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CCITT

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MAINTENANCE; DESIGNATIONS AND INFORMATION EXCHANGE

DESIGNATIONS FOR INTERNATIONAL NETWORKS

Recommendation M.1400

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation M.1400 was revised by Study Group IV and was approved under the Resolution No. 2 procedure on the 5th of October 1992.

CCITT NOTES

1) In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized private operating agency.

2) A list of abbreviations used in this Recommendation can be found in Annex C.

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Note – For the definition of the terms unidirectional (one way) and bidirectional (two way), refer to Recommendations B.13 (Appendix II) and Q.9 [1].

Recommendation M.1400

DESIGNATIONS FOR INTERNATIONAL NETWORKS

(Circuits, groups, group and line links, digital blocks, digital paths, data transmission systems, digital blocks created between DCMEs, virtual containers, multiplex sections and related information)

(Published as M.13, 1960; renumbered as M.14, 1964, as M.140, 1972 and as M.1400, 1992; revised 1964, 1972, 1976, 1980, 1984, 1992)

Abstract

This Recommendation covers the designations of international circuits, groups, group and line links, digital blocks, digital paths, data transmission systems, digital blocks created between DCMEs, virtual containers and multiplex sections.

The designation information is in two layers:

– layer 1: The unique information; the designation;

– layer 2: Additional information; the related information.

Guidance for the user is provided in a series of examples.

Keywords

– designation;

– identification.

0 General

Designation of international routes[1)] are of great importance for identification and information.

Technical developments, especially those due to digital technology have brought a much greater variety of techniques and allow for a more efficient use of equipment.

Information on the equipment and techniques used is of great interest to staff working in the field of maintenance and operation. Present operational conditions can be more complicated than those previously, e.g. as a consequence of greater competition in the field of telecommunication. Another consideration is automated file handling which is often a necessity for Administrations and the standardization of designation is an important factor to facilitate this.

To cover the need for standardized designations which are easy to handle but which give precise information, the designation information is built up from two layers

– layer 1 provides the unique identification: the designation;

– layer 2 provides the necessary additional information which must be known at both terminations of the routes: the related information.

If Administrations need more route data to be stored, they are free to create independently or bilaterally a third layer for which no standardization is intended for the time being.

1) The term “routes” is used in this text to cover all types of telecommunication connections: circuits, groups, blocks. etc.

0.1 *Layer 1*

The general format of layer 1 for the designation of all types of international routes is shown in Table 1/M.1400.

TABLE 1/M.1400

Format of designation	Town A	/	Suffix	–	Town B	/	Suffix		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	≤ 6	≤ 4
									↑ No space	

The use of suffixes applies particularly to international public switched circuits. Their use is optional for international non-switched circuits, groups, group links, digital blocks and paths and data transmission systems. A suffix provides for independent sequential numbering plan in case there is more than one carrier operating in the town.

The first part of the designation, the traffic relation, presents the origin and destination of a route. The function code shows the type of route whilst the serial number counts the routes (i.e. circuits, groups, digital blocks, etc.) within the same traffic relation and same function code.

If a town name exceeds 12 characters, Administrations should apply a suitable abbreviation which should be unique.

If identical place names occur in different countries, and if confusion is likely to arise, the Administrations concerned should agree to identify the country in the designation by adding after the place name a three letter country code as defined in ISO 3166 [2]. This country code must be included within the 12 characters of the town name, if necessary by providing an abbreviation of the town name.

The serial number should be written without leading zeros.

0.2 *Layer 2*

The general format for layer 2 (related information) is as follows:

1 . . . , . . . ;

2 . . . , . . . ;

3 . . . , . . . ; etc.

The numbers identifying the fields in layer 2 indicate the various items. Each item provides information on the route, e.g. *operational* : operating companies and control station, etc. or *technical* : analogue/digital, use of special equipment etc. The items provide flexibility in designation information because they can be extended in the future if there is a need.

0.3 *Layer 3*

Not subject to standardization at the present time.

0.4 *Implementation*

It is recommended that the new designation types be applied to newly installed routes starting on 1 January 1990 (or earlier with the agreement of the Administrations involved).

Existing route designations (circuits, groups, digital blocks, etc.) should be converted gradually. The conversion to the new type designation should be completed by 1 January 1994.

To facilitate the change, Administrations with control station responsibility should prepare proposals containing designations conforming to layer 1 and propose the items of related information to be included in layer 2.

Agreement should then follow on the designation as well as an exchange of the agreed layer 2 information.

Administrations will need to ensure that the layer 2 related information is kept up to date and that other concerned Administrations are informed of any changes.

1 Designations of international public switched circuits

1.1 *General*

The format of the designation of public switched circuits is shown in Table 2/M.1400.

The elements of the format are as follows:

a) *Traffic relation*

Towns A and B (maximum 12 characters or space, see Note 1) refer to the names of the two towns in which the international exchanges of the circuit are located. The place names in all types of designations should always be written in Roman characters taking the official name of a town as used in the country to which it belongs (see § 0.1).

International exchange suffix (maximum 3 alpha-numeric characters). The international exchange is indicated by letters, digits or a combination. The suffix will refer to the whole exchange (to the building or to a part of it, see Note 2). It will be chosen by the Administration, see Notes 3 and 4.

TABLE 2/M.1400

Format of designation	Town A	/	International exchange suffix	–	Town B	/	International exchange suffix		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	1 or 2	≤ 4
									↑ No space	

b) *Function code* (1 or 2 alphabetical characters)

The function code indicates the type of circuit.

c) *Serial number* (maximum 4 numeric characters)

The serial numbering starts anew if there is a difference in

– town A or town B;

– international exchange suffix;

– function code.

Note 1 – If the name of the town exceeds 12 characters the responsible Administration will supply an appropriate abbreviation, which should be unique.

Note 2 – In the example given in Figure 1/M.1400 there may be only one suffix or three to be decided by the Administration.

Note 3 – The 3 alphanumeric characters make it possible to include carrier's name information in the suffix, e.g. Tokyo/SJK: the international exchange in Tokyo–Shinjuku where the K in the suffix reflects the responsible carrier KDD.

Note 4 – The different companies operating in the same town have to agree on the suffixes used, in order that they be different.

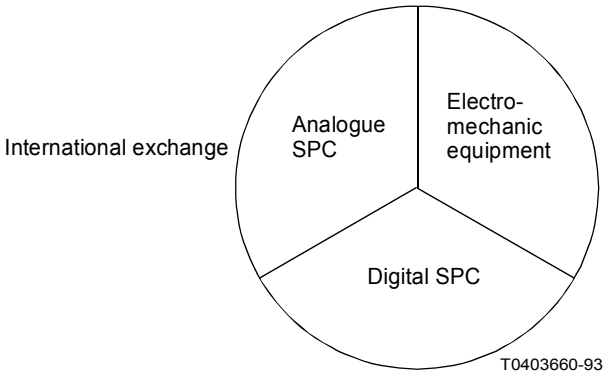


FIGURE 1/M.1400

1.2 *Telephone-type circuits*

1.2.1 *General*

Possible function codes are

M manual telephone circuits;

Z automatic and semi-automatic telephone circuits in one-way operation;

B both-way telephone circuits.

The serial number has a maximum of 4 numeric characters. Serial numbering starts anew if there is a difference in

– town A or town B;

– international exchange suffix[2)];

– function code.

2) By bilateral agreement Administrations may wish to apply a serial number to telephone-type circuits on a town-to-town basis rather than on an exchange-to-exchange basis.

1.2.2 *Telephone circuits used in manual operation*

The terminal points of the circuit are arranged in alphabetical order.

The function code is: M.

Example:

The first telephone circuit for manual operation between London Keybridge and Paris Bagnolet is designated:

London/KB–Paris/BA M1.

1.2.3 *One-way telephone circuits used for semi-automatic or automatic operation*

The terminal points of the circuits are arranged in the order according to the direction of operation of the circuit.

The function code is: Z.

Serial numbering: Circuits operated in the direction corresponding to the alphabetical order of the terminations should have odd numbers. Circuits operated in the direction corresponding to an inverse alphabetical order of the terminations should have even numbers.[3)]

Examples:

The 11th circuit operated in the London Mollison to Montreal 1TE direction (alphabetical order of towns) is designated:

London/SM–Montreal/1TE Z21.

The 9th circuit operated in the Montreal 1TE to London Mollison direction (inverse alphabetical order of towns) is designated:

Montreal/1TE–London/SM Z18.

1.2.4 *Both-way telephone circuits used for semi-automatic or automatic operation*

The terminal points of the circuit are arranged in alphabetical order.

The function code is: B.

Example:

The first both-way circuit between London Kelvin and New York 24 is designated:

London/J–New York/24 B1.

1.3 *Circuit used for switched telex and telegraph services*

See Recommendation R.70 [3].

1.4 *Circuits in the international public switched data network*

The terminations of the circuit are arranged in alphabetical order.

The function code is: XD.

Example:

The first international public switched data circuit between Oslo A and Stockolm HYX is designated:

Oslo/A–Stockholm/HYX XD1.

3) By bilateral agreement, Administrations may wish to apply continuous serial numbering on Z + B circuits.

1.5 *Related information*

The additional information on public switched circuits is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations' or carriers' names;
4) control and subcontrol station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) composition of transmission;
12) bandwith or bit rate;
13) signalling type.

The various items will be dealt with in § 2.

2 Related information for international public switched circuit

The following sections explain the items of related information concerned with international public switched circuits. A full example for the designation information of an international public switched telephone circuit is given in § A.1.

2.1 *Urgency for restoration [item 1)]*

This item supplies information on the urgency of restoration of the circuit based upon bilateral agreement between the terminal Administrations.

Format:

1. xxx . . . . xx; (maximum 10 characters)

Illustration:

a) if the priority is top: 1;
if the priority is second: 2;
if the priority is third: 3; or

b) if repair is required within e.g. 24 hours: ≤ 24 h; or

c) if no urgency has to be indicated: –;

2.2 *Terminal countries [item 2)]*

This item presents the countries in which the circuit is terminating.

Format:

2. XXX, YYY; (3 characters for each)

Specification:

XXX: code for country of town A
YYY: code for country of town B

Note – The codes are according to ISO Standard 3166 [2].

Example:

For the circuit London/KB–Tokyo/SJK Z101:

2. GBR, JNP:

2.3 *Names of Administrations or carriers [item 3)]*

This item records the names of the Administrations or carriers which operate the circuit.

Format:

3. YYYYYY, ZZZZZZ; (maximum 6 characters for each)

Specification:

YYYYYY	code for company operating in town A
ZZZZZZ	code for company operating in town B

Example:

For the circuit London/KB–Tokyo/SJK Z101 operated by BTI and KDD:

3. BTI, KDD;

2.4 *Control station [sub-control station(s)] [item 4)]*

This item lists the appointed control station and sub-control stations (according to Recommendations M.80 [16] and M.90 [17]). Further details about the stations can be found in the list of contact points (Recommendation M.1510 [18]).

Format:

4. CS: designation of control station,

SCS1: designation of sub-control station,

SCS2: designation of sub-control station,

. . . .
. . . .
. . . .

SCSn: designation of sub-control station.

Specification:

CS: designation of the control station,

SCS1: designation of the terminal sub-control station,

SCS2 to SCSn: if applicable, other sub-control stations have to be placed in the geographical order according to the traffic relation.

Example:

For the circuit New York/10–Stockholm/1 B1 where New York is the control station and sub-control stations are in London and Stockholm:

4. CS: New York,

SCS1: Stockholm,

SCS2: London;

2.5 *Fault report points [item 5)]*

This item presents the names of both fault report points on the circuit. Further information about the fault report points can be found in the list of contact points (Recommendation M.1510 [18]).

Format:

5. Designation of fault report point, designation of fault report point;

Specification:

The first report point is that of the country of town A.

The second fault report point is that of the country of town B.

Example:

For the circuit London/M–Reims/IP1 Z999 with fault report points in London M and Reims XRE:

5. London/M, Reims/XRE;

2.6 *Routing [item 6)]*

This item shows the international primary group(s) or primary block(s) and channel number(s) which carry the circuit. If there are more than one, the groups or blocks appear in the geographical order from town A to town B.

Format:

6. Designation of an international primary group or primary block/channel number, designation of a primary group/channel number, ..., designation of a primary group/channel number;

Note – Primary groups or blocks can be unidirectional as well. Two consecutive unidirectional groups or blocks are separated by a + sign instead of a comma.

Example:

For a circuit London/KB–Santiago/1 Z27:

6. London–Paris 1204/4, Paris–(MU) 1202/2+Santiago–(MU) 1203/3;

2.7 *Association [item 7)]*

This item informs whether there are associated circuits and if so, of which nature.

Format:

7. Association code: designation of associated circuit;

Specification:

If the circuit *has* a reserve circuit the association code is: S followed by the function code and the serial number of the principal circuit.

If the circuit *is* a reserve circuit the association code is: Function code followed by S and the serial number of the reserve circuit.

Example 1:

7. ZS13: Roma/AS1–Zuerich/SEL T1;

Which indicates that the actual circuit Z13 is a reserve circuit for the circuit Roma/AS1–Zuerich/SEL T1.

If the circuit belongs to a group of circuits for which the time slot sequential order (end-to-end) must be guaranteed, the association code is: TSG. The designations of the associated circuits are abbreviated by taking the function code of the circuits followed by the lowest sequential number, a hyphen and the highest sequential number.

Example 2:

If the circuit Sherman Oaks/4ES–Singapore/EST B607 belongs to a group of 30 circuits for which the time slot sequential order must be guaranteed, the association is: 7. TSG: B601-630;

2.8 *Equipment information [item 8)]*

This item records any equipment in the circuit which requires special maintenance attention.

Format:

8. XX, XX, XX, XX, XX;

Specification:

If the circuit has been routed via analogue circuit multiplication equipment: AM

If the circuit has been routed via digital circuit multiplication equipment:

– using reduced bit rate encoding: RB
– using speech interpolation: SI

If the circuit has a compandor: CO

If the circuit has an echo suppressor: ES

If the circuit has an echo cancellor: EC

If the circuit has an echo suppressor in terminal country of town A and an echo cancellor in terminal country of town B: ES, EC (any combination of EC and ES is possible).

If the circuit is a bearer circuit: BC

If the circuit is a derived circuit: DC

Note 1 – If there is a need to record an additional special equipment, additional codes can be used by bilateral agreement between the Administrations. The codes must be unique and shall have two characters.

Note 2 – A bearer circuit refers to the circuit type that continues to be provided in the case of a breakdown of the circuit multiplication equipment. For a derived circuit this is not the case.

2.9 *Use [item 9)]*

This item supplies information on the usage of the circuit. It concerns the role of the circuit in the traffic (e.g. belonging to a final route) and the usage of the circuit made by the user.

Format:

9. XX, YYYY; (maximum 7 characters)

Specification:

XX refers to the type of traffic carried by the circuit:
– if it belongs to a final group of circuits: FN
– if it belongs to an overflow group of circuits: OF
– if it belongs to a transit group of circuits: TR
– if the information is not known: –

YYYY refers to the use of the circuit:

– in the case where a public telephone circuit is used for phototelegraphy or facsimile: F
– in the case where such a circuit is occasionally used for narrow-band sound programme transmission: RK.

2.10 *Transmission medium information [item 10)]*

This item identifies whether a satellite is involved in the routing of the circuit.

Format:

10. ST; or –;

Specification:

If the circuit has been routed via satellite: ST

If the circuit is not being routed via satellite: –

Example:

For the circuit Amsterdam/2H–New York/24 Z33 routed partly via satellite:

10. ST;

2.11 *Composition of the transmission [item 11)]*

This item shows the type of transmission on the circuit.

Format:

11. A; or N; or C;

Specification:

If the transmission is analogue: A

If the transmission is digital: N

If the transmission is mixed analogue/digital: C

2.12 *Bandwidth or bit rate [item 12)]*

This item shows the bandwidth (in the case of an analogue or mixed circuit) or the bit rate (in the case of a digital circuit).

Format:

12. xxxx.x Hz; or kHz; or MHz; bit/s; or kbit/s; or Mbit/s;

Rule for the notation of the figures:

Leading zeros may be omitted, and if the decimal is a zero, this decimal and the decimal point may also be omitted.

If the figure is up to 999, use Hz, bit/s.

If the figure is between 1000 and 9 999 999, use kHz, kbit/s.

If the figure is 10 000 000 or more, use MHz, Mbit/s.

Specification:

If the circuit is analogue or mixed analogue/digital: the bandwidth in Hz, kHz, MHz

If the circuit is digital: the bit rate in bit/s, kbit/s, Mbit/s.

2.13 *Signalling type [item 13)]*

This item presents the signalling information that applies to the circuit.

Format:

13. xx . . . . xx; (maximum 20 characters).

Specification:

If the signalling is of the type xxxx Hz/xx Hz: xxxx/xx

If the CCITT Signalling System R2 is applied: R2

If the CCITT Signalling System R2-digital is applied: R2D

If the CCITT Signalling System No. 4 is applied: C4

If the CCITT Signalling System No. 5 is applied: C5

If the CCITT Signalling System No. 6 is applied: C6, xxx/yy

where xxx/yy refers to band and circuit number respectively

If the CCITT Signalling System No. 7 is applied: C7, xxxx, Y–YYY–Y, Z–ZZZ–Z

where xxxx refers to the circuit identification code (CIC)

Y–YYY–Y refers to the international signalling point code (ISPC) for town A/international exchange

Z–ZZZ–Z refers to the ISPC for town B/international exchange.

Example:

For a circuit with C6-signalling type and being the 7th circuit in band number 32:

13. C6, 032/06; (circuit counting starts at 0).

3 Designations of international fixed (non-switched) circuits

3.1 *General*

The designations of leased circuits and public fixed circuits are treated in §§ 3.2 and 3.3 respectively. The format of the designation of fixed circuits is shown in Table 3/M.1400.

TABLE 3/M.1400

Format of designation	Town A	/	Transmission station[a] suffix (optional)	–	Town B	/	Transmission station[a] suffix (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	1 to 4	≤ 4
									↑ No space	

[a] For some circuits the international exchange may be more suitable (see §§ 3.3.9 and 3.2.15, Note 2).

The elements of the format are as follows:

a) *Traffic relation*

Towns A and B, possibly with a transmission station suffix, identify the terminals of the circuit. The identification of the terminal is up to the administration concerned. In the case where a town name exceeds the maximum length of 12 characters, the administration should supply a suitable abbreviation which must be unique (see § 0.1).

The transmission station suffix (maximum 3 characters) is an optional field which may be used to further identify the terminal, when there is more than one carrier operating in the town. In that case its form should be decided by the administrations operating the circuits in the town concerned.

b) *Function code* (maximum 4 characters)

This code identifies the type of the circuit; see §§ 3.2 and 3.3.

c) *Serial number* (maximum 4 digits)

There should be a separate serial numbering series for each traffic relation and function code. In case of more than one carrier in the town, the serial numbering will be on a transmission station to transmission station basis.

The designations of the different categories of leased circuits are given below. In special cases in which CCITT Recommendations do not apply, agreement should be reached between the terminal Administrations.

3.2 *International leased circuits*

3.2.1 *General*

Leased circuits are fixed circuits for private services or particular purposes. They are distinguished by the letter P.

The designation format for leased circuits is as stated in § 3.1. Possible function codes are:

P for analogue leased circuits used wholly for telephony

TP for analogue leased circuits used for voice-frequency telegraphy

TDP for analogue leased circuits used for TDM-telegraphy

DP for analogue leased circuits used wholly for data transmission

FP for analogue leased circuits used wholly for phototelegraphy or facsimile

RP for analogue leased unidirectional sound-programme circuits

RRP for analogue leased reversible sound-programme circuits

VP for analogue leased unidirectional television-programme circuits

VVP for analogue leased reversible television-programme circuits

XP for analogue leased circuits used for multiple type transmissions

NP for digital leased circuits.

Note 1 – In case of leased circuits connecting three or more locations, the letter M should follow these function codes.

Note 2 – Whether these circuits make use of analogue or digital transmission not relevant for the above codes; the service is coded.

Note 3 – For digital leased circuits the actual use is not relevant; all are coded as NP.

3.2.2 *Analogue leased circuits used for telephony*

The terminal points of the circuits are arranged in alphabetical order.

The function code is: P.

Example:

The lst analogue leased circuit used for telephony between Paris and Wellington (New Zealand) is designated:

Paris–WellingtoNZL P1.

3.2.3 *Analogue leased circuits used for telegraphy*

3.2.3.1 *Voice-frequency telegraphy*

The terminal points of the circuits are arranged in alphabetical order.

The function code is: TP.

Example:

The lst analogue leased circuit used for voice-frequency telegraphy between Bern 1RS and New York 1RC is designated:

Bern/1RS–New York/1RC TP1.

3.2.3.2 *TDM-telegraphy*

The terminal points of the circuits are arranged in alphabetical order.

The function code is: TDP.

Example:

The 3rd analogue leased circuit used for TDM-telegraphy between London and Montreal is designated:

London–Montreal TDP3.

3.2.4 *Leased telegraph circuits*

See Recommendation R.70 [3].

3.2.5 *Analogue leased circuits used for data transmission*

The terminal points of the circuits are arranged in alphabetical order.

The function code is: DP.

Example:

The 3rd analogue leased circuits used for data transmission between London and Paris is designated:

London–Paris DP3.

3.2.6 *Analogue leased circuits used for phototelegraphy or facsimile*

The terminal point of the circuits are arranged in alphabetical order.

If these circuits are different from P-circuits the function code is: FP.

Example:

The 2nd analogue leased circuits used for phototelegraphy between London and Paris is designated:

London–Paris FP2.

If normal P-circuits are used, then these circuits are designated accordingly.

3.2.7 *Analogue leased circuits used for sound-programme transmission*

3.2.7.1 *Analogue leased unidirectional sound-programme circuit*

The terminal points of the circuits are arranged in the order corresponding to the direction of transmission (instead of alphabetically, if this is different).

The function code for these circuits is: RP.

Serial numbering: Circuits which transmit in the direction corresponding to the alphabetical order of the terminals should have odd serial numbers, circuits in the other direction even numbers.

Examples:

The first leased sound-programme circuit transmitting in the direction Montreal to Wellington (New Zealand) will be designated:

Montreal–WellingtoNZL RP1.

The first leased sound-programme circuit transmitting in the direction Wellington (New Zealand) to Montreal will be designated:

WellingtoNZL–Montreal RP2.

3.2.7.2 *Analogue leased reversible sound-programme circuits*

The terminal points of the circuits are arranged in alphabetical order.

The function code is: RRP.

Example:

The first leased circuit with reversible sound-programme transmission between Montreal and Wellington (New Zealand) is designated:

Montreal–WellingtoNZL RRP1.

3.2.8 *Analogue leased circuits used for television transmission*

3.2.8.1 *Analogue leased unidirectional television-programme circuits*

The terminal points of the circuit are arranged in the order corresponding to the direction of transmission (instead of alphabetically if this is different).

The function code is: VP.

Serial numbering: Circuits which transmit in the direction corresponding to the alphabetical order of the terminals should have odd serial numbers, circuits in the other direction even numbers.

Example:

The first leased television programme circuit transmitting in the direction Wellington (New Zealand) to Montreal will be designated:

WellingtoNZL–Montreal VP2.

3.2.8.2 *Analogue leased reversible television-programme circuits*

The terminal points of the circuits are arranged in alphabetical order.

The function code is: VVP.

Example:

The first circuit with reversible television transmission between Montreal and Wellington (New Zealand) is designated:

Montreal–WellingtoNZL VVP1.

3.2.9 *Leased circuits used for digital video transmission*

These circuits are designated as digital leased circuits (irrespective of the use), see §§ 3.2.15 and 3.2.16.

3.2.10 *Analogue leased circuits connecting circuit multiplication terminal equipments as renters' premises*

These circuits are designated as normal leased circuits. The information indicating that these circuits connect circuit multiplication terminal equipment can be recorded under item 9 (use) of related information (see § 4.9).

Circuits routed via circuit multiplication equipment are also designated as normal circuits. The multiplication equipment appears under item 8 (equipment information) of related information (see § 4.8).

3.2.11 *Analogue leased circuits used for transmission other than those designated in the paragraphs above, or used for combinations of transmissions*

In this category are circuits used for different transmissions at different times, or circuits in which the bandwidth is divided into two or more bands, thus providing two or more derived circuits which may be used for different transmissions.

The terminal points of the circuits are arranged in alphabetical order.

The function code is: XP.

Example:

Bruxelles–Paris XP8.

3.2.12 *Analogue leased circuits connecting three or more locations*

Various types and configurations of multiterminal circuits fall into this category. Each section of the circuit should have a unique designation. A section is any part of the circuit which connects a branching point to either a customer terminal or another branching point.

International sections should use the designation described below.

The terminal town points of each section are arranged in alphabetical order.

The function code is formed by adding the letter M to the function codes recommended in §§ 3.2.2 to 3.2.11. This leads, in principle, to the function codes PM, TPM, TDPM, DPM, FPM, RPM, RRPM, VPM, VVPM and XPM.

The association between sections should be recorded in the related information of each section under item 7 (association) (see § 4.7).

Wholly national sections with national designations may be included if bilaterally agreed.

Example:

Let there be an international multiterminal leased circuit connecting Bruxelles and Paris (7th PM circuit between Bruxelles and Paris) with branches from Bruxelles to Edinburgh (1st PM circuit on this relation) and from Bruxelles to Aachen (4th PM-circuit) and with an extension from Paris to Marseille.

The international sections are designated:

Bruxelles–Edinburgh PM1

Aachen–Bruxelles PM4

Bruxelles–Paris PM7.

3.2.13 *Leased analogue groups, supergroups, etc.*

These groups, supergroups, etc. will receive a circuit type designation. The additional information on the constitution of these leased groups, supergroups, etc. is to be recorded in related information under item 12 (bandwidth or bit rate) (see § 4.12) and under item 6 (routing) (see § 4.6).

The function codes are according to the relevant codes for circuits.

Example:

A supergroup between renters' premises in London and Paris for data transmission which is the 15th lease circuit for data transmission on this relation, is designated:

London–Paris DP15.

3.2.14 *Leased analogue group, supergroup links*

These group and supergroup links will receive a circuit type designation. The additional information on the constitution of these leased group, supergroup links, etc. is to be recorded in related information under item 12 (bandwidth or bit rate) (see § 4.12) and under item 6 (routing) (see § 4.6).

Example:

A group link provided between renters' premises in London and Montreal devoted to data transmission which is the 10th leased circuit for data transmission on this relation, is designated:

London–Montreal DP10.

3.2.15 *Digital leased circuits connecting two locations*

Destinations given below also apply for leased digital blocks and paths.

Note – For digital leased circuits, the use of the circuit will no longer be taken into account for the designation: the use may change without notification to the Administration or may be unknown.

The additional information concerning the bit rate is to be found in related information under item 12 (bandwidth or bit rate) (see § 4.12).

The terminations of the circuit are placed in alphabetical order.

The function code is: NP.

Example:

The 5th digital leased circuit between Birmingham and Toulouse is designated:

Birmingham–Toulouse NP5.

Note – It may happen that a digital leased circuit has been routed via one or more international exchanges; in this case, they are designated as normal digital leased circuits. However, in such cases, an international exchange suffix may replace the transmission station suffix. The information concerning the permanent switched mode is recorded in related information under item 8 (equipment information) (see § 4.8).

Example:

The 12th digital leased circuit between users' premises in Athens and Reims which is connected to transmission station TS2 in Athens and permanently switched in the international exchange IP2 in Reims is designated:

Athinai/TS2–Reims/IP2 NP12.

(Recording of suffixes is not mandatory.)

3.2.16 *Digital leased circuits connecting three or more locations*

Various types and configurations of multiterminals circuits fall into this category. Each section of the circuit should have a unique designation. A section is any part of the circuit which connects a branching point to either a customer terminal or another branching point. (See also Recommendation M.1055 [4]).

International sections should use the designation described below.

The terminal points of each section are arranged in alphabetical order.

The function code is formed by adding the letter M to the function code recommended in § 3.2.15, i.e. the function code is: NPM.

The association between sections should be recorded in the related information of each section under item 7 (association) (see § 4.7).

Wholly national sections with national designations may be included if bilaterally agreed.

Example:

In an international digital multiterminal leased circuit connecting Oslo, London, Paris, Rome and Amsterdam, the international section between Oslo and London (being the lst NPM circuit on this relation) is designated:

London–Oslo NPM1.

3.3 *Fixed (non-switched) public circuits*

3.3.1 *General*

The designation format is according to § 3.1. Possible function codes are:

R for a unidirectional sound-programme circuit

RR for a reversible sound-programme circuit

RK for telephone type circuits for narrow band sound-programme transmission

V for a unidirectional television circuit

VV for a reversible television circuit

F for a phototelegraphy or facsimile circuit

T for circuits providing voice-frequency telegraph links

TD for circuits providing TDM-telegraph systems

D for data transmission circuits

DL for circuits providing transfer link for common channel signalling systems.

Note – Information on whether a sound-programme circuit together with a second sound-programme circuit form a stereophonic pair will be recorded in the related information under the item No. 7 (association) (see § 4.7).

3.3.2 *Circuits used for sound-programme transmission*

3.3.2.1 *Circuits used for unidirectional sound-programme transmission*

The terminations of the circuit are arranged in the order corresponding to the direction of transmission (instead of alphabetically, if this is different).

The function code is: R.

Serial numbering: Circuits which transmit in the direction corresponding to the alphabetical order of the terminals should have odd serial numbers. Circuits which transmit in the direction corresponding to the inverse alphabetical order of the terminals should have even serial numbers.

Example:

The 1st circuit transmitting in the direction Wellington (New Zealand) to Montreal is designated:

WellingtoNZL–Montreal R2.

3.3.2.2 *Circuits used for reversible sound-programme transmission*

The terminations of the circuit are arranged in alphabetical order.

The function code is: RR.

Example:

The 1st circuit with reversible sound-programme transmission between Montreal and Wellington (New Zealand) is designated:

Montreal–WellingtoNZL RR1.

3.3.2.3 *Telephone-type circuits used for narrow-band sound-programme transmission*

In the traffic relation, the terminals of the circuit are arranged in the order corresponding to the direction of operation (instead of alphabetically, if this is different).

The function code is: RK.

Serial numbering: Circuits which transmit in the direction corresponding to the alphabetical order of the terminals should have odd serial numbers. Circuits which transmit in the direction corresponding to the inverse alphabetical order of the terminals should have even serial numbers.

Example:

The 1st telephone-type circuit set up for the narrow-band sound-programme transmission in the direction from Milano to Madrid is designated.

Milano–Madrid RK2.

3.3.3 *Circuits used for television transmission*

3.3.3.1 *Circuits used for unidirectional television transmission*

In the traffic relation, the terminations of the circuit are arranged in the order corresponding to the direction of transmission (instead of alphabetically, if this is different).

The function code is: V.

Serial numbering: Circuits which transmit in the direction corresponding to the alphabetical order of the terminals should have odd serial numbers. Circuits which transmit in the direction corresponding to the inverse alphabetical order of the terminals should have even serial numbers.

Example:

The 1st unidirectional television circuit transmitting in the direction Paris to Helsinki is designated:

Paris–Helsinki V2.

3.3.3.2 *Circuits used for reversible television transmission*

The terminations of the circuit are arranged in alphabetical order.

The function code is: VV.

Example:

The 1st reversible television transmission circuit between Tokyo TS1 and New Delhi is designated:

New Delhi–Tokyo/TS1 VV1.

3.3.4 Circuits for digital audio and video transmission

These circuits are designated according to the data transmission system, see § 11.

3.3.5 *Telephone-type circuits used for phototelegraphy or facsimile*

Circuits used for phototelegraphy or facsimile which are different from normal telephone circuits will have the function code: F.

The terminal points of the circuit are arranged in alphabetical order.

If normal telephone circuits are used, they are designated accordingly. Information about the usage may be recorded in the related information under item 9 (use) (see § 4.9).

Example:

The first circuit for phototelegraphy between Koebenhavn and Tokyo:

Koebenhavn–Tokyo F1.

3.3.6 *Telephone-type circuits used to provide voice-frequency telegraph links*

The terminal points of the circuit are arranged in alphabetical order.

The function code is: T.

Example:

The 1st circuit to provide a voice-frequency telegraph link between Koebenhavn 1 and Montreal 1TE is designated:

Koebenhavn/1–Montreal/1TE T1.

(Suffixes are optional.)

A reserve T-circuit is designated according to its present function. Information concerning the nature of the reserve T-circuit is found in the related information under item 7 (association) (see § 4.7).

3.3.7 *Telephone-type circuits used to provide TDM (time division multiplex) telegraph systems*

The terminal points of the circuit are arranged in alphabetical order.

The function code is: TD.

Example:

The first circuit to provide a TDM-telegraph system between London Keybridge and Montreal 1TE:

London/KB–Montreal/1TE TD1.

(Suffixes are optional.)

A reserve TD-circuit is designated according to its present function. Information concerning the nature of the reserve TD-circuit is found in the related information under item 7 (association) (see § 4.7).

3.3.8 *Telephone-type circuits used for data transmission*

The terminal points of the circuit are arranged in alphabetical order.

The function code is: D.

Example:

The 1st circuit used for data transmission between Frankfurt 1 and Toronto 1TE is designated:

Frankfurt/1–Toronto/1TE D1.

(Suffixes are optional.)

3.3.9 *Telephone-type circuits used as transfer links for common channel Signalling Systems No. 6 and No. 7*

The terminal points of the circuit are arranged in alphabetical order.

The function code is: DL.

Example:

The first data link used for common channel signalling between Sacramento 4ESS and Tokyo Shinjuku is designated:

Sacramento/4ES–Tokyo/SJK DL1

(Suffixes are optional.)

3.4 *Related information*

The additional information on fixed circuits is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations' carriers, or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) composition of transmission;
12) bandwidth or bit rate;
13) signalling type;
14) applicable CCITT Recommendations.

The various items will be dealt with in § 4.

4 Related information for international fixed circuits

The following sections explain the items of related information concerned with international fixed circuits. A full example for the designation information of an international leased analogue circuit is given in § A.2.

4.1 *Urgency for restoration [item 1)]*

This item supplies information on the urgency of restoration of the circuit based upon bilateral agreement between the terminal Administrations.

Format:

1. xxx . . . xx; (maximum 10 characters)

Illustration:

a) if the priority is top: 1;
if the priority is second: 2;
if the priority is third: 3; or

b) if repair is required within e.g. 24 hours: ≤ 24 h; or

c) if no urgency has to be indicated: –;

Note – In the case of a digital leased circuit, the priority or urgency may be decided upon by taking into account the bit rate of the circuit.

4.2 *Terminal countries [item 2)]*

This item presents the countries in which the circuit is terminating.

Format:

2. XXX, YYY; (3 characters for each)

Specification:

XXX: code for country of town A

YYY: code for country of town B

Note – The codes are according to the ISO Standard 3166 [2].

Example:

For the circuit Paris–WellingtoNZL P1:

2. FRA, NZL;

4.3 *Names of Administrations, carriers or broadcasting companies [item 3)]*

This item records the names of the Administrations or carriers which operate the circuit or, in the case of sound-programme and television circuits, the name of the broadcasting company.

Format:

3. YYYYYY, ZZZZZZ; (maximum 6 characters for each)

Specification:

YYYYYY: code for company operating in town A

XXXXXX: code for company operating in town B

Example:

For the circuit Bern/1RS–NewYork/1RC TP1 operated by Radio Suisse and RCA:

3. RS, RCA;

4.4 *Control station [sub-control station(s)] [item 4)]*

This item lists the appointed control station and sub-control stations (according to Recommendations M.80 [16] and M.90 [17] or M.1012 [5] and M.1013 [6] for leased circuits). Further details about the stations can be found in the list of contact points (Recommendation M.1510 [18]).

Example:

4. CS: designation of control station,

SCS1: designation of sub-control station,

SCS2: designation of sub-control station,

. . . .

. . . .

. . . .

SCSn: designation of sub-control station.

Specification:

CS: designation of the control station,

SCS1: designation of the terminal sub-control station,

SCS2 to SCSn: if applicable, other sub-control stations have to be placed in the geographical order according to the traffic relation.

Example:

For the circuit London/KB–Paris/ARC RP1 where Paris Archives is the control station and London Keybridge is the sub-control station:

4. CS: Paris/ARC,

SCS1: London/KB.

4.5 *Fault report points [item 5)]*

This item presents the names of both fault report points on the circuit. Further information about the fault report points can be found in the list of contact points (Recommendation M.1510 [18]).

Format:

5. Designation of fault report point, designation of fault report point.

Specification:

The first fault report point is that of the country of town A.

The second fault report point is that of the country of town B.

Example:

The fault report points for the circuit Athinai–Roma DP3:

5. Athinai, Roma/TS1.

4.6 *Routing [item 6)]*

This item shows the international primary group(s) or primary block(s) and the channel number(s) which carry the circuit (see Notes 1 and 2). If there are more than one, the groups or blocks appear in the geographical order from town A to town B.

Format:

6. Designation of an international primary group (Note 1) or primary block/channel number, designation of a primary group of block/channel number, . . ., designation of a primary group or block/channel number;

Example 1:

For the circuit from London Mollison to Paris Archives DP7:

6. London–Paris 1204/4;

Example 2:

For the wide-band circuit Frankfurt–London DP5:

6. Amsterdam–Frankfurt 6005/2, Amsterdam–London 6002/3;

Note 1 – In the case where a leased circuit consists of a group or block, the primary groups or blocks are to be replaced by the next higher groups or blocks. In this case the channel numbers are to be replaced by the group numbers.

Note 2 – Primary groups or blocks can be unidirectional as well. Two consecutive unidirectional groups or blocks are separated by a + sign instead of a comma.

4.7 *Association [item 7)]*

This item informs whether there are associated circuits and if so, of what nature.

Format:

7. Association code: Designation(s) of associated circuit(s);

Specification:

If the circuit *has* a reserve circuit, the association code is: S. This is followed by the function code and the serial number of the principal circuit.

Note – In this case the designation of the associated circuit may be replaced by the designation of a free time slot or a free channel.

If the circuit *is* a reserve circuit, the association code is: function code followed by S and this is the serial number of the reserve circuit.

If a circuit must have diverse routing with respect to another circuit, the association code is DVR. This is followed by the designation of the other circuit.

If the circuit is one of a stereophonic pair, the other circuit will appear in this item. Association code is: H followed by a 2 digit serial number indicating the number of the stereophonic pair. This is followed by the function code and the serial number of actual circuit.

If the circuit belongs to a multiterminal leased circuit, the association code is: PM, DPM, etc. (see §§ 3.2.12 and 3.2.16) and this is followed by the serial number of the circuit.

Example 1:

7. ST1: Roma/AS1–Zuerich/SEL Z13;

which indicates that the reserve circuit for the principal circuit T1 is Roma/AS1–Zuerich/SEL Z13.

In the case of a free channel in the group Roma–Zuerich 1205:

7. ST1: Roma–Zuerich 1205/6;

Example 2

The two leased circuits Kolding–Lausanne DP and Geneve–Koebenhavn DP 18 must have diverse routing ,

for the first circuit Kolding–Lausanne DP7;

7. DVR: Geneve–Koebenhavn DP18

Example 3:

If the circuit London/KB–Paris/ARC R1 is bearing one channel of the second stereophonic pair from London to Paris, and London/KB–Paris/ARC R5 bearing the other channel of this pair:

7. H02R1: London/KB–Paris/ARC R5;

which indicates that circuit R1, being one of the stereophonic pair number 2, has as the other circuit of this pair: London/KB–Paris/ARC R5.

Example 4:

If the circuit Bruxelles–Edinburgh PM1 is a part of an international multiterminal telephone circuit connecting Bruxelles and Paris (being the 7th PM-circuit on that relation) with branches from Bruxelles to Edinburgh and to Aachen (being the 2nd PM-circuit on that relation) and with an extension from Paris to Marseille, then for the circuit Bruxelles–Edinburgh PM1:

7. PM1: Aachen–Bruxelles PM2, Bruxelles–Paris PM7;

Note – The international branches may appear in any order. National branches may be added after bilateral agreement.

4.8 *Equipment information [item 8)]*

This item records any equipment in the circuit which requires special maintenance attention.

Format:

8. XX, XX, XX, XX, XX;

Specification:

If the circuit has been routed via digital circuit multiplication equipment: AM

If the circuit has been routed via digital circuit multiplication equipment

– using reduced bit rate encoding: RB

– using speech interpolation: SI

If the circuit has a compandor: CO

If the circuit consists of a semi-permanent switched connection: SP

Note – If there is a need to record additional special equipment, additional codes can be used by bilateral Agreement between the Administrations. The codes must be unique and shall have two characters.

4.9 *Use [item 9)]*

This item identifies for what purpose the circuit is used (if this is known by the Administration and of use for maintenance).

Format:

9. XXX . . XX; (maximum 7 characters)

Specification:

XX . . XX allows the record of the usage of the circuit.

If the circuit has been provided with circuit multiplication equipment at renters' premises with connection channels: CC.

4.10 *Transmission medium information [item 10)]*

This item identifies whether a particular transmission medium is required in the routing of the circuit.

Format:

10. ST: XX . . . XX; or 10. NS: XX . . . XX; or 10. –; (XX . . . XX maximum 10 characters)

Specification:

If the circuit has to be routed via satellite: ST followed by the designation of the satellite.

If the circuit must not be routed via satellite: NS followed by the designation of the terrestrial transmission medium.

If there is no transmission medium requirement: –.

Example:

For the circuit London–Paris DP3 that has to be routed via satellite Telecom 1:

10. ST: Tel 1.

4.11 *Composition of the transmission [item 11)]*

This item shows the type of transmission on the circuit.

Format:

11. A; N; or C;

Specification:

If the transmission is analogue: A

If the transmission is digital: N

If the transmission is mixed analogue/digital: C

4.12 *Bandwidth or bit rate [item 12)]*

This item shows the bandwidth (in the case of an analogue circuit or mixed circuit) or the bit rate (in the case of a digital circuit).

Format:

12. xxxx.x Hz; or kHz; or MHz; bit/s; or kbit/s; or Mbit/s;

Rules for the notation of the figures:

Leading zeros may be omitted, and if the decimal is a zero, this decimal and the decimal point may also be omitted.

If the figure is up to 999, use Hz, bit/s.

If the figure is between 1000 and 9 999 999, use kHz, kbit/s.

If the figure is 10 000 000 or more, use MHz, Mbit/s.

Specification:

If the circuit is analogue or mixed analogue/digital: the bandwidth Hz, kHz, MHz.

If the circuit is digital: the bit rate in bit/s, kbit/s, Mbit/s.

Example:

For the circuit Bordeaux–Darmstadt NP7 with a bit rate of 64 kbit/s:

12. 64 kbit/s.

4.13 *Signalling type [item 13)]*

This item presents the signalling type that applies to the circuit (reference is made to Recommendations M.1045 [7] and Q.8 [8]).

Format:

13. xxxxxxx; (maximum 7 characters)

Specification:

If the signalling is of the type xxxx Hz/xx Hz: xxxx/xx. Otherwise the characters can be used on the basis of bilateral agreement between the two terminal Administrations.

Example:

For a circuit with in-band signalling 1000 Hz/20 Hz:

13. 1000/20.

4.14 *Application CCITT Recommendations [item 14)]*

This item records the CCITT Recommendation(s) applied as regards the parameters of the circuit.

Format:

14. Rec. X.xxxx, Rec. Y.yyyy; or 14. Rec. X.xxxx; or 14. –;

Specification:

The number of Recommendations to be recorded (2, 1 or 0) is dependent on the need.

Example:

14. Recommendation M.1020;

5 Designations of international groups, supergroups, etc. (bidirectional and unidirectional)

5.1 *General*

The format of the designation of groups, etc. is shown in Table 4/M.1400.

TABLE 4/M.1400

Format of designation	Town A	/	Transmission station suffix (optional)	–	Town B	/	Transmission station suffix (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	1 to 6	2 to 3
									↑ No space	

The elements of the format are as follows:

a) *Traffic relation*

Groups etc. are indicated by the names of the towns where the groups, etc. terminate. For the spelling, see § 1.1. The town names are arranged in alphabetical order. For multiple destination unidirectional groups the name of town B is replaced by (MU) (see § 5.3.1). In the case that a town name exceeds the maximum length of 12 characters, the responsible Administration should supply a suitable abbreviation that must be unique (see § 0.1).

The transmission station suffix (maximum 3 characters) is an optional field which may be used to further identify the terminal point when there is more than one carrier operating in the town. The necessity for a suffix and its form should be decided by the Administration operating the circuit in the town concerned.

b) *Function code*

This code consists of the nominal number of channels in the group (see Note). In the case of a unidirectional single destination group, the number is preceded by (U) (see § 5.3.2).

Note – Where group, supergroup, etc., links are directly interfaced by analogue to digital conversion equipment, the number of channels is followed by the letter C (see § 10).

c) *Serial numbering*

The numbering is on a town-to-town basis with an exception for the case where the suffix is used. The numbering for that case is made on a transmission station to transmission station basis.

The numbering of a group, supergroup, etc., is applied between the point where the group, etc., is assembled to the point where it is broken down, independently of the position it occupies in the band of line frequencies.

If the number is less than 10, it is preceded by a zero.

5.2 *Bidirectional groups, etc.*

5.2.1 *Group*[4)]

The function code is a number that indicates the nominal number of channels in the group, as follows:

8 for 8 channel groups,

12 for 12 channel groups,

16 for 16 channel groups.

Example:

The third 12-channel group between Moskva and New York is designated:

Moskva–New York 1203.

5.2.2 *Supergroup*[4)]

The function code is a number that indicates the nominal number of channels in the supergroup, as follows:

60 for 60 channel supergroups.

80 for 80 channel supergroups.

Example:

The first 60 channel supergroup between London and Amsterdam is designated:

Amsterdam–London 6001.

5.2.3 *Mastergroup*[4)]

The function code is: 300.

Example:

The first mastergroup between Bruxelles and London is designated:

Bruxelles–London 30001.

5.2.4 *Supermastergroup*[4)]

The function code is: 900.

Example:

The tenth supergroup between Amsterdam and Paris is designated:

Amsterdam–Paris 90010.

5.2.5 *Use of the groups, etc.*

This information will be contained in related information under item 9 (use) (see § 7.9). If groups are used for private purposes, see § 3.2.13.

5.2.6 *Restoration groups and supergroups*

Groups and supergroups set up on restoration groups and supergroups, or on spare groups and supergroups for restoration purposes, will receive a serial number from the 800 series, in descending order and starting from 899.

Restoration groups:	8899, 8898, 8897, etc., 12899, 12898, 12897, etc., or 16899, 16898, 16897, etc., as appropriate.
Restoration supergroups:	60899, 60898, 60897, etc.

4) For the definition, see Recommendation M.60 [19].

Example 1:

The second 12-channel restoration group between London and Sydney is designated:

London–Sydney 12898.

Example 2:

The first restoration supergroup between Amsterdam and Bruxelles is designated:

Amsterdam–Bruxelles 60899.

5.3 *Unidirectional groups and supergroups*

5.3.1 *Multiple destination unidirectional groups and supergroups*

The unidirectional route will be designated by the name of the sending terminal station (in the general format: town A) followed by a hyphen, and the letters MU (multiple destination unidirectional) in parentheses replace town B. This will be followed by the function code and serial number of the group or supergroup.

Example 1:

The first multiple destination unidirectional supergroup from London (to, for example Bogota, Lusaka and Montreal) is designated:

London-(MU) 6001.

The next such supergroup from the same point of origin to any destination would take the next number in the series, e.g., the second supergroup from London is designated:

London-(MU) 6002.

This supergroup might go, for example, to Tokyo, Hawaii and Melbourne.

Example 2:

The first supergroup from Montreal (to, for example, London, Lusaka and Paris) is designated:

Montreal-(MU) 6001.

Note – Groups and supergroups routed via a multiple-access system may be provided for exclusive use between two terminal stations only, in which case the normal designations given above in this Recommendation will apply.

5.3.2 *Single destination unidirectional groups and supergroups*

The unidirectional route will be designated by the name of the sending terminal station (in the general format: town A) followed by a hyphen and the name of the receiving terminal station (town B). The function code consists of the letter U (unidirectional) in parentheses and the nominal number of channels of the group or supergroup.

Example:

A unidirectional group transmitting in the direction from Paris to Etam, which, in the reverse direction of transmission is assigned to a multiple destination unidirectional (MU) group from Etam to Paris and Rio de Janeiro, would be designated as:

Paris–Etam (U) 1201.

The next group between these locations, Paris and Etam, if bidirectional, would be designated in the normal manner as:

Etam–Paris 1202.

Note – Groups and supergroups routed via a multiple-access system may be provided on a bidirectional basis for exclusive use between two terminal stations only, and in this case the normal designations given above in this Recommendation will apply.

5.4 *Related information*

The additional information on groups etc., is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers' or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) (unassigned item, use: –;);
12) bandwidth;
13) occupancy.

The various items will be dealt with in § 7.

6 Designations of international group links, supergroup links and line links

6.1 *Group and supergroup links*

Group links and supergroup links are designated according to the general format for groups (see § 5.1). In practice, it may be that terminal equipment is not connected to a group link or supergroup link. Nevertheless, for designation purposes, the link will be numbered as though terminal equipment were connected.

6.1.1 *Conventional links not connected to their terminal equipment*

Such links are included in the normal numbering sequence of groups and supergroups and are not given a separate numbering sequence.

When a group link or supergroup link is used only part time with terminal translating equipment (to provide a conventional group or supergroup) it will be designated in the normal way. The part time condition of the group link has to be indicated in related information under item 9 (use) (see § 7.9).

Example:

The group link between Amsterdam and London set up following 5 groups already in service, is designated:

Amsterdam–London 1206.

6.1.2 *Restoration links*

Group links and supergroup links nominated for restoration purposes will receive a serial number from the 800-series in ascending order and starting from 801.

Restoration group links: 12801, 12802, 12803, etc.,

Restoration supergroup links: 60801, 60802, 60803, etc.

Example:

The second restoration group link between Hong Kong and Sydney is designated:

Hong Kong–Sydney 12802.

Note – The first two digits (e.g. 12) in the designation of a restoration group link do not necessarily indicate the number of channels in the group which is set up via the link. For example, a restoration group link London–Montreal 12801 might be used to restore the group London–Montreal 1605.

6.2 *Line links*[5)]

The format of the designation of line links is shown in Table 5/M.1400.

TABLE 5/M.1400

Format of designation	Town A	/	Transmission station suffix (optional)	–	Town B	/	Transmission station suffix (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	3 to 5	2
									↑ No space	

The elements of the format are as follows:

a) *Traffic relation*

The two terminals are arranged in alphabetical order. For the use of the suffix, see § 5.1.

b) *Function code*

This code consists of a number indicating the nominal telephone channel transmission capacity followed by the letter A.

c) *Serial number*

This is a two-digit number.

Example 1:

The first 1840 telephone channel capacity line link between Beaver Harbour and Widemouth is designated:

Beaver Harbo–Widemouth 1840A01.

Example 2:

The first 432 telephone channels capacity line link between Etam and Pleumeur-Bodou is designated:

Etam–Pleumeur-Bod 432A01.

Note – Line links are sometimes characterized by having channel capacities not in accordance with normal group, supergroup, etc., alignments. Examples of these nonstandard capacities may often be found in submarine cable or satellite line links. These links will be numbered in accordance with the nominal channel capacity of the link.

5) For the definition, see Recommendation M.60 [19].

6.3 *Related information*

The additional information on group links, supergroup links and line links is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers', or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) (unassigned item, use: –;);
12) bandwidth;
13) occupancy (this item is not in use for group, etc.); links,

The various items will be dealt with in § 7.

7 Related information for international groups, group links and line links

The following sections explain the items of related information concerned with international groups, group links, line links, etc. Full examples for the designation information of an international group and an international group link is given in § A.3.

7.1 *Urgency for restoration [item 1)]*

This item supplies information on the urgency of restoration of the group/group link based upon bilateral agreement between the terminal Administrations.

Format:

1. xxx . . . . xx; (maximum 10 characters)

Illustration:

a) if the priority is top: 1;
if the priority is second: 2;
if the priority is third: 3; or

b) if repair is required within e.g., 24 hours: ≤ 24 h; or

c) if no urgency has to be indicated: –;

Example:

If the group Bonn–Paris 1201 needs top priority restoration:

1. 1;

7.2 *Terminal countries [item 2)]*

This item presents the countries in which the group/group link is terminating.

Format:

2. XXX, YYY; or XXX; (3 characters for each)

Specification:

XXX code for country of town A

YYY code for country of town B

In the case of a multiple destination unidirectional group (MU), only XXX applies.

Example 1:

For the group Beograd–Roma 1201:

2. YUG, ITA;

Example 2:

For the multiple destination group Toronto–(MU) 1202

2. CAN;

Note – The codes are according to ISO Standard 3166 [2].

7.3 *Names of Administrations, carriers or broadcasting companies [item 3)]*

This item records the names of the carriers, etc., which operate the group/group link.

Format:

3. XXXXXX, YYYYYY; or XXXXXX; (maximum 6 characters for each)

Specification:

XXXXXX: name of company in town A

YYYYYY: name of company in town B

In the case of an unidirectional multiple destination, only XXXXX applies.

Example 1:

For the supergroup Amsterdam–London 6002:

3. NLDPTT, BTI;

Example 2:

For the multiple destination group Hong Kong–(MU) 1201:

3. HKGTEL;

7.4 *Control station [sub-control station(s) [item 4)]*

This item lists the appointed control station and sub-control stations (according to Recommendations M.80 [16] and M.90 [17]). Further details about the stations can be found in the list of contact point (Recommendation M.1510 [18]).

Format:

4. CS: designation of control station,

SCS1: designation of sub-control station,

SCS2: designation of sub-control station,

. . . .
. . . .
. . . .

SCSn: designation of sub-control station.

or in the case of a multiple destination unidirectional group:

4. CS: designation of control station;

Specification:

4. CS: designation of the control station;

SCS1: designation of the terminal sub-control station;

SCS2 to SCSn: if applicable: other sub-control stations, are to be placed in the geographical order according to the traffic relation.

In the case of a multiple destination unidirectional group, only CS applies.

Example 1:

For a group Helsinki–Paris 1201 where the control station is Helsinki TM1 and the sub-control station is Paris Archives:

4. CS: Helsinki/TM1,

SCS1: Paris/ARC;

Example 2:

For the multiple destination unidirectional group Wien–(MU) 1201:

4. CS: Wien/ARS;

7.5 *Fault report points [item 5)]*

This item presents the names of both fault report points on the group/group link (according to Recommendation M.2130 [20]). Further details about the fault report points can be found in the list of contact points (Recommendation M.1510 [18]).

Format:

5. Designation of fault report point, designation of fault report point;

or

5. Designation of fault report point;

Specification:

The first fault report point is that of the country of town A. The second fault report point is that of the country of town B. In the case of a multiple destination unidirectional group, there is only one fault report point under item 5.

Example 1:

For the group Moskva–Paris 1201;

5. Moskva/MNA, Paris/ARC;

Example 2:

For the multiple destination unidirectional group Caracas–(MU) 1201:

5. Caracas/TS1;

7.6 *Routing [item 6)]*

This item records the next higher group within the multiplex hierarchy on which the group/group link has been routed and the position number, or in the case of the highest multiplex level, the transmission media on which the group/group link has been routed.

Format:

6. Designation of an international group/position number or designation of transmission medium, designation of an international group/position number or designation of transmission medium, . . ., designation of an international group/position number or designation of transmission medium;

Note – Two consecutive unidirectional groups are separated by a + sign instead of a comma.

Specification:

The designation of an international group refers to the next higher level in the multiplex hierarchy. If there are more than one, the groups are noted in geographical order from town A to town B

The designation of the transmission medium refers to the transmission medium leaving the country of town A and to the transmission medium entering the country of town B respectively.

As no CCITT designations of transmission media are provided for the time being, the terminal countries should provide designations or agree on designations.

If there is only one transmission medium, the designation of this medium applies.

Example 1:

A group Alger–London 1201 has been routed internationally as follows:

6. Alger–Paris 6002/2, London–Paris 6040/5;

Example 2:

A supermaster group Barcelona–Perpignan 90001 has been routed as follows:

6. Gerona–Perpignan 1800A08;

Example 3:

A group Caracas–Paris 1201 has been routed as follows:

6. Caracas–Paris 6001/2+Caracas–(MU) 6002/3;

7.7 *Association [item 7)]*

This item informs whether there are associated group/group links and if so, of which nature.

Format:

7. Association code: designation(s) of the associated group(s) or group link(s);

Specification:

If the group *has* a reserve group the association code is:

S followed by the function code and the serial number of the group.

If the group *is* a reserve group the association code is:

function code followed by S and the serial number of the reserve group.

The same applies for group links.

Example:

If the normal group is Bruxelles–Luxembourg 1215 and if the group Bruxelles–Luxembourg 12899 serves as a restoration group for the group Bruxelles–Luxembourg 1215:

7. S1215: Bruxelles–Luxembourg 12899;

For the group Bruxelles–Luxembourg 12899 there has to be recorded under item 7:

7. 12S899: Bruxelles–Luxembourg 1215;

7.8 *Equipment information [item 8)]*

This item records information on equipment in the group/group link which requires special maintenance attention.

Format:

8. XX, XX, XX, XX;

Specification:

If the group is carrying companded circuits: CO

If a group has been routed via TDMA: TD

If there is no special equipment: –

Note – If there is a need to record any additional equipment information, the free codeplaces are available for that purpose. The codes to be used must consist of two characters, be unique and can be chosen by bilateral agreement between Administrations.

Example:

If a group Genève–Mexico 1210 is carrying companded circuits:

8. CO;

7.9 *Use [item 9)]*

This item identifies for what purpose the group/group link is used (if this is known by the Administration and of use for maintenance).

Format:

9. XXXXXX; (maximum of 6 characters)

Specification:

XXXXXX refers to (among others) the designatory letters Z, B, D, X, DP, RP, VP, etc., as explained in §§ 1 and 3. If no other information available, the sign – is used.

Example:

If the group London–Melbourne 1212 is dedicated to DP-circuits:

9. DP;

7.10 *Transmission medium information [item 10)]*

This item identifies whether a satellite is involved in the routing.

Format:

10. ST; or –;

Specification:

If the group/group link has been routed via satellite: ST

If the group/group link has not been routed via satellite: –

Example:

If the group Caracas–Madrid 1203 has been routed via satellite:

10. ST;

7.11 *End-to-end information (for mixed analogue/digital routes only) [item 11)]*

This item provides information on the destinations of the traffic carried by the group.

Format:

11. X . . . X, Y . . . Y; (maximum 12 characters each) or –;

Specification:

X . . . X and Y . . . Y are the names of a town and refer to the destinations of the traffic on the group. The destinations are placed according to the order of towns in the traffic relation.

If the group has a multiple destination, one town name is replaced by the code: M.

If the group is within an analogue environment, X . . . X, Y . . . Y is replaced by the sign –.

Example:

If the group Athinai–Paris 60C11 carries traffic from Bruxelles to Sofia:

11. Sofia, Bruxelles;

7.12 *Bandwidth [item 12)]*

This item shows the bandwidth of the group/group link.

Format:

12. xxxx kHz or MHz or GHz

Rules for the notation of the bandwidth figures:

No leading zeros required

If the figure is between 10 000 and 9 999 999, use kHz

If the figure is between 10 000 000 and 9 999 999 999, use MHz

If the figure is 10 000 000 000 or more, use GHz.

Example:

A group Bangkok–New Delhi 1201:

12. 48 kHz;

7.13 *Occupancy (for groups/supergroups, etc., and for line links) [item 13)]*

This item lists the occupancy of the group expressed by the next lower group and/or circuits which have been routed in the group.

Format in the case of a group (lowest level):

13. Position number: designation of the circuit, or the sign –,

. . . . . .
. . . . . .
. . . . . .

Position number: designation of the circuit, or the sign –;

Format in the case of a supergroup or higher level group:

13. Position number: designation of a group, of a leased circuit, or the sign –,

. . . . . .
. . . . . .
. . . . . .

Position number: designation of a group of a leased circuit, or the sign –;

Specification:

If the position number is occupied by a next lower group: designation of this group.

If the position number is occupied by a leased circuit (with a bandwidth corresponding to the bandwidth of the next lower multiplex level, e.g. see § 3.2.13): designation of this leased circuit.

If the position number is not in use: –

Example:

For a supergroup Athinai–Paris 6002:

13. 01: Beyrouth–Paris 1209,
02: London–Sofia 1202,
03: Athinai–Paris 1205,
04: Athinai–Rotterdam 1202,
05: Athinai–Paris DP4;

8 Designations of international digital blocks (bidirectional and unidirectional)

8.1 *General*

This section refers to blocks which are part of the digital multiplex hierarchy and which are formatted according to Recommendations G.734, G.736, G.742, G.743, G.745, G.751, G.752, G.753 and G.754 [10]. All other blocks are designated according to § 11.

The format of the designation of digital blocks is shown in Table 6/M.1400.

TABLE 6/M.1400

Format of designation	Town A	/	Suffix for transmission station or international exchange (optional)	–	Town B	/	Suffix for transmission station or international exchange (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	3 to 6	≤ 4
									↑ No space	

The elements of the format are as follows:

a) *Traffic relation*

Town A and town B, possibly with a suffix for the transmission station or international exchange, indicate the terminal points of the block. For the spelling, see § 1.1. If a town name exceeds the maximum length of 12 characters, the Administration should apply a suitable abbreviation which must be unique (see § 0.1). The town names are arranged in alphabetical order.

The suffix for the transmission station or international exchange (maximum 3 characters) is an optional field which may be used to further identify the terminal point when there is more than one carrier operating in the town. The necessity for a suffix and its form should be decided by the Administration operating the circuit in the town concerned.

In the case of a multiple destination unidirectional block, town B is replaced by (MU) (see § 8.4).

b) *Function code*

This code consists of a number indicating the nominal number of channels in the block followed by the letter N.

For blocks in a mixed analogue/digital environment, see § 10.1.2. (In this case 6 characters or less are required.)

c) *Serial number*

This is a 1 to 4 digit number which counts the number of blocks with the same traffic relation and the same function code.

8.2 *Bidirectional digital blocks*

These blocks are designated according to the principles stated in § 8.1.

Example 1:

The fourth secondary order block between London and Paris is designated:

London–Paris 120N4.

Example 2:

The tenth primary order block between New York and Tokyo is designated:

New York–Tokyo 24N10.

8.3 *Restoration digital blocks*

Digital blocks set up on restoration digital paths or spare digital paths for restoration purposes will receive a serial number from the 800 series, in descending order and starting from 899.

Example:

The first fourth order restoration block between Koebenhavn and Stockholm is designated:

Koebenhavn–Stockholm 1920N899.

8.4 *Multiple destination unidirectional digital blocks*

For these blocks the traffic relation is composed of the name of the sending terminal station followed by a hyphen and the letters MU (Multiple destination Unidirectional) in parentheses.

Examples:

The first multiple destination unidirectional primary digital block from Bercenay (to, for example, London and Bruxelles) is designated:

Bercenay–(MU) 30N1.

The next multiple destination unidirectional primary digital block from Bercenay (to, for example, Frankfurt and Roma) is designated:

Bercenay–(MU) 30N2.

Note – Digital blocks routed via a multi-access system may be provided for exclusive use between two terminal stations only, in which case the normal designations given above in this Recommendation will apply.

8.5 *Single destination unidirectional digital blocks*

These blocks are designated as normal digital blocks and numbered in the same sequence. The unidirectional property as well as the direction of transmission has to be registered in Related information under item 16 (Direction of transmission) (see § 15.16).

Example:

A unidirectional primary digital block transmitting in the direction Roma to London, which is the 21st primary digital block on that relation is designated:

London–Roma 30N21.

8.6 *Related information*

The additional information on digital blocks is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers' or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing:
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) (unassigned item, use: "–;");
12) bit rate;
13) occupancy;
14) actual number of channels (for primary blocks only);
15) clocking information;
16) direction of transmission (for unidirectional blocks only);

The various items will be dealt with in § 15.

9 Designation of international digital paths

In practice it may be that terminal equipment is not connected to a digital path. Nevertheless, for designation purposes the digital path will be designated as though digital blocks had been set up (see § 8.1).

9.1 *Conventional digital paths not connected to their terminal equipment*

Such digital paths are included in the normal serial numbering sequence of digital blocks and are not given a separate numbering sequence.

9.2 *Restoration digital paths*

Digital paths nominated for restoration purposes are designated by serial numbers taken from the 800 series in ascending order and starting from 801.

Restoration paths for first order digital blocks: 30N801, 30N802, etc.

Restoration paths for second order digital blocks: 120N801, 120N802, etc.

Example 1:

The 4th second order restoration digital path between London and Paris is designated:

London–Paris 120N804.

Example 2:

The first third order restoration digital path between Amsterdam and Paris is designated:

Amsterdam–Paris 480N801.

9.3 *Digital line sections and digital radio sections*

Designations of digital line sections and digital radio sections are under consideration.

9.4 *Related information*

The additional information on digital paths is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers' or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) (unassigned item, use: "–;");
12) bit rate;

The various items will be dealt with in § 15.

10 Designations of routes[6] in the mixed analogue/digital transmission network

Conforming to the philosophy for lining-up and maintaining a mixed analogue/digital transmission network (Recommendation M.20 [21]), the analogue and digital parts of the network are designated separately. To indicate that the end-to-end transmission relies on a mixture of analogue and digital transmission systems, the letter C is included in both the analogue and digital designations. The function code may, therefore, consist of a maximum of 6 characters.

Transmultiplexer equipment is included in the designation of the analogue part of the route.

10.1 *Transmission routes with one analogue-to-digital conversion*

10.1.1 *Groups and supergroups, etc., forming part of a mixed analogue/digital transmission route*

Groups, supergroups, etc., which are converted into digital paths at some point are designated in the same way as conventional groups or supergroups (see § 5.1), but have a letter C included in the function code and placed after the nominal number of channels.

Examples:

Group:	London–Riyadh 12C02 Amsterdam–Koebenhavn 12C899 (restoration group)
Supergroup:	Paris–Sydney 60C01
Mastergroup:	Bruxelles–London 300C03
Supermastergroup:	Amsterdam–Paris 900C04

Figure 2/M.1400 shows a typical analogue/digital arrangement and how it will be designated.

10.1.2 *Digital blocks and paths forming part of a mixed analogue/digital transmission route*

Digital blocks and paths which are converted into analogue groups, supergroups, etc., at some point, are designated in the same way as conventional digital blocks and paths, but have an additional letter C placed after the letter N.

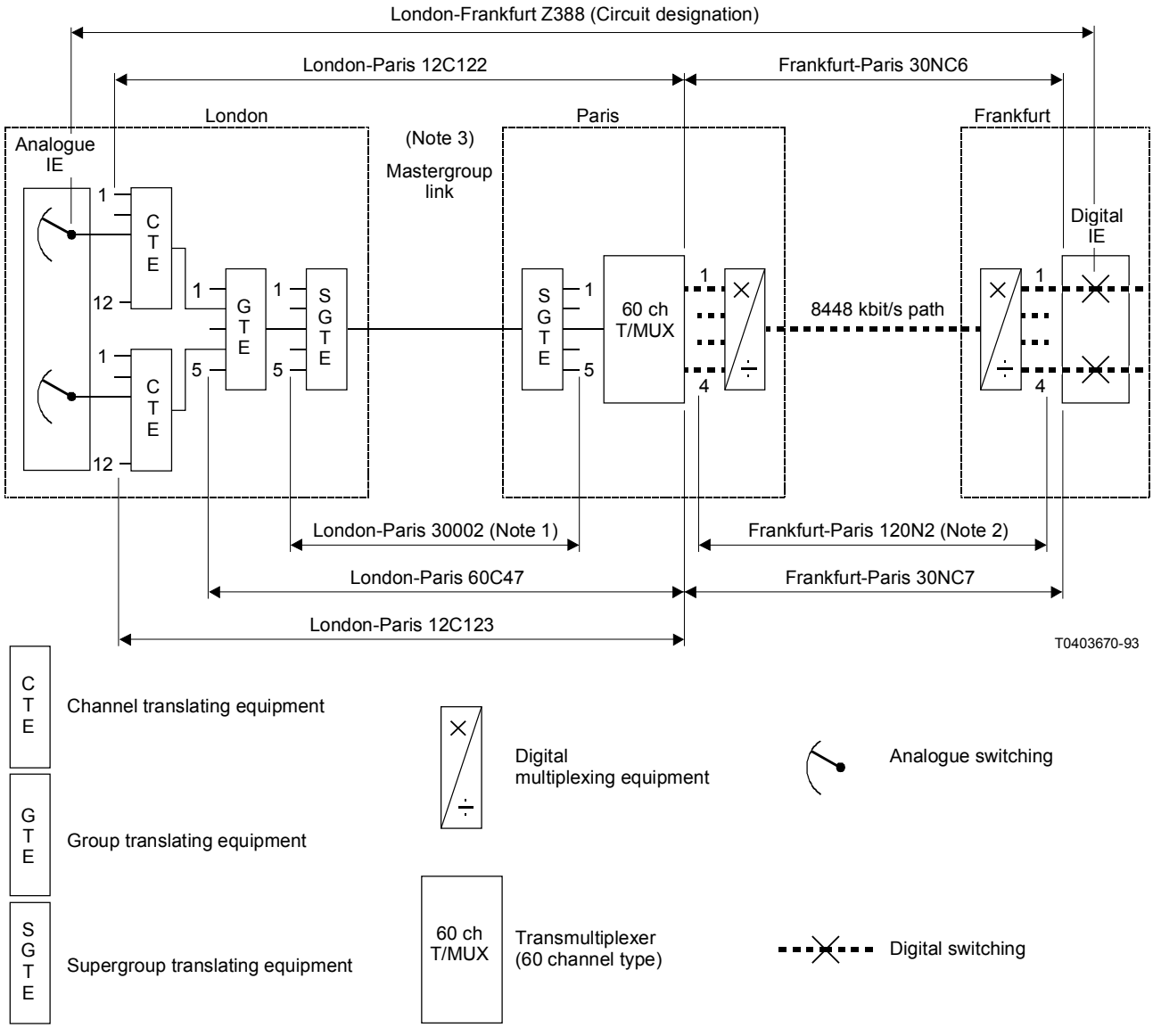
---

6) This term is used provisionally in this context to designate various combinations of analogue and digital sections with appropriate intermediate equipment and usually also including terminal equipment, as illustrated in Figure 2/M.1400 and Figure 3/M.1400.

Example:

Madrid–Roma 480NC1.

Figure 2/M.1400 shows a typical analogue/digital arrangement and how it will be designated.



IE International exchange

Note 1 – The conventional analogue designation is used.

Note 2 – The conventional digital designation is used.

Note 3 – Mastergroup link equipment is assumed and not shown here.

FIGURE 2/M.1400

Example of a transmission route involving one analogue-to-digital conversion, showing how the various parts will be designated

10.1.3 *End-to-end designations*

This subject is covered by item 11 in Related Information for digital blocks (see § 15.11).

10.2 *Transmission routes with two analogue-to-digital conversions*

10.2.1 *End-to-end designations*

Where both ends of a route involving two analogue-to-digital conversions are analogue, an end-to-end designation using the analogue notation described in § 10.1.1 should be agreed between the terminal Administrations.

Where both ends are digital, an end-to-end designation using the digital notation described in § 10.1.2 should be agreed between the terminal Administrations.

By the above means, both terminal stations have available a common designation for the end-to-end transmission route, and are informed of its mixed analogue/digital nature.

10.2.2 *Intermediate section designation*

The intermediate part of the route is given a separate designation using the appropriate notation. The choice of this designation is the responsibility of the Administrations providing the intermediate part of the route, and it is their responsibility to associate, in their records, this intermediate designation with the overall designation.

Figure 3/M.1400 shows two examples of routes involving two analogue-to-digital conversions and how they will be designated.

10.3 *Transmission routes with more than two analogue-to-digital conversions*

The transmission planning rules given in Recommendation G.113, § 3 [11] effectively restrict the number of unintegrated digital processes (e.g. analogue-to-digital conversions) permitted in the international part of a telephone connection. Similarly, the routing plan given in Recommendation E.171 [12] restricts the number of international circuits in a connection to four.

In view of these rules it is desirable to limit the number of analogue-to-digital conversions in each direction between international centres to a maximum of two. Therefore the detailed designation requirements of routes with more than two analogue-to-digital conversions are not considered.

10.4 *Related information*

The additional information on groups and blocks in the mixed analogue/digital network is covered by the same items as analogue groups and digital blocks respectively. However the item 11, "End-to-end information" is used in addition (see §§ 7.11 and 15.11).

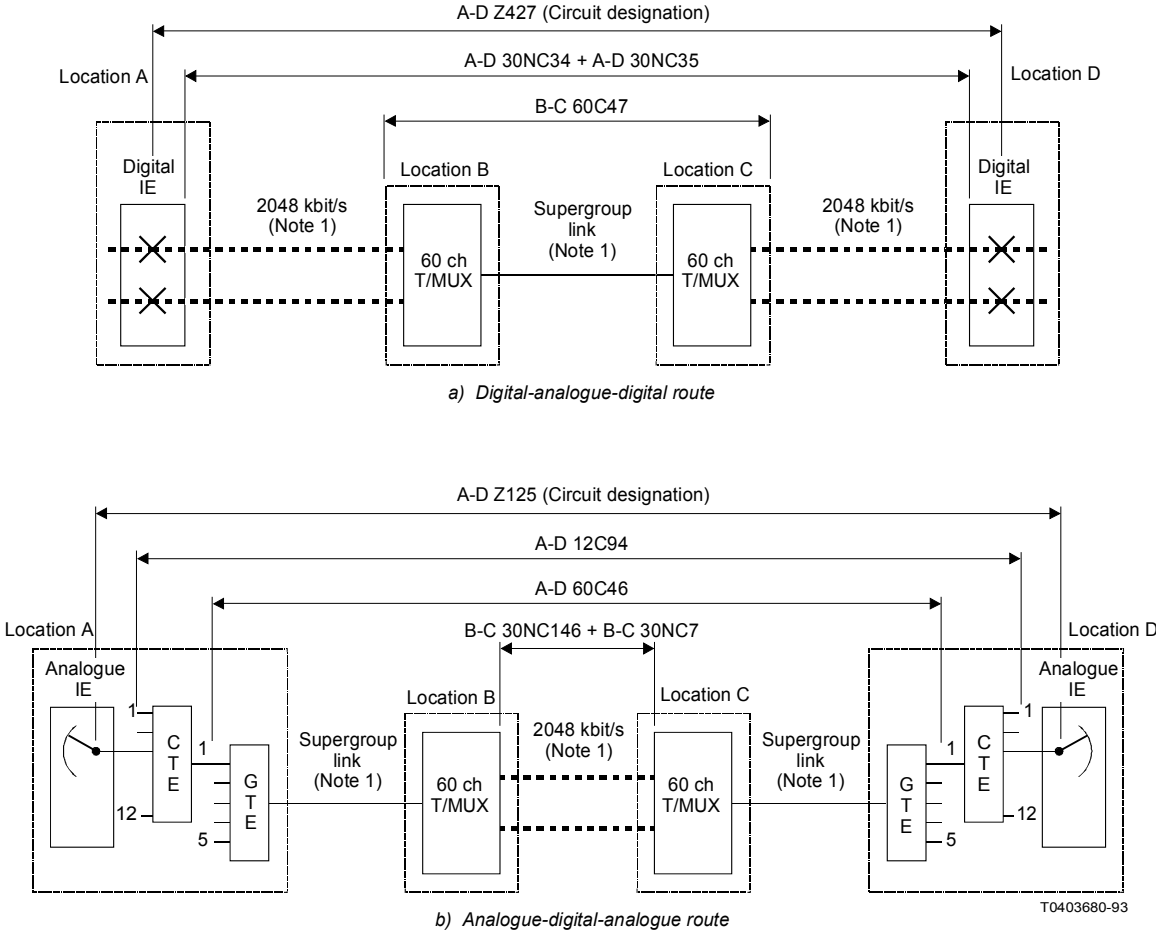
11 Designation of data transmission systems

11.1 *General*

This section deals with data transmission systems provided between the premises of Administrations. (Those between renters' premises are designated according to § 3.2.15 concerning digital leased circuits connecting two locations.)

The designation scheme of these data transmission systems can only be used if they are non-hierarchical or not formatted according to the Recommendations G.734, G.736, G.742, G.743, G.745, G.751, G.752, G.753 and G.754 [10]. This means that digital blocks from a digital multiplex hierarchy, with a format defined in Recommendation G.702 [13] cannot have a designation taken from this section. They should be designated according to § 8.

Note – This section deals with digital transmission only. Analogue data transmission systems and links are covered by the sections treating circuits, groups and group links.



Note 1 – Higher order groups and digital blocks would be designated in the conventional manner.

Note 2 – Symbols are defined in Figure 2/M.1400.

FIGURE 3/M.1400

Examples of transmission routes involving two analogue-to-digital conversions, showing how the various parts will be designated

The format of designations of data transmission systems are shown in Table 7/M.1400.

TABLE 7/M.1400

Format of designation	Town A	/	Suffix for transmission station or international exchange (optional)	–	Town B	/	Suffix for transmission station or international exchange (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	≤ 5	1 to 3
									↑ No space	

The elements of the format are as follows:

a) *Traffic relation*

Town A and town B, possibly with a transmission station or international exchange suffix, represent the two terminal stations of the data transmission system. The names are arranged in alphabetical order. For the spelling, see § 1.1. If the town name exceeds the maximum length of 12 characters, the responsible Administration should supply a suitable abbreviation which must be unique (see § 0.1).

The transmission station or international exchange suffix (maximum 3 characters) is an optional field which may be used to further identify the terminal point when there is more than one carrier operating in the town. The necessity for a suffix and its form should be decided by the Administration operating the circuit in the town concerned.

b) *Function code*

This code consists of a 2 to 4 digits number which together with a letter showing the multiplication factor, indicates the bit rate.

The letters to be used to indicate the multiplication factor are:

Bit rate of system			*Letter*
Up to	999 bit/s		B
	1000 to	9999 bit/s	H
	10 000 to	9 999 999 bit/s	K
	10 000 000 to	9 999 999 999 bit/s	M

c) *Serial number*

This is a 1 to 3 digit number counting the number of data transmission systems with the same traffic relation and the same function code.

Note – The use of the data transmission system (e.g. multiplex of digital leased circuits, broadcasting, video) will be recorded in Related information under item 9 (Use) (see § 15.9.).

Example 1:

The first 9600 bit/s data transmission system between Lisboa RM1 and New York (for example in use for a multiplex of 2400 bit/s and 7200 bit/s circuits):

Lisboa RM1–New York 96H1.

Example 2:

The eleventh 2048 kbit/s data transmission system between London and Paris (used, for example, for public video conference):

London–Paris 2048K11.

11.2 *Data transmission links*

Data transmission links are designated as data transmission systems.

11.3 *Related information*

The additional information on data transmission systems is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers' or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) composition of transmission;
12) (unassigned item, use: "–;");
13) occupancy;

The various items will be dealt with in § 15.

12 Designations of international digital blocks created by the interconnection of Digital Circuit Multiplication Equipments (DCME)

12.1 *General*

The format of the designation of digital blocks created by the interconnection of DCMEs is shown in Table 8/M.1400:

TABLE 8/M.1400

Format of designation	Town A	/	Suffix for transmission station or international exchange (optional)	–	Town B	/	Suffix for transmission station or international exchange (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	2 to 4	≤ 4
									↑ No space	

The elements of the format are as follows:

a) *Traffic relation*

Town A and town B, possibly with a suffix for the transmission station or international exchange, indicate the terminal points of the block. For the spelling, see § 1.1. If a town name exceeds the maximum length of 12 characters, the Administration should apply a suitable abbreviation which must be unique (see § 0.1). The town names are arranged in alphabetical order.

The suffix for the transmission station or international exchange (maximum 3 characters) is an optional field which may be used to further identify the terminal point when there is more than one carrier operating in the town. The necessity for a suffix and its form should be decided by the Administration operating the circuit in the town concerned.

b) *Function code*

This code consists of a number indicating the nominal maximum number of channels in the block followed by the letter Y.

c) *Serial number*

This is a 1 to 4 digit number which counts the number of blocks with the same traffic relation and the same function code.

Example:

The second block created by the interconnection of DCMEs with a nominal maximum number of 240 channels between Frankfurt and Melbourne will be designated:

Frankfurt–Melbourne 240Y2

12.2 *Multi-clique configuration of DCMEs*

If the created block is partly directed to destination B and partly to C (Figure 4/M.1400) the designation of the blocks is:

Town A/sfx – Town B/sfx $n_1\ n_1\ n_1$ Y xxxx

Town A/sfx – Town B/sfx $n_2\ n_2\ n_2$ Y xxxx

– $n_1\ n_1\ n_1$, $n_2\ n_2\ n_2$ are the numbers of channels dedicated to that relation (multiples of 30)

– $n_1\ n_1\ n_1 + n_2\ n_2\ n_2$ = the capacity of the DCME

Example:

London–New York $120Y_1$

London–Pittsburg $120Y_1$

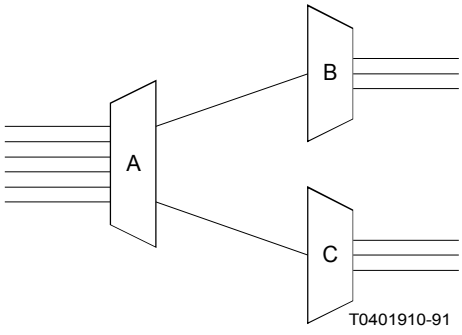


FIGURE 4/M.1400

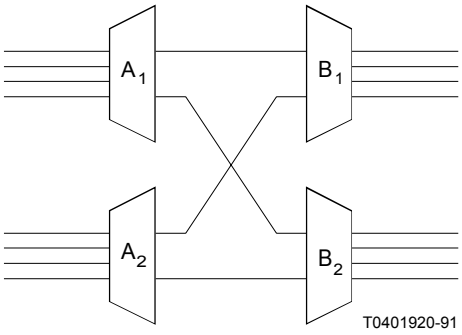


FIGURE 5/M.1400

The same designation applies to the configuration in Figure 5/M.1400 ($A_1 - B_1$, $A_1 - B_2$, $A_2 - B_1$ and A_2 - B_2).

12.3 *Low Rate Encoding Equipment*

Low Rate Encoding Equipment is considered as a special case of DCMEs.

If two of these equipments are linked by, using a 2 Mbit/s path, the designation 60Y (if multiplication factor = 2) should be applied.

When there is no direct 2 Mbit/s path between these equipments, and if the multiplication factor is 2, thirty 2Y blocks should be designated.

12.4 *Related information*

The additional information digital blocks created by the interconnection of DCMEs is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers' or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) (unassigned item, use: "–;");
12) bit rate;
13) occupancy;

The various items will be dealt with in § 15.

13 Designations of international Virtual Containers

13.1 *General*

This section refers to Virtual Containers of the Synchronous Digital Hierarchy as defined in Recommendations G.707, G.708 and G.709 [22].

The format of the designation of Virtual Containers is shown in Table 9/M.1400:

The elements of the format are as follows:

a) *Traffic relation*

Town A and town B, possibly with a transmission station or international exchange suffix, represent the two terminal stations of the data transmission system. The names are arranged in alphabetical order. For the spelling, see § 1.1. If the town name exceeds the maximum length of 12 characters, the responsible Administration should supply a suitable abbreviation which must be unique (see § 0.1).

The transmission station or international exchange suffix (maximum 3 characters) is an optional field which may be used to further identify the terminal point when there is more than one carrier operating in the town. The necessity for a suffix and its form should be decided by the Administration operating the circuit in the town concerned.

TABLE 9/M.1400

Format of designation	Town A	/	Suffix for transmission station or international exchange (optional)	–	Town B	/	Suffix for transmission station or international exchange (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	4 to 5	≤ 4
									↑ No space	

b) *Function code*

This code is the following:

VC11S for a VC11 Virtual Container
VC12S for a VC12 Virtual Container
VC2S for a VC2 Virtual Container
VC3S for a VC3 Virtual Container
VC4S for a VC4 Virtual Container

c) *Serial number*

This is a 1 to 4 digit number which counts the number of Virtual Containers with the same traffic relation and the same function code.

Example:

The tenth VC4 Virtual Container between Barcelona and Toulouse is designated:

Barcelona–Toulouse VC4S10

13.2 *Related information*

The additional information on Virtual Containers is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers' or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) (unassigned item, use: "–;");
12) bit rate;
13) occupancy;

The various items will be dealt with in § 15.

14 Designation of multiplex sections of the Synchronous Digital Hierarchy (SDH)

14.1 *General*

This section deals with multiplex sections of the SDH (STMs) as defined in Recommendations G.707, G.708 and G.709 [22].

The format of designation of multiplex sections is shown in Table 10/M.1400:

TABLE 10/M.1400

Format of designation	Town A	/	Suffix for transmission station or international exchange (optional)	–	Town B	/	Suffix for transmission station or international exchange (optional)		Function code	Serial number
Signs	Characters	Slash	Letters/ digits	Hyphen	Characters	Slash	Letters/ digits	Space	Letters/ digits	Digits
Number of characters	≤ 12	1	≤ 3	1	≤ 12	1	≤ 3	1	2 to 4	1 to 3
									↑ No space	

The elements of the format are as follows:

a) *Traffic relation*

Town A and town B, possibly with a transmission station or international exchange suffix, represent the two terminal stations of the data transmission system. The names are arranged in alphabetical order. For the spelling, see § 1.1. If the town name exceeds the maximum length of 12 characters, the responsible Administration should supply a suitable abbreviation which must be unique (see § 0.1).

The transmission station or international exchange suffix (maximum 3 characters) is an optional field which may be used to further identify the terminal point when there is more than one carrier operating in the town. The necessity for a suffix and its form should be decided by the Administration operating the circuit in the town concerned.

b) *Function code*

This code consists of a number (1 to 3 digits) indicating the nominal number of VC4s which can be carried by the multiplex section followed by the letter S.

c) *Serial number*

This is a 1 to 3 digit number counting the number of mulitplex sections with the same traffic relation and the same function code.

Example:

The eleventh multiplex section STM16 (bit rate = 16 × 155 Mbit/s) between London and Paris is designated:

London–Paris 16S11

14.2 *Related information*

The additional information on multiplex sections is covered by the following items:

1) urgency for restoration;
2) terminal countries;
3) Administrations', carriers' or broadcasting companies' names;
4) control and sub-control station(s);
5) fault report points;
6) routing;
7) association;
8) equipment information;
9) use;
10) transmission medium information;
11) (unassigned item, use: "–;");
12) bit rate;
13) occupancy;

The various items will be dealt with in § 15.

15 Related information for international digital blocks, paths, data transmission systems, blocks created by the interconnection of DCMEs, Virtual Containers and SDH multiplex sections

The following sections explain the items of Related information concerned with international digital blocks, paths, data transmission systems, blocks created by the interconnection of DCMEs, Virtual Containers and SDH multiplex sections. Full examples of the designation information of an international digital block, an international digital path, an international data transmission system, an international block created by the interconnection of DCMEs, an international Virtual Container and an international SDH multiplex section are given in § A.4.

15.1 *Urgency for restoration [item 1)]*

This item supplies information on the urgency of restoration of the block, path, etc. based upon bilateral agreement between the terminal Administrations.

Format:

1. xx . . . . xx; (maximum 10 characters)

Illustration:

a) If the priority is top: 1;
If the priority is second: 2;
If the priority is third: 3; or

b) If repair is required within e.g. 24 hours: $\leq$ 24 h; or

c) If no urgency has to be indicated: –;

Example:

If a block needs top priority in the case of restoration:

1. 1;

15.2 *Terminal countries [item 2)]*

This item presents the countries in which the block, path, etc., is terminating.

Format:

2. XXX, YYY; (3 characters for each) or 2. XXX;

Specification:

XXX: code for country of town A

YYY: code for country of town B

In the case of multiple destination unidirectional block, only XXX applies.

Note – The codes are according to ISO Standard 3166 [2].

Example:

For a digital block Bruxelles–Frankfurt 120N1:

2. BEL, DEU;

15.3 *Names of Administration, carriers or broadcasting companies [item 3)]*

This item records the names of the carriers, etc., which operate the block, path, etc.

Format:

3. XXXXXX, YYYYYY; (maximum 6 characters for each) ou 3. XXXXXX;

Specification:

XXXXXX: name of company in town A

YYYYYY: name of company in town B

In the case of a multiple destination unidirectional block, only XXXXXX applies.

Example:

For a digital block Frankfurt–London 30N1 operated by British Telecom International and Deutsche Telekom:

3. DBP, BTI;

15.4 *Control station [sub-control station(s)] [item 4)]*

This item lists the appointed control station and sub-control stations (according to Recommendations M.80 [16] and M.90 [17]). Further details about the stations can be found in the list of contact points (Recommendation M.1510 [18]).

Format:

4. CS: designation of control station,

SCS1: designation of sub-control station,

SCS2: designation of sub-control station,

. . . . .

. . . . .

. . . . .

SCSn: designation of sub-control station,

or, in the case of a multiple destination unidirectional block:

4. CS: designation of control station.

Specification:

CS: designation of the control station,

SCS1: designation of the terminal sub-control station,

SCS2 to SCSn: if applicable, other sub-control stations are to be placed in the geographical order according to the traffic relation.

In the case of a multiple destination unidirectional block, only CS applies.

Example 1:

For the digital block Stockholm–Venezia 30N1 with control station Stockholm and sub-control stations Venezia and Paris:

4. CS: Stockholm/HAM;

SCS1: Venezia/CEN;

SCS2: Paris/ARC;

Example 2:

For the digital block Rio de Janeiro–(MU) 30N1:

4. CS: Rio de Janei/1:

15.5 *Fault report points [item 5)]*

This item presents the names of both fault report points on the block, path, etc. (according to Recommendation M.2130 [20]). Further details about the fault report points can be found in the list of contact points (Recommendation M.1510 [18]).

Format:

5. Designation of fault report point, Designation of fault report point

or

5. Designation of fault report point;

Specification:

The first fault report point is the one of country of town A.

The second fault report point is the one of country of town B.

In the case of a multiple destination unidirectional block, the second station and the comma are omitted.

Example 1:

For the digital block Lisboa–Zuerich 30N1:

5. Lisboa/PCS, Zuerich/SEL;

Example 2:

For the digital block Jakarta-(MU) 30N1:

5. Jakarta/1;

15.6 *Routing [item 6)]*

This item records the next higher block within the multiplex hierarchy on which the block, path, Virtual Container, multiplex sections, etc., has been routed and the position number, or in the case of the highest multiplex level, the transmission media on which the block has been routed.

Format:

6. Designation of an international block/position number or designation of transmission medium, Designation of an international block/position number or designation of transmission medium, . . ., Designation of an international block/position number or designation of transmission medium.

Note – Two consecutive unidirectional blocks are separated by a + sign instead of a comma.

Specification:

The designation of an international block refers to the next higher level in the digital multiplex hierarchy. If there are more than one, the blocks are noted in geographical order from town A to town B.

The designation of the transmission medium refers to the transmission medium leaving the country of town A and to the transmission medium entering the country of town B respectively.

As no CCITT designations of transmission media, nor digital line or radio sections are recommended for the time being, the terminal countries should provide designations or agree on designations.

If there is only one transmission medium, the designation of this medium applies.

Example 1:

For the primary digital block Frankfurt–Zuerich 30N7:

6. Frankfurt–Zuerich 120N1/3;

Example 2:

For the block Bruxelles–London 1920N1, with transmission medium corresponding to submarine cable:

6. UK–B 5;

15.7 *Association [item 7)]*

This item identifies whether there are associated blocks, paths, data transmission systems, digital blocks created between DCMES, Virtual Containers and SDH multiplex sections, and if so, of what type.

Format:

7. Association code: designation(s) of the associated block(s), path(s), etc.;

15.7.1 *Information on reserve blocks, paths, data transmission systems created digital blocks between DCMEs, Virtual Containers and multiplex sections*

Specification:

If the block *has* a reserve block, the association code is: S followed by the function code and the serial number of the principal block.

If the block *is* a reserve block, the association code is: function code followed by S and the serial number of the reserve block.

The same applies for digital paths, data transmission systems, etc.

Example:

If the path Hongkong–Singapore 30N801 is the restoration path for the normal block Hongkong–Singapore 30N3, the Related information for the normal block under Association must show:

7. S30N3: Hongkong–Singapore 30N801;

15.7.2 *Information on diverse routing*

Specification:

If a block is required to be routed on a different route than other blocks, the association code is DVR followed by the designation of the other blocks.

The same applies for digital paths, data transmission systems, etc.

Example:

If a block Amsterdam–Paris 30N7 is required to be routed on a different route than the blocks Amsterdam–Bruxelles 30N12 and Bruxelles–Paris 30N2, the related information for the block Amsterdam–Paris 30N7 under Association must show:

7. DVR: Amsterdam–Bruxelles 30N12,

Bruxelles–Paris 30N2;

Note – The codes listed in §§ 15.7.1 and 15.7.2 may both appear under Association.

15.8 *Equipment information [item 8)]*

15.8.1 This item records information on equipment in the block, path, etc., which requires special maintenance attention.

Format:

8. XX, XX, XX, XX;

Specification:

If the block has been routed via TDMA: TD.

If the block has been created by the interconnection of two transcoders (Low Rate Encoding equipment) using the A-law: AI or μ-law: MI.

Note – If there is a need to record any additional equipment information, the next free codeplaces are available for that purpose. The codes to be used must consist of two characters, be unique and can be chosen by bilateral agreement between Administrations.

15.8.2 For data transmission systems this item supplies information about the multiplex configuration.

Format for data transmission systems only:

8. XXXXXXYYYYZZZZZ;

Specification:

XXXXXX refers to the Recommendation series,

YYYY refers to the Recommendation number,

ZZZZZ refers to the section, paragraph, table, etc., number.

Example:

For a 9600 bit/s data transmission system with a multiplex configuration as defined in Table A-1/M.1320 [14], item 8 will present:

8. Rec. M.1320TA-1;

15.8.3 For blocks created by the interconnection of DCMEs, this item provides information on through-going channels (which are transmitted even if a DCME fails) and derived channels (which are not transmitted if a DCME fails).

Format:

8. XXXXXXX = Y;

Specification:

XXXXXXX indicates a range of positions (e.g. 1-30), on all even positions (EP), on all odd positions (OP).

Y indicates whether these positions are through-going (T) or derived (D).

Example 1:

If the 30 first channels of a 240Y block are through-going, item 8 will be:

8. 1-30 = T;

Example 2:

If the even positions of a 60Y block created by the interconnection of two transcoders are derived, item 8 will be:

8. EP = D.

15.9 *Use [item 9)]*

This item identifies for what purpose the block, path, data transmission system is used (if this known by the Administration and is of use for maintenance).

Format:

9. XXXXXX; (maximum 6 characters)

Specification:

XXXXXX refers to (among others) the designatory letters Z, B, D, V, etc., to indicate the use of the block. If no information is available, the sign – is used.

Example:

If the digital block Frankfurt–Luxembourg 30N1 is used for sound-programme transmission:

9. R;

15.10 *Transmision medium information [item 10)]*

This item identifies whether a satellite is involved in the routing.

Format:

10. ST; or –;

Specification:

If the block has been routed via satellite: ST

If the block has not been routed via satellite: –.

Example:

For the block Paris–(MU) 30N1:

10. ST;

15.11 *End-to-end information or composition of transmission [item 11)]*

15.11.1 *End-to-end information (for blocks and paths on mixed analogue/digital routes only)*

This item provides information on the destinations of the traffic carried by the block or path.

Format:

11. X . . . X, Y . . . Y; (maximum 12 characters each) or –;

Specification:

X . . . X and Y . . . Y are the names of a town and refer to the destinations of the traffic on the block/path. The destinations are placed according to the order of towns in the traffic relation.

If the block has multiple destination the town name is replaced by the code: M.

If the block is within a digital environment X . . . X, Y . . . Y is replaced by the sign –.

Example 1:

For primary digital block Frankfurt–Paris 30NC6 carrying from Frankfurt–London:

11. Frankfurt, London;

Example 2:

For primary block Amsterdam–Bruxelles 30NC146 carrying traffic from London to Luxembourg:

11. London, Luxembourg;

15.11.2 *Composition of transmission (for data transmission systems)*

This item shows the type of transmission on the data transmission system.

Format:

11. A; N; or C;

Specification:

If the transmission is analogue: A

If the transmission is digital: N

If the transmission is mixed analogue/digital: C

15.12 *Bit rate (for blocks, paths, Virtual Containers and SDH multiplex sections) [item 12)]*

This item shows the bit rate of the block or path.

Format:

12. xxxx.x kbit/s or Mbit/s;

Rules for the notation of the bit rate figures:

Leading zeros may be omitted and if the decimal is a zero, this decimal and the decimal sign may also be omitted.

If the figure is up to 9 999 999, use kbit/s.

If the figure is 10 000 000 or more, use Mbit/s.

Note – For data transmission systems, use the sign –.

Example 1:

For the digital block New York–Tokyo 24N2:

12. 1544 kbit/s;

Example 2:

For the digital block Bruxelles–Luxembourg 480N1:

12. 34 Mbit/s;

15.13 *Occupancy (except for paths) [item 13)]*

This item lists the occupancy of the block expressed by the next lower blocks and/or circuits and/or data transmission systems which have been routed in the block.

Format in the case of a primary block:

(The same format applies to data transmission systems, replacing "time slot number" by "channel number" according to Recommendation M.1320 [14]).

. . . . . .
. . . . . .
. . . . . .

Time slot number: designation of the circuit, or the sign –;

Format in the case of a secondary or higher level block:

13. Position number: designation of a block, of a leased circuit, of a data transmission system or the sign –,

. . .

. . .

. . .

Position number: designation of a block, of a leased circuit, of a data transmission system or the sign –,

Specification:

If the position number is occupied by a next lower digital block: designation of this block.

If the position number is occupied by a digital leased circuit (with a bit rate corresponding to the bit rate of the next lower multiplex level): designation of this leased circuit.

If the position number is occupied by a data transmission system (with a bit rate corresponding to the bit rate of the next lower multiplex level): designation of this data transmission system.

If the position number is not in use: the sign –.

Example 1:

For the digital block Genève–Paris 120N2:

13. 01: Genève–Lisboa 30N1,
02: –,
03: Genève–Paris 2048K1,
04: Bruxelles–Wien 30N1;

Example 2:

For the digital block New York–Paris 24N5:

13. 01: New York/24–Paris/PT2 Z1,
02: New York/24–Paris/PT2 Z3,
03: New York/24–Paris/PT2 Z5,
04: Paris/PT2–New York/24 Z2,
05: Paris/PT2–New York/24 Z4,
06: Paris/PT2–New York/24 Z6,
07: –,
08: –,
09: –,
10: Orlando/TS1–Toulouse/FER 64K1,
11: –,
12: –,
13: –,
14: –,
15: New York/TS1–Paris/ARC R1,
16: New York/TS1–Paris/ARC R3,
17: –,
18: –,
19: –,
20: Paris/BEA–Washington/TS1 NP1,
21: –,
22: –,
23: –,
24: –.

15.14 *Actual number of channels (primary blocks only) [item 14)]*

This item contains the actual number of channels on a primary digital block.

Format:

14. xxx;

Specification:

xxx indicates the actual number of channels.

For higher blocks xxx is replaced by the sign –.

Example 1:

For the digital block New York–Paris 30N5 dedicated to leased circuits:

14. 31;

Example 2:

For the digital block London–New York 30N3 used for switched public telephone circuits with ADPCM, the information may be:

14. 60;

Example 3:

For the digital block Honolulu–Osaka 24N2 used for switched public telephone circuits:

14. 24;

15.15 *Clocking information (for blocks only) [item 15)]*

This item specifies whether Administrations apply a clocking system according to Recommendation G.811 [15] or use a master/slave system.

Format:

15 XX . . . XX; (maximum 30 characters)

Specification:

If clocking according to Recommendation G.811 is applied: Rec. G.811;

If a master/slave clocking is applied:

M = XX . . . XX,	S = XX . . . XX;
(Town name for the master)	(Town name for the slave)

Example 1:

Clocking according to Recommendation G.811:

15. Rec. G.811;

Example 2:

Clocking according to Master/Slave system:

15. M = London, S = Frankfurt;

15.16 *Direction of transmission (for unidirectional blocks) [item 16)]*

This item gives information on the direction of transmission of a unidirectional digital block.

Format:

16. I; or A;

Specification:

If the block is unidirectional and if it has a single destination:

– if the direction of transmission is in alphabetical order A;

– if the direction of transmission is in inverse alphabetical order I;

Example:

For the unidirectional digital block London–Roma 30N1 transmitting in the direction Roma to London:

16. I;

ANNEX A

(to Recommendation M.1400)

Full examples for designation information

A.1 *Full example for the designation information of a public switched telephone circuit*

The circuit is the 604th both-way telephone circuit between Sherman Oaks 4ES and Tokyo Shinjuku, operated by AT&T and KDD. The signalling type is CCITT No. 6 with band/circuit number assigned as 000/03. The control station and sub-control station of the circuit are Sherman Oaks-transmission station 1 and Tokyo-transmission station 1 respectively. Both stations are also the fault report points of the circuit. The circuit has been routed on the 4th channel of the first group between Sherman Oaks and Ibaraki which is routed via satellite and has been connected to digital blocks in domestic networks.

Designation:

Sherman Oaks/4ES–Tokyo/SJK B604

Related Information:

1. 2;
2. USA, JPN;
3. ATT, KDD;
4. CS: Sherman Oaks/TS1,
   SCS1: Tokyo/TS1;
5. Sherman Oaks/TS1, Tokyo/TS1;
6. Ibaraki–Sherman Oaks 12CO1/4;
7. –;
8. –;
9. –;
10. ST;
11. C;
12. 3.4 kHz;
13. C6, 000/03.

A.2 *Full example for the designation information of a leased analogue circuit*

The circuit is the first analogue leased circuit used for data transmission between London and Frankfurt, operated by British Telecom International and the Deutsche Telekom. The signalling type is 500 Hz/20 Hz. The control station and sub-control station of the circuit are London Mollison and Frankfurt 0 respectively. Both stations are also the fault report points of the circuit. The circuit is routed on the 3rd channel of the first group between Frankfurt and London. As regards the parameters of the circuit, Recommendation M.1020 [9] is applied. The maintenance contract between Administrations and customer is repair within 24 hours.

Designation:

Frankfurt–London DP1

Related Information:

1. ≤ 24 h;
2. DEU, GBR;
3. DTEL, BTI;
4. CS: London/SM,
   SCS1: Frankfurt/0;
5. Frankfurt/0, London/SM;
6. Frankfurt–London 1201/3;
7. –;
8. –;
9. D;
10. –;
11. A;
12. 3.4 kHz;
13. 500/20;
14. Rec. M.1020.

A.3 *Full examples for the designation information of an international group and an international group link*

A.3.1 *Full example for the designation information of an international group*

Note – The numbers between parentheses refer to the numbers of the items in the Related information.

The international group is the fifth group between Amsterdam and Paris. The urgency for restoration (1) is 3rd priority, the terminal countries (2) are Netherlands and France, the Administrations involved (3) are Netherlands PTT and France Telecom, the control station and sub-control station (4) are Paris Archives and Amsterdam 1 respectively, the fault report points (5) are Amsterdam 2 and Paris Archives, the routing (6) of the group is in the supergroup Amsterdam–Bruxelles 6011 on position 1 and in the supergroup Bruxelles–Paris 6002 on position 3, there is an associated group (7) carrying traffic but indicated for restoration namely Amsterdam–Paris 1209, there is special equipment involved (8) because the group is carrying companded circuits, the use (9) is: Z-circuits and a DP circuit, no satellite (10) is involved, no end-to-end information (11) is to be recorded, the bandwith (12) is 48 kHz and the occupancy (13) is to be seen from the example.

Designation:

Amsterdam–Paris 1205

Related Information:

1. 3;
2. NLD, FRA;
3. NLDPTT, FRATEL;
4. CS: Paris/ARC,
   SCS1: Amsterdam/1;
5. Amsterdam/2, Paris/ARC;
6. Amsterdam–Bruxelles 6011/1,
   Bruxelles–Paris 6002/3;
7. S1205: Amsterdam–Paris 1209;
8. CO;
9. Z, DP;
10. –;
11. –;
12. 48 kHz;

13. 01: Amsterdam–Paris Z111,
02: Amsterdam–Paris Z113,
03: Amsterdam–Paris Z115,
04: Amsterdam–Paris Z117,
05: Amsterdam–Paris Z119,
06: Amsterdam–Paris Z121,
07: Paris–Amsterdam Z120,
08: Paris–Amsterdam Z122,
09: Paris–Amsterdam Z124,
10: Paris–Amsterdam Z126,
11: Paris–Amsterdam Z128,
12: Amsterdam–Paris DP5,

A.3.2 *Full example for the designation information of an international group link*

Note – The numbers between parentheses refer to the numbers of the items in the Related information.

The link is the first restoration group link between Paris and Genève. The urgency for restoration (1) is 3rd priority, the terminal countries (2) are Switzerland and France, the Administrations (3) are Swiss PTT and France Telecom, the control and sub-control stations (4) are Genève Monthoux and Paris Archives respectively, the fault report points (5) are the same stations, the routing (6) is in the second supergroup between Genève and Annemasse on position 1, there is no information to be recorded about association (7), special equipment (8), use (9), there is no satellite involved (10), no end-to-end information (11) is required, the bandwith (12) is 48 kHz.

Designation:

Genève–Paris 12801

Related Information:

1. 3;
2. CHE, FRA;
3. CHEPTT, FRATEL;
4. CS: Genève/MON,
SCS1: Paris/ARC;
5. Genève/MON, Paris/ARC;
6. Annemasse–Genève 6002/1;
7. –;
8. –;
9. –;
10. –;
11. –;
12. 48 kHz;

A.4 *Full examples for the designation information of an international digital block, digital path, data transmission system, blocks created between DCMEs, Virtual Containers and SDH multiplex sections*

A.4.1 *Full example for the designation information of an international digital block*

Note – The numbers between parentheses refer to the numbers of the items in the Related information.

The international digital block is the 12th primary digital block between Roma and Paris. The urgency for restoration (1) is 2, the terminal countries (2) are France and Italy, the Administrations involved (3) are France Telecom and ASST, control station (4) is Roma 1 and sub-control station is Paris Archives, the fault report points (5) are the same stations, the block has been routed (6) in the secondary digital block Paris–Roma 120N2 on position number 3, it has an associated block (7) indicated for restoration: Paris–Roma 30N5, no special equipment (8) is

involved, the use of the block (9) is DP- and NP-circuits, no satellite is involved (10), no end-to-end information (11) is required, the bit rate (12) is 2048 Mbit/s, the occupancy (13) is seen in the example, the actual number of channels (14) is 31, the clocking system (15) is a master/slave system with the master in Paris and the slave in Roma.

Designation:

Paris–Roma 30N12

Related Information:

1. 2;
2. FRA, ITA;
3. FRATEL, ASST;
4. CS: Roma/1,
   SCS1: Paris/ARC;
5. Paris/ARC, Roma/1;
6. Paris–Roma 120N2/3;
7. S30N12: Paris–Roma 30N5;
8. –;
9. DP, NP;
10. –;
11. –;
12. 2048 kbit/s;
13. 01: London–Roma DP12,
    02: Paris–Roma DP2,
    03: Napoli–Rouen NP1,
    04: Paris–Roma NP3,
    05: Paris–Roma NP4,
    06: Paris–Roma NP5,
    07: –,
    08: –,
    09: –,
    10: Lille–Roma DP1,
    11: Paris–Roma DP5,
    12: –,
    13: –,
    14: –,
    15: –,
    16: Bruxelles–Roma DPM4,
    17: Paris–Roma DPM1,
    18: –,
    19: –,
    20: –,
    21: –,
    22: –,
    23: –,
    24: –,
    25: –,
    26: –,
    27: –,
    28: –,
    29: –,
    30: –,
    31: –;
14. 31;
15. M = Paris, S = Roma;

A.4.2 *Full example for the designation information of an international digital path*

Note – The numbers between parentheses refer to the numbers of the items in the Related information.

The international digital path is the first restoration digital second order path between Paris and Bruxelles. The urgency for restoration (1) is 3, the terminal countries (2) are Belgium and France, the Administrations

involved (3) are the Belgium RTT and France Telecom, control station (4) is Bruxelles BLA and sub-control station is Paris Archives, the fault report points (5) are the same stations, the path has been routed (6) in the first third order block Bruxelles–Paris on position number 1, there are no associated blocks (7), no special equipment (8), use (9) has not been indicated, no satellite is involved (10), no end-to-end information (11) is required, the bit rate (12) is 8448 Mbit/s.

Designation:

Bruxelles–Paris 120N801

Related Information:

1. 3;
2. BEL, FRA;
3. BELRTT, FRATEL;
4. CS: Bruxelles/BLA,
   SCS1: Paris/ARC;
5. Bruxelles/BLA, Paris/ARC;
6. Bruxelles–Paris 480N1/1;
7. –;
8. –;
9. –;
10. –;
11. –;
12. 8448 kbit/s;

A.4.3 *Full example for the designation information of an international data transmission system*

Note – The numbers between parentheses refer to the numbers of the items in the Related information.

The international data transmission system is the first 64 kbit/s data transmission system between London and Paris. The urgency for restoration (1) is 1, the terminal countries (2) are United Kingdom and France, the Administrations involved (3) are British Telecom International and France Telecom, the control and sub-control stations (4) are London Mollison and Paris Archives respectively, the fault report points (5) are the same stations, the system has been routed (6) in the 12th primary block between Paris and London on timeslot number 3, there is no information to be recorded about association (7), equipment information (8) and use (9), there is no satellite involved (10), composition of transmission (11) is digital, item (12) does not apply, the occupancy (13) is seen in the example.

Designation:

London–Paris 64K1

Related Information:

1. 1;
2. GBR, FRA;
3. BTI, FRATEL;
4. CS: London/SM,
   SCS1: Paris/ARC;
5. London/SM, Paris/ARC;
6. London–Paris 30N12/3;
7. –;
8. –;
9. –;
10. –;
11. N;
12. –;
13. A4: London–Paris NP12,
    B4: London–Toulouse NP3,
    C4: –;
    D4: Dublin–Paris NP6,
    E4: London–Paris NP11,
    F4: London–Paris NP14;

A.4.4 *Full example for the designation information of a block created by the interconnection of DCMEs*

Note – The numbers between parentheses refer to the numbers of the items in the related information.

This block is the second block created by the interconnection of DCMEs with a maximal nominal number of 240 channels between Boston and Reims. The urgency for restoration (1) is 2, the terminal countries (2) are the United States and France, the Administrations involved (3) are AT&T and France Telecom, control station is Boston (4) and sub-control station is Reims/CRE, the fault report points (5) are the same stations, the block has been routed (6) on the 22nd primary digital path between Reims and New York, it has no associated block (7), the first 30 channels are through-going (8), use (9) has not been indicated, a satellite is involved in transmission (10), items 11 and 12 do not apply and the occupancy (13) is seen in the example.

Designation:

Boston–Reims 240Y2

Related Information:

1. 2;
2. USA, FRA;
3. ATT, FRATEL;
4. CS: Boston,
   SCS1: Reims/CRE;
5. Boston, Reims/CRE;
6. New York–Reims 30N22;
7. –;
8. 1–30 = T;
9. –;
10. ST;
11. –;
12. –;
13. 001: New York/24–Paris/PT3 B1
    002: New York/24–Paris/PT3 B2
    .....
    240: New York/24–Paris/PT3 B240

A.4.5 *Full example for the designation of an international Virtual Container*

Note – The numbers between parentheses refer to the numbers of the items in the Related information.

The international Virtual Container is the 12th VC4 between Roma and Paris. The urgency for restoration (1) is 2, the terminal countries (2) are France and Italy, the Administrations involved (3) are France Telecom and ASST, control station (4) is Roma 1 and sub-control station is Paris Archives, the fault report points (5) are the same stations, the block has been routed (6) in the multiplex section Paris-Roma 4S2 on position number 3, it has no associated block (7), no special equipment (8) is involved, the use of the block (9) is unknown, no satellite is involved (10), no end-to-end information (11) is required, the bit rate (12) is 155 Mbit/s, the occupancy (13) is seen in the example.

Designation:

Paris–Roma VC4S12

Related Information:

1. 2;
2. FRA, ITA;
3. FRATEL, ASST;
4. CS: Roma/1,
   SCS1: Paris/ARC;
5. Paris/ARC, Roma/1;

6. Paris–Roma 4S2/3;
7. –;
8. –;
9. –;
10. –;
11. –;
12. 155 Mbit/s;
13. 01: Napoli–Paris VC3S15,
    02: –,
    03: –,
    :
    21: –,
    22: Lille–Roma VC2S121,
    23: –,
    24: –,
    25: London–Roma 30N12,
    26: London–Roma 30N13,
    27: Paris–Roma VC12S4,
    28: –,
    :
    62: Amsterdam–Roma 30N16,
    63: Napoli–Rennes VC12S32;

A.4.6 *Full example for the designation information of an international multiplex section*

Note – The numbers between parentheses refer to the numbers of the items in the Related information.

The international multiplex section is the first STM4 between London and Paris. The urgency for restoration (1) is 1, the terminal countries (2) are United Kingdom and France, the Administrations involved (3) are British Telecom International and France Telecom, the control and sub-control stations (4) are London Mollison and Paris Archives respectively, the fault report points (5) are the same stations, the system has been routed (6) on the France-UK 4 submarine cable, there is no information to be recorded about association (7), equipment information (8) and use (9), there is no satellite involved (10), item (11) does not apply, the bit rate (12) is 620 Mbit/s, the occupancy (13) is seen in the example.

Designation:

London–Paris 4S1

Related Information:

1. 1;
2. GBR, FRA;
3. BTI, FRATEL;
4. CS: London/SM,
   SCS1: Paris/ARC;
5. London/SM, Paris/ARC;
6. France–UK 4;
7. –;
8. –;
9. –;
10. –;
11. –;
12. 620 Mbit/s;
13. 1: Glasgow–Paris 1920N12
    2: London–Paris VG4S21
    3: –;
    4: London–Toulouse VC4S2

ANNEX B

(to Recommendation M.1400)

Reference section numbers for the various types of routes

Section	*Type of international route*
1.2.2	Telephone circuits used in manual operation
1.2.3	One-way telephone circuits used for semi-automatic or automatic operation
1.2.4	Both-way telephone circuits used for semi-automatic or automatic operation
1.3	Circuits used for switched telex and telegraph service
1.4	Circuits in the international public switched data network
3.2.2	Analogue leased circuit used for telephony
3.2.3.1	Analogue circuits used for voice-frequency telegraphy
3.2.3.2	Analogue leased circuits used for TDM-telegraphy
3.2.4	Leased telegraph circuits
3.2.5	Analogue leased circuits used for data transmission
3.2.6	Analogue leased circuits used for phototelegraphy or facsimile
3.2.7.1	Analogue leased unidirectional sound-programme transmission circuits
3.2.7.2	Analogue leased reversible sound-programme transmission circuits
3.2.8.1	Analogue leased unidirectional television-programme circuits
3.2.8.2	Analogue leased reversible television-programme circuits
3.2.9	Leased circuits used for digital video transmission
3.2.10	Analogue leased circuits connecting circuit multiplication terminal equipment at renters' premises
3.2.11	Analogue leased circuits used for combinations of transmissions, etc.
3.2.12	Analogue leased circuits connecting three or more locations
3.2.13	Leased analogue groups, supergroups, etc.
3.2.14	Leased analogue group, supergroup links
3.2.15	Digital leased circuits connecting two locations
3.2.16	Digital leased circuits connecting three or more locations
3.3.2.1	Public circuits used for unidirectional sound-programme transmission
3.3.2.2	Public circuits used for reversible sound-programme transmission
3.3.2.3	Public circuits used for narrow-band sound-programme transmission
3.3.3.1	Public circuits used for unidirectional television transmission
3.3.3.2	Public circuits used for reversible television transmission
3.3.4	Public circuits for digital audio and video transmission
3.3.5	Public telephone-type circuits used for phototelegraphy or facsimile
3.3.6	Telephone-type circuits used to provide voice-frequency telegraph links
3.3.7	Telephone-type circuits used to provide time division multiplex telegraph systems
3.3.8	Telephone-type circuits used for data transmission
3.3.9	Telephone-type circuits used as transfer links for common channel signalling systems Nos. 6 and 7
5.2.1	Groups (bidirectional)
5.2.2	Supergroups (bidirectional)
5.2.3	Mastergroups (bidirectional)
5.2.4	Supermastergroup (bidirectional)
5.2.6	Restoration groups and supergroups (bidirectional)

5.3.1 Multiple destination unidirectional groups and supergroups

5.3.2 Single destination unidirectional groups and supergroups

6.1.1 Conventional group and supergroup links

6.1.2 Restoration links

6.2 Line links

8.2 Bidirectional digital blocks

8.3 Restoration digital blocks

8.4 Multiple destination unidirectional digital blocks

8.5 Single destination unidirectional digital blocks

9.1 Conventional digital paths

9.2 Restoration digital paths

10.1.1 Groups and supergroups, etc. on a mixed analogue/digital route

10.1.2 Digital blocks and paths on a mixed analogue/digital route

10.2 Routes with two analogue-to-digital conversions

11.1 Data transmisssion systems

11.2 Data transmission links

12 Blocks created by interconnection of DCMEs

13 Virtual containers

14 Multiplex sections (SDH)

References

[1] CCITT Recommendation B.13 (Appendix II) *General terminology of telecommunication (Terms common to CCIR and CCITT)* and CCITT Recommendation Q.9 *Vocabulary of switching and signalling terms.*

[2] ISO International Standard 3166 *Codes for the representation of names of countries*, Second edition, 1981.

[3] CCITT Recommendation R.70 *Designation of international telegraph circuits.*

[4] CCITT Recommendation M.1055 *Lining up an international multiterminal leased circuit.*

[5] CCITT Recommendation M.1012 *Circuit control station for leased and special circuits.*

[6] CCITT Recommendation M.1013 *Sub-control station for leased and special circuits.*

[7] CCITT Recommendation M.1045 *Preliminary exchange of information for the provision of international leased circuits.*

[8] CCITT Recommendation Q.8 *Signalling systems to be used for international normal and automatic working on analogue leased circuits.*

[9] CCITT Recommendation M.1020 *Characteristics of special quality international leased circuits with special bandwidth conditioning.*

[10] CCITT Recommendations G.731 to G.755, concerning the *Specification of primary, secondary and higher order digital multiplex equipment.*

[11] CCITT Recommendation G.113 *Transmission impairments.*

[12] CCITT Recommendation E.171 *International telephone routing plan.*

[13] CCITT Recommendation G.702 *Digital hierarchy bit rates.*

[14] CCITT Recommendation M.1320 *Numbering of channels in data transmission systems.*

[15] CCITT Recommendation G.811 *Timing requirements at the outputs of reference clocks and network nodes suitable for plesiochronous operation of international digital links.*

[16] CCITT Recommendation M.80 *Control stations.*

[17] CCITT Recommendation M.90 *Sub-control stations.*

[18] CCITT Recommendation M.1510 *Exchange of contact point information for the maintenance of international services and the international network.*

[19] CCITT Recommendation M.60 *Maintenance terminology and definitions.*

[20] CCITT Recommendation M.2130 *Operational procedures in locating and clearing transmission faults.*

[21] CCITT Recommendation M.20 *Maintenance philosophy for telecommunications networks.*

[22] CCITT Recommendations G.707 (*Synchronous digital hierarchy bit rates*), G.708 (*Network node interface for SDH*), G.709 (*Synchronous multiplexing structure*).

ANNEX C

(to Recommendation M.1400)

Alphabetical list of abbreviations used in this Recommendation

ADPCM	Adaptative differential pulse code modulation
BC	Bearer circuit
BTI	British telecom international
CIC	Circuit identification code
CO	Compandor
CS	Control station
CTE	Channel translating equipment
DC	Derived circuit
DCME	Digital circuit multiplication equipment
EC	Echo cancellor
EP	Even position
ES	Echo suppressor
GTE	Group translating equipment
IE	International exchange
ISPC	International signalling point code
OP	Odd position
SCS	Subcontrol station
SDH	Synchronous digital hierarchy
SGTE	Supergroup translating equipment
SI	Speech interpolation
TDM	Time division multiplex

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