

# Zetron's Commitment to P25

## INTRODUCTION:

Project 25 (P25) was initiated by the Association of Public-Safety Communications Officials - International, Inc. (APCO) as an open standard for digital two-way radio technology targeted at meeting the needs of public safety organizations, primarily in North America. The Telecommunications Industry Association (TIA), a recognized standards development organization, is responsible for publishing P25 standards. Zetron is an active participant in the TIA TR-8 engineering committee that creates P25 standards and is a member of the Project 25 Technology Interest Group (PTIG). To learn more about P25 visit some of these web sites:

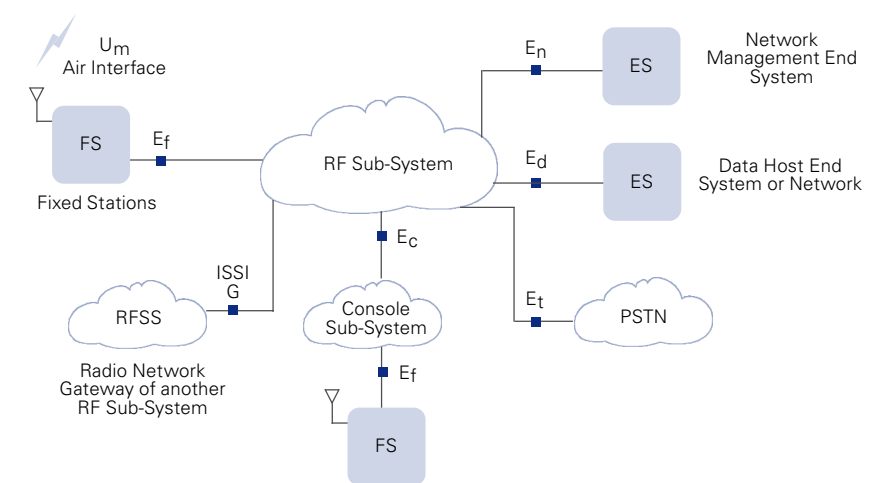
- APCO - <http://www.apcointl.org/frequency/project25/>
- TIA - [http://www.tiaonline.org/standards/project\\_25/](http://www.tiaonline.org/standards/project_25/)
- Global Engineering Documents - <http://global.ihs.com>
- PTIG - <http://www.project25.org/>



## P25 STANDARD INTERFACES:

The following diagram identifies the various TIA recognized interface points within a P25 system. The interfaces that apply to consoles are the Ec interface to the RF Sub-System (RFSS), and the Ef interface to Fixed Stations. The Fixed Station interface standard, TIA 102.BAHA, was approved by TIA in January 2006. It specifies both an analog (AFSI) and digital (DFSI) interface. Zetron consoles are compliant with the AFSI. Zetron is currently developing an interface compliant with the DFSI. The interface standard to the RFSS has not yet been completed by TIA and is not expected until late 2006.

TIA Interface Points within a P25 System



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## ZETRON P25 CONSOLE OPTIONS:

In lieu of having a complete set of TIA console interface standards, Zetron has developed several options for interfacing our consoles to P25 radios.

### Wired fixed station interfaces.

Zetron interfaces to a variety of conventional fixed stations manufactured by Motorola, M/A-COM, Tait, Daniels Electronics, and Westel Wireless. The interfaces permit control of fixed station functions including RF mode, channel selection and coded/clear mode. In some circumstances subscriber unit signaling is also supported.

### Wireless subscriber unit interface.

Zetron interfaces to the EF Johnson RS-5300 and M/A-COM M7100 mobile radios in either conventional or trunked modes. This will permit control of radio functions including selection of channel/talk-group, coded/clear selection, scan and PTT ID. In addition PTT-ID display is supported.

### Wired RFSS interface.

Zetron's Acorn Advanced Communications System interfaces to the EADS P25 trunked RFSS using VoIP over the EADS Console Subsystem Interface (CSSI).

Refer to the P25 Radio Interface Capability Summary for a complete list of features supported for each of the interfaces.

#### Notes:

*General: Some of these features may require the addition of certain manufacturer options.*

*1. The Subscriber Unit Signaling when used with the TB9100 translates full 24-bit P25 unit ID to a mapped 16-bit ID. This requires an additional Tait fixed station option.*

*2. The TIA 102.BAHA Fixed Station Interface Standard does not require these features, but permits them via manufacturer option.*

*3. The Emergency indication when used with the RS-5300 works for P25 Priority transmissions, where audio is sent along with the emergency notification. The Emergency status transmission which occurs without audio will also work if all emergency transmissions are steered to a specific conventional channel or trunking talk-group.*

## Zetron Console P25 Radio Interface Capability Summary

FEATURE \ RADIO	Fixed stations compatible with TIA 102.BAHA	Motorola Quantar ASTRO 25 Fixed Station	Tait TB9100 P25 Fixed Station	Daniels Electronics P25 Fixed Station	Westel Wireless DRB-25 Fixed Station	M/A-COM Mastr III P25 FixedStation	M/A-COM7100 Mobile Radio	EF Johnson RS-5300 Mobile Radio	EADS P25 RFSS V2.01 Feature Set
<b>Supported Zetron Consoles</b>	Model 4010 Series 4000 Acorn	Model 4010 Series 4000 Acorn	Model 4010 Series 4000 Acorn	Model 4010 Series 4000 Acorn	Model 4010 Series 4000 Acorn	Model 4010 Series 4000 Acorn	Series 4000	Model 4010 Series 4000 Acorn	Acorn
<b>Console Wireline Interface</b>	Analog (AFSI)	Analog via Motorola DIU-3000	Analog via Tait Analog Line Option	Analog via Daniels Base Control Card	Analog	Analog 4-wire Tone Option	Analog via Zetron WIM	Analog via Zetron iRIM	VoIP via EADS CSSI
<b>Supported Modes</b>	Conventional	Conventional	Conventional	Conventional	Conventional	Conventional	Conventional and Trunked	Conventional and Trunked	Trunked
<b>Fixed Station Control</b>									
<b>Analog (FM) &amp; Digital (CAI) RF Mode Selection</b>	Yes	Yes	Yes	Yes	Yes	TBD	Yes	Yes	Yes
<b>Coded/Clear Encryption Selection</b>	Yes	Yes	Yes	Yes	Yes	TBD	Yes	Yes	Future
<b>Encryption Key Selection</b>	Mfg Option <sup>2</sup>	Yes	Yes	No	Yes	TBD	Yes	Yes	Future
<b>Frequency or Talk Group Selection</b>	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes – tech setup
<b>CTCSS/DCS or NAK Code Selection</b>	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	N/A
<b>CTCSS/DCS or NAK Monitor</b>	Yes	Yes	Yes	NAC only	Yes	TBD	Yes	Yes	N/A
<b>Squelch Min/Max</b>	Yes	No	Yes	No	Yes	TBD	No	No	N/A
<b>Repeated or Talk Around Mode Selection</b>	Yes	Yes	Yes	No	Yes	TBD	Yes	Yes	N/A
<b>Scan On/Off</b>	Mfg Option <sup>2</sup>	Yes	No	No	Yes	No	Yes	Yes	N/A
<b>2<sup>nd</sup> Receiver Mute/Unmute</b>	Yes	Yes	Yes	No	Yes	TBD	N/A	N/A	N/A
<b>Site Intercom</b>	Yes	Yes	Yes	Yes	Yes	TBD	No	No	N/A
<b>Dispatcher Interrupt</b>	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
<b>Subscriber Unit Signaling</b>									
<b>Receive PTT-ID Display</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	No	No	No	Yes	Yes	Yes
<b>Incoming Emergency Alert Indication</b>	Mfg Option <sup>2</sup>	Audible only	Yes <sup>1</sup>	Yes	No	No	Yes	Yes <sup>3</sup>	Yes
<b>Incoming Status Display</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	Future	No	No	No	No	No
<b>Radio Selective Call (without ack)</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	Future	No	No	Yes	No	No
<b>Radio Call Alert (with ack)</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	Future	No	No	Yes	No	No
<b>Radio Check</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	Future	No	No	No	No	No
<b>Radio Status Check</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	Future	No	No	No	No	No
<b>Radio Monitor</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	Future	No	No	No	No	No
<b>Radio Enable/Disable</b>	Mfg Option <sup>2</sup>	No	Yes <sup>1</sup>	Future	No	No	No	No	No