A test drive into the future – Austrian Federal Railways puts its trust in ETCS and a high-tech collaboration

The end of May saw the successful completion of a public ETCS Level 2 test run on the Matrei to Fritzens-Wattens route in Austria. The run was made possible by a close collaboration between five technology companies: Alstom, Frequentis, Kapsch CarrierCom, SIGNON and Thales.

In moving toward implementation of the pan-European ETCS standard (European Train Control System), Austrian Federal Railways (ÖBB) is making a commitment to high-tech, safety and reliability. The implementation of such a hugely complex rail safety system demands close cooperation between various technology companies. For the Austrian ETCS project, Alstom was charged with equipping the trains, Thales with installing the trackside equipment and Kapsch CarrierCom with supplying the necessary GSM-R technology. Frequentis and its subsidiary team managed the integration of these individual components within a single system, while SIGNON was responsible for routing system engineering and consulting.

The results of this cooperation were revealed to the public on a Tuesday in late May, when a tour of the Innsbruck management centre was followed by a trip along the Matrei/Fritzens-Wattens test track. The new technology sits well with ÖBB's motto - "more service, more safety, more trains" - and the company's director of infrastructure, Herwig Wittberger, was a witness to the event. A number of high-profile guests from the worlds of business and politics were present at the unveiling of the future of rail travel, including Anton Heinzl, MP and head of the parliamentary transport committee, and Bernhard Tilg, transport secretary of the Tyrol provincial government.

Summarising the project from the perspective of the system integrator, Hannes Bardach, CEO of Frequentis, said, "New technologies and new operating procedures mean new opportunities. In taking this important step, the European rail sector has set a new standard both for itself and for the rest of the world. I'm extremely proud of the efforts of all those involved, not just the work done by our own company. As a mid-size, Austrian organisation, the role of system integrator was a very rewarding experience, especially since we were able to bring together three global corporations in a complex project that finished right on schedule."

Thales are currently installing the trackside infrastructure needed on over 200km of test routes in Unterinntal and along the western rail link between Vienna and St.Polten. The company is using its state-of-the-art components and solutions for the trackside changes needed to implement ETCS/ERTMS (the European Rail Traffic Management System).
Alfred Veider, CEO of Thales Austria GmbH, emphasises the national and international significance of the project, noting, "The leading technology suppliers in this field have demonstrated how we can abandon 14 incompatible, national train control systems in favour of ground-breaking, safe, reliable and more cost effective systems based on the ERTMS/ETCS European standards...in keeping with the dictates of the European Transport White Paper. The positive impact of the modern train management solution chosen here in Austria is not only reflected in the contracts we've won in Europe, but also in the numerous projects commissioned worldwide. I'm convinced that the success of ERTMS/ETCS will see the approach move beyond Europe's borders to conquer the world, just as we saw with the introduction of the GSM global standard for mobile telephony".

At the moment, numerous different train control systems are operated in Europe, none of which are compatible with each other. The switch to ETCS will simplify and increase cross-border rail travel: once the migration period is over, there will be no need to account for multiple train control systems in equipment decisions. According to Johannes Braun, managing director of ALSTOM Austria GmbH in Vienna, "Unifying the systems through migration to ETCS Level 2 will lead to clear improvements in the quality and interoperability of rail operations. This will in turn lead to greater competitiveness for the rail sector in relation to road-based alternatives."

A long partnership with Austrian Federal Railways
"Through the expertise gained as the global market leader for GSM-R technology, Kapsch CarrierCom is making a key contribution to the practical development of a European rail system. Thanks to its support system role, GSM-R is a core component of the European Rail Traffic Management System (ERMTS), one that provides the foundation for a new, uniform and pan-European signal and train management system. The permanent exchange of data between routing centres and trains also helps improve the safety of European rail traffic. A long-term partnership between ÖBB and Kapsch CarrierCom is based on the shared goal of implementing the new pan-European approach in Austria. ÖBB-Infrastruktur AG has given Kapsch CarrierCom responsibility for radio network planning, for the implementation and functionality of GSM-R technology and for ensuring complete, uninterrupted radio coverage," says Michael Kleinhagauer, CTO of Kapsch CarrierCom AG.

About Alstom Transport
A promoter of sustainable mobility, Alstom Transport supplies a complete range of high-performance rail products and systems, including rolling stock, infrastructure, information systems, related services and turnkey solutions. Alstom offers its customers environmentally-friendly and economical products and services, in recognition of the rail operators’ growing demand for sustainable mobility solutions and high profitability. During the 2010/2011 fiscal year, Alstom Transport generated revenues of €5.6 billion. The company is present in over 60 countries and employs some 26,000 people.

For more information about Alstom, see www.alstom.com
About Frequentis
Frequentis AG is an international supplier of communication and information systems in two business segments: air traffic management and public safety & transport. Frequentis systems are used successfully in over 80 countries, and the company can draw on enormous reserves of project know-how built through numerous international engagements.

Frequentis, together with its partners SIGNON and team, is acting as the system integrator for Austrian Federal Railways (ÖBB) for the introduction of ETCS Level 2. This is the first time a system integrator role of this nature has been outsourced in Europe. ÖBB’s decision was based on the experience gained with similar projects in other countries. The project management expertise and specialist ETCS know-how offered by the technology partners were also a decisive factor in taking this step.

For more information about Frequentis, see www.frequentis.com

About Kapsch CarrierCom AG
Kapsch CarrierCom is a global manufacturer and independent system integrator of telecommunications solutions for railway operators and providers of fixed, mobile, transportation and access networks. In addition to applications and services for next generation networks and innovative OSS/BSS solutions, Kapsch CarrierCom provides an end-to-end service spectrum: from consulting, design and product development, installation and integration, to maintenance and support, and even the operation of complete networks. Kapsch CarrierCom develops and sells products such as its own service delivery framework with convergent centrex, fraud management systems, and the business & service assurance system DataXtender. Kapsch CarrierCom’s extensive customer list includes service providers such as Bouygues Telecom (France), Chunghwa Telecom (Taiwan) and the companies of the Telekom Austria Group. Railway operators in important markets such as France also rely on Kapsch CarrierCom, as does the operator of the largest GSM-R network in the world in Germany. Kapsch CarrierCom is part of the Kapsch Group and is headquartered in Vienna.

For more information about Kapsch, see www.kapschcarrier.com | www.kapsch.net.

About SIGNON
SIGNON has the know-how and experience that comes from many years equipping rail networks across the entire process chain. SIGNON offers specialist, expert support for projects dealing with control & signalling systems, telecommunications and power supply, covering everything from planning and consulting through to implementation and operation.
SIGNON is managing the development and implementation of ETCS technologies on behalf of railways and system suppliers throughout the world. Austrian Federal Railways is also benefitting from SIGNON expertise, with the company contributing engineering and consulting services across the planning and implementation phases for ETCS Levels 1 and 2. SIGNON uses specialist software tools to ensure this implementation is as efficient as possible.

For more information about SIGNON, see www.signon-rail.com

About team
If projects are highly complex, technologically challenging and in need of specialist know-how, then it’s time to put the right team together. team Communication Technology Management GmbH is the project management and system integration specialist within the Frequentis Group. Team experts have an industrial background and can draw on many years of experience with successful projects, particularly larger ventures involving telecommunications, intelligent transportation systems and public safety. Their wide range of rail-oriented expertise includes voice, data and radio communication, tunnel systems, access control and transmission networks.

For more information about team, see www.te-am.net

About Thales
Thales is a world leader in technology systems for the defence and security, aerospace and transportation markets. Corporate revenues in 2010 reached €13.1 billion and the company has 68,000 employees in 50 countries. With its 22,500 engineers and researchers, Thales has a unique capacity to design, develop and deploy products, systems and services that meet the most complex safety and security requirements. Thales has an exceptional international presence, with numerous subsidiaries all over the world supporting true partnerships with customers on a local basis.

For more information about Thales, see www.thalesgroup.com