## VSBS Virtualised Server Broadcast System

In a major upgrade to their DAB$^+$ Playout Systems in 2016, a major European public broadcaster has taken delivery of Factum Radioscape's new Virtualised Server Broadcast System (VSBS).

The broadcaster is replacing their traditional component-based Factum DAB$^+$ encoder, multiplexer and controller head-end systems for four multiplexes with eight all-in-one Factum Radioscape VSBS.

VSBS integrates DAB$^+$ Broadcast System component components in a single, versatile hardware platform, including audio encoders with Ravenna IP inputs.

In addition to the economy of requiring less physical space and lower power consumption, server-based Digital Radio Broadcast Systems with multiple Virtual Machines means that management, supervision and 24/7 performance monitoring can be integrated with other critical services in an existing IT network.
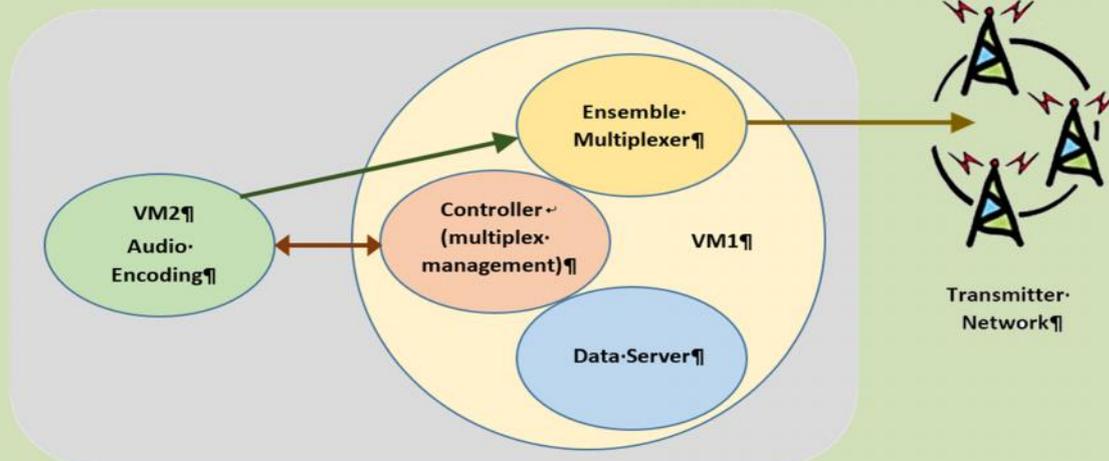
Another VSBS has been delivered to replace traditional component-based Factum DAB encoder, multiplexer and controller head-end systems to a European cable broadcaster as part of a CATV cable system upgrade to the new generation high-speed data over cable service interface specification DOCSIS 3.1. The higher speed and network capacity of the new cable service will include Digital TV, Digital Radio (DAB-C) and high-speed broadband. The new Factum Radioscape VSBS upgrade includes the transition from DAB to DAB$^+$ encoding technology, which enables CATV subscribers to receive a significantly higher number of radio programmes through the cable network.

Running a Digital Radio Broadcast System on a server with multiple Virtual Machines means that management, supervision and 24/7 performance monitoring can be integrated with other critical services in an existing IT network.

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OBSERVA Multiplex Supervisor

As part of their DAB+ Playout Systems upgrade in 2016, a major European public broadcaster has taken delivery of Factum Radioscape's new OBSERVA Multiplex Supervisor for validation and supervision of four DAB+ multiplexes.

The OBSERVA Multiplex Supervisor provides evidence of output to a distribution network with live monitoring and analysis of one or more DAB+ multiplexes.

For multiplexer output verification, the Multiplex Supervisor can be located at the multiplexing, or located at each transmission site to monitor incoming ETI or EDI streams.

For off-air supervision, the Multiplex Supervisor can be located within the RF coverage area and, if required, managed remotely via an IP network, including remote rendering of audio, Slideshow, DLS and EPG services (Monitor and Analyser versions only).

The Multiplex Supervisor is available with a choice or combination of two software applications: Monitoring and Analysis.

The Monitoring service provides SNMP and is managed from a Client application, which can be installed locally or remotely.
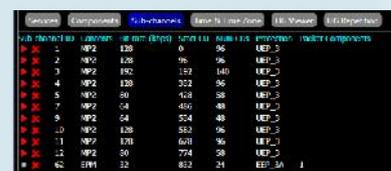
The Analyser software, which can also be installed locally or remotely, provides detailed metrics, graphs, service viewers and metric logging.

The Multiplex Supervisor can be specified in the following configurations:

- Monitoring Service with Client only
- Analyser only
- Monitor and Analyser

Monitoring options include: Audio Silence Detection, Content Presence Checking and TII Monitoring (RF inputs only).

Analyser input options include: FM, Packet Data View, EPG View, RF Modulation View, Metric Data Logging, All Radio Stations View, ETI Recording, FIC Recording, ETI file input and Audio file input.

OBSERVA Field Monitor

In 2016, Factum Radioscape OBSERVA Field Monitors have been delivered to customers in Hungary, Italy, Germany and UK, including public and commercial broadcasters; transmission network operators and a government communications regulator.

The OBSERVA Field Monitor is a compact, robust USB-powered receiver that provides detailed views of the DAB/DAB+ ensemble and RF transmissions, including SFN Networks. ETI recording enables subsequent ensemble analysis from ETI files.

Ensemble displays include audio and data services e.g. DLS, Slideshow, EPG. RF displays include signal level/field strength, TII decoding, modulation, including Channel Impulse Response, Phase Reference and constellation diagram.

The OBSERVA Field Monitor's combination of customisable displays, real-time graphs and wide range of metric measurements gives users the most versatile tool for accurate and informative field measurements.

The FM Monitoring option displays receiver metrics, Radio Text statistics, RDS Flags and Group Counts, as well as providing graphical displays for Signal Level, Frequency Offset, Block Error-Rate and Spectrum.

For mobile measurements, map information can be cached prior to starting the journey. This allows for viewing real-time location and metrics without the need for an 'always-on' internet connection.

Multiple profiles can be created for storing selected metrics. These profiles can be saved and loaded into the software as required.

DETS Voice Break-in System for Tunnels

Leading-up to the switch-off of FM radio transmissions, Norway continues to upgrade the country's large number of road tunnels with DAB+ voice break-in systems.

In conjunction with Norwegian tunnel communications system integrator, TRAFSYS AS of Bergen, Factum Radioscape has delivered 25 DETS systems in 2016.

TRAFSYS are installing radio systems that provide FM and DAB+ radio coverage, which is achieved by installing a leaky feeder cable inside the tunnels. Signal amplifiers (repeaters) are installed throughout the tunnel (max distance of 1500 metres). Installation of receivers and transceivers are designed to achieve the best coverage for the topographical environment.
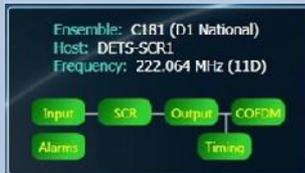
DETS inserts emergency audio and text messages in to DAB and DAB+ ensembles. The system's seamless break-in of announcements and synchronisation of transmission framing ensures that listeners can be made aware of emergency situations with the minimum possible delay.

The system monitors the live ensemble for all current audio service configurations and automatically manages the replacement of normal programmes with the emergency announcement using the same audio bit-rate.

Factum Radioscape
United House ● North Road ● London ● N7 9DP ● UK
Tel: +44 (0)20 7406 7990
sales@factumradioscape.com
www.factumradioscape.com

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