Ritron, Incorporated
505 W. Carmel Drive · Carmel, IN 46032
P. O. Box 1998 · Carmel, IN 46082
Ph: 317-846-1201
Fax: 317-846-4978
Email: ritron@ritron.com
Web Site: www.ritron.com

The US Railroad Industry, Narrowband Radio Compliance And A Cost-Effective Path To Digital

- A Case For The Tri-Mode "Capable" Clean Cab Radio -

At present, there is no FCC or Industry Canada date for users to convert to very narrow band digital channel operation, but regulatory authorities have made it clear that that is the eventual goal. Given this, it is understandable for purchasers of radio equipment to desire radios which will support known future requirements such as very narrow band operation. With all of the Clean Cab radio suppliers, except Ritron, offering a clean cab shell with an embedded commercial-grade mobile radio or mobile radio subassembly inside, a railroad purchaser is faced with the prospect of having to remove and/or replace the radios at a future date if the equipment does not support tri-mode operation from the start. The Ritron product offering, however, gives the purchaser unique options that make the purchase of Ritron tri-mode capable Clean Cab radios more attractive. Consider the following:

1) While the other vendors' dual-mode offerings require that their product be replaced to go from a dual-mode to tri-mode, the Ritron Clean Cab radio is unique in that it is basically a tri-mode upgradeable RF platform. Digital NXDN operation is effected via a Ritron designed and developed plug-in board, which can be easily added to the radio. This allows for a smooth transition to digital operation when needed, without requiring immediate additional funding for tri-mode equipment. Of course, tri-mode offerings are available from the other vendors, but at a price premium compared to the dual-mode offerings.

2) Ritron is the only vendor who is a member of the NXDN forum, a group dedicated to advancing the introduction of the NXDN standard and to resolving any technical issues which may arise with the standard. It is not unreasonable to expect that the NXDN standard may change with time and after the introduction of tri-mode Clean Cab radios or that new features, not necessarily addressed within the standard, may be developed and desired by the railroads. With those Clean Cab radios that have an embedded mobile radio or mobile radio subassembly inside, the radio must be updated or replaced to stay current. The Ritron Clean Cab radio only requires an update to the plug-in board via the radio programmer. It simply is NOT reasonable for a railroad to expect to purchase a tri-mode radio now and not have to ever remove it from a locomotive for a program update. The NXDN standard and the embedded digital mobile radio feature set is simply too immature for that expectation. Given that, the purchase of the dual-mode Ritron Clean Cab radio with a future update required for tri-mode and the resultant reprogramming is not, in reality, a disadvantage compared to buying a tri-mode radio now as an initial purchase from the competition.

3) The dual-mode version of the Ritron Clean Cab radio is <u>less expensive</u> than the tri-mode version. Although for digital operation, a plug-in board must be added later, the initial up-front costs are lower. In the depressed economic times that we now face, the opportunity to defer capital costs

must be seriously considered. This is an option that the competition cannot offer since their dual-mode product and tri-mode products are completely separate.

4) Ritron is in production with the dual-mode version of the Clean Cab radio and can deliver product in a timely fashion. The plug-in board to support tri-mode operation has been designed and is functional; production samples have been supplied to a number of class 1 railroads for evaluation. Ritron expects to have the basic NXDN package available in Q3, 2009 with more expanded features available later in the year and trunking early next year. Other than the railroads' desire to make only one radio purchase, it is unlikely that true digital radio operation will be required in the near future. Therefore, the question is, why pay for it now when you can achieve the immediate goal of narrowband conversion while retaining the flexibility to "upgrade" to digital in the future, when it is needed. This gives the railroads the opportunity to purchase dual-mode product sooner from Ritron, at less cost, without compromising the eventual migration to digital.

   It is Ritron's sincere desire that your railroad decide that Ritron is the most qualified vendor for your Clean Cab radio purchase and Ritron is willing and able to supply both dual-mode and tri-mode equipment.

   If you have questions or would like to speak to someone about the Ritron clean cab radio please don't hesitate to contact us:

W. Stephen Rice
President
317-846-1201 ext 104
email: wrice@ritron.com

Sam Dulaney
Chief Engineer
317-846-120 Ext 183
email: sdulaney@ritron.com

Devon E. Sherer
Vice President
Key Accounts
317-846-1201 ext 126
email: dsherer@ritron.com

Kevin Matson
Clean Cab Radio Project Engineer
317-846-1201 Ext 185
email: kmatson@ritron.com

Glossary of Terms:

Dual-Mode: Clean cab radios that support existing wideband and narrowband analog operation.

Tri-Mode: Clean cab radios that support wideband and narrowband analog and narrowband digital operation.

Tri-Mode Capable: i.e. Ritron's clean cab radio which supports wideband and narrowband analog and can be easily upgraded to narrowband digital operation with an add-on board.

NXDN™: A digital voice radio standard used in the two-way radio industry and the one selected by the railroads for their very narrowband digital voice operation.