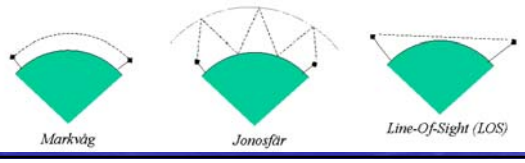
Frekvensband

3 kHz-30 kHz	VLF (very low frequency)	Markvåg
30 kHz-300 kHz	LF (low frequency)	Markvåg
300 kHz-3 Mhz	MF (medium frequency)	Markvåg
3 Mhz-30 Mhz	HF (high frequency)	Jonosfärisk utbredning
30 Mhz-300 MHz	VHF (very high frequency)	Nästan LOS
300 MHz-3 GHz	UHF (ultra high frequency)	LOS
3 GHz-30 GHz	SHF (super high frequency)	LOS
30 GHz-300 GHz	EHF (extremely high freq.)	LOS
1000 GHz-10^{12} GHz	IR, visible light, UV	LOS



Medium Frequency (Gränsvåg)

- Räckvidd dagtid: 200 – 300Nm
- Räckvidd nattetid: <600Nm

Medium Frequency (Gränsvåg)

- Nödtrafik
- Säkerhetstrafik
- Telefonsamtal
- Ship-ship

- DSC
- Telefoni
- Telex

Nödfrekvenser

- **DSC**
  - (Ch 70)
  - **2187,5 kHz**
- **Radiotelefoni**
  - (Ch 16)
  - **2182 kHz**

Frekvenser MF

2182 kHz	**Telefoni (H3E) Nöd, anrop, svar på anrop**
2187,5 kHz	**DSC (F1B) Nödanrop**
2177 kHz	**DSC (F1B) Anrop**
3352 kHz	**Telefoni (J3E) ship-ship svenska handelsfartyg**

Frekvenser MF

- List of Coaststations
- RR
- Sjöfartsverket

Telefonsamtal MF

- Stockholmradio: 2182 kHz
- Enligt LoC ex.

HF

- Utrustningskrav i A4 men är också vanligt i A3
- DSC
- Telefoni
- Radiotelex

Ungefärlig räckvidd

HF-band	DSC	Nöd tfn	Dagtid	Nattetid
HF4	4207,5 kHz	4125 kHz	300 M	1000 M
HF6	6312 kHz	6215 kHz	600 M	1500 M
HF8	8414,5 kHz	8291 kHz	1000 M	2000 M
HF12	12577 kHz	12290 kHz	2500 M	
HF16	16804,5 kHz	16420 kHz	X000 M	

Nödfrekvenser

- **DSC**
  - (Ch 70)
  - 2187,5 kHz
  - **4207,5 kHz**
  - **6312 kHz**
  - **8414,5 kHz**
  - **12577 kHz**
  - **16804,5 kHz**
- **Radiotelefoni**
  - (Ch 16)
  - 2182 kHz
  - **4125 kHz**
  - **6215 kHz**
  - **8291 kHz**
  - **12290 kHz**
  - **16420 kHz**

HF-frekvenser

- Anropskanaler
- Trafikkanaler
- Simplexfrekvenser
- Dsc-frekvenser

Val av kustradiostation

- Avstånd till mottagare
- Avstånd till kustradiostation
- Tjänster?
- Frekvenser enligt List of Coastation el motsvarande

Simplexfrekvenser HF

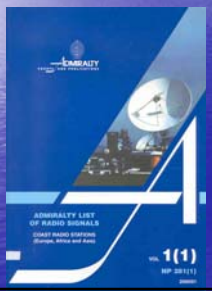
4 MHz band		6 MHz band		8 MHz band2		12 MHz band	
Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency
4 146 4 149	4 147.4 4 150.4	6 224 6 227 6 230	6 225.4 6 228.4 6 231.4	8 294 8 297	8 295.4 8 298.4	12 353 12 356 12 359 12 362 12 365	12 354.4 12 357.4 12 360.4 12 363.4 12 366.4

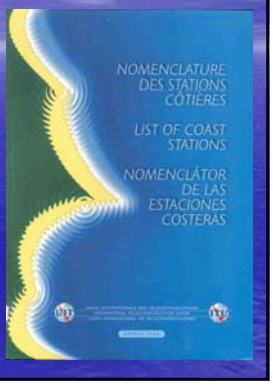
Frekvenser/kanaler

- Stockholmradio ”Seaphone”
  ch 420 , 801, 1203, 1608
- Andra kustradiostationer: Enligt LoC ex.

Publikationer

- **RR Appendix S 16:**
- A list of coast stations



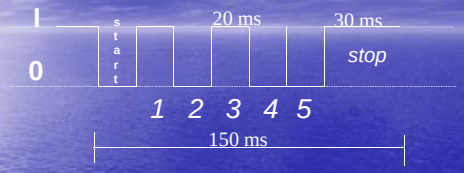


Radio Telex historia

- Teleprinter Exchange.
- 1940-50 utvecklades Automatic Teleprinter Network samtidigt med Telephone Exchange (PSTN)
- Experiment med Radio Telex för handelsfartyg startade på 60-talet.

Telex characters / Baudot

Telex characters / Baudot



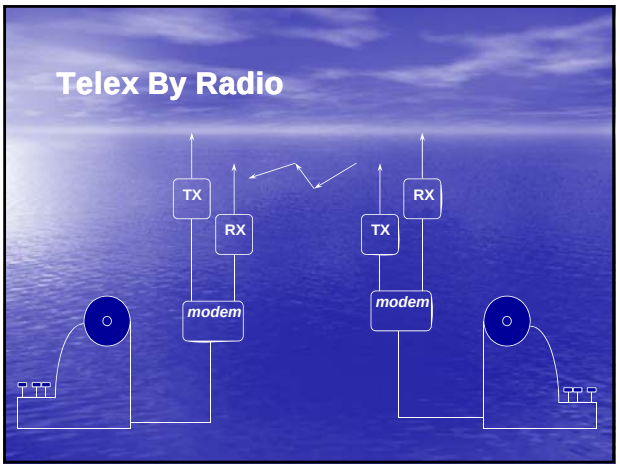
Ger 32 tecken

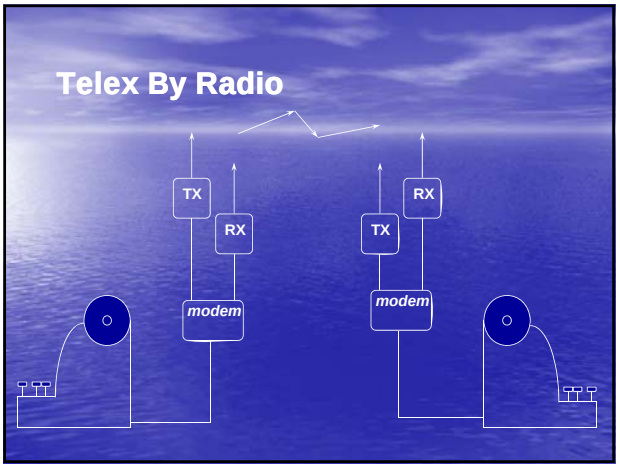
Table for the 2 ^5 bits Baudot Code

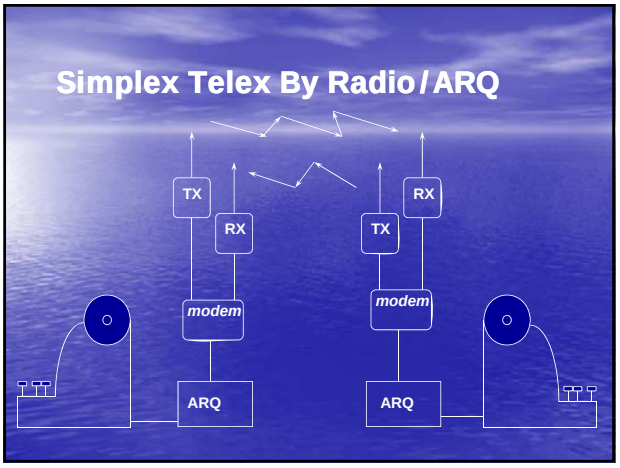
NR:	Letter	NR:	Letter
1	A	17	Q
2	B	18	R
3	C	19	S
4	D	20	T
5	E	21	U
6	F	22	V
7	G	23	W
8	H	24	X
9	I	25	Y
10	J	26	Z
11	K	27	Carriage Return
12	L	28	Line Feed
13	M	29	Letter Shift
14	N	30	Figure Sift
15	O	31	Space
16	P	32	Transport

Table for the 2 ^5 bits Baudot Code

NR:	Letter	Figures	NR:	Letter	Figures
1	A	-	17	Q	1
2	B	?	18	R	4
3	C	:	19	S	'
4	D	WRU	20	T	5
5	E	3	21	U	7
6	F	! (Å)	22	V	=
7	G	& (Ä)	23	W	2
8	H	# (Ö)	24	X	/
9	I	8	25	Y	6
10	J	BELL	26	Z	+
11	K	(	27	Carriage Return	
12	L	)	28	Line Feed	
13	M	.	29	Letter Shift	
14	N	,	30	Figure Sift	
15	O	9	31	Space	
16	P	0	32	Transport	


Telex By Radio
TX
RX
RX
TX
modem
modem


Telex By Radio
TX
RX
RX
TX
modem
modem


Simplex Telex By Radio / ARQ
TX
RX
RX
TX
modem
modem
ARQ
ARQ

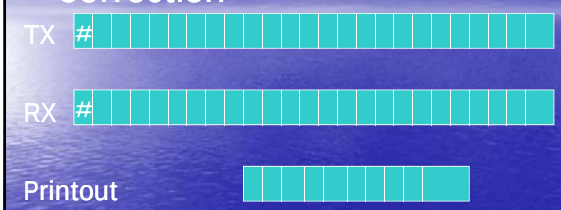
FEC - Forward Error Correction

- FEC eller ”Broadcast mode”
- Exempel: Navtex

FEC - Forward Error Correction

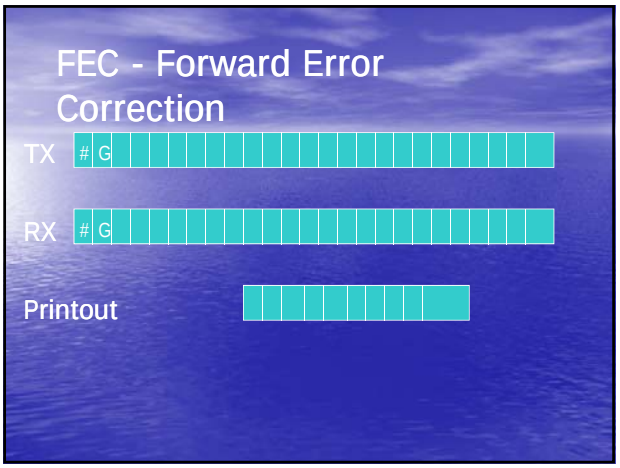
All characters will be send twice but with a five character face shift.

FEC - Forward Error Correction

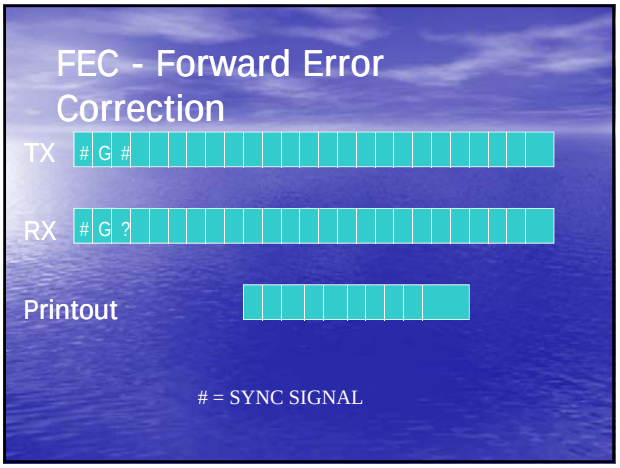


= SYNC SIGNAL

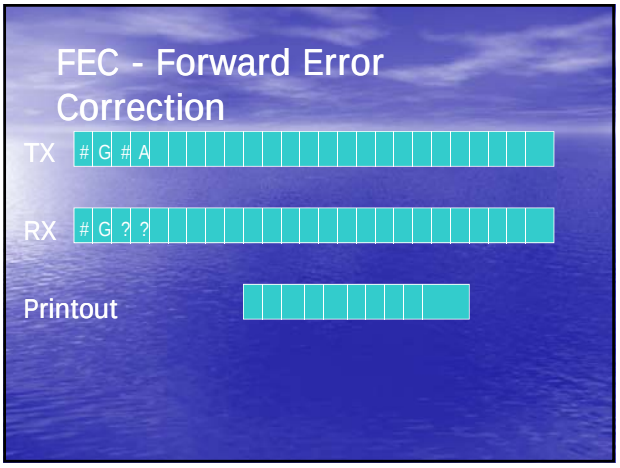
FEC - Forward Error Correction



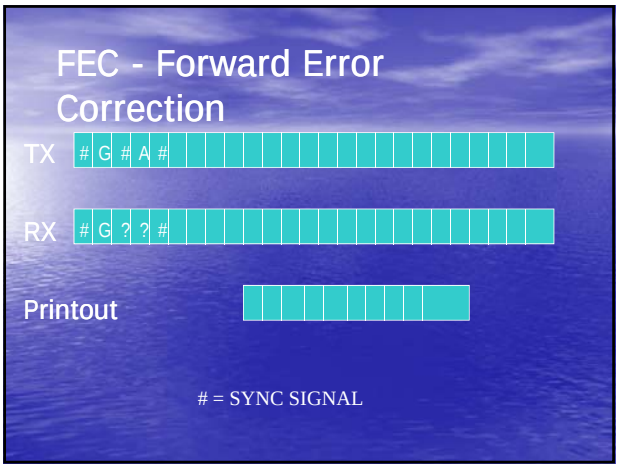
FEC - Forward Error Correction



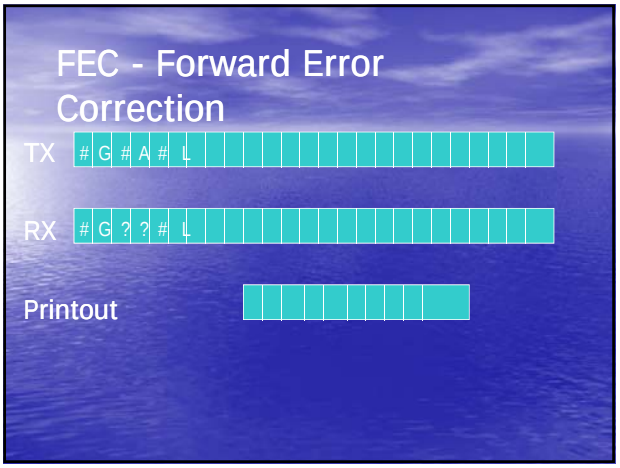
FEC - Forward Error Correction



FEC - Forward Error Correction



FEC - Forward Error Correction



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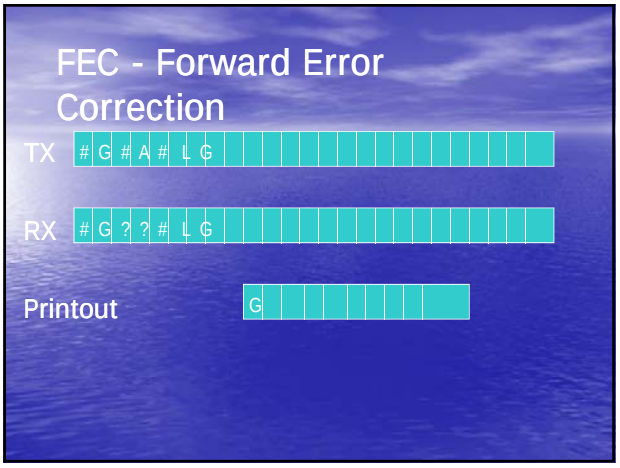

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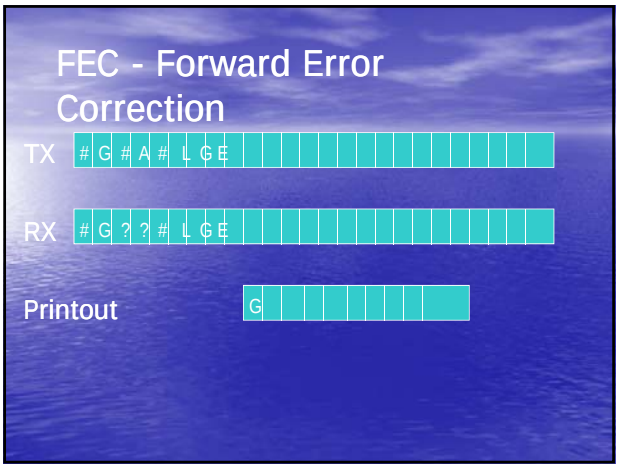
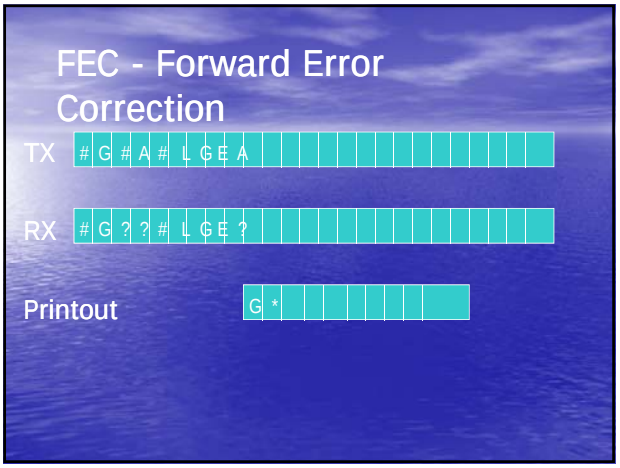
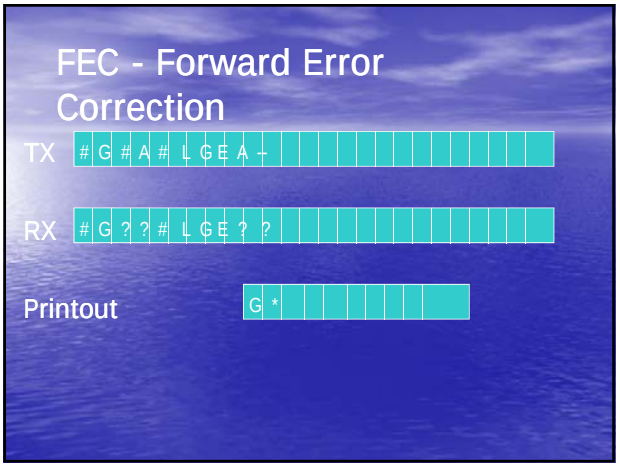


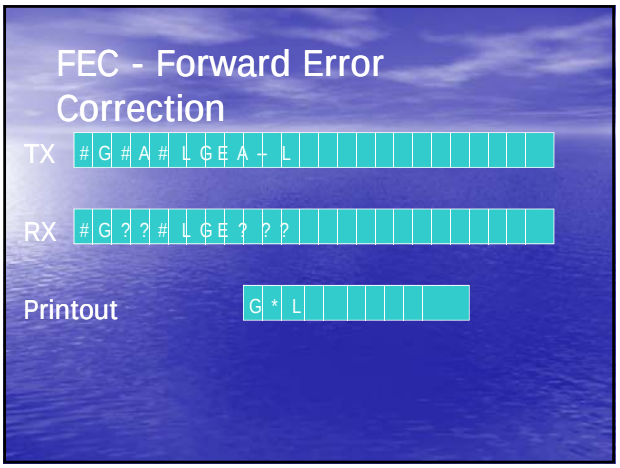
FEC - Forward Error Correction



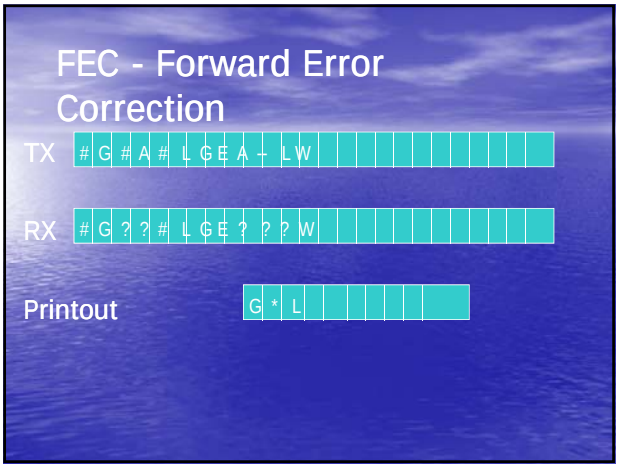
FEC - Forward Error Correction



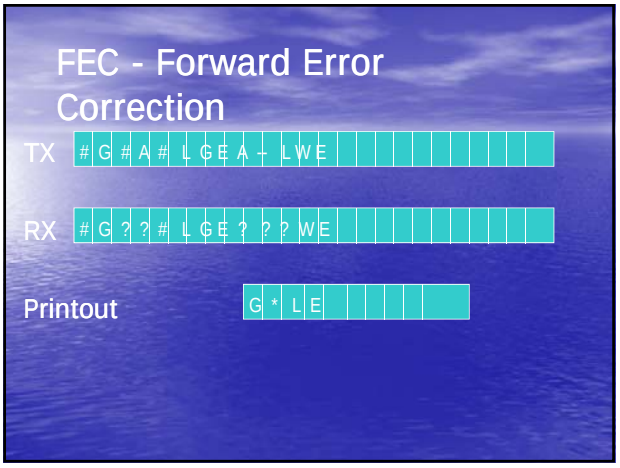
FEC - Forward Error Correction



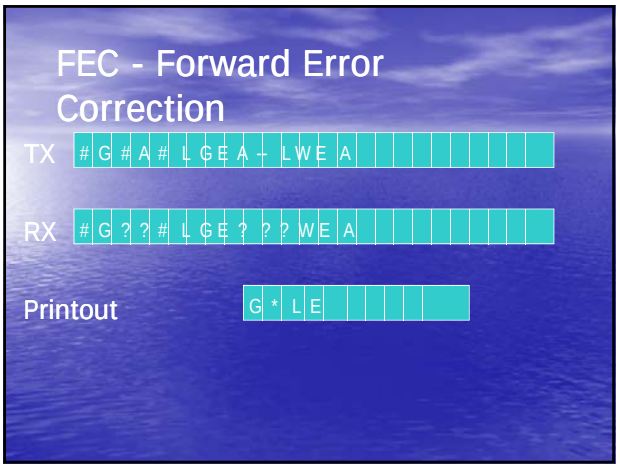
FEC - Forward Error Correction



FEC - Forward Error Correction



FEC - Forward Error Correction



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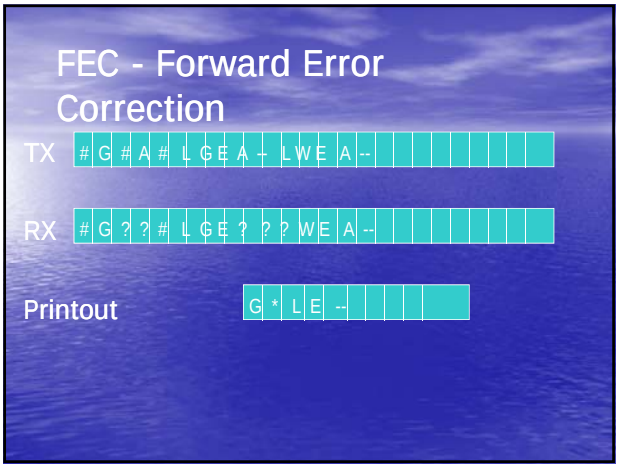
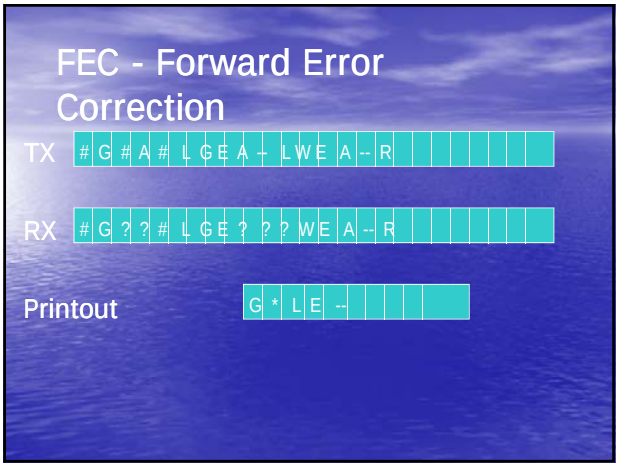


FEC - Forward Error Correction



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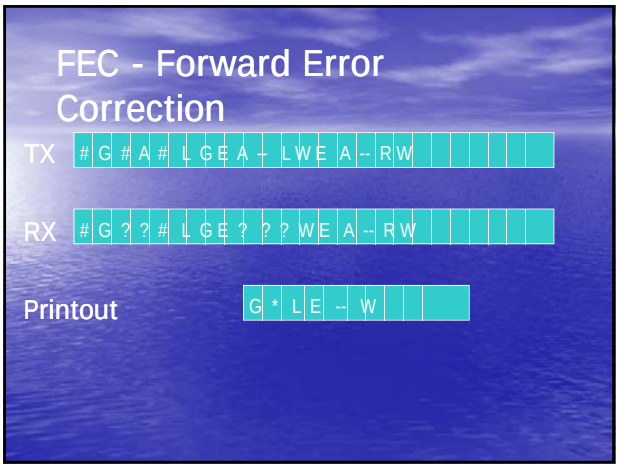
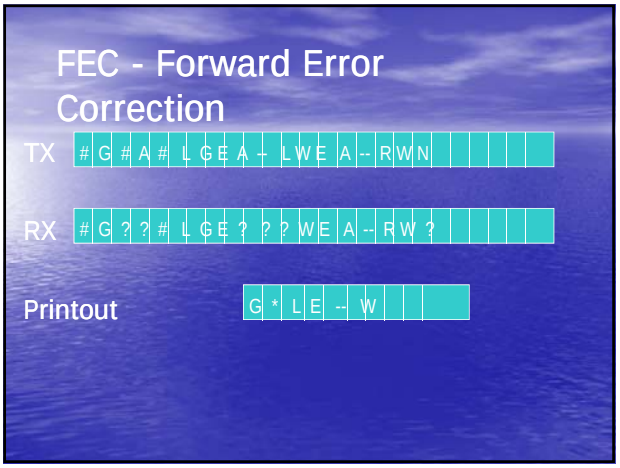


FEC - Forward Error Correction



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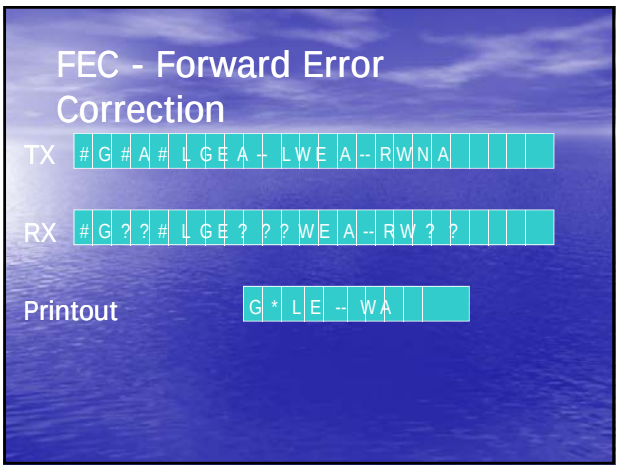

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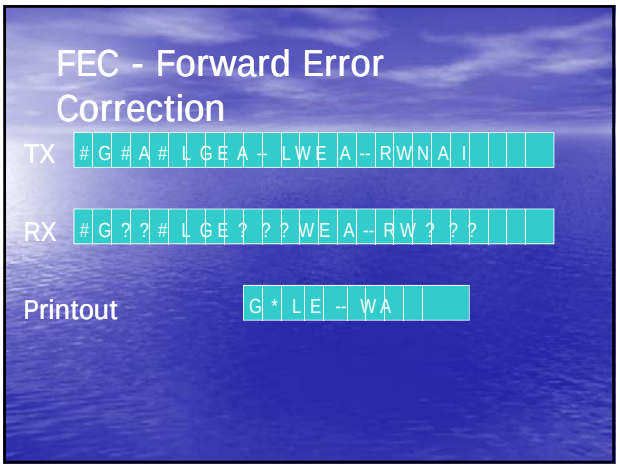
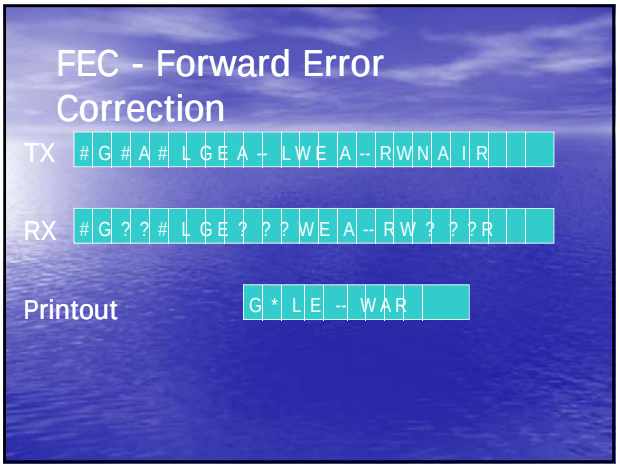
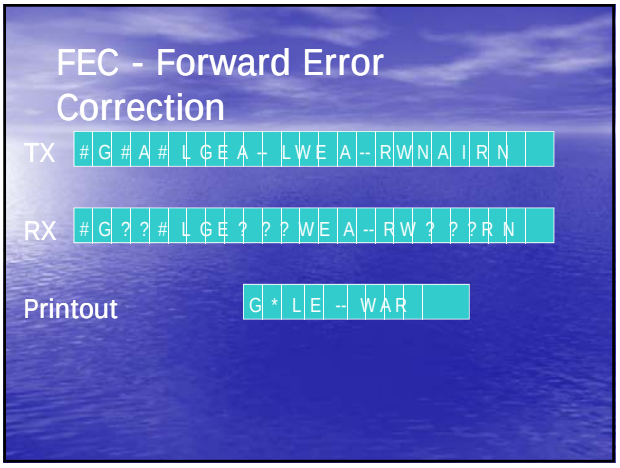


FEC - Forward Error Correction



FEC - Forward Error Correction



FEC - Forward Error Correction

TX #G#A# LGEA-- LWEA--RWNAIRNN

RX #G??# LGE?? ??WEA--RW?? ??RN
N

Printout G*LE-- WARN ....

FEC - Forward Error Correction

TX #G#A# LGEA-- LWEA--RWNAIRNN
G

RX #G??# LGE?? ??WEA--RW?? ??RN
NG

Printout G*LE-- WARN ....

Our Interpretation: ***Gale warning***