ECP 1081B

Aegis™

Training Session Notes

ERICSSON

$25.00 USD

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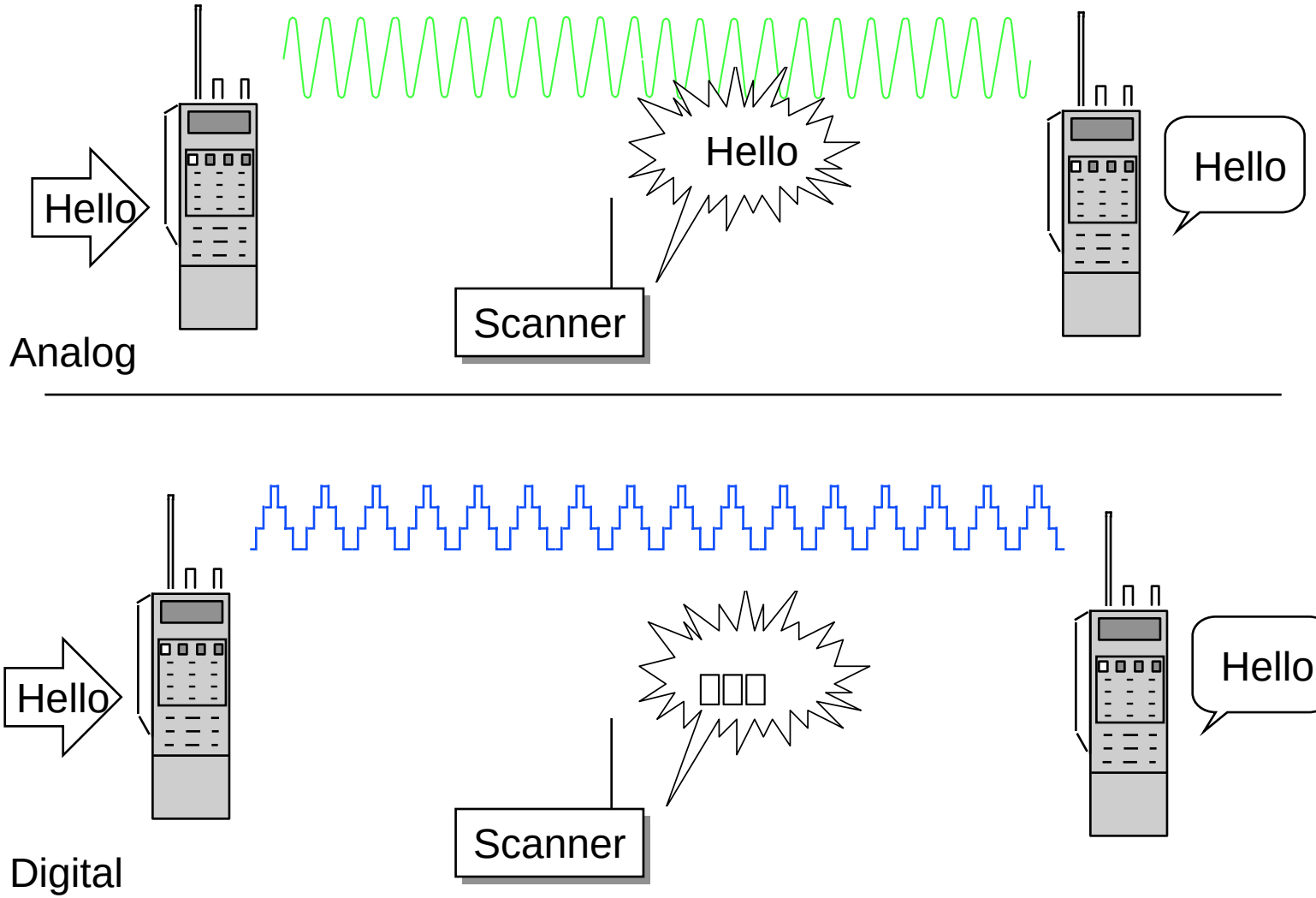
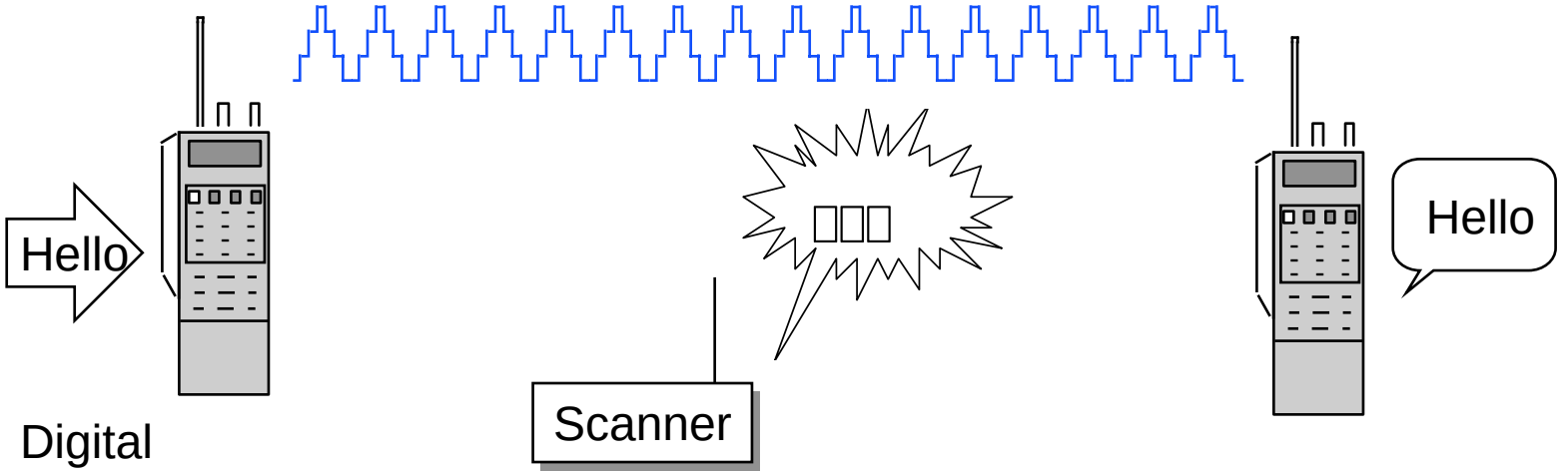
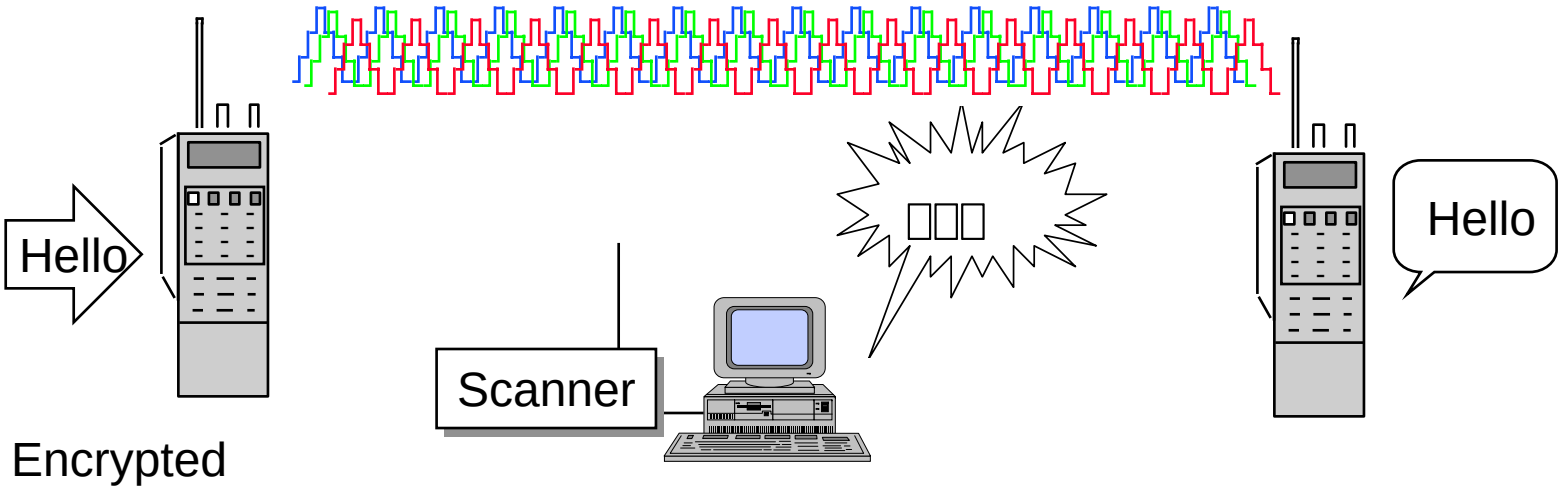
Why Digital Voice?



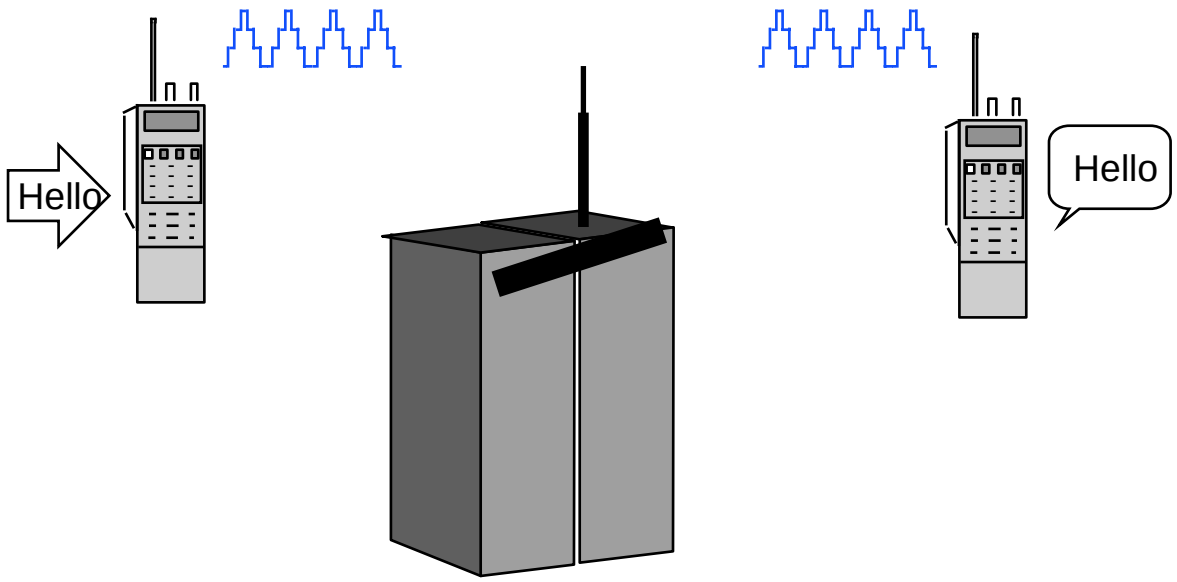
Digital Voice vs. Encryption





What Is Aegis?

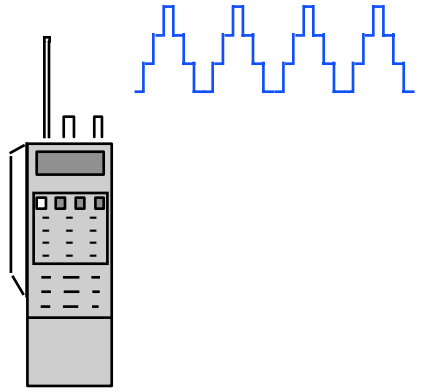
- Newest Digital Voice Technology
- 9600 Bits per Second Digital Signaling Speed
- Integral Part of EDACS



Modes of Operation

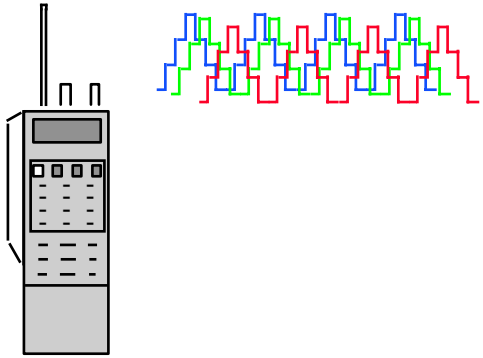
Digital

- Sometimes called “Unencrypted”
- High Quality



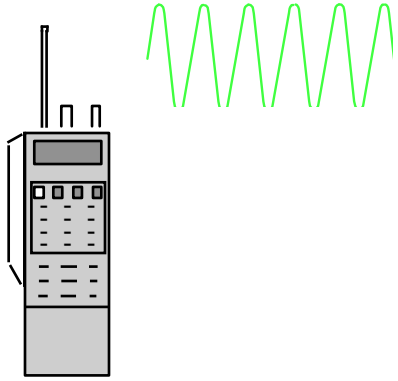
Encryption

- Sometimes called “Private”
- Very high security



Analog

- Sometimes called “Clear” or “Clear Voice”
- Backward compatibility with analog radios



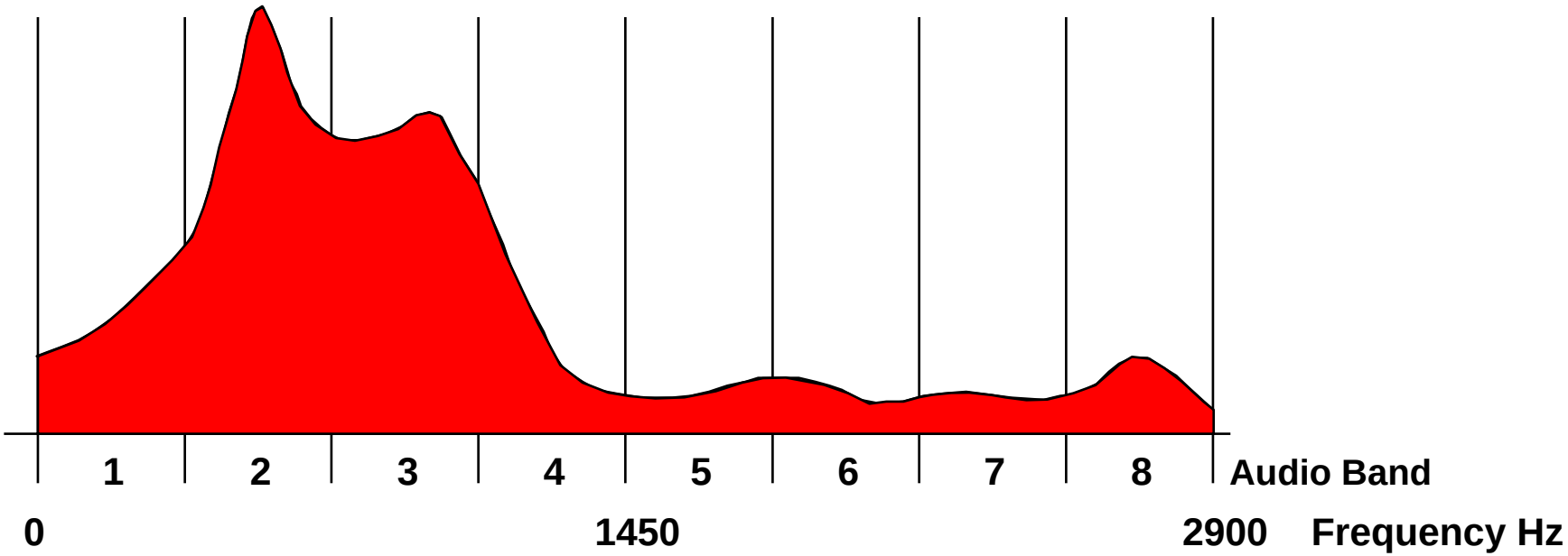
Aegis vs. Voice Guard

	AEGIS	VOICE GUARD
VOCODER	Adaptive Multiband Encoding	Sub Band Coder
ENCRYPTION	Optional	Required

Aegis Vocoder

Adaptive Multiband Encoder (AME)

- 8 Frequency Bands
- Bit allocation is proportional to the energy at the instant of the sample

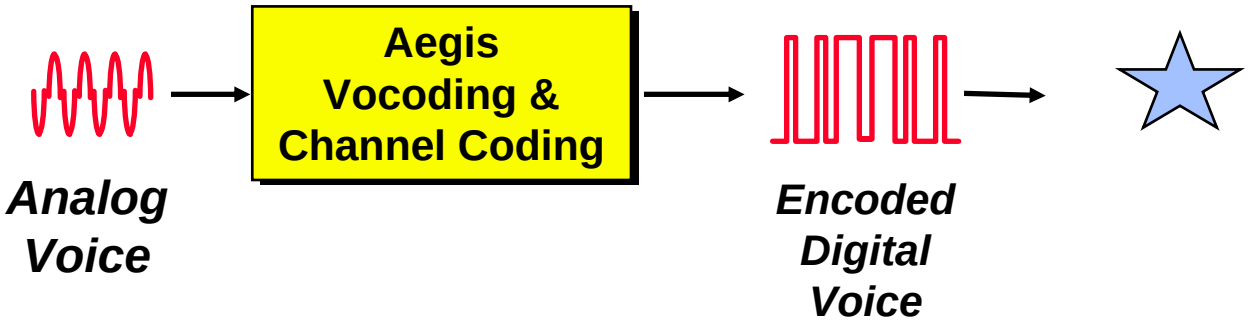


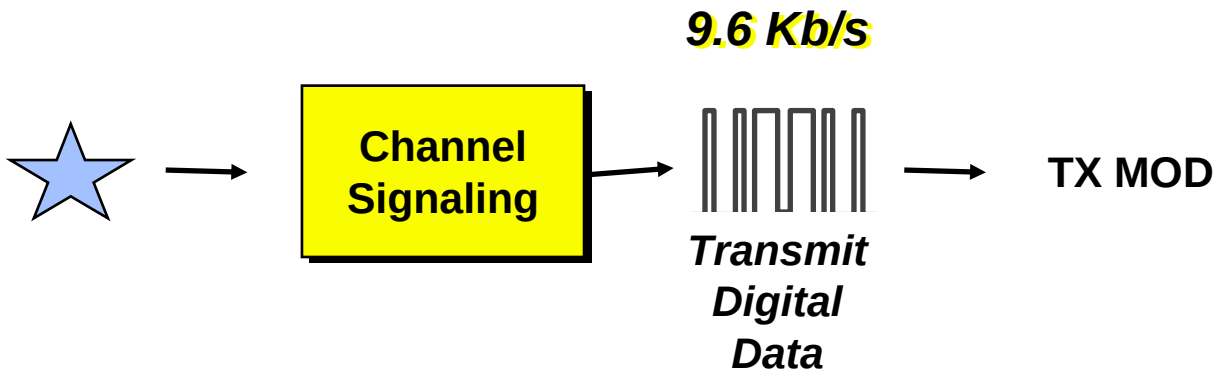
Interoperability Matrix
Operational Voice Mode

Radio	Analog	Aegis Digital	Aegis Encrypted	Voice Guard
Analog	X			
Voice Guard	X			X
Aegis Digital	X	X		
Aegis Encrypted	X	X	X**	X**

**Aegis Encrypted or Voice Guard is programmable on a per system basis

Aegis Implementation





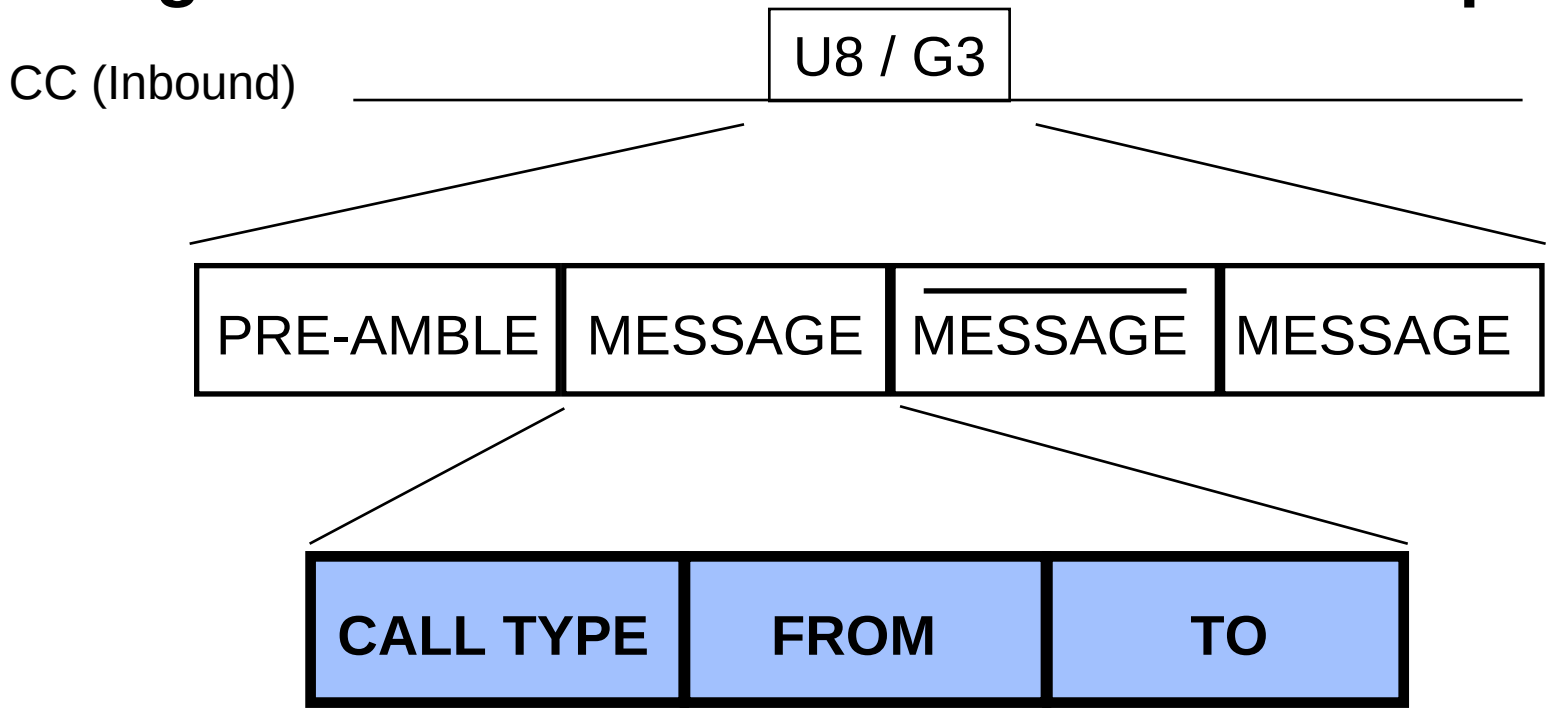
Section 2 -- Aegis on EDACS

Digital Calls on EDACS

EDACS Site Configuration

Aegis Call Flow Through the GETC

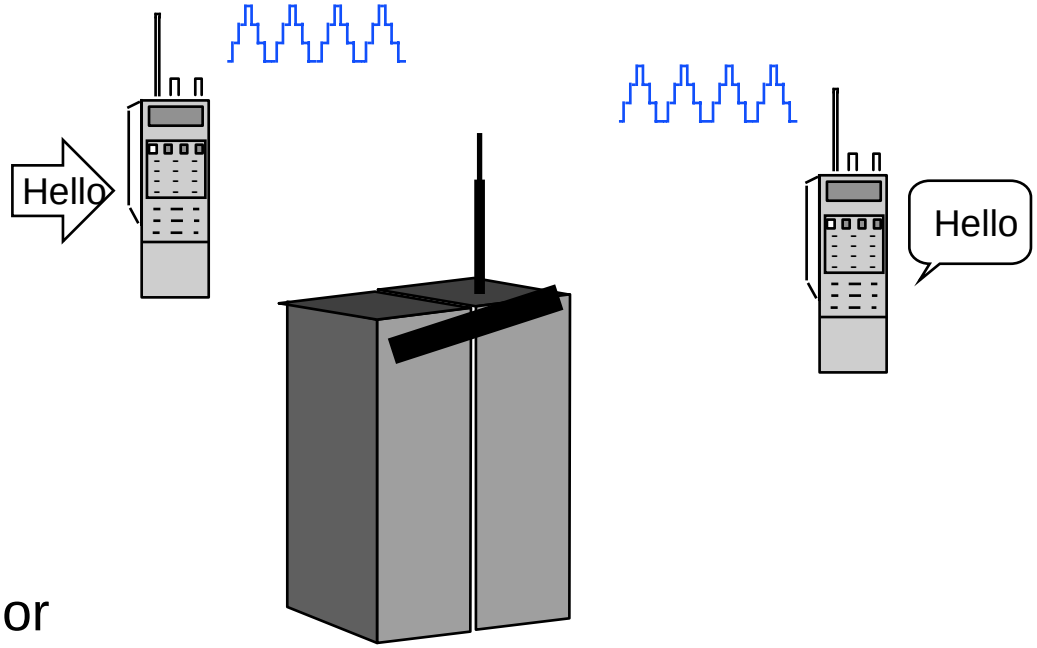
Aegis on EDACS -- Calls & Channel Request



Call Mode	Group	Unit	Group ID
Analog Voice	Individual		Individual LID
Digital Voice	Emergency Group		Telephone? **NO!**
Digital Data	System All Call		**MAYBE?**

Aegis on EDACS

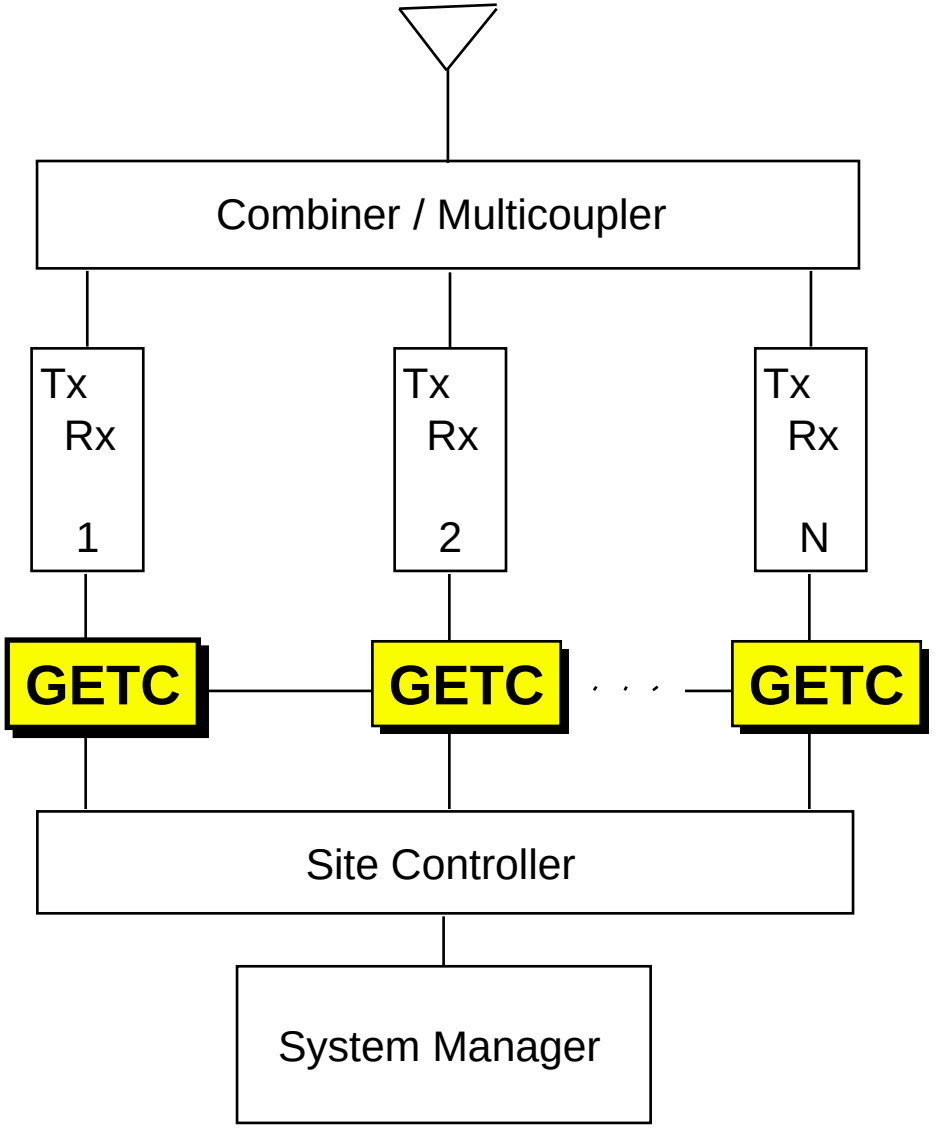
- Group Calls
  - Groups are programmed for digital voice or encryption
  - Done via the pc programmer
- Individual Calls
  - Individual Call List Indicates if Call is Digital or Analog
  - Use the “System” key for digital voice or encryption
  - Done via the pc programmer
- Cryptographic Keys Entered via Key Loader



Aegis on EDACS - GETC Requirements

GETC Programming

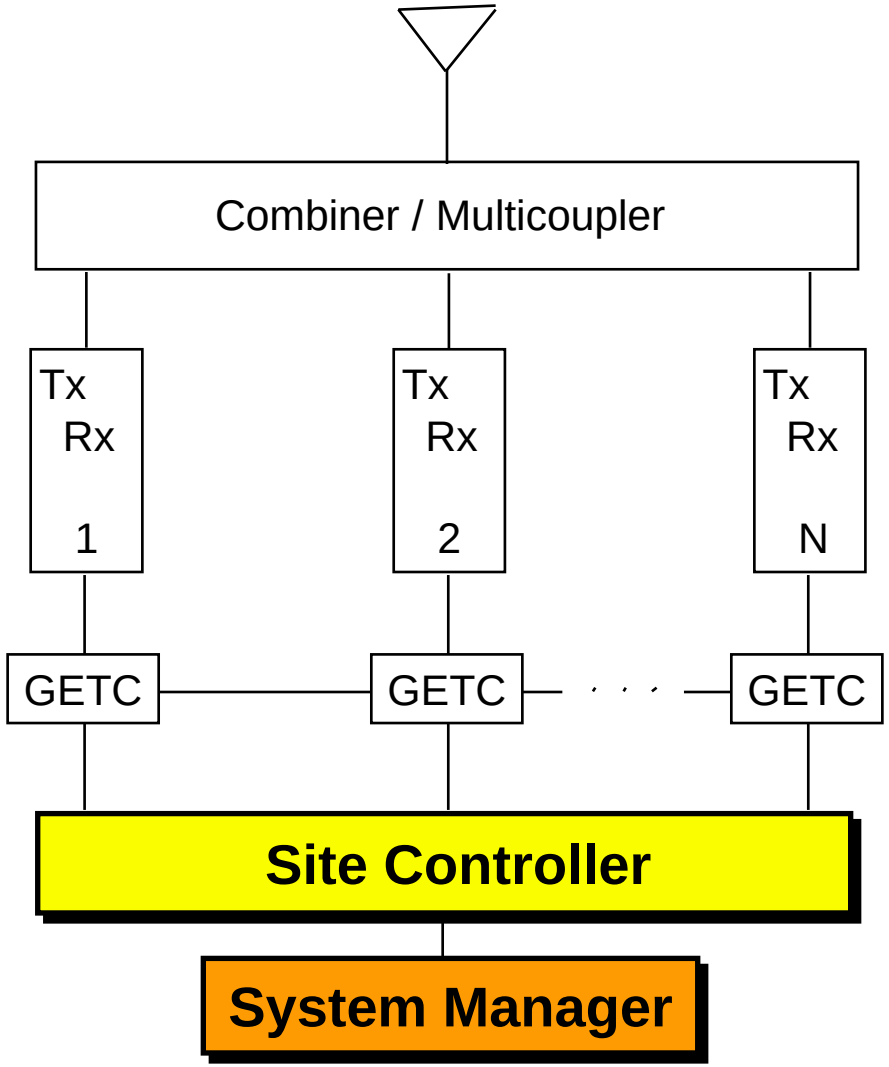
- Each Channel must be enabled for Voice Guard (Digital)
- Done via GETC Personality PC Programmer
- Basic or Level 1 Site



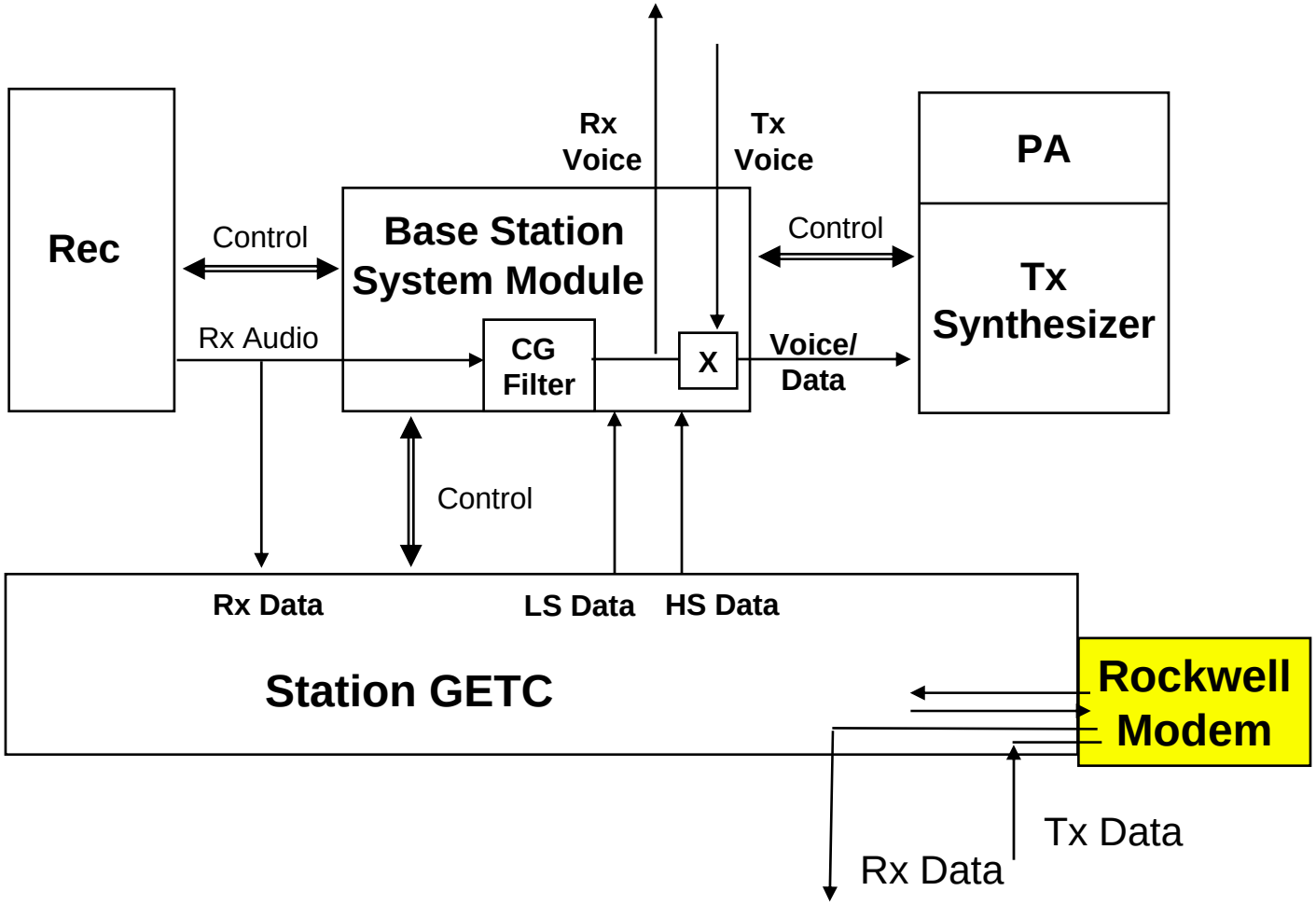
Aegis on EDACS - Site Requirements

RF Channels

- Must be enabled for Digital Voice
- Done via System Manager
- Uploaded to Site Controller



Aegis Through the GETC



Section 3 -- Aegis Programming and Operation

Programming Groups for Aegis

Programming Special Calls

Private Mode Operation

Inter-Operability

CUE

Aegis Programming - System Mode

Sys	Name	Freq Set	Typ	Site	Unit	Group Set	Fs	E/A	E/D	DIGIT MODE	DIGIT/ Key	MPD Bck Alt
1	FAB	FAB	T	1	15101	TRAINING				AEG	DIG	
2	CSC	CSC	C	2	15101	AMS				VG	2	
3												

DIGIT MODE

- Type of speech vocoding used for that system
  - –Aegis
  - –Voice Guard
  - –Clear -- Orion & M-RK

- Different systems can have different modes

Aegis Groups

Group Set Definition

Gr	Name	GID	Scn	Tx	Call	DIG/ - Key	MPD- Bck	MPD- Alt
1	TRNG-1	1377	On	On	On	DIS	On	On
2	TRNG-2	1378	On	On	On	DIG	On	On
3	TRNG-VG	1381	On	On	On	2	On	On

Aegis Groups Are Defined in the Group Set

- Disable -- Clear or Analog
- Digital -- Aegis unencrypted
- Key Number -- Encryption is used

  Only 1 key number for each group

Radio uses this Group Key when transmitting or receiving on the Group

Encryption Keys & The Key Number

Can have up to 6 keys stored in radio

- Numbered 1 - 6
- Refer to locations in memory
  - Key 1 = The encryption key stored at location 1
- M-RK & Orion have 7 keys and up to 8 key banks
  - Specify 1 key bank per system

Keys loaded with a key loader

The System Key

Sys	Name	Freq Set	Typ	Site	Unit	Group Set	Fs	E/A	E/D	DIGIT MODE	DIGIT/ Key	MPD Bck	MPD Alt
1	FAB	FAB	T	1	15101	TRAINING				AEG	DIG		
2	CSC	CSC	T	2	15101	AMS				VG	2		
3													

Options

- Disable -- Clear or Analog
- Digital --unencrypted
- Key Number -- Encryption

Used for

- Receiving Agency and Fleet All Calls
- Transmitting & Receiving Individual Calls
- Transmitting & Receiving Telephone Interconnect Calls

Aegis Individual Calls

Call	Name	Type	DIG	Number
1	JACK	Call1	On	7775
2	RICK	Call1	On	7214
3	NANCY	Call1	Off	7907

Defined in Special Call List

- Digital Call if DIG = On
- Uses the System Key to transmit

Receiving Clear/Digital/Encrypted

Call is Transmitted	**Clear**	**Digital**	**Private**
Clear (Analog)	Yes	Yes	Yes
Digital (Unencrypted)	No	Yes	No
Private (Encrypted)	No	No	Yes

Private Mode

Private Mode Indicator

No Transmission if a key is not loaded

Private (Encrypted) Mode Operation

- Forced Private - Can’t disable private mode
- Switched
  - Can select/deselect private mode operation
  - Use “Private” button
- Autoselect
  - Radio returns the call in the same mode it was received

VGE and CUE

CUE -- Customer Unique Encryption

- Used With VGE *only*
- Additional 64 bits
- Used for additional encryption/decryption
- Programmed into the radio via pc programmer

Notes

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