

Radio Narrowbanding Transition

Radio Communications Systems Engineering and Integration for the Railroad Industry

By 2013, the Federal Communications Commission (FCC) has mandated that all radio users operating below 512 MHz migrate from 25 kHz to narrowband (12.5 kHz) or very narrowband (6.25 kHz) channels for Land Mobile Radio (LMR) operations. To undertake such a significant and critical task, it is imperative for railroads to plan ahead for the transition by assessing current equipment and channel plans and making the necessary upgrades. That's where ARINC comes in.

Applying our proven expertise in all phases of the radio system life-cycle, we make the task less daunting from the onset. Our highly-qualified technical personnel will efficiently design, deploy, and manage the transition from beginning to end, providing expert systems engineering and integration services with minimum risk and disruption to your operations.

ARINC has designed, evaluated, and implemented a variety of communications, command and control, security, and information systems for freight, commuter, inter-city passenger, light rail, and transit customers. ARINC shapes ideal solutions to manage our customers' toughest challenges, working with your staff in all aspects of design/build projects to design and implement an integrated, cost-effective narrowband solution.

Systems Engineering Services

- ▶ Migration planning for transition to narrowband and very narrowband voice and data systems
- ▶ System design and engineering of conventional or trunked systems
- ▶ Testing of supplier equipment for compatibility and interoperability
- ▶ Testing of wideband, narrowband, and very narrowband operation
- ▶ Propagation and coverage analysis

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Quick Facts

- ▶ Radio systems engineering and integration services to meet the FCC narrowbanding mandate
- ▶ Freight, transit, light rail, commuter rail, and intercity rail
- ▶ Full-service narrowbanding and interoperability test facilities
- ▶ Experience working with the AAR, individual railroads, and key radio vendors in narrowband transition
- ▶ Support for 12.5 kHz narrowbanding and 6.25 kHz very narrowbanding design and deployment
- ▶ Variety of communications models to support system design and evolution



- ▶ EMI/EMC analyses
- ▶ Development of specifications and procurement packages
- ▶ Radio system procurement support and vendor equipment selection
- ▶ System implementation oversight and construction management
- ▶ Technical support to FCC licensing, waiver, and filing actions

Systems Integration Services

- ▶ Radio site surveys, design, and implementation
- ▶ Radio system configuration and provisioning
- ▶ Integration of equipment racks and assemblies
- ▶ Integration of radio systems to enterprise networks
- ▶ System installation and test
- ▶ Implementation of shared radio and network facilities
- ▶ Centralized system monitoring and system management

Comprehensive Testing Services and Facilities

To support the transition to narrowband radio technology, ARINC operates two interoperability test labs. Our NXDN lab is used to evaluate performance, interoperability, data communications, and GPS reporting capabilities of equipment from different suppliers to determine compliance with the new NXDN technical standard for LMR and public safety radio systems.

The Interoperability Test and Demonstration Center (ITDC) will provide customers, partners, and technology vendors a platform to assess the capability, reliability, and interoperability of existing and new equipment. It is equipped with a variety of Public Safety and Homeland Security voice, video, and data

technologies, including trunked and conventional LMR systems (APCO P25), broadband wireless, video surveillance, and physical security platforms.

ARINC understands the unique needs of the railroad industry. We operate one of the largest transportation radio networks in the world—with proven network availability exceeding 99.97%. We are committed to helping make timely and well informed upgrading decisions, as well as cost-effective ways to avoid replacing entire systems at once. As a trusted industry leader, our success is built on our commitment to the safety, efficiency, and cost-effectiveness of all train operations. ARINC's unmatched experience and knowledge will ensure a seamless narrowband transition from a full range of design and build activities to the deployment of your new radio systems.

ARINC, a portfolio company of The Carlyle Group, provides communications, engineering and integration solutions for commercial, defense and government customers worldwide. Headquartered in Annapolis, Maryland with regional offices in London and Singapore, ARINC is ISO 9001:2008 certified.

To learn more log onto arinc.com/narrowbanding or email narrowbanding@arinc.com

2551 Riva Road | Annapolis, MD 21401 USA
Tel: +1 800.633.6882

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