mostly free-of-charge or are billed at a very low rate (as of September 2011).

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In order to take advantage of both GSM-R and USSD, SBB needed a USSD gateway that could enable an interactive exchange of messages that is both efficient and secure. SBB also wanted a USSD gateway that would fit easily within its network, and provide the high reliability required for mobile, real-time voice and data communication among railway operational staff, including drivers, dispatchers, shunting team members, train engineers, and station controllers.

Solution

After surveying various options, SBB chose the USSD Gateway developed by MATERNA Communications, a product which offers comprehensive support for implementing different types of USSD menus. In addition to a stand-alone capability, MATERNA's USSD Gateway supports open interfaces, such as those already implemented on SBB's GSM-R network.

When a mobile device requests a USSD menu via a USSD message, MATERNA's USSD Gateway (or an application server behind it) generates the application menu on demand. Adding new functions is easy because a modification is only required on the USSD Gateway or related application server. Interactive services can be used immediately without installing any applications on the mobile devices — an additional convenience.

MATERNA Chooses Dialogic® TX Series SS7 Boards

In its USSD Gateway for SBB, MATERNA is using a Dialogic® TX Series SS7 Board. "We have used many different Dialogic® products in a wide variety of customer situations for more than 15 years," says Marcus Götting, Director of Messaging Communication Platforms at MATERNA. "We are supporters of standards-based products, and we value the reliability, easy scalability, and advanced technology of Dialogic products."

The architecture of the TX Series combines TDM connectivity and transport with the SS7 protocol layers required for higher level application interfaces. Its H.100 bus and switching feature provides flexibility, openness, and vendor independence along with access to other resources as needed. Ethernet ports enable board-level redundancy.

Results

SBB has been using MATERNA's USSD Gateway for several years with excellent results in optimizing its processes, which has led to significant cost reductions and more efficient operations.

In addition to supplying the technical solution, MATERNA also maintains the installed solution for SBB, and has assisted in developing important new services.

Among these are internal information services for SBB employees, such as specialized weather forecasts and train departure requests via USSD. These services can be made available via easy-to-use menu applications, which draw data from the existing SBB information infrastructure, resulting in added value and convenience for both passengers and staff.

Elmar Reidy, Project Leader at SBB, has high praise for MATERNA. "By implementing this project quickly and efficiently, MATERNA has proved to be very professional, particularly by applying a flexible approach to our requirements, which was very helpful in this project. We are sure we have found the right partner and are looking forward to planning the next steps together."

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About Swiss Federal Railways

Swiss Federal Railways (SBB CFF FFS) is the largest travel and transport company in Switzerland. SBB handled over 347 million passengers and nearly 50 million net tons of cargo in 2010 on its 3,011 kilometer network.

For more information, visit www.sbb.ch

About MATERNA Communications

As a leading information technology service provider, MATERNA Communications employs a staff of approximately 1,300 throughout Europe and earned 152 million Euros with its two business divisions in 2010. The Information Division provides process and technology consulting and implements appropriate IT solutions, as well as delivering maintenance, operational, and training services. MATERNA also has comprehensive expertise in marketing services for new media, e-commerce, and m-commerce solutions, voice, M2M, and telematic applications, service platforms, and hosting.

For more information, visit www.materna-communications.com

About Dialogic Inc.

Dialogic develops products and technologies that enable reliable, seamless, and efficient communications across countless devices on any network. Dialogic streamlines the delivery of high-demand mobile, VoIP, and traditional services. Dialogic also focuses on any-to-any connectivity and IP-enabling its traditional media products to smooth the move from TDM to an all-IP environment.

For more Information, visit www.dialogic.com



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Information about Swiss Federal Railways and MATERNA Communications for this case study has been provided by MATERNA Communications.

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