

Structure of an agreement Data requirements

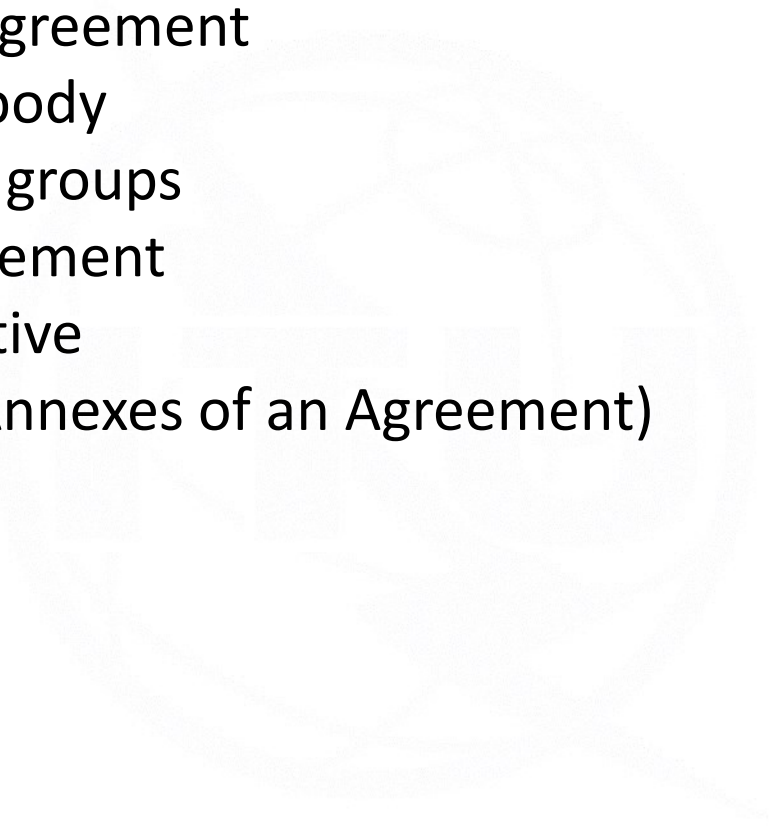


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ITU Workshop on Arab Cross-Border Frequency Coordination
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Dubai

Managing an Agreement

- Article 6 of the Radio Regulations,
- Managing an Agreement
 - Managing body
 - Supporting groups
- Part of an Agreement
 - Administrative
 - Technical (Annexes of an Agreement)
- Meetings

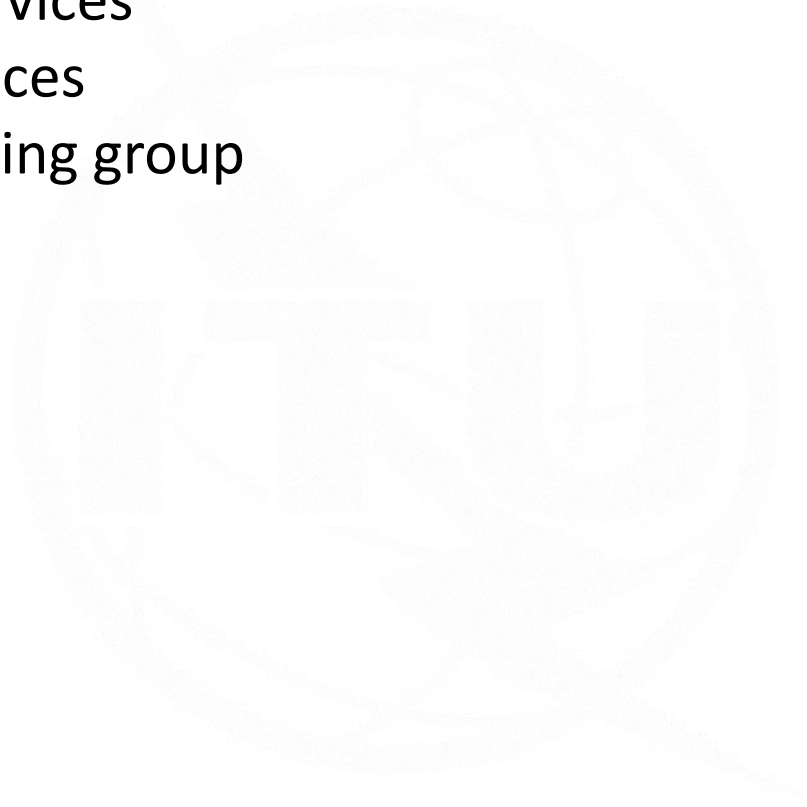


Managing Body

- Managing administration
- Regional coordination group
- Managing the update of the Agreement based on the decisions of the Plenary meetings or by correspondence on the proposals of the working groups
- Responsible for the maintenance and registration of the HCM server.
- Posting to the server bi- or multilateral agreements

Supporting groups

- Technical working group
 - Mobile services
 - Fixed services
 - Programming group



Administrative part - Definitions

- From the Article 1 of the RR
- Signatories
- Frequency bands and services
- Frequency categories
- Structure of the frequency database – frequency registry
- Specification of the harmful interference
- Affected administrations
- Harmonized calculation: HCM program
- Data exchange

Administrative part - General

- An Agreement shall in no way affect the rights and obligations of the Administrations arising from the Constitution and Convention of the International Telecommunication Union (ITU), the administrative Regulations and Agreements concluded within the framework of the ITU as well as other pertinent inter-governmental agreements.
- Administrations shall assign frequencies exclusively in accordance with the provisions of this Agreement. If co-ordination is required, it shall be done prior to the putting into operation of the radio station affected.
- If necessary, the Administrations may agree on provisions that are different from or supplementary to the provisions of this Agreement, which, however, must not adversely affect Administrations that are not concerned.

Administrative part – Technical provisions

- The request for co-ordination of a station and the evaluation of this request shall be made in accordance with the in the Annexes of the Agreement
- In case of the Land Mobile Service the maximum permissible interference field strength is given
In case of the Fixed Service, the maximum permissible threshold degradation is given
- Administrations may agree to apply parameters other than the set values.

Administrative part – Procedures

- Frequencies requiring co-ordination
- Preferential frequencies
- Frequencies for planned radio communication networks
- Frequencies used on the basis of geographical network plans
- Frequencies using preferential codes
- Frequencies used on the basis of arrangements between operators
- Evaluation of requests for co-ordination
- Evaluation in connection with tests
- Exchange of Lists

Administrative part – Report of harmful interference

- Any harmful interference which is observed shall be reported to the Administration of the country in which the interfering station is located.
- If harmful interference occurs on frequencies entered in the Frequency Register, the Administrations concerned shall endeavour to achieve a mutually satisfactory solution as soon as possible.

Administrative part – Revision of the Agreement

An Agreement may be expanded or amended at any time at the initiative of any Administration, subject to approval by the other Administrations. Planned amendments shall be communicated to the Managing Administration, which shall undertake to obtain the assent of the other Administrations through the appropriate channels.



Administrative part –Joining/withdrawal

- Any administration which needs to co-ordinate with at least one Administration may accede to this Agreement. A declaration to that effect shall be addressed to the Managing Administration. Upon approval by all Administrations, the accession shall take effect the day on which the requesting administration signs this Agreement
- Any Administration may withdraw from the Agreement by the end of a calendar month by giving notice of its intention at least six months before. A declaration to that effect shall be addressed to the Managing Administration.

Administrative part – Others

- Status of co-ordinations prior to the Agreement
- Languages of the Agreement
- Entry into force of this Agreement.



Technical part – Annexes for Mobile service

Maximum permissible interference field strengths and maximum cross-border ranges of harmful interference for frequencies requiring co-ordination in the Land Mobile Service

Data exchange in the Land Mobile Service

Determination of the correction factor for the permissible interference field strength at different nominal frequencies in the Land Mobile Service

Propagation curves in the Land Mobile Service

Determination of the interference field strength in the Land Mobile Service

Coding instructions for antenna diagrams in the Land Mobile Service

Provisions on measurement procedures in the Fixed Service and the Land Mobile Service

Method for combining the horizontal and vertical antenna patterns for the Land Mobile Service.

Technical part – Annexes for Fixed service

Data exchange in the Fixed Service

Determination of the Masks Discrimination and the Net Filter Discrimination in the Fixed Service

Provisions on measurement procedures in the Fixed Service and the Land Mobile Service

Method for combining the horizontal and vertical antenna patterns for the Fixed Service

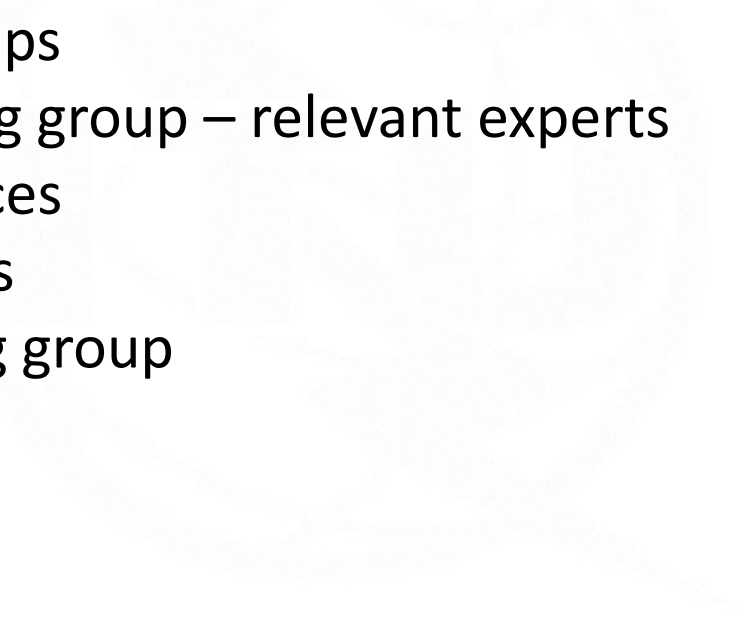
Threshold Degradation in the Fixed Service

Determination of the basic transmission loss in the Fixed Service

Trigger for co-ordination in the Fixed Service

Meetings

- Plenary –meeting of the signatories
 - Approving new members
 - Approving modifications to the text
 - Approving modifications of the structure, chairs of the relevant groups
- Technical working group – relevant experts
 - Mobile services
 - Fixed services
 - Programming group



Data requirements and structure



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Requirements for cross border frequency coordination

- Radio frequencies do not stop at international borders and therefore, may potentially cause interference and disruption communications to systems beyond national borders.
- Within the framework of RR procedures or regional agreements, administrations coordinate the operation of radio stations within their territory whose operation could cause harmful interference to the stations situated on the territory of other administrations
- The most efficient method for resolving interference of stations in a border region is frequency assignment planning, when neighboring administrations possess entire information regarding parameters of planned and operated stations of the affected administrations.
- In such a case the impact of harmful interference can be calculated during bilateral/multilateral discussions of the planned station

4.3 Any new assignment or any change of frequency or other basic characteristic of an existing assignment (see Appendix 4) shall be made in such a way as to avoid causing harmful interference to services rendered by stations using frequencies assigned in accordance with the Table of Frequency Allocations in this Chapter and the other provisions of these Regulations, the characteristics of which assignments are recorded in the Master International Frequency Register.

11.15 When notifying a frequency assignment, the administration shall provide the relevant characteristics listed in Appendix 4.

Appendix 4 of the ITU Radio Regulations

- Table 1 Characteristics for terrestrial services
- Table 2 Characteristics for high altitude platform stations (HAPS) frequency assignments
- Table 3 Table of characteristics to be submitted for space and radio astronomy services

Terrestrial services

1. GENERAL INFORMATION AND FREQUENCY CHARACTERISTICS
2. DATE OF OPERATION
3. CALL SIGN AND STATION IDENTIFICATION
4. LOCATION OF THE TRANSMITTING ANTENNA(S)
5. LOCATION OF THE RECEIVING ANTENNA(S)
6. CLASS OF STATION AND NATURE OF SERVICE
7. CLASS OF EMISSION AND NECESSARY BANDWIDTH
8. POWER CHARACTERISTICS
9. ANTENNA CHARACTERISTICS
10. HOURS OF OPERATION
11. COORDINATION AND AGREEMENT
12. OPERATING ADMINISTRATION OR AGENCY
13. REMARKS

Data requirements

- Administrative
- Technical
- Procedural
- *Topo/morphology*
- *Coordination (border) lines*

Radiocommunication Data Dictionary (RDD)

- ITU-R Recommendation SM.1413 -3 (2014): RDD for notification and coordination purposes
- The aim of the (RDD) is to improve the exchange of notification and coordination data between administrations and between administrations and the Radiocommunication Bureau (BR) by:
 - providing a single comprehensive reference source;
 - presenting consistent, accurate and unambiguous descriptions for the data with, where appropriate, references to other ITU documentation containing additional relevant information;
 - providing administrations with a resource for their internal frequency management processes which could include such items as staff training, exchange of technical data, upgrading of computer-based systems, and conference and meeting preparation.

Data table description

Field identification

Field name (characteristic)

Storage format

Definition (possible values)

Remarks

Record position

Length of the data element

Validation

Related information

If comments need more characters than provided in the field, paper or another medium has to be used.

Data exchange fields and record format

1A	Transmitting frequency Frequency unit	9(5)V9(5) X	Frequency unit K: kHz, M: MHz, G: GHz
1Z	Frequency category	X	valid values: see later
6A	Class of station	X(2)	valid values: see later
6B	Nature of service	X(2)	valid values: see later
6Z	Category of use	X(2)	valid values: see later
10Z	Channel occupation		9 valid values: 0: not continuous 1: continuous
2C	Date of bringing into use	DDMMYYYY	

Data exchange fields and record format

4A	Name of station	X(20)		
4B	Country	X(3)	Country where the station is located	
4C	Geographical co-ordinates of the station or centre of the operating area	9(3)X9(2)9(2) 9(2)X9(2)9(2)	3 characters : degrees longitude 1 character : E(East) or W(West) 2 characters : minutes longitude 2 characters : seconds longitude 2 characters : degrees latitude 1 character : N(North) or S(South) 2 characters : minutes latitude 2 characters : seconds latitude	Co-ordinates are to be indicated with seconds and based on WGS 84
4D	Radius of the operating area	9(5)	In kilometres	
4Z	Height of the station site above sea level	9(4) or S9(3)	In meters	
7A	Designation of emission	X(9)	First 4 characters: necessary Bandwidth following 5 characters: class of emission (see Art.2 and Appendix 1 of the RR)	

Data exchange fields and record format

8B1	Maximal radiated power of the station	S9(3)V9	In dBW Omitted in case of only Rx	
8B2	Type of reference antenna	X	X=E for e.r.p., X=I for e.i.r.p. Mandatory	
9A	Azimuth of maximum radiation	9(3)V9	In degrees with one decimal from 000.0 to 359.9 or blank	For non directional horizontal antenna blank
9B	Mechanical elevation angle of the antenna in direction of maximum radiation	S99V9	In degrees with one decimal from -90.0 to 90.0 or blank	Negative elevation points towards the ground. For non directional vertical antenna blank
9D	Polarization	X(2)	Codes later	

Data exchange fields and record format

9G	Gain of the antenna in the direction of 9A and 9B	99V9	In dB Mandatory in case of Rx	
9Y	Height of antenna above ground	9(4)	In meters	
9XH	Type of antenna horizontal	9(3)X(2)9(2)	code	
9XV	Type of antenna vertical	9(3)X(2)9(2)	code	
1Y	Transmitting frequency of the corresponding receiving station or receiving frequency Frequency unit	9(5)V9(5) X	Frequency unit: K: kHz, M: MHz, G: GHz Omitted in case of only Tx	

Data exchange fields and record format

13Z	Remarks	X(50)		Data necessary for calculations are not allowed
13Y	Status of co-ordination	X	see later	
2W	Date of co-ordination request	DDMMYYYY		In overall list not needed
2Z	Final date of achieving co-ordination	DDMMYYYY	May be omitted	
13X	Co-ordination reference	CCC ZZ PPPPPP FF R O	C: country code as given in App.1 Section 9 of the RDD Z: year of initial co-ordination P: process identification F: frequency order number R: number of associated records O: order number of record	C: country requesting co-ordination F: several co-ordinations for one site

Frequency Categories

- 1 Preferential frequencies
- 2 Frequencies requiring co-ordination
- 3 Frequencies used on the basis of geographical network plans
- 4 Frequencies for a planned radiocommunications network
- 5 Shared frequencies
- 6 Reserved for bi- or multilateral use
- 7 Frequencies using preferential codes
- 8 Frequencies used on the basis of arrangements between operators

Class of Station

FB Base station

FC Coast station

FL Land station

FP Port station

FS Land station established solely for safety of life

FW Mobile station with a radius of service area of 0 km

FX Fixed station

ML Land mobile station i.e. mobile station in the land mobile service

MO Mobile station i.e. station in the mobile service intended to be used while in motion or during halts at unspecified points

MR Radiolocation mobile station

MS Ship station

Nature of the Service

CO Station open to official correspondence exclusively

CP Station open to public correspondence

CR Station open to limited public correspondence

CV Station open exclusively to correspondence of a private agent

OT Station open exclusively to operational traffic of the service concerned

Category of Use

- A Airport services
 - B Railways (excluding mountain railways)
 - C Diplomatic corps
 - D Mountain railways
 - E Production, transport and distribution of energy (electricity, gas, water)
 - F Fire services
 - G Military
 - H Radio relay networks
 - HH Local call
 - I Demonstration
 - K Public transport
 - L Subscriber installations, public mobile services, stand-by links
 - M Navigation (in ports, on the Rhine, etc.)
 - N Tests and research
 - O Not allocated
 - P Public security services (Police, customs, etc.)
 - Q Entries not falling within other categories on this list (cordless microphones, etc.)
 - R Ancillary broadcasting services (studio, news reporting)
 - S Rescue services (ambulances, doctors, water and mountain rescue)
 - T Other services provided by telecommunications administrations
 - U Industrial operators
 - V Road traffic service
 - W Taxi and car hire firms
 - X Other private services
 - Y Reserved specific applications, not allocated
 - Z Other private multiple-use networks
-

Status of Coordination

- A For information : the assignment described is not submitted to a coordination procedure and to any protection requirement.
- B Request for agreement.
- C Agreed without reservation.
- D Temporary status: Coordination subject to operational tests to show that coexistence is possible.
- E Agreement on a non-interference basis (NIB); revocation of the agreement and any request to cease the emissions in question requires proof that harmful interference has been caused to assignments whose status has already been established, which should normally be described in an associated notice.
- F Agreed, subject to a requirement identical or analogous to the requirement of RR 4.4. (Protection of primary allocated services)

Status of Coordination

G Agreed, without any reservation as to interference which may be caused by the assignment described; the applicant is, however, informed that there is a risk of interference from assignments whose status has already been established, and that the responsibility for any such risk is his; one or more associated notices may be sent.

H E+G

M Request for agreement following a modified co-ordination after an answer coded E, G, H or Z.

P Assignment according to preferential frequency agreements or geographical network plans or shared frequency agreements or frequencies using preferential codes or frequencies used on the basis of arrangements between operators.

R Deletion of co-ordinated assignment.

W Withdrawal of the co-ordination request.

Z Request for agreement refused.

Polarization

Polarization	Symbol	Definition
Horizontal linear	H	The electric field intensity vector is in the horizontal plane.
Vertical linear	V	The magnetic field intensity vector is in the horizontal plane.
Right - hand slant	SR	The electric field intensity vector is in the plane rotated 45 degrees clockwise from the vertical position, as seen from the transmitting point.
Left – hand slant	SL	The electric field intensity vector is in the plane rotated 45 degrees anti-clockwise from the vertical position, as seen from the transmitting point.
Right - hand circular or direct	CR	The electric field intensity vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a right-hand or clockwise direction
Left – hand circular or indirect	CL	The electric field intensity vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a left-hand or anti-clockwise direction
Dual	D	When substantially equal-amplitude vertically- and horizontally-polarized components are radiated without particular control of the phase relation between them. Typically, the vertically-and horizontally polarized sources may be displaced one from the other so that the resultant polarization varies between circular and slant, according to the azimuth angle.
Mixed	M	The collective term applies when both vertical and horizontal components are radiated, embracing slant circular and dual polarization.

Exchange of information

Overall list

Frequency registers (overall list) have to be exchanged twice a year using CD-ROM or other mutually agreed media.

Co-ordination or notification

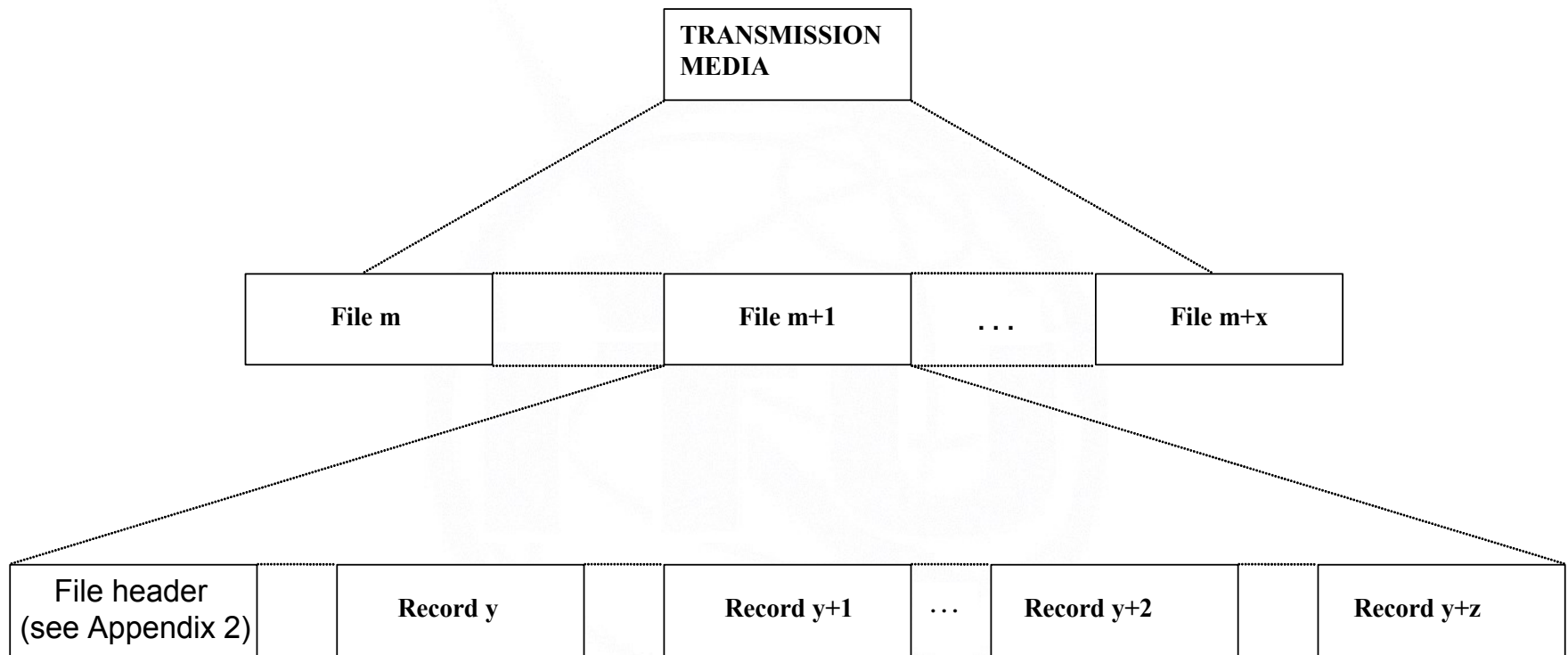
Co-ordination requests, answers to co-ordination requests or notifications may be exchanged on CD-ROM or other mutually agreed media.

Data to be exchanged during the co-ordination procedure may be of the following type:

- new entries
- modifications
- deletions
- answers

Exchange of information (example)

Appendix 1 to Annex 2 A



No record separator e.g. CR/LF is used.

Transmission media

The following transmission media are preferred but others may be agreed bilaterally:

- E-mail
- Common Disc Media
- Paper is limited to the coordination process but generally should be avoided.
- Data exchange based on the XML format

Although XML allows more characters to be used, the content should be limited to those introduced in the appendices of this annex and applicable to the fixed length file-format.

The background features a large, light blue watermark of the ITU logo, which consists of a globe with latitude and longitude lines, and the letters 'ITU' in a bold, sans-serif font.

Thank you !

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