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ETSI TM4 3-11GHz standards
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Inform IEEE 802.16 about the ETSI 3-11GHz standards
Notice:

Release:

IEEE Patent Policy:

ETSI 3-11GHz standards

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Contents

- General parameters
- Jersey meeting: TDMA enhancements

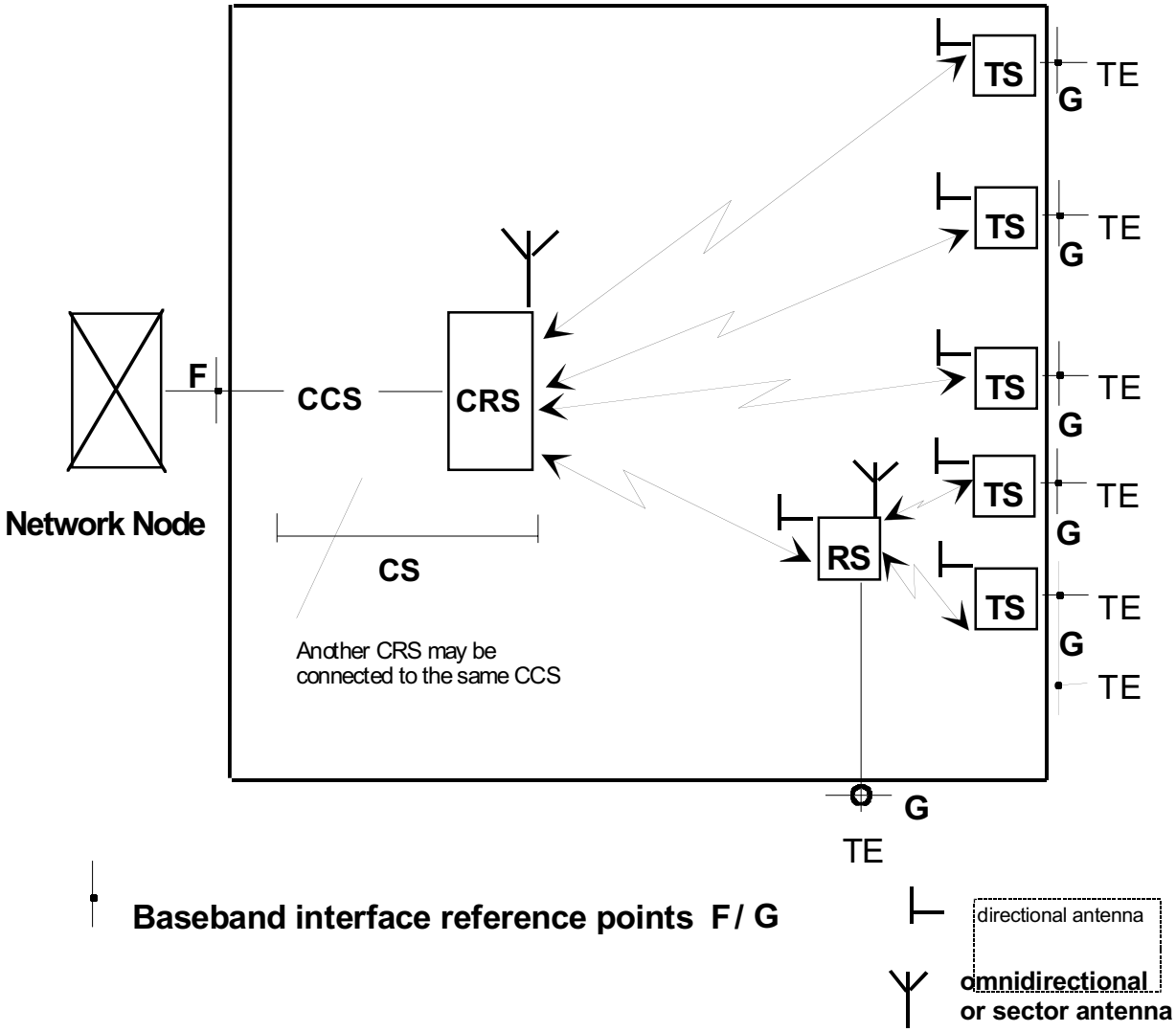
What standards?

- Digital P-MP Systems
  - TDMA - EN 301 021
  - FDMA - EN 301 080
  - DS-CDMA - EN 301 124
  - FH-CDMA - EN 301 253
  - CDMA/TDMA - EN 301 744
- Antenna
  - EN 301 085
- Conformance testing EN 301 126

Parameters

- Now unified under “Generic Wording” draft
- Parameters type
  - System Architecture
  - System Parameters
    - Capacity
    - Performance
    - Voice requirements, etc.
  - Radio
    - Access method specific
  - Interfaces
  - Power supplies

Block Diagram



ETSI proprietary diagram

Frequencies

Frequency band	Band limits	Recommendation
3,5 GHz	3 410 MHz to 3 600 MHz	CEPT ERC Recommendation T/R 14_03
3,7 GHz	3 600 MHz to 4 200 MHz	CEPT ERC Recommendation T/R 12_08
10,5 GHz	10,15 GHz to 10,3 GHz paired with 10,50 GHz to 10,65 GHz	CEPT ERC Recommendation T/R 12_05

Channel Spacing

- Generally:
  - 1.75, 3.5, 7, 14, 28MHz
- In DS-CDMA: also 5,10,15MHz
- In CDMA/TDMA: 24MHz

Capacity

- Defined as gross bit rate in newer standards
- Minimum requirement: 1bit/s/Hz
- Related to channel spacing in most of the standards
- Related to modulation states
- DS-CDMA: related also to Terminal Station number

Transmitter characteristics

- Tx power range
- Spectrum masks
  - Generally: defined for 1.75, 3.5,7,14,28MHz
- Spurious emissions
  - CEPT/ERC Recommendation 74-01
  - Starts at 250% of channel spacing

Receiver characteristics

- Input level range
- Spurious emissions
  - CEPT/ERC Recommendation 74-01
- BER performance
  - General eq.:
    For BER = 10-3: (-93 + 10log10[gross bit rate Mbit/s]) dBm;
    For BER = 10-6: (-89 + 10log10[gross bit rate Mbit/s]) dBm.
  - For DS-CDMA: as function of TS number also
- Co-channel and adjacent channel interference sensitivity
  - BER degradation or RSL degradation approaches

Actual Values

- Lets take a look at the documents….

Unpublished yet TDMA enhancements – Dec. 1999

- Type C: to support DECT
  - Low bit-rate
  - Lower receive sensitivities
  - Same mask as type A
- Type D: to support 64QAM
  - 3 bit/s/Hz
  - new mask

Unpublished yet TDMA enhancements – June 2000

- High coexistence – HC type
  - 1 bit/s/Hz, but better (3-4dB) sensitivity
  - New mask
  - Co-channel and adjacent channel better parameters
- OFDM
  - 1,2,3 bits/s/Hz with same sensitivities, co-channel and adjacent channel immunity as QAM
  - New masks