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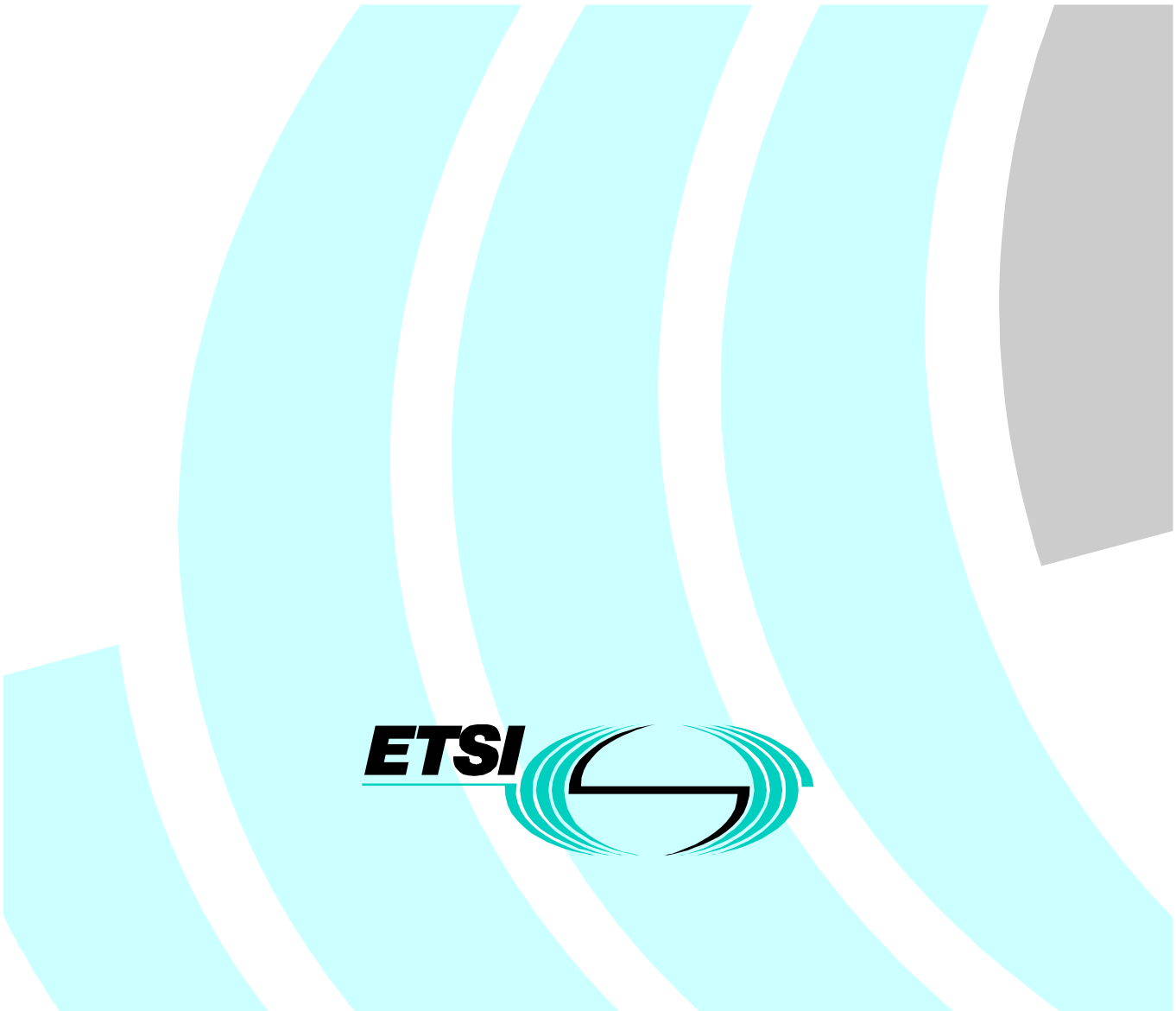
Technical Report

Transmission and Multiplexing (TM);
Terms and definitions in transport networks;
Part 3: Fixed Radio Systems



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Contents

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Transmission and Multiplexing (TM).

The present document is part 3 of a multi-part Technical Report covering the Definitions and Abbreviations in transport networks, as identified below:

Part 1: "Core networks";

Part 2: "Access networks";

Part 3: "Fixed Radio Systems".

1 Scope

The present document lists the preferred definitions and abbreviations relevant to fixed radio system standardization within ETSI Working Group TM4. The definitions and abbreviations have been extracted from the documents shown in clause 2.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] ITU-R Recommendation F.746: "Radio-frequency channel arrangements for radio-relay systems" (revision 1998)".

[2] ITU-R Recommendation F.1191-1 (1997): "Bandwidths and unwanted emissions of digital radio-relay systems".

[3] ITU-R Recommendation F.750-3 (1997): "Architectures and functional aspects of radio-relay systems for SDH-based networks".

[4] ITU-R Recommendation F.1399 (1999): "Vocabulary of terms for wireless access".

[5] EN 301 215-1: "Fixed Radio Systems; Point to Multipoint Antennas; Antennas for point-to-multipoint fixed radio systems in the 11 GHz to 60 GHz band; Part 1: General aspects".

[6] EN 301 253: "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Frequency Hopping Code Division Multiple Access (FH-CDMA); Point-to-multipoint DRRS in frequency bands in the range 3 GHz to 11 GHz".

[7] TR 101 274: "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Point-to-multipoint DRRS in the access network: Overview of different access techniques".

[8] EN 301 213-1: "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Point-to-multipoint DRRS in frequency bands in the range 24,25 GHz to 29,5 GHz using different access methods; Part 1: Basic parameters".

[9] EN 300 197 (V1.2): "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Parameters for DRRS for the transmission of digital signals and analogue video signals operating at 38 GHz".

[10] EN 301 129: "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Synchronous Digital Hierarchy (SDH); System performance monitoring parameters of SDH DRRS".

[11] EN 301 126-1: "Fixed Radio Systems; Conformance testing; Part 1: Point-to-Point equipments - Definitions, general requirements and test procedures".

[12] EN 301 128: "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Plesiochronous Digital Hierarchy (PDH); Low and medium capacity DRRS operating in the 13 GHz, 15 GHz and 18 GHz frequency bands".

[13] EN 45001: "General criteria for the operation of testing laboratories".

[14] EN 45002: "General criteria for the assesment of testing laboratories".

[15] ITU-R Recommendation F.594-4 (1997): "Error performance objectives of the hypothetical reference digital path for radio-relay systems providing connections at a bit rate below the primary rate and forming part or all of the high grade portion of an integrated services digital network"

[16] ITU-R Recommendation F.592-2 (1990): "Error performance objectives of the hypothetical reference digital path for radio-relay systems providing connections at a bit rate below the primary rate and forming part or all of the high grade portion of an integrated services digital network".

[17] ITU-R Recommendation F.634-4 (1997): "Error performance objectives for real digital radio-relay links forming part of the high-grade portion of international digital connections at a bit rate below the primary rate within an integrated services digital network".

[18] ITU-R Recommendation F.696-2 (1997): "Error performance and availability objectives for hypothetical reference digital sections forming part or all of the medium-grade portion of an ISDN connection at a bit rate below the primary rate utilizing digital radio-relay systems".

[19] ITU-R Recommendation F.697-2 (1997): "Error performance and availability objectives for the local-grade portion at each end of an ISDN connection at a bit rate below the primary rate utilizing digital radio-relay systems".

[20] ITU-R Recommendation SM.329-7 (1997): "Spurious emissions".

[21] ITU-T Recommendation G.861 (1996): "Principles and guidelines for the integration of satellite and radio systems in SDH transport networks".

[22] CEPT/ERC Recommendation 74-01: "Spurious emissions".

[23] ITU-R Recommendation F.1092-1 (1997): "Error performance objectives for constant bit rate digital path at or above the primary rate carried by digital radio-relay systems which may form part of the international portion of a 27 500 km hypothetical reference path".

[24] ITU-R Recommendation F.1189-1 (1997): "Error performance objectives for constant bit rate digital paths at or above the primary rate carried by digital radio-relay systems which may form part or all of the national portion of a 27 500 km hypothetical reference path".

[25] ITU-R, "Radio Regulation Article 1", Geneva 1998.

[26] ITU-T Recommendation G.821 (1996): "Error performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network".

[27] ITU-T Recommendation G.826 (1999): "Error performance parameters and objectives for international, constant bit rate digital paths at or above the primary rate".

3 Definitions and abbreviations

3.1 Introduction

Definitions have been organised in the table given in subclause 3.2, sorted in alphabetical order according to the term itself. In addition to the corresponding abbreviation and definition, an additional field identifies the context in which the term is habitually used. A redundant table is given in subclause 3.3, where the terms are sorted according to the abbreviation, if there is one.

3.2 List sorted by terms

Term	Abbreviation	Definition	Context
Accreditation		Formal recognition that a testing laboratory is competent to carry out specific tests or specific types of test	Conformance test
Accreditation body		Body that conducts and administers a laboratory *ACCREDITATION SYSTEM* and grants *ACCREDITATION*	Conformance test
Accreditation system		System that has its own rules of procedure and management for carrying out laboratory *ACCREDITATION*	Conformance test
Accredited laboratory		Testing laboratory to which *ACCREDITATION* has been granted in accordance with the ISO guides 25 and 28 or EN 45001 [13] and 45002 [14]	Conformance test
Allocated frequency band		Allocation (of a frequency band): entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radioastronomy service under specific conditions. This term shall also be applied to the frequency band concerned (RR Article 1, No. 17 [25]). For DRRS the allocated frequency band may be considered as the overall frequency band allocated to the FS on a primary or co-primary basis	Spectrum management parameters
Alternated radio-frequency channel arrangements		Methodology of frequency band usage in Fixed Service (see figure 1a)	Radio frequency channel arrangements
Antenna		That part of the transmitting or receiving system that is designed to radiate and/or receive electromagnetic waves. It may be integral part of a Radio system or a separate stand-alone element	General
Antenna cross-polar discrimination	XPD	The difference in dB between the peak of the co-polarized main beam and the maximum cross-polarized signal over an angle measured within a defined region	Antennas for Fixed radio systems
Antenna gain		The ratio of the radiation intensity, in a given direction, to the radiation intensity that would be obtained if the power accepted by the antenna was radiated isotropically	Antennas for Fixed radio systems
Approval testing		Approval testing is required for approval of the *Implementation Under Test* (IUT) by the appropriate authority for regulatory purposes. In this context approval implies that the IUT has met the *Essential requirements* of the ETS/EN against which it has been tested	Conformance test
Assigned frequency		The centre frequency of a radio frequency channel	Spectrum management parameter
Automatic transmit power control	ATPC	Dynamic power control of transmitter derived from the receiver level (controlled loop)	Interference reduction methodology
Background BER (Bit-error ratio)	BBER	Terminology used in WG TM4 for long term BER (bit-error ratio) evaluated on simulated hop at a *Receive signal level* usually 15 dB above the 10^{-3} threshold or above. Defined also as: *Residual bit error rat*io *(RBER)* performance objective in ITU-R Recommendations F.594-4 [15], F.634-4 [17], F.696-2 [18] and F.697-2 [19] based on ITU-T Recommendation G.821 objectives [26]	General
Background BER (Block-error ratio)	BBER	Defined as one of the error performance objectives in ITU-R Recommendations F.1092-1 [23] and F.1189-1 [24] based on ITU-T Recommendation G.826 objectives [27]. Long term BER (block-error ratio) evaluated on simulated hop	General

Term	Abbreviation	Definition	Context
Base-band	BB	Digital processing on payload and additional service capacity and systems controls preceding the modulation and following the demodulation processes	General
Boresight		The axis of the *Main beam* in a directional antenna	Antennas for Fixed radio systems
Broadband wireless access	BWA	Defined in ITU-R Recommendation F.1399 [4] as "*Wireless access* in which the connection(s) capabilities are higher than the primary rate".	P-MP systems
Carrier to Interference ratio	C/I	Ratio between wanted and a generic unwanted signals causing potential system degradation	General
Central controller station	CCS	Element of a Central Station in P-MP systems (see figure 2)	P-MP systems
Central radio station	CRS	Element of a Central Station in P-MP systems (see figure 2)	P-MP systems
Central station	CS	Central element in P-MP systems (see figure 2)	P-MP systems
Channel separation	CS	Bandwidth equal to the frequency separation, defined in ITU-R Recommendation F.746 [1], of adjacent channels of the relevant radio-frequency channel arrangement established within the allocated frequency band	Radio frequency channel arrangements
Chip		A unit of modulation used in *Direct Sequence Spread Spectrum* (DSSS) modulation	DS-CDMA P-MP systems
Chip rate		The number of chips per second e.g. Mchip/s	DS-CDMA P-MP systems
Chip sequence		A sequence of *chips* with defined length and chip polarities	DS-CDMA P-MP systems
Co-channel band re-use radio-frequency channel arrangements		Methodology of frequency band usage in Fixed Service (see figure 1b)	Radio frequency channel arrangements
Co-channel dual polarization systems	CCDP	Dual-coupled radio systems operating on both vertical and horizontal polarization using methods for XPD enhancement (XPIC)	Point-to-point HCDR
Complementary requirements		In a standard all those requirements not part of the *Essential requirements* are complementary requirements	Conformance test
Conformance testing		Conformance testing is the *Type testing* process to verify to what extent the *IUT* conforms to the standard	Conformance test
Co-polar channel separation	XS	Defined as the radio-frequency separation between the centre frequencies of adjacent radio-frequency channels on the same polarization and in the same direction of transmission; ITU-R Recommendation F.1191-1 [2] defines that it is equal to twice the Channel Separation for the alternated radio frequency channel arrangement of figure 1a and to the channel separation for the co-channel and interleaved band re-use radio frequency channel arrangements of figure 1b and figure 1c; the channel separation is also considered equal to the Channel Bandwidth	Radio frequency channel arrangements
Co-polar pattern		A diagram representing the *Radiation pattern* of a test antenna when the reference antenna is similarly polarized, scaled in dBi or dB relative to the measured *Antenna gain*	Antennas for Fixed radio systems
Cross-polar (discrimination) Improvement Factor	XIF	*XPD* improvement factor of a *Cross-polar interference canceller*, if implemented in the interfered receiver	*CCDP* systems
Cross-polar discrimination	$XPD_{H(V)}$	Defined as the following ratio in dB: [Power received on polarization H(V), transmitted on polarization H(V)] [Power received on opposite polarization V(H), transmitted on polarization H(V)]	Propagation related characteristic

Term	Abbreviation	Definition	Context
Cross-Polar Interference Canceller	XPIC	Circuitry used in digital demodulators to reduce co-channel interference produced by a like-modulated signal transmitted on opposite polarization	*CCDP* systems
Cross-polar pattern		A diagram representing the *Radiation pattern* of a test antenna when the reference antenna is orthogonally polarized, scaled in dBi or dB relative to the measured antenna gain	Antennas for Fixed radio systems
Demand assigned multiple access	DAMA	P-MP algorithm allowing dynamic sharing, among terminal stations, of the system capacity, according the current demand	P-MP systems
De-scrambler		Digital receive BB process, complementary to *Scrambler* to reproduce the original payload	Digital mo-demodulation processing
Digital radio relay systems	DRRS	Generic term for fixed radio systems in the transport network	General
Direct sequence code division multiple access	DS-CDMA	A form of modulation whereby a combination of data to be transmitted and a fixed code sequence (chip sequence) is used to directly modulate a carrier, e.g. by phase shift keying Spread spectrum methods	P-MP systems
Direct sequence spread spectrum	DSSS	A coded modulation with code rate larger than information rate used for spread-spectrum technologies	DS-CDMA P-MP systems
Dwell time		The duration of a transmission on a particular *Sub-channel*	FH-CDMA P-MP systems
Early warning	EW	Technique to evaluate the transmission channel degradation, faster than expected propagation phenomena, in order to activate an *Hitless* type *Radio Protection Switch* (*RPS*) prior than actual BER event is happening enhancing the error performance of a protected radio link	Radio protection switch and error performance
End-user		Defined in ITU-R Recommendation F.1399 [4] as "a human being, organization, or telecommunications system that accesses the network in order to communicate via the services provided by the network"	General
End-user connection point		Defined in ITU-R Recommendation F.1399 [4] as "point at which the *End-user* obtains the communications service"	General
End-user termination, end-user radio termination		Defined in ITU-R Recommendation F.1399 [4] as "the *End-user* radio equipment antenna"	P-MP systems
Essential requirements		The basic set of parameters and functions which are necessary to meet any regulatory obligations imposed for radio frequency co-ordination and, if applicable, for electromagnetic compatibility (EMC)	Conformance test
Evaluation Bandwidth	BWe	The bandwidth where a spectral density is normalized. Referred also as *Reference bandwidth* when spectrum density limits are concerned	Spectrum management parameters
Fading		Receiver level reduction due to adverse propagation caused by rain or *Multipath* Rain induced fading has usually a flat amplitude/frequency behaviour, while multipath induced fading has usually a selective amplitude/frequency behaviour	Propagation related characteristic
Fixed beam		The *Radiation pattern* in use is fixed relative to a defined mechanical reference plane	Antennas for Fixed radio systems
Fixed wireless access	FWA	Defined in ITU-R Recommendation F.1399 [4] as "*wireless access* application in which the location of the *end-user termination* and the network access point to be connected to the end-user are fixed.	P-MP systems

Term	Abbreviation	Definition	Context
Flat fade margin		Difference between nominal receiver power and a predefined receiver BER threshold of a radio system (including *ATPC* range if any)	*Radio hop* design
Forward error correction	FEC	Algorithm by which a bit-rate redundancy allows an amount of error correction	General
Frequency division duplex	FDD	Technique where go and return (P-P systems) or down-link and up-link (P-MP systems) transmission operate in two *RF channels* spaced by Tx/Rx Duplex Spacing provided by the relevant ERC or ITU-R channel arrangement	General
Frequency division multiple access	FDMA	Access methodology for P-MP systems where *Terminal Stations* operate on different sub-carriers inside a *RF channel*	P-MP systems
Frequency hopping	FH	A spread spectrum technique whereby individual radio links are continually switched from one *Sub-channel* to another. Such links are not constrained to a single *RF channel*	FH-CDMA P-MP systems
Frequency hopping code division multiple access	FH-CDMA	Access methodology for P-MP systems where each *Terminal Stations* operate in *Frequency Hopping* according a predefined (coded) *Hopping Sequence* inside a *RF channel*	P-MP systems
Full capacity load	FCL	Full capacity load (FCL) is defined by the maximum number of 64 kbit/s signals or the equivalent which can be transmitted and received by a single CRS within a specified RF-bandwidth, fulfilling a given performance and availability objectives in respect to fading conditions	P-MP systems
Full conformance		Full conformance is the status of the IUT when it has successfully passed all the requirements of the conformance testing process and therefore meets all the mandatory requirements of the standard	Conformance test
Guard-band	ZS	Bandwidth equal to the frequency separation, defined in ITU-R Recommendation F.746 [1] as ZS, between the nominal centre frequency of the outermost channel of a radio-frequency channel arrangement and the limit of the allocated band (see figure 1) ZS is also defined Guard Band by ITU-R Recommendation F.1191-1 [2]	Radio frequency channel arrangements
Half power beamwidth		The angle, relative to the *Main beam axis*, between the two directions at which the measured *Co-polar pattern* is 3 dB below the value on the main beam axis	Antennas for Fixed radio systems
High altitude platform station	HAPS	Defined in ITU-R Recommendation F.1399 [4] as "a station located on an object at an altitude of 20 to 50 km and at a specified nominal, fixed point relative to the Earth"	HAPS P-MP systems
High bit error ratio	HBER	Highest BER alarm threshold set in a digital Radio system (for protection switch activation and/or network management signalling)	General
High capacity digital radio	HCDR	Radio system with capacity higher than 100 Mbit/s (ITU-R definition)	General
Hitless switch		A switch event between a working and a protection channel which does not add any errors to those already produced by the propagation medium during the switching procedure	General
Hopping period		The time between the starts of successive transmissions on a different sub-channel. This is the sum of *Dwell time* and *Transition time*	FH-CDMA P-MP systems
Hopping sequence		The sequence of *Sub-channels* which a particular link follows	FH-CDMA P-MP systems
Implementation under test	IUT	Representative sample of equipment for the *Type testing*	Conformance test

Term	Abbreviation	Definition	Context
Innermost channel separation	YS	Defined as the radio-frequency separation between the centre frequencies of the go and return radio-frequency channels which are nearest to each other (also named innermost channels). In the case where go and return frequency sub-bands are not contiguous, such that there is a (are) band(s) allocated: for (an)other service(s) in the gap between, YS shall be considered to include the band separation (BS) equal to the total width of the allocated band(s) used by this (these) service(s) (see figure 1)	Radio frequency channel arrangements
Interleaved band re-use radio-frequency channel arrangements		Methodology of frequency band usage in Fixed Service (see figure 1c)	Radio frequency channel arrangements
Intermediate frequency	IF	Frequency used for analogue signal processing (e.g. filtering) prior (in IF to RF transmitters) or after (in RF to IF receivers) RF conversion	General
Inter-port isolation	IPI	It is the ratio in dB of the power level applied to one port of a multi-port antenna to the power level received in any other port of the same antenna as function of frequency	Antennas for Fixed radio systems
Isotropic radiator		A hypothetical, lossless antenna having equal radiation intensity in all directions	Antennas for Fixed radio systems
Low bit error ratio	LBER	Lowest BER alarm threshold set in a digital Radio system (for protection switch activation and/or network management signalling)	General
Low capacity digital radio	LCDR	Radio system with capacity lower than 10 Mbit/s (ITU-R definition)	General
Main beam		The radiation lobe containing the direction of maximum radiation	Antennas for Fixed radio systems
Main beam axis		The direction for which the *Radiation pattern* intensity is the maximum	Antennas for Fixed radio systems
Mandatory requirements		A mandatory requirement is defined as one which the *IUT* shall meet. To achieve full conformance all standard requirements are mandatory	Conformance test
Maximum system loading		The number of simultaneous 64 kbit/s traffic channels, or the maximum bit-rate, in a given radio channel for the class of operation declared by the manufacturer	P-MP systems with *DAMA* technology
Medium capacity digital radio	MCDR	Radio system with capacity between 10 Mbit/s and 100 Mbit/s (ITU-R definition)	General
Minimum-phase	MP	Echo delay condition for the definition of a *System signature* The echo signal is delayed with respect to the main signal	General
Multi-carrier (sub-carriers) transmission		Defined in ITU-R Recommendation SM.329 [20] as "transmitters/transponders, where several carriers may be transmitted simultaneously from a final output amplifier or an active antenna" and in ITU-R Recommendation F.1191-1 [2] as "a digital fixed radio systems transmitter may carry multiple sub-carriers amplified by a common amplifier"	General
Multipath		Propagation phenomenon where more than one ray reach the receiver antenna with various amplitude, phase and delay relative values	Propagation related characteristic
Multiplex section adaptation for sub-STM-1 radio systems	RR-MSA	Regenerator section termination for a STM-0 radio system reported in ITU-R Recommendation F.750 [3]. The description of this function is identical to the MSA but limited to one VC-3 only	SDH Radio systems

Term	Abbreviation	Definition	Context
Multiplex section termination for sub-STM-1 radiosystems	RR-MST	Regenerator section termination for a STM-0 radio system reported in ITU-R Recommendation F.750 [3]. The description of this function is identical to the MST but limited to the relevant MSOH columns only	SDH Radio systems
Necessary bandwidth	NB	For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions (RR Article 1, No. 146 [25]). For *DRRS*, ITU-R Recommendation F.1191-1 [2] defines that the necessary bandwidth should be considered to have the same value as the *Occupied bandwidth*	Spectrum management parameter
Net fade margin		Difference between nominal receiver power and a predefined receiver BER threshold of a radio system corrected by statistical methods for in band distortion effects (including *ATPC* range if any). The correction factor take into account propagation factors and system equalization capabilities (*System signature*)	*Radio hop* design
Net filter discrimination	NFD	Defined as the following ratio in dB: (Adjacent channel received power) (Adjacent channel power received by the main receiver after all RF, IF and BB filters)	General
Nomadic wireless access	NWA	Defined in ITU-R Recommendation F.1399 [4] as "W*ireless access* application in which the location of the E*nd-user termination* may be in different places but it must be stationary while in use"	P-MP systems
Non-minimum-phase	NMP	Echo delay condition for the definition of a *System signature* The echo signal is anticipated with respect to the main signal	General
Occupied bandwidth		The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage β/2 of the total mean power of a given emission (RR Article 1, No. 147 [25]). For *DRRS*, ITU-R Recommendation F.1191-1 [2] requires that the value of percentage B/2 should be taken as 0,5 %	Spectrum management parameter
Optional requirements		The term "optional" is used in a standard with two different meanings: 1) Optional in the sense that the parameter or function itself is mandatory but there is more than one possible value or configuration which may be chosen (e.g. Class of output power, baseband interface, etc.). Once an option is selected it becomes mandatory; 2) Optional in the sense that the feature is not mandatory (e.g. *Automatic Transmit Power Control* (*ATPC*), service channels, etc.). However, once such an option has been implemented it becomes mandatory that it conforms to the requirements of the present document	Conformance test
Out-of-band emission		Emission on a frequency or frequencies immediately outside the necessary bandwidth which results from the modulation process, but excluding spurious emissions (RR Article 1, No. 138 [25]). CEPT/ERC Recommendation 74-01 [22] and ITU-R Recommendations SM.329-7 [20] and F.1191-1 [2] define that any unwanted emission which falls at frequencies separated from the centre frequency of the emission by less than 250 % of the relevant channel separation, where the system is intended to be used, will generally be considered out-of-band emission	Spectrum management parameter
Point to Point	P-P	Fixed Radio system where two similar equipment connect two Radio stations	General

Term	Abbreviation	Definition	Context
Point-to-multipoint	P-MP	Fixed Radio system which connects a single *Central radio station* to multiple *Terminal stations* with possibly some *Repeater stations* in between	General
Pre-assigned multiple access	PAMA	P-MP algorithm allowing the selection, through management system, of the system capacity, according the current demand, among terminal stations	P-MP systems
Radiation pattern		A diagram relating power flux density at a constant distance from an antenna to direction relative to the antenna *Main beam axis*	Antennas for Fixed radio systems
Radiation pattern envelope	RPE	An envelope below which the *Radiation pattern* shall fit	Antennas for Fixed radio systems
Radio complementary section overhead	RCSOH	The transmission, in sub-STM-1 (STM-0) DRRS, as a well identified case of RFCOH, of a capacity equivalent to the six missed columns of a full STM-1 SOH format	SDH radio systems
Radio frame complementary overhead	RFCOH	The transmission capacity that can be contained in the radio frame (for O&M purpose); RFCOH is not standardized by ITU	SDH Radio systems
Radio frequency	RF	Radio frequency	General
Radio frequency channel	RF channel	A partition of a radio frequency band as assigned by the authorities in accordance with CEPT or ITU-R Recommendations on channel arrangement	Radio frequency channel arrangements
Radio hop		A single radio connection between two adjacent radio stations	General
Radio link		Generic term for a radio connection	General
Radio overhead access	ROHA	The ROHA function gives external interfaces to radio specific SOH or RFCOH signals and gives suitable handling for the radio specific internal communication channels; as defined by ITU-R Recommendation F.750 [3]	SDH Radio systems
Radio physical interface	RPI	Generic terminology for the typical fixed radio systems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc.	General
Radio plesiochronous physical interface	RPPI	A common description for the typical plesiochronous fixed radio systems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc	PDH Radio systems
Radio protection switching	RPS	RPS is a function where a number of working channels share one or more protection channel. It is used to improve failure induced unavailability and, when *hitless switch* functionality is implemented, to counteract *multipath* phenomena in order to improve the error performance of the radio section between two *radio-relay terminals*	General
Radio relay regenerator	RRR	A radio station where RST function is implemented to an SDH signal. A RRR may be either a *radio-relay repeater* or a *radio-relay terminal*	SDH Radio systems
Radio relay repeater	RRR	Generic term for a radio station where the signal is passed through from one radio hop to the next, without implementing any protection systems (*RPS*)	General
Radio relay terminal	RRT	Generic term for a radio station where protection switch (*RPS*) is implemented and/or where the payload is extracted and passed to a non-radio system	General
Radio section		A radio connection that may be constituted by one or more consecutive *radio hops* where control of the overall quality of the section is likely required according ITU Recommendations; a radio section is likely to be protected by *RPS* function	General
Radio sub-STM-1 synchronous physical interface	RR-RSPI	A common description for the typical STM-0 synchronous fixed radiosystems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc.; as defined by ITU-R Recommendation F.750 [3]	SDH Radio systems

Term	Abbreviation	Definition	Context
Radio synchronous physical interface	RSPI	A common description for the typical synchronous fixed radio systems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc.	SDH Radio systems
Radio-relay system; Digital radio-relay system	RRS; DRRS	ITU-R Recommendation F.1399 [4] definition: Where are cascaded geographically, point-to-point systems are also commonly referred to as "radio-relay systems", and if using digital technology thereby termed "digital radio-relay systems" (see ITU-R Recommendation F.592-2 [16]). ITU-R Recommendation F.592-2 [16] definition: Radiocommunication system in the fixed service operating at frequencies above about 30 MHz which uses tropospheric propagation and which normally includes one or more intermediate stations	General
Radome		A cover of dielectric material, intended for protecting an antenna from the effects of the physical environment	Antennas for Fixed radio systems
Receive signal level	RSL	The level of a received signal referenced to a specific section of the receiver block diagram (e.g. reference points B or C in figure 3)	General
Reference bandwidth		The bandwidth where a spectral density limit is defined	Spectrum management parameters
Reference point		A conventional section of the generic Radio system block diagram (see figure 3) where a limit or a performance required by a standard are defined	General
Regenerator section termination for sub-STM-1 fixed radio systems	RR-RST	Regenerator section termination for a STM-0 radio system reported in ITU-R Recommendation F.750 [3]. The description of this function is identical to the RST but limited to the relevant RSOH columns only	SDH radio systems
Remote frequency control	RFC	A methodology where the output centre frequency (*assigned frequency*) of a transmitter is set, through the management network, to the required value inside a number of possible radio frequency channels	General
Remote transmit power control	RTPC	A methodology where the output power of a transmitter is set, through the management network, to a prefixed value to minimize the expected interfering scenario	General
Repeater station	RS	An intermediate station between a *central station* and a number of *terminal stations* in P-MP system	P-MP systems
Residual BER (Bit-error ratio)	RBER	See *Background bit error ratio (BBER)*	General
Resolution bandwidth		The spectrum analyser bandwidth where a spectral density is measured	Spectrum management parameters
Round trip delay		The sum of the delays between points F to G and G to F in figure 2, including any repeaters if appropriate	Wireless radio access (typically P-to-MP)
Scrambler		Digital transmit BB process to avoid transmission of repetitive patterns; DRRS use suitable scrambling circuitry in order to facilitate receiver clock extraction and to maintain all the spectral emissions (both wanted and unwanted) independently from the input data stream	Digital mo-demodulation processing
Sector angle		The declared angle of coverage in azimuth of a sectored antenna, defined as 2α in the antennas standard	Antennas for Fixed P-MP radio systems
Signal to Noise ratio	S/N	Ratio between the mean signal level and the noise level normalized in a band equal to the symbol rate	General
Single DS-CDMA signal		A single traffic channel and any associated signalling and synchronization overhead	DS-CDMA P-MP systems
Slow frequency hopping	SFH	A FH technique where the *Hopping period* is larger than the symbol period	FH-CDMA P-MP systems

Term	Abbreviation	Definition	Context
Spurious emission		Emission on a frequency or frequencies which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products, but exclude out-of-band emissions (RR Article 1, No. 139 [25]). CEPT/ERC Recommendation 74-01 [22] and ITU-R Recommendations SM.329-7 [20] and F.1191-1 [2] define that any unwanted emission which falls at frequencies separated from the centre frequency of the emission by 250 % or more of the relevant channel separation, where the system is intended to be used, will generally be considered spurious emission	Spectrum management parameter
Sub-channel		An integer sub-division of the *RF channel*(s), as determined by the equipment manufacturer, where the carrier of a *Frequency hopping systems* may be alternatively moved according the *Hopping sequence*	FH-CDMA P-MP systems
Supplier		Organization requesting the approval	Conformance test
Supplier's declaration	SD	A supplier’s declaration is the procedure by which a supplier gives written assurance that a parameter or function conforms to the present document	Conformance test
Synchronous transport module for sub-STM-1 fixed radio systems	RR-STM	Medium capacity synchronous transport module defined in ITU-R Recommendation F.750 [3]; also defined as STM-0 by ITU-T Recommendation G.861 [21]	SDH radio systems
System loading		The number of simultaneous traffic channels at 64 kbit/s, or equivalent, in a given radio channel	P-MP systems with *DAMA* technology
System signature		Methodology to characterize and compare the behaviour of digital receiver against *Multipath* propagation phenomena	General
Teledensity, access density		Defined in ITU-R Recommendation F.1399 [4] as "number of *End-user terminations* per square kilometre"	P-MP systems
Teledensity, terminal density		Defined in ITU-R Recommendation F.1399 [4] as "number of end-user terminals per square kilometre"	P-MP systems
Terminal equipment	TE	Customer apparatus connected to an access system (see figure 2)	General
Terminal station	TS	Peripheral equipment in a P-MP system (see figure 2)	P-MP systems
Termination, radio termination		Defined in ITU-R Recommendation F.1399 [4] as "the physical location of the radio equipment antenna"	P-MP systems
Tilt		Fixed, angular shift of the antenna main beam axis (boresight) in the elevation plane by either electrical, electronic or mechanical means	Antennas for Fixed radio systems
Time division duplex	TDD	Technique where go and return (*P-P systems*) or down-link and up-link (*P-MP systems*) transmission operate in the same *RF channel* but in different time slots	General
Time division multiple access	TDMA	Access methodology for P-MP systems where *Terminal Stations* operate on different time slots inside the same *RF channel*	P-MP systems
Total station density		Defined in ITU-R Recommendation F.1399 [4] as "the total number of stations per square km in a service area"	P-MP systems
Total transmitter density		Defined in ITU-R Recommendation F.1399 [4] as "the total number of transmitters per square km in a service area"	P-MP systems

Term	Abbreviation	Definition	Context
Transition time		The period between successive transmissions on different *Sub-channels* during which no transmission is made	FH-CDMA P-MP systems
Tx/rx duplex spacing	DS	Tx/Rx Duplex Spacing, defined as the radio-frequency separation between corresponding go and return channels, constant for each couple of i th and i' th frequencies, within a given channel arrangement	Radio frequency channel arrangements
Type approval authority		National regulatory/licensing authority	Conformance test
Type approval testing		Type approval testing is the process of *Type testing* for approval. A type test is to be carried out successfully in order to achieve approval	Conformance test
Type testing		Type testing is when a representative sample of equipment is tested. The test result is considered to be applicable and representative for all subsequent units of the same type. Any changes that could potentially affect the essential parameters shall be notified to the Type Approval Authority	Conformance test
Unwanted emissions		Consist of *Spurious emissions* and *Out-of-band emissions* (RR Article 1, No. 140 [25]). For DRRS an example of a typical scenario is reported in ITU-R Recommendation F.1191-1 [2]	Spectrum management parameter
Wanted to Unwanted (signals) ratio	W/U	See Carrier to Interference (C/I)	General
Wireless access	WA	Defined in ITU-R Recommendation F.1399 [4] as "*end-user radio connection(s)* to core networks" NOTE 1: Core networks include, for example, PSTN, ISDN, PLMN, PSDN, Internet, WAN/LAN, CATV, etc. NOTE 2: The end-user may be a single user or a user accessing the services on behalf of multiple users.	P-MP systems
Zero degree (0°) reference direction		A declared direction as referenced to the antenna mechanical characteristics, used as reference for *RPE*	Antennas for Fixed radio systems

3.3 List by abbreviation

Term	Abbreviation	Definition	Context
Automatic transmit power control	ATPC	Dynamic power control of transmitter derived from the receiver level (controlled loop)	Interference reduction methodology
Base-band	BB	Digital processing on payload and additional service capacity and systems controls preceding the modulation and following the demodulation processes	General
Background BER (Bit-error ratio)	BBER	Terminology used in WG TM4 for long term BER (bit-error ratio) evaluated on simulated hop at a *Receive signal level* usually 15 dB above the 10^{-3} threshold or above. Defined also as: *Residual bit error rat*io *(RBER)* performance objective in ITU-R Recommendations F.594-4 [15], F.634-4 [17], F.696-2 [18] and F.697-2 [19] based on ITU-T Recommendation G.821 objectives [26]	General
Background BER (Block-error ratio)	BBER	Defined as one of the error performance objectives in ITU-R Recommendations F.1092-1 [23] and F.1189-1 [24] based on ITU-T Recommendation G.826 objectives [27]. Long term BER (block-error ratio) evaluated on simulated hop	General
Broadband wireless access	BWA	Defined in ITU-R Recommendation F.1399 [4] as "*Wireless access* in which the connection(s) capabilities are higher than the primary rate".	P-MP systems
Evaluation Bandwidth	BWe	The bandwidth where a spectral density is normalized. Referred also as *Reference bandwidth* when spectrum density limits are concerned	Spectrum management parameters
Carrier to Interference ratio	C/I	Ratio between wanted and a generic unwanted signals causing potential system degradation	General
Co-channel dual polarization systems	CCDP	Dual-coupled radio systems operating on both vertical and horizontal polarization using methods for XPD enhancement (XPIC)	Point-to-point HCDR
Central controller station	CCS	Element of a Central Station in P-MP systems (see figure 2)	P-MP systems
Central radio station	CRS	Element of a Central Station in P-MP systems (see figure 2)	P-MP systems
Central station	CS	Central element in P-MP systems (see figure 2)	P-MP systems
Channel separation	CS	Bandwidth equal to the frequency separation, defined in ITU-R Recommendation F.746 [1], of adjacent channels of the relevant radio-frequency channel arrangement established within the allocated frequency band	Radio frequency channel arrangements
Demand assigned multiple access	DAMA	P-MP algorithm allowing dynamic sharing, among terminal stations, of the system capacity, according the current demand	P-MP systems
Digital radio relay systems	DRRS	Generic term for fixed radio systems in the transport network	General
Tx/rx duplex spacing	DS	Tx/Rx Duplex Spacing, defined as the radio-frequency separation between corresponding go and return channels, constant for each couple of i th and i' th frequencies, within a given channel arrangement	Radio frequency channel arrangements
Direct sequence code division multiple access	DS-CDMA	A form of modulation whereby a combination of data to be transmitted and a fixed code sequence (chip sequence) is used to directly modulate a carrier, e.g. By phase shift keying Spread spectrum methods	P-MP systems

Term	Abbreviation	Definition	Context
Direct sequence spread spectrum	DSSS	A coded modulation with code rate larger than information rate used for spread-spectrum technologies	DS-CDMA P-MP systems
Early warning	EW	Technique to evaluate the transmission channel degradation, faster than expected propagation phenomena, in order to activate an *Hitless* type *Radio Protection Switch* (*RPS*) prior than actual BER event is happening enhancing the error performance of a protected radio link	Radio protection switch and error performance
Full capacity load	FCL	Full capacity load (FCL) is defined by the maximum number of 64 kbit/s signals or the equivalent which can be transmitted and received by a single CRS within a specified RF-bandwidth, fulfilling a given performance and availability objectives in respect to fading conditions	P-MP systems
Frequency division duplex	FDD	Technique where go and return (P-P systems) or down-link and up-link (P-MP systems) transmission operate in two *RF channels* spaced by Tx/Rx Duplex Spacing provided by the relevant ERC or ITU-R channel arrangement	General
Frequency division multiple access	FDMA	Access methodology for P-MP systems where *Terminal Stations* operate on different sub-carriers inside a *RF channel*	P-MP systems
Forward error correction	FEC	Algorithm by which a bit-rate redundancy allows an amount of error correction	General
Frequency hopping	FH	A spread spectrum technique whereby individual radio links are continually switched from one *Sub-channel* to another. Such links are not constrained to a single *RF channel*	FH-CDMA P-MP systems
Frequency hopping code division multiple access	FH-CDMA	Access methodology for P-MP systems where each *Terminal Stations* operate in *Frequency Hopping* according a predefined (coded) *Hopping Sequence* inside a *RF channel*	P-MP systems
Fixed wireless access	FWA	Defined in ITU-R Recommendation F.1399 [4] as "*wireless access* application in which the location of the *end-user termination* and the network access point to be connected to the end-user are fixed.	P-MP systems
High altitude platform station	HAPS	Defined in ITU-R Recommendation F.1399 [4] as "a station located on an object at an altitude of 20 to 50 km and at a specified nominal, fixed point relative to the Earth"	HAPS P-MP systems
High bit error ratio	HBER	Highest BER alarm threshold set in a digital Radio system (for protection switch activation and/or network management signalling)	General
High capacity digital radio	HCDR	Radio system with capacity higher than 100 Mbit/s (ITU-R definition)	General
Intermediate frequency	IF	Frequency used for analogue signal processing (e.g. filtering) prior (in IF to RF transmitters) or after (in RF to IF receivers) RF conversion	General
Inter-port isolation	IPI	It is the ratio in dB of the power level applied to one port of a multi-port antenna to the power level received in any other port of the same antenna as function of frequency	Antennas for Fixed radio systems
Implementation under test	IUT	Representative sample of equipment for the *Type testing*	Conformance test
Low bit error ratio	LBER	Lowest BER alarm threshold set in a digital Radio system (for protection switch activation and/or network management signalling)	General
Low capacity digital radio	LCDR	Radio system with capacity lower than 10 Mbit/s (ITU-R definition)	General
Medium capacity digital radio	MCDR	Radio system with capacity between 10 Mbit/s and 100 Mbit/s (ITU-R definition)	General
Minimum-phase	MP	Echo delay condition for the definition of a *System signature* The echo signal is delayed with respect to the main signal	General

Term	Abbreviation	Definition	Context
Necessary bandwidth	NB	For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions (RR Article 1, No. 146 [25]). For *DRRS*, ITU-R Recommendation F.1191-1 [2] defines that the necessary bandwidth should be considered to have the same value as the *Occupied bandwidth*	Spectrum management parameter
Net filter discrimination	NFD	Defined as the following ratio in dB: (Adjacent channel received power) (Adjacent channel power received by the main receiver after all RF, IF and BB filters)	General
Non-minimum-phase	NMP	Echo delay condition for the definition of a *System signature* The echo signal is anticipated with respect to the main signal	General
Nomadic wireless access	NWA	Defined in ITU-R Recommendation F.1399 [4] as "W*ireless access* application in which the location of the E*nd-user termination* may be in different places but it must be stationary while in use"	P-MP systems
Pre-assigned multiple access	PAMA	P-MP algorithm allowing the selection, through management system, of the system capacity, according the current demand, among terminal stations	P-MP systems
Point-to-multipoint	P-MP	Fixed Radio system which connects a single *Central radio station* to multiple *Terminal stations* with possibly some *Repeater stations* in between	General
Point to Point	P-P	Fixed Radio system where two similar equipment connect two Radio stations	General
Residual BER (Bit-error ratio)	RBER	See *Background bit error ratio (BBER)*	General
Radio complementary section overhead	RCSOH	The transmission, in sub-STM-1 (STM-0) DRRS, as a well identified case of RFCOH, of a capacity equivalent to the six missed columns of a full STM-1 SOH format	SDH radio systems
Radio frequency	RF	Radio frequency	General
Radio frequency channel	RF channel	A partition of a radio frequency band as assigned by the authorities in accordance with CEPT or ITU-R Recommendations on channel arrangement	Radio frequency channel arrangements
Remote frequency control	RFC	A methodology where the output centre frequency (*assigned frequency*) of a transmitter is set, through the management network, to the required value inside a number of possible radio frequency channels	General
Radio frame complementary overhead	RFCOH	The transmission capacity that can be contained in the radio frame (for O&M purpose); RFCOH is not standardized by ITU	SDH Radio systems
Radio overhead access	ROHA	The ROHA function gives external interfaces to radio specific SOH or RFCOH signals and gives suitable handling for the radio specific internal communication channels; as defined by ITU-R Recommendation F.750 [3]	SDH Radio systems
Radiation pattern envelope	RPE	An envelope below which the *Radiation pattern* shall fit	Antennas for Fixed radio systems
Radio physical interface	RPI	Generic terminology for the typical fixed radio systems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc.	General
Radio plesiochronous physical interface	RPPI	A common description for the typical plesiochronous fixed radio systems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc	PDH Radio systems

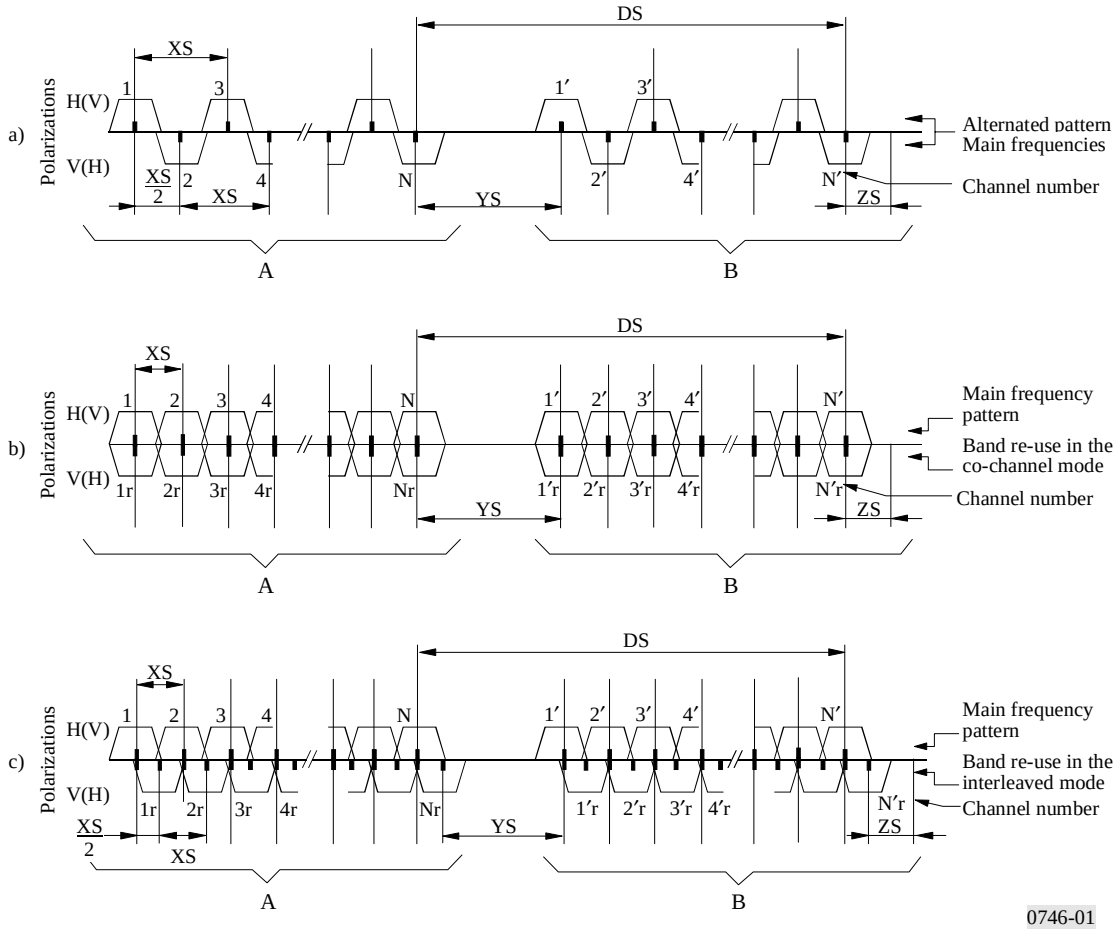
Term	Abbreviation	Definition	Context
Radio protection switching	RPS	RPS is a function where a number of working channels share one or more protection channel. It is used to improve failure induced unavailability and, when *hitless switch* functionality is implemented, to counteract *multipath* phenomena in order to improve the error performance of the radio section between two *radio-relay terminals*	General
Multiplex section adaptation for sub-STM-1 radio systems	RR-MSA	Regenerator section termination for a STM-0 radio system reported in ITU-R Recommendation F.750 [3]. The description of this function is identical to the MSA but limited to one VC-3 only	SDH Radio systems
Multiplex section termination for sub-STM-1 radiosystems	RR-MST	Regenerator section termination for a STM-0 radio system reported in ITU-R Recommendation F.750 [3]. The description of this function is identical to the MST but limited to the relevant MSOH columns only	SDH Radio systems
Radio relay regenerator	RRR	A radio station where RST function is implemented to an SDH signal. A RRR may be either a *radio-relay repeater* or a *radio-relay terminal*	SDH Radio systems
Radio relay repeater	RRR	Generic term for a radio station where the signal is passed through from one radio hop to the next, without implementing any protection systems (*RPS*)	General
Radio sub-STM-1 synchronous physical interface	RR-RSPI	A common description for the typical STM-0 synchronous fixed radiosystems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc.; as defined by ITU-R Recommendation F.750 [3]	SDH Radio systems
Regenerator section termination for sub-STM-1 fixed radio systems	RR-RST	Regenerator section termination for a STM-0 radio system reported in ITU-R Recommendation F.750 [3]. The description of this function is identical to the RST but limited to the relevant RSOH columns only	SDH radio systems
Radio-relay system; Digital radio-relay system	RRS; DRRS	ITU-R Recommendation F.1399 [4] definition: Where are cascaded geographically, point-to-point systems are also commonly referred to as "radio-relay systems", and if using digital technology thereby termed "digital radio-relay systems" (see ITU-R Recommendation F.592-2 [16]). ITU-R Recommendation F.592-2 [16] definition: Radiocommunication system in the fixed service operating at frequencies above about 30 MHz which uses tropospheric propagation and which normally includes one or more intermediate stations	General
Synchronous transport module for sub-STM-1 fixed radio systems	RR-STM	Medium capacity synchronous transport module defined in ITU-R Recommendation F.750 [3]; also defined as STM-0 by ITU-T Recommendation G.861 [21]	SDH radio systems
Radio relay terminal	RRT	Generic term for a radio station where protection switch (*RPS*) is implemented and/or where the payload is extracted and passed to a non-radio system	General
Repeater station	RS	An intermediate station between a *central station* and a number of *terminal stations* in P-MP system	P-MP systems
Receive signal level	RSL	The level of a received signal referenced to a specific section of the receiver block diagram (e.g. reference points B or C in figure 3)	General
Radio synchronous physical interface	RSPI	A common description for the typical synchronous fixed radio systems functions, including modulator, demodulator, transmitter, receiver, possible radio-framer, etc.	SDH Radio systems
Remote transmit power control	RTPC	A methodology where the output power of a transmitter is set, through the management network, to a prefixed value to minimize the expected interfering scenario	General
Signal to Noise ratio	S/N	Ratio between the mean signal level and the noise level normalized in a band equal to the symbol rate	General

Term	Abbreviation	Definition	Context
Supplier's declaration	SD	A supplier's declaration is the procedure by which a supplier gives written assurance that a parameter or function conforms to the present document	Conformance test
Slow frequency hopping	SFH	A FH technique where the *Hopping period* is larger than the symbol period	FH-CDMA P-MP systems
Time division duplex	TDD	Technique where go and return (*P-P systems*) or down-link and up-link (*P-MP systems*) transmission operate in the same *RF channel* but in different time slots	General
Time division multiple access	TDMA	Access methodology for P-MP systems where *Terminal Stations* operate on different time slots inside the same *RF channel*	P-MP systems
Terminal equipment	TE	Customer apparatus connected to an access system (see figure 2)	General
Terminal station	TS	Peripheral equipment in a P-MP system (see figure 2)	P-MP systems
Wanted to Unwanted (signals) ratio	W/U	See Carrier to Interference (C/I)	General
Wireless access	WA	Defined in ITU-R Recommendation F.1399 [4] as "*end-user radio connection(s)* to core networks" NOTE 1: Core networks include, for example, PSTN, ISDN, PLMN, PSDN, Internet, WAN/LAN, CATV, etc. NOTE 2: The end-user may be a single user or a user accessing the services on behalf of multiple users.	P-MP systems
Cross-polar (discrimination) Improvement Factor	XIF	*XPD* improvement factor of a *Cross-polar interference canceller*, if implemented in the interfered receiver	*CCDP* systems
Antenna cross-polar discrimination	XPD	The difference in dB between the peak of the co-polarized main beam and the maximum cross-polarized signal over an angle measured within a defined region	Antennas for Fixed radio systems
Cross-polar discrimination	$XPD_{H(V)}$	Defined as the following ratio in dB: [Power received on polarization H(V), transmitted on polarization H(V)] [Power received on opposite polarization V(H), transmitted on polarization H(V)]	Propagation related characteristic
Cross-Polar Interference Canceller	XPIC	Circuitry used in digital demodulators to reduce co-channel interference produced by a like-modulated signal transmitted on opposite polarization	*CCDP* systems
Co-polar channel separation	XS	Defined as the radio-frequency separation between the centre frequencies of adjacent radio-frequency channels on the same polarization and in the same direction of transmission; ITU-R Recommendation F.1191-1 [2] defines that it is equal to twice the Channel Separation for the alternated radio frequency channel arrangement of figure 1a and to the channel separation for the co-channel and interleaved band re-use radio frequency channel arrangements of figure 1b and figure 1c; the channel separation is also considered equal to the Channel Bandwidth	Radio frequency channel arrangements
Innermost channel separation	YS	Defined as the radio-frequency separation between the centre frequencies of the go and return radio-frequency channels which are nearest to each other (also named innermost channels). In the case where go and return frequency sub-bands are not contiguous, such that there is a (are) band(s) allocated: for (an)other service(s) in the gap between, ys shall be considered to include the band separation (bs) equal to the total width of the allocated band(s) used by this (these) service(s) (see figure 1)	Radio frequency channel arrangements

Term	Abbreviation	Definition	Context
Guard-band	ZS	Bandwidth equal to the frequency separation, defined in ITU-R Recommendation F.746 [1] as ZS, between the nominal centre frequency of the outermost channel of a radio-frequency channel arrangement and the limit of the allocated band (see figure 1) ZS is also defined Guard Band by ITU-R Recommendation F.1191-1 [2]	Radio frequency channel arrangements

FIGURE 1

Channel arrangements for the three possible schemes considered in the text



A: "go" channels B: "return" channels

NOTE: A given frequency channel arrangement can be regarded as either alternated or interleaved as a consequence of the symbol rate transmitted by the radio systems. Alternated frequency channel arrangements may be, in principle, further implemented with co-channel band re-use.

Figure 1: Channel arrangements for the three possible schemes considered in the text

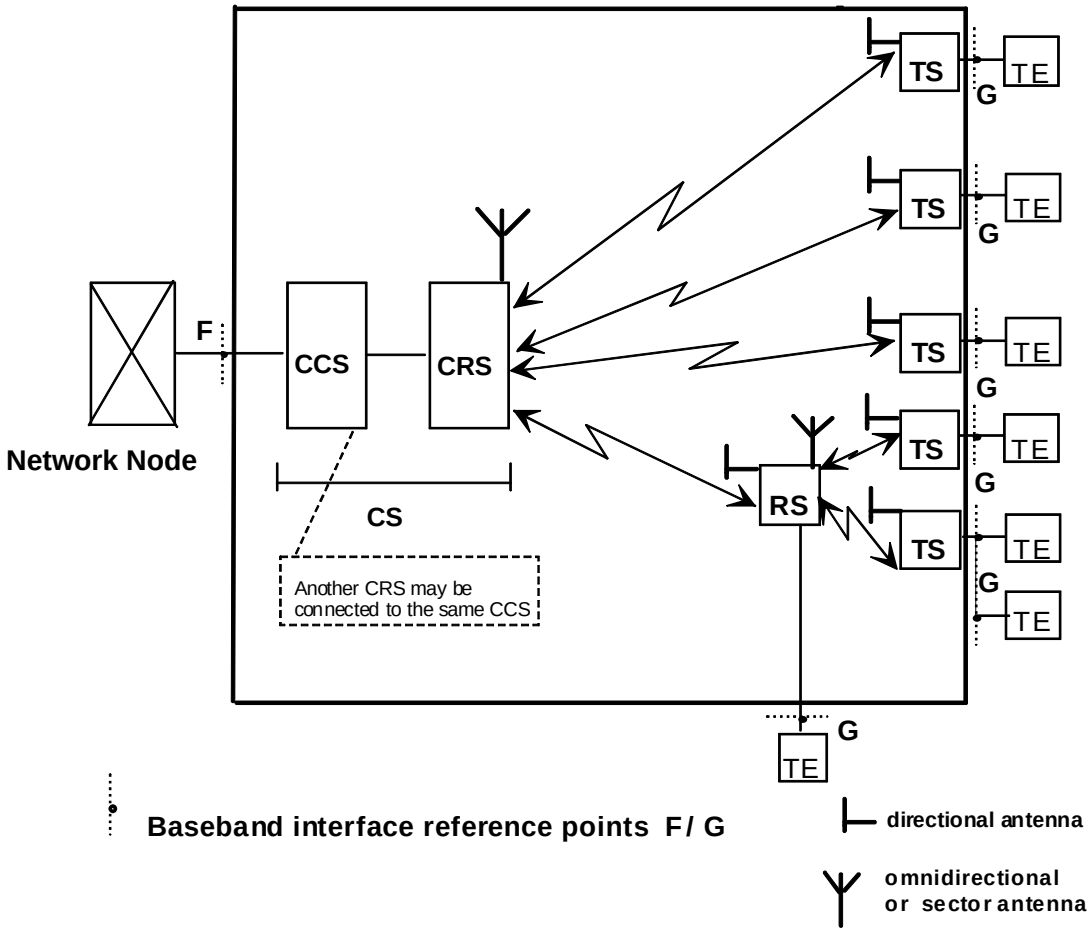
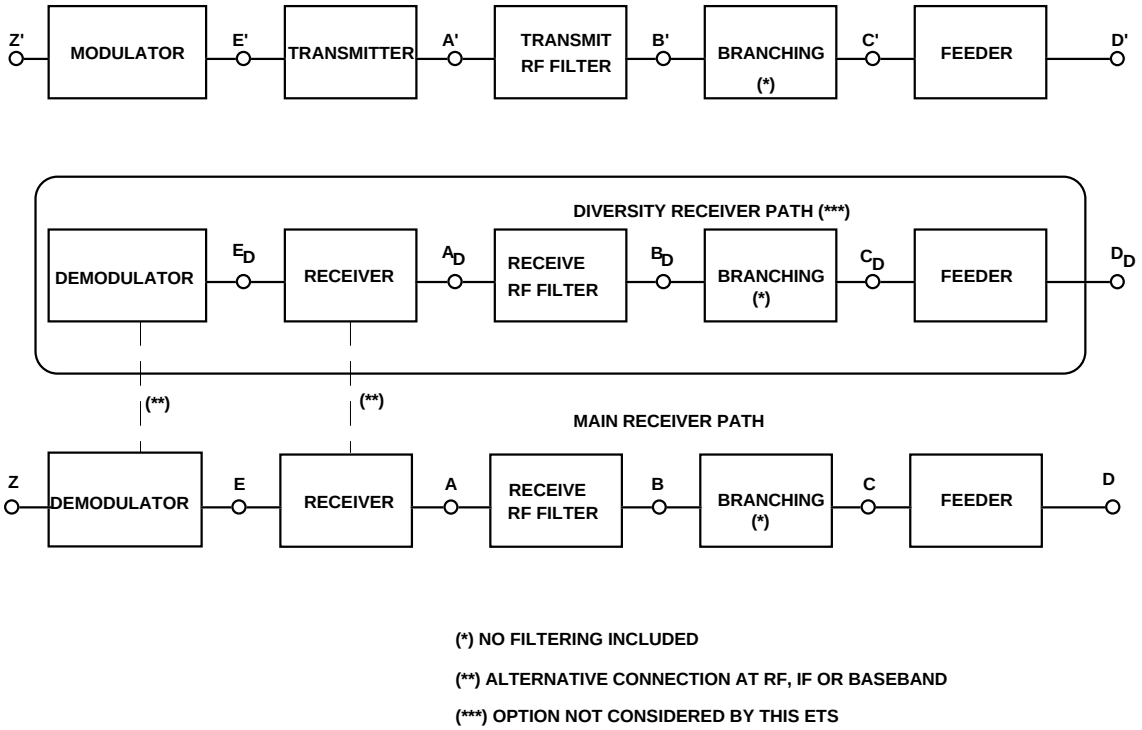


Figure 2: General P-MP System Architecture



(*) NO FILTERING INCLUDED

(**) ALTERNATIVE CONNECTION AT RF, IF OR BASEBAND

(***) OPTION NOT CONSIDERED BY THIS ETS

NOTE 1: For the purpose of defining the measurement points, the branching network does not include a hybrid.
NOTE 2: The points shown above are reference points only; points C and C', D and D' in general coincide.
NOTE 3: Reference points B and C, B' and C' may coincide when simple duplexer is used.

Figure 3: Generic Radio system block diagram

History

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