5.2.1 Groups (bidirectional)

5.2.2 Supergroups (bidirectional)

5.2.3 Mastergroups (bidirectional)

5.2.4 Supermastergroups (bidirectional)

5.2.6 Restoration groups and supergroups (bidirectional)
5.3.1 Multiple destination undirectional 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 transmission systems

11.2 Data transmission links

tion terminal equipment at renters' premises

3.1.11 Analogue leased circuits used for a multiple kind of transmission 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 and line 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

Annex

(to Recommendation M.140)

Paragraph	Type of international route
1.2.2	Telephone circuits used in manual operation
1.2.3	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 connection circuit multiplica-

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;

The 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

C. 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.

It 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 Kindom and France, the administrations involved (3) are British Telecom International and France Telecom, the control and subcontrol station (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.

The designation:

London-Paris 64K1

Related Information:

1. 1;
2. GBR, FRA;
3. BTI, FRATEL;

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 NPM1,
18: -,
19: -,
20: -,
21: -,
22: -,
23: -,
24: -,
25: -,
26: -,
27: -,
28: -,
29: -,
30: -,
31: -,
14. 31: -,
15. M = Paris, S = Roma

B. 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.

It 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 andFrance Telecom, control station (4) is Bruxelles BLA and subcontrol 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 8.448 Mbit/s.

16. I;

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

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

It 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 subcontrol 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 2.048 Mbit/s, the occupancy (13) is to be 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.

The 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,

Format:

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

Specification:

If clocking according to Recommendation G.811 is applied: G.811;
If a master/slave clocking is applied:

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

Example 1:

Clocking according to Recommendation G.811:

15. GT.811;

Example 2:

Clocking according to master/slave system:

15. M = London, S = Frankfurt;

12.16 Direction of transmission (for undirectional blocks)

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 the alphabetical order: A
. if the direction of transmission is in the inverse alphabetical order: I

Example:

Unidirectional digital block transmitting in the direction Roma to London, London-Roma 30N1 will have under item 16:

20:Paris/BEA-Washington/TS1 NP1,
21:-,
22:-,
23:-,
24:-,

12.14Actual number of channels (primary blocks only)

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 highest blocks xxx is replaced by the sign - .

Example 1:

The digital block New York-Paris 30N5 dedicated to leased circuits will show under this item:

14. 31;

Example 2:

The digital block London-New York 30N3 used for switched public telephone circuits with ADPCM may have under this item:

14. 60;

Example 3:

This digital block Honolulu-Osaka 24N2 used for switched public telephone circuits:

14. 24;

12.15Clocking information (for blocks only)

This item specifies whether administration apply a clocking system according to CCITT Recommendation G.811 or use a master/slave system.

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:

Item 13 digital of block Geneve-Paris 120N2 is

13.01.Geneve-Lisboa 30N1,
13.02.-,
13.03.Geneve-Paris 2048K1,
13.04.Bruxelles-Wien 30N1;

Example 2:

Item 13 of 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:-,

The digital block New York-Tokyo 24N2 will have under this item:

12. 1544 kbit/s

Example 2:

The digital block Bruxelles-Luxembourg 480N1 will have under this item:

12. 34 Mbit/s;

12.13<u>Occupancy (for blocks and data transmission systems</u>

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.)

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

A primary digital block Frankfurt–Paris 30NC6 being part of a mixed route Frankfurt–London will have under item 11:

11. Frankfurt, London;

Example 2:

A primary block Amsterdam–Bruxelles 30NC146 being part of a mixed route London–Luxembourg will show under this item:

11. London, Luxembourg;

12.11.BComposition 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 analogue/digital : C

12.12Bit rate (for blocks and paths)

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

Format:

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

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

If the bit rate is up to 9 999 999 bit/s use kbit/s
If it is higher use Mbit/s

Note - for data transmission systems use the sign: -

Example 1:

programmetransmission:

9. R;

12.10Transmission medium information

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;

12.11.AEnd-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 refer to the names of the towns which form the extremities of this route. The town names are placed according to the order in the traffic relation.

If the block has multiple destination the town name is replaced by "M".
If the block is within a digital environment x..x, y..y is replaced by the sign "-".

Example 1:

If the block has been routed via TDMA: TD.

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, have to be unique and can be chosen by bilateral agreement between administrations.

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

Format for data transmission systems only:

8. xyyyyzzzzz

Specification:

x refers to the Recommendation series
yyyy refers to the Recommendation number
z...zrefers to the section, paragraph, table etc., number.

Example:

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

8. M1320TA-1.

12.9Use

This item identifies for what purpose the block, path, data transmission system is used (if this is known by the administration and 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: -

Example:

If the digital block Frankfurt-Luxembourg 30N1 is used for sound-

Example 2:

For the block Bruxelles-London 1920N1:

6. UK-B 5.

12.7Association

This item identifies whether there are associated blocks, paths, data transmission systems and if so, of which nature.

Format:

7. Association code: designation of the associated block, paths etc., or blocks paths etc.

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: Funtion code followed by S and the serial number of the reserve block.

The same applies for digital paths and data transmission systems.

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.

12.8Equipment information

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

Format:

8. xx, xx, xx, xx

Specification:

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

5. Jakarta/1.

12.6Routing

This item records the next higher block within the multiplex hierarchy on which the block path, data transmission system, has been routed + 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,
.....; or
.....
.....,
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. 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 designation of transmission media nor digital line or radio sections are provided for the time being, the terminal countries should provide 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.

rectional block only CS applies.

Example 1:

For the digital block Stockholm-Venezia 30N1 with control station Stockholm and subcontrol 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;

12.5Fault report points

This item presents the names of both fault report points on the block, path etc., (according to Recommendation M.130). Further details about the fault report points can be found in the List of Contact Points (Recommendation M.93).

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 undirectional block the second station and the comma are omitted.

Example 1:

For the digital block Lisboa-Zuerich 30N1:

5. Lisboa/MAR, Zuerich/SEL.

Example 2:

Specification:

xxxxxx: name of company in town A
yyyyyy: name of company in town B

In the case of multiplex destination undirectional block only xxxxxx applies.

Example:

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

3. DBP, BTI;

12.4 Control station (subcontrol station(s))

This item lists the appointed control station and subcontrol stations (according to Recommendations M 80 and M 90). Further details about the stations can be found in the List of Contact Points (Recommendation M.93).

Format:

4. CS: designation of control station;
SCS1:designation of subcontrol station;
SCS2:designation of subcontrol station;
. . .
. . .
. . .
SCSn:designation of subcontrol 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 station which has subcontrol station responsibility;
SCS2: if applicable: next subcontrol station.

SCSn etc., are to be placed in the geographical order according to the traffic relation. In the case of a multiple destination unidi-

a) If the priority is top: 1
If the priority is second: 2
If the priority is third: 3
b) If repair is required within e.g. 24 hours: _ 24h
c) If no urgency has to be indicated: -

Example:

If a block needs top priority in the case of restoration: 1.1

12.2Terminal countries

This item presents the countries in which the block, path or data transmission system 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.

Remark:

The codes are according to ISO Standard 3166 "Specification for codes for the representation of names of countries".

Example:

For a digital block Bruxelles-Frankfurt 120N1:

2. BEL, DEU;

12.3Names for administration, carriers or broadcasting companies

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

Format:

3. xxxxxx, yyyyyy; (maximum 6 characters for each) or 3. xxxxxx;

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

London - Paris 2048K11.

11.2Data transmission links

Data transmission links are designated as data transmission systems.

11.3Related information

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

1. Urgency for restoration;
2. Terminal countries;
3. 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. (Empty item, use: -);
13. Occupancy.

Various items will be dealt with in Chapter 12 "Related information for international digital blocks, paths and data transmission systems".

12.Related information for international digital blocks, paths and data transmission systems

12.1Urgency for restoration

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

Format:

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

Illustration:

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.

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.

Function code:

This code consists of a two to four - digit number which together with a letter which shows the multiplication factor, indicates the bit rate in bit/s.

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

Bit rate of system	letter
Up to 999 bit/s	B
1 000 to 9 999 bit/s	H
10 000 to 9 999 999 bit/s	K
10 000 000 to 9 999 999 999 bit/s	M

Serial number:

This is a one to three 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 (ref 12.9).

Example:

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

Lisboa - New York 96H1.

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, 736, 742, 743, 745, 751, 752, 753 and 754. This means that digital blocks from a digital multiplex hierarchy, with a format defined in Recommendation G.702 cannot have a designation taken from this section. They should be designated according to section 8.

Note 1 - This section deals with digital transmission only. Analogue data transmission systems and links are covered by circuits, groups and group links.

Format of designations of data transmission systems:

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	Slash	Hyphen	Slash	Space / No Space
Number of characters	1 to 12	1 to 3	1 to 12	1 to 3	1 to 5

Traffic relation:

Town A and Town B possibly with a transmission station or international exchange suffix represent the two terminal stations of the

designation for the end-to-end transmission route, and are informed of its mixed analogue/digital nature.

10.2.2Intemediate 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 2/M.140 shows two examples of routes involving two analogue-to- digital conversions and how they will be designated.

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

The transmission planning rules given in Recommendation G.113 § 3 |2| 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 |3| restricts thenumber 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.

10.4Related 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 (ref. 7.11 and 12.11).

11.Designation of data transmission systems (note 1)

11.1 General

This section deals with data transmission systems provided between the premises of administrations. (Those between renters' premises are designated according to section 3.2.15 digital leased circuits.)

Supergroup : Paris-Sydney 60C01
Mastergroup : Brussels-London 300C03
Supermastergroup: Amsterdam-Paris 900C04

Figure 1/M.140 shows a typical analogue/digital arrangement and how it will bedesignated.

10.1.2Digital 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.

Example:

Madrid-Roma 480NC1.

Figure 1/M.140 shows a typical analogue/digital arrangement and how it will be designated.

10.1.3End-to-end designations

This subject is covered by item 11 in layer 2 for digital blocks (ref. 12.11).

Note 5 - This term is used provisionally in this context to designate various combination of analogue and digital sections with appropriate intermediate equipment and usually also including terminal equipment, as illustrated in Figure 1/M.140 and Figure 2/M.140.

10.2Transmission routes with two analogue-to-digital conversions

10.2.1End-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 administration.

Where both ends are digital, and 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

1) Urgency for restoration;
2) Terminal countries;
3) 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) (Empty item, use -);
12) Bit rate;

The various items will be dealt with in section 12 "Related information for international digital blocks, paths and data transmission systems".

10.Designations of routes in the mixed analogue/digital transmission network

To be in accordance with the philosophy for lining-up and maintaining a mixed analogue/digital transmission network (Recommendation M.20), 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.

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

10.1Transmission routes 5) with one analogue-to-digital conversion

10.1.1Groups 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 (ref. 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)

a digital path. Nevertheless, for designation purposes the digital path will be designated as though digital blocks had been set up (ref. 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. The serial numbering starts at 801 and paths are numbered in ascending order.

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

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

Example 1:

The fourth 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 transmission systems

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:

which case the normal designations given above in this Recommendation will apply.

8.5 Single destination unidirectional digital blocks

These 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 under related information under item 16 "Direction of transmission" (ref. 12.16).

Example:

An unidirectional primary digital block transmitting in the direction Roma to London being the twenth-first primary digital blocks 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) 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) (Empty 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 section 12 "Related information for international digital blocks, paths and data transmission systems".

9. Designations of international digital paths

In practice it may be that terminal equipment is not connected to

ignated:

London-Paris 120N4.

Example 2:

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

New York-Tokyo 24N10.

8.3Restoration digital blocks

Digital blocks set up on restoration digital paths or spare digital paths for restoration purposes are indicated by serial numbers taken from the 800-Series. The serial numbering starts at 899 and blocks are numbered in descending order.

Example:

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

Koebenhavn-Stockholm 1920N899.

8.4Multiple 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:

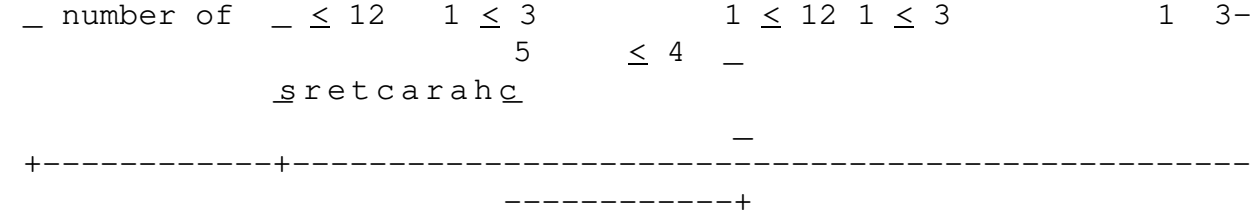
The first multiple destination unidirectional primary digital block from Bercenay (to, for example, London and Bruxelles) is designated:

Bercenay-(MU) 30N1.

The next multiple destination unidirectional primary digital block from Bercenay (to, for example, Frankfurt and Rome) 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



Traffic relation

Town A and town B possibly with a suffix for 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 administrations should supply a suitable abbreviation which must be unique. The town names are arranged in alphabetical order.

The suffix for 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) (ref. 8.3).

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. Then ≤ 6 characters are required.

Serial number

This is a 1-4 digit number counting 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 above (ref. 8.1).

Example 1:

The fourth secondary order block between London and Paris is des-

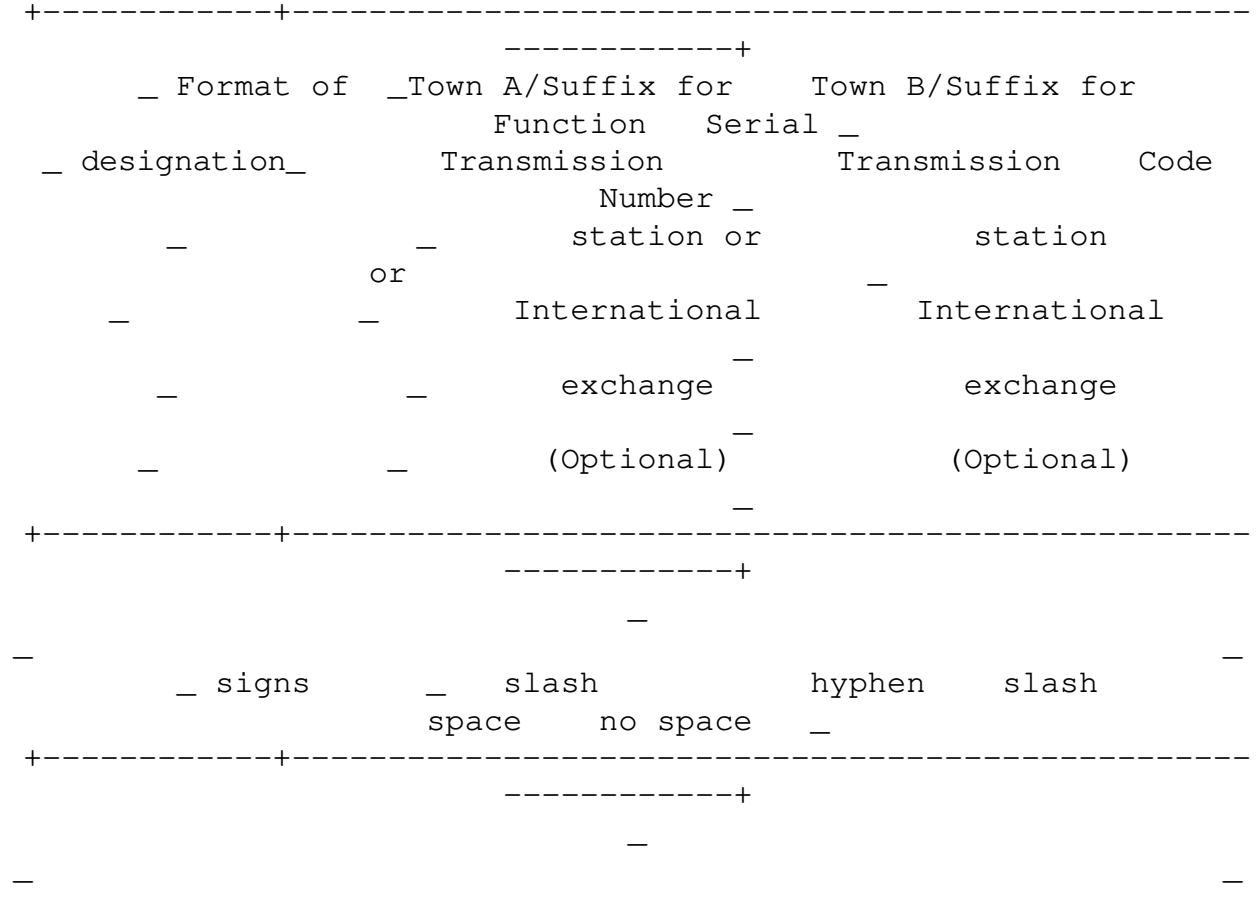
4) CS: Geneva/MON, SCS: Paris/ARC;
5) Geneva/MON, Paris/ARC;
6) Annemasse-Geneva 6002/1;
7) -;
8) -;
9) -;
10) -;
11) -;
12) 48 kHz;

8.Designations of international digital blocks (bidirectional and unidirectional)

8.1General

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. All other blocks are designated according to section 11.

Format of designation of digital blocks:



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.

B.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.

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

The designations:

Geneva-Paris 12801.

Related information

1) 3;
2) CHE, FRA;
3) CHEPTT, FRATEL;

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;

A.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.

It is the fifth group between Amsterdam and Paris. The urgency for restoration (1) is third priority, the terminal countries (2) are The Netherlands and France, the administrations involved (3) are The Netherlands PTT and France Telecom, the control station and subcontrol station (4) are Paris Archives and Amsterdam 1 respectively, the fault report points (5) are Amsterdam 2 and Paris Archives, 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 bandwidth (12) is 48 kHz and the occupancy (13) is to be seen from the example.

The designations:

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;

If the bandwidth figure is between 10 000 and 9 999 999, use kHz. If it is between 10 000 000 and 9 999 999 999, use MHz. If it is higher, use GHz.

Example:

A group Bangkok-New Delhi 1201:

12. 48 kHz;

7.13Occupancy (for groups/supergroups etc., and for line links)

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 -,
" " " " " " " " ",
" " " " " " " " ",
" " " " " " " " ",
" " " " " " " " ",
" " " " " " " " ";

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 -,
" " " " " " " " " " ",
" " " " " " " " " " ",
" " " " " " " " " " ",
" " " " " " " " " " ",
" " " " " " " " " " ",
" " " " " " " " " " ";

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., ref. 3.2.13); designation of

Example:

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

10. ST;

7.11End-to-end information (for mixed analogue/digital routes only)

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:

xx..x and y.....y are the names of a town and refer to the extremities of the routes.

The extremities 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 analogue environment x..x, y..y is replaced by the sign "-".

Example:

If the group Athinai-Paris 60C11 carriers traffic from Bruxelles to Sofia:

11. Sofia, Bruxelles;

7.12Bandwidth

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

Format:

6. xxxx kHz or MHz of GHz (no leading zero's required).

Rule for the notation of the figures

information, the free codeplaces are available for that purpose. The codes to be used must consist of twocharacters, have to be unique and can be chosen by bilateral agreement between administrations.

Example:

If a group Geneva-Mexico 1210 is carrying companded circuits:

8. CO;

7.9Use

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 chapters 1 and 3. If no other information is available the sign: -

Example:

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

9. DP;

7.10Transmission medium information

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: -

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 above applies for group links in the same way.

Examples:

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:

12S899: Bruxelles-Luxembourg 1215;

7.8 Equipment information

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

.....,

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.

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:

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

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

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

6. Gerona-Perpignan 1800A08;

A group Caracas-Paris 1201:

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

7.7Association

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

Format:

This item presents the names of both fault report points on the group/group link (according to Recommendation M.130). Further details about the fault report points can be found in the List of Contact Points (Recommendation M.93).

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 the country of town A. The second 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:

For the group Moskva–Paris 1201;

5. Moskva/MNA, Paris/ARC;

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

5. Caracas/TS1;

7.6 Routing

This item records the next higher group within the multiplex hierarchy on which the group/group link has been routed + 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,

.....

4. CS: designation of control station,

SCS1: designation of subcontrol station,

SCS2: designation of subcontrol station,

. . .

. . .

. . .

SCSn: designation of subcontrol station;

or in the case of a multiple destination unidirectional group:

4. CS: designation of control station;

Specification:

CS: designation of the control station;

SCS1: designation of the terminal station which has subcontrol station responsibility;

SCS2: if applicable: other subcontrol station;

SCS5 etc., 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 for a group Helsinki-Paris 1201 where the control station is Helsinki TM1 and the subcontrol station is Paris Archives:

4. CS: Helsinki/TM1,

SCS1:Paris/ARC;

Example for the multiple destination unidirectional group Wien-(MU) 1201:

4. CS: Wien/ARS;

7.5Fault report points

For the multiple destination group Toronto-(MU) 1202

2. CAN;

Remark:

The codes are according to ISO standard 3166 "Specification for codes for the representation of names of countries."

7.3Names of administrations, carriers or broadcasting companies

This item records the names of the carriers 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:

For for the supergroup Amsterdam-London 6002:

3. NLDPTT, BTI;

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

3. HGKTEL;

7.4Control station (subcontrol station(s))

This item lists the appointed control station and subcontrol stations (according to Recommendations M.80 and M.90).

Further details about the stations can be found in the List of Contact Point (Recommendation M.93).

Format:

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

c) if no urgency has to be indicated: F-S

Example:

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

1.1;

7.2Terminal countries

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 multiple destination unidirectional group (MU) only xxx applies.

Example:

For the group Beograd-Rome 1201:

2. YUG, ITA;

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.

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) 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) (Empty item, use: "-;");
12) Bandwidth;
13) Occupancy (this item is not in use for group links and supergroups links).

The various items will be dealt with in section 7. "Related information for international groups, group links and line links".

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

7.1 Urgency for restoration

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

Format of designation	Town A/Transmission station suffix	Function	Town B/Transmission station suffix	Serial Number
				Code
				(Optional)
signs	slash	hyphen	slash	space / no space
number of characters	≤ 12	1 ≤ 3	≤ 12	1 ≤ 3	1	3-5	2

Traffic relation

The two terminals are arranged in alphabetical order. For the use of the suffix ref. 5.1.

Function code

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

Serial number

This is a two-digit number.

Example 1:

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

6.1.1Conventional 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 under related information under item 9 "Use" (ref. 4.9).

Example:

The group link between Amsterdam and London set up after five existing groups is designated:

Amsterdam–London 1206.

6.1.2Restoration 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 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.

6.2Line links (see definition in Recommendation M.300, § 1)

Format of designations of line links:

+-------------+---

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.

5.4Related information

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

1) Urgency for restoration;
2) Terminal countries;
3) 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) (Empty item, use: "-;");
12) Bandwidth;
13) Occupancy;

The various items will be dealt with in section 7 "Related informations forinternational groups and group and line links".

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

6.1Group and supergroup links

Group links and supergroup links are designated according to the general format for groups (ref. 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.

The unidirectional route will be designated by the name of the sending terminal station (in the general format: town A) followed by a hyphen whilst 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.

Examples:

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 whatever destinations would take the next number in the series: for example, the second supergroup from London is designated:

London-(MU) 6002.

but might go, for example, to Tokyo, Hawaii and Melbourne.

The first supergroup from Montreal to for example London, Lusaka and Paris is designed:

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

Format:

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

The tenth supergroup between Amsterdam and Paris is designated:

Amsterdam-Paris 90010.

Note 2 - For the definitions see Recommendation M.300.

5.2.5 Use of the groups etc.

This information will be contained in related information under item 9 "Use" (ref. 7.9). If groups are used for private purpose see 3.2.13.

5.2.6 Restoration groups and supergroups

Serial numbering for groups and supergroups set upon restoration or spare groups and supergroups for restoration purposes are numbered by numbers taken from the 800-Series in descending order and starting from the highest value (899):

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

Example 1:

The second 12 channels 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

Format:

5.2 Bidirectional groups etc.

5.2.1 Group[2]

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 Supergroups[2]

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 supergroup between London and Amsterdam is designated:

Amsterdam-London 6001.

5.2.3 "Mastergroups"[2]

Function code is: 300.

Example:

The first mastergroup between Bruxelles and London is designated:

Bruxelles-London 30001.

5.2.4 "Supermastergroups"[2]

Function code is: 900

Example:

6 2-3 _
_characters
_ _
+--------------+---
-------------+

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) (ref. 5.3.1).

If 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.

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.

Function code

This code consists of the nominal number of channels in the group 1). In the case of an unidirectional single destination group the number is preceded by (U) (ref. 5.3.2).

Note 1 - Where group, supergroup, etc., links are directly interfaced by analogue to digital conversion equipment, the number of channels is followed by the letter "C" (ref. 10).

Serial numbering

This is on a town-to-town basis with an exception for the case when the suffix is used. Then the numbering is on a transmission station to transmission station basis.

The numbering of a group, supergroup, etc., is applied between the point where it 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 $\leq$ 10, it is preceded by a zero.

10) -;

11) A;

12) 3.4 kHz;

13) 500/20;

14) Recommendation M.1020;

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.

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

5.1General

The format of the designation of groups etc. is:

Format of designation	Town A/Transmission station suffix		Town B/Transmission station suffix		Function code (optional)	Serial number (optional)
signs	slash	hyphen	slash	space	no space	
number of	≤ 12	1 ≤ 3	1 ≤ 12	1 ≤ 3	1	1-

Example:

14. Rec. M.1020;

Full example for the layered designation structures 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 Deutsche Bundespost. 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.

The two stations are also the fault report points of the circuit. The circuit is routed on third channel of the first group between Frankfurt and London.

As regards the parameters of the circuit, Recommendation M.1020 is applied. The maintenance contract between administrations and customer is repair within 24 hours.
The designation:

Frankfurt-London DP1.

Related Information:

1) ≤ 24 h;

2) DEU, GBR;

3) DBP, BTI;

4) CS: London/SM;

SCS1: Frankfurt/0;

5) Frankfurt/0, London/SM;

6) Frankfurt-London 1201/3;

7) -;

8) -;

9) D;

Specification:

Whether 2, 1 or no Recommendation numbers are to be recorded is dependent on the need.

Rule for the notation of figures:

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

If the figure between 1 000 and 9 999 999, use kHz, kbit/s.

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

Specification:

If the circuit is analogue: the bandwidth in 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

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

Format:

13. xxxxxxx; (maximum seven characters).

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

Example:

For a circuit with in-band signalling 1 000 Hz/20 Hz:

13. 1000/20;

4.14 Applicable CCITT Recommendations

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

Format:

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

Format:

12. xxxx.x Hz; or kHz; or MHz; bit/s; or kbit/s; or Mbit/s;
(leading zero's and if the decimal is a zero, this decimal and the decimal point may be omitted).

4.10Transmission medium information

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 ten 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;

4.11Composition of the transmission

This item shows 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.

4.12Bandwidth or bit rate

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:

9. XXX..XX; (maximum seven 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 connecting channels: CC.

Example 3:

If the circuit Bruxelles–Edinburgh PM1 is a part of an international multiterminal telephone circuit connecting Bruxelles and Paris (being the seventh PM–circuit on that relation) with branches from Bruxelles to Edinburgh and to Aachen (being the second PM–circuit on that relation) and with an extension from Paris to Marseille, then for the circuit Bruxelles–Edinburgh PM1 under item 7 must be registered:

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.

4.8Equipment information

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 consists of a semi–permanent switched connection: SP.

4.9Use

This item supplies information on the usage of the circuit if this usage is known by the administrations and if this is a help for maintenance on the circuit.

Circuit R1 being one of the stereophonic pair number two has as the other circuit of this pair: London/KB-Paris/ARC R5.

4.7Association

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 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.

If the circuit is one of a stereophonic pair, the other circuit will appear in this item. Association code is: H followed by a two 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 circut belongs to a multiterminal leased circuit the association code is PM, DPM, etc. (ref. 3.2.12 and 3.2.16) followed by the serial number of the circuit.

Example 1:

7. ST1: Roma/AS1-Zuerich/SEL Z13;

Read:

The reserve circuit for the principal circuit T1 is Roma/AS1-Zuerich/SEL Z13

Example 2:

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 the other channel of this pair:

7. H02R1: London/KB-Paris/ARC R5;

Read:

6. London-Paris 1204/4;
Example:

For the wideband circuit Frankfurt-London DP5 under item 6 must be registered:

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

---

* 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.

4.5Fault report points

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.93).

Format:

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

Specification:

The first fault report point is the one belonging to 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;

4.6Routing

This item shows the international primary group(s) or primary block(s) and the channel number(s) which carry the circuit. 1

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 or block/channel number, ..., designation of a primary group or block/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 the circuit from London Mollison to Paris Archives DP7:

SCSn:etc., 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 : Paris-ARC,

SCS1: London/KB;

Format:

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

Specification:

YYYYYY: code for company operating in town A

ZZZZZZ: code for company operating in town B

Example for the circuit Bern/1RS-New York/1RC TP1 operating by Radio Suisse and RCA:

3. RS, RCA;

4.4 Control station (sub-control station(s))

This item lists the appointed control station and sub-control stations (according to Recommendations M.80 and M.90 or M.1012 and M.1013 for leased circuits). Further detail about the stations can be found in the List of Contact Points (Recommendation M.93).

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:if applicable: other sub-control stations

Remark:

The codes are according to the ISO Standard 3166 "Specification for codes for the representation of names of countries".

Example for the circuit Paris-Wellington P1:

2. FRA, NZL;

4.3 Names of administrations, carriers or broadcasting companies

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

The various items will be dealt with in section 4.
"Related information for fixed circuits"

4. Related information for international fixed circuits

4.1 Urgency for restoration

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

Format:

1. XXX .... XX; (max. 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

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

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

Format:

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

Specification:

XXX: code for country of town A

YYY: code for country of town B

12) Bandwidth or bit rate;

13) Signalling information;

14) Applicable CCITT Recommendations.

Example:

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

Frankfurt/1-Toronto/1TE D1.

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

These circuits are designated as follows:

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.

3.4 Related Information

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

1) Urgency for restoration;

2) Terminal countries;

3) Carriers' 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;

in the Related Information under item 7 (ref. § 4.7).

3.3.8 Telephone type circuits used for data transmission

These circuits are designated as follows:

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

The function code is: D.

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

These circuits are designated as follows:

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

The function code is: T.

Example:

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

Koebenhavn/1-Montreal/1TE T1.

A reserve T-circuit is designated according to its present function. The information of being a reserve T-circuit is to be found in the Related Information under item 7 (ref. § 4.8).

3.3.7 Telephone type circuits used to provide TDM (Time Division Multiplex) telegraph systems

These circuits are designated as follows:

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

The function code is: TD.

Example:

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

London/KB-Montreal/1TE TD1.

A reserve TD-circuit is designated according to its present function. The information of being a reserve TD-circuit is to be found

ile

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" (ref. § 4.9).

3.3.3.1Circuits used for unidirectional television transmission

These circuits are designated as follows:

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 first unidirectional television circuit transmitting in the direction Paris to Helsinki is designated:

Paris-Helsinki V2.

3.3.3.2Circuits used for reversible television transmission

These circuits are designated as follows:

The terminations of the circuit are arranged in alphabetical order.

The function code is: VV.

Example:

> The first reversible television transmission circuit between Tokyo TS1 and New Delhi is designated:

New Delhi-Tokyo/TS1 VV1.

3.3.4Circuits for digital audio and video transmission

These circuits are designated according to the data transmission systems, see section 11.

3.3.5Telephone type circuits used for phototelegraphy or facsim-

bers. Circuits which transmit in the direction corresponding to the inverse alphabetical order of the terminals should have even serial numbers.

Example:

> The first telephone-type circuit set up for the narrow-band sound-programme transmission in the direction from Milan to Madrid is designated:

Milano-Madrid RK2.

3.3.3 Circuits used for television transmission

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 first circuit transmitting in the direction Wellington (New Zealand) to Montreal is designated:

WellingtoNZL - Montreal R2.

3.3.2.2Circuits used for reversible sound-programme transmission

These circuits are designated as follows:

The terminations of the circuit are arranged in alphabetical order.

The function code is: RR.

Example:

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

Montreal-WellingtoNZL RR1.

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

These circuits are designated as follows:

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 num-

3.3.2.1Circuits used for unidirectional sound-programme transmission

These circuits are designated as follows:

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.

Example:

In an international digital multiterminal leased circuit connecting Oslo, London, Paris, Roma and Amsterdam, the international section between Oslo and London (being the first 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 section 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 links for common channel signalling systems.

Remark

Information on whether a sound-programme circuit forms with another sound programme circuit a stereophonic pair will be recorded in the Related Information under item no. 7 "Association" (ref. § 4.7).

3.3.2 Circuits used for sound programme transmission

point to either a customer terminal or another branching point (see also Recommendation M.1055).

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, so the function code is: NPM.

The association between sections should be recorded in the Related Information of each section under item 7 "Association" (ref. § 4.7).

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

Remark:

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" (ref. § 4.12).

The terminations of the circuit are placed in alphabetical order.

The function code is: NP.

Example:

> The fifth digital leased circuit between Birmingham and Toulouse is designated:

Birmingham-Toulouse NP5.

Note - Digital leased circuits consisting of a permanent switched connection.

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 transmission station suffix. The information on being permanently switched is recorded in the Related Information under item 8 "Equipment information" (ref. § 4.8).

Example:

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

Athinai/TS2-Reims/IP2 NP12.

3.2.16 Digital 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

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

London-Montreal DP10.

3.2.15Digital leased circuits connecting two locations

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

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 (seventh PM circuit between Bruxelles and Paris) with branches from Bruxelles to Edinburgh (first PM circuit on this relation) and from Bruxelles to Aachen (fourth 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 designation. The additional information on the constitution of these circuits is to be recorded under Related Information under item 12 "Bandwidth or Bit rate" (ref. § 4.12) and under item 6 "Routing" ref. § 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 being the 15th leased circuit for data transmission on this relation is designated:

London-Paris DP15.

3.2.14 Leased analogue group, supergroup links

These group, supergroup and line links will receive a circuit designation. The additional information on the constitution of these circuits is to be recorded in Related Information under item 12 "Bandwidth or Bit rate" (ref 4.12) and under item 6 "Routing" (ref. 4.6).

Example:

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 above. 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" (ref. § 4.7).

3.2.9 Leased circuits used for digital video transmission

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

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

These circuits are designated as normal leased circuits. The information 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 circuit used for transmission other than those designated in 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

Into this category fall multiterminal circuits of various types and configurations. 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 function code is: VVP.

Example:

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

Montreal-WellingtoNZL VVP1

(3149)

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

WellingtoNZL-Montreal RP2

3.2.7.2Analogue 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

3.2.8Analogue leased circuits used for television transmission

3.2.8.1Analogue leased unidirectional television programme circuits

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 is: VP.

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

3.2.8.2Analogue leased reversible television programme circuits

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

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

3.2.4Leased telegraph circuits

See Recommendation R.70.

3.2.5Analogue leased circuits used for data transmission

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

The function code is: DP.

Example:

The third analogue leased circuit used for data transmission between London and Paris is designated:

London-Paris DP3.

3.2.6Analogue leased circuits used for phototelegraphy or facsimile

The terminal points of the circuits are arranged in alphabetical order. If these circuits are different from P-circuits the function code is: FP.

Example:

The second analogue leased circuit used for phototelegraphy between London and Paris is designated:

London-Paris FP2.

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

3.2.7Analogue leased circuits used for sound-programme transmission

3.2.7.1Analogue 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:

The terminal points of the circuits are arranged in alphabetical order. The function code is: TDP.

Example:

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

London-Montreal TDP3.

RP : for analogue unidirectional sound-programme leased circuits

RRP: for analogue reversible sound-programme leased circuits

VP : for analogue unidirectional television programme leased circuits

VVP: for analogue reversible television programme leased circuits

XP : for analogue leased circuits used for a multiple kind of transmissions

NP : for digital leased circuits.

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

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 first 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 first 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

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

Traffic relation

Towns A and B possibly with a transmission station suffix identify the terminal points of the circuit.

The identification of the terminal point is up to the administration concerned. In the case that a town name exceeds the maximum length of 12 characters, the administration should supply a suitable abbreviation which must be unique. Transmission station suffix (maximum 3 characters) is an optional field which may be used to further identify the terminal point, e.g. 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.

Note 1 - For some circuits the international exchange may be more suitable (see the examples in §§ 3.3.9 and 3.2.15.

Function code

(Maximum four characters) identifies the type of the circuit; see 3.2 and 3.3 below.

Serial number

(Maximum four 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 layer 1 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 layer 1 format for leased circuits is as stated in 3.1.

Possible function codes are:

P : for analogue leased circuits used wholly for telephony

7. -;

8. -;

9. -;

10. ST;

11. C;

12. 3.4 kHz;

13. C6, 000/03;

3.Designations of international fixed (non-switched) circuits

3.1General

This chapter comprises the sections on designations of:

3.2Leased circuits

3.3Public fixed circuits

The

format of	Town A/Transmission station(Note 1)	Function	Serial code	Town B/Transmission station(Note 1)	Number	Suffix (Optional)
Signs	Slash	Hyphen	Slash	Space	No Space	
number of characters	≤12	1 ≤ 3	1 ≤ 12	1 ≤ 3	1 1-4 ≤ 4	

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:

being the seventh circuit in band number 32

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

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. The two stations are also the fault report points of the circuit. The circuit has been routed on fourth 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.
The 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 12C01/4;

Format:

12. xxxx.x Hz; or kHz; or MHz; bit/s; or kbit/s; or Mbit/s; (leading zeros, and if the decimal is a zero, this decimal and the decimal point may be omitted).

Rule for the notation of figures:

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: the bandwidth in Hz, kHz, MHz;

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

2.13Signalling information

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

Format:

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

Specification:

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

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

YYYY refers to the use of the circuit:

in the case where a public telephone circuit is used for phototelegraphy or facsimile: F

2.10Transmission medium information

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 viasatellite:
10. ST;

2.11Composition of the transmission

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

2.12Bandwidth or bit rate

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).

- if speech interpolation is used: SI

  If the circuit has a compandor: CO

  If the circuit has an echo suppressor: ES

  If the circuit has an echo canceller: EC

  If the circuit has an echo suppressor in terminal country of town A and an echo canceller 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, the free places for a code are available for this purpose. They can be used after 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 is continued to be provided in the case of a breakdown of the circuit multiplication equipment. For a derived circuit this is not the case.

2.9Use

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

Format:

9. XX, YYYY; (maximum seven 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 a overflow group of circuits: OF

- if it belongs to a transit group of circuits: TR

- if the information is not known: -

2.7Association

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

Read:

The actual circuit Z13 is a reserve circuit for the circuit Roma/ AS1-Zuerich/SEL T1.

2.8Equipment information

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

- if reduced bit rate encoding is used: RB

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

The second fault report point to 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;

2.6Routing

This item shows the international primary groups or primary block and channel number 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 Paris/ARC-Santiago/1 Z27:

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

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: if applicable: other sub-control stations,

SCSn: etc. 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.

2.5Fault report points

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.93).

Format:

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

Specification:

YYY: code for country of town B

Remark:

The codes are according to ISO Standard 3166 "Specification for codes for the representation of names of countries".

Example:

for the circuit London/KB-Tokyo/SJK Z101:

2. GBR,JPN;

2.3Names of administrations or carriers

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

Format:

3. YYYYYY, ZZZZZZ; (maximum six 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;

2.4Control station (sub-control station(s))

This item lists the appointed control station and sub-control stations (according to Recommendations M.80 and M.90).

Further details about the stations can be found in the List of Contact Points (Recommendation M.93).

Format:

4. CS : designation of control station,

12) bandwidth or bit rate;

13) signalling information.

The various items will be dealt with in section 2, "Related information for international public switched circuits".

2 Related information for international public switched circuits

2.1 Urgency for restoration

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: ≤ 24h

or

c) If no urgency has to be indicated: -

2.2 Terminal countries

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

Format:

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

Specification:

XXX: code for country of town A

1.3Circuits used for switched telex and telegraph service

See CCITT Recommendation R.70.

1.4Circuits in the international public switched data network

These circuits are designated as follows:

-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 Stockholm HYX is designated:

Oslo/A-Stockholm/HYX XD1.

1.5Related Information

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

1) urgency for restoration;

2) terminal countries;

3) 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;

24 is designated:

London/J-New York/24 B1.

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

These circuits are designated as follows:

- 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 (Note 6).

Note 6 – On bilateral agreement administrations may wish to apply continuous serial numbering on Z + B circuits.

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 ninth 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

These circuits are designated as follows:

- 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

Example:

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

London/KB-Paris/BAG M1.

Note 2 - In the example given in the figure there may be only one suffix or three to be decided by the administration.

Note 3 - The three alpha-numeric 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 suffices they use, so that they are different.

1.2 Telephone type circuits

1.2.1 General

Possible function codes are:

M: for manual telephone circuits;

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

B: for both-way telephone circuits.

Serial number

(Maximum four numeric characters). Serial numbering starts anew if there is a difference in:

- Town A or town B
- International Exchange Suffix (Note 5)
- Function code.

Note 5 - On bilateral agreement administrations may wish to apply a serial number on a town-to-town basis rather than on an exchange-to-exchange basis.

1.2.2 Telephone circuits used in manual operation

These circuits are designated as follows:

- The terminal points of the circuit are arranged in alphabetical order;
- the function code is: M.

Traffic relation

- Town A and B

(Maximum 12 characters or space)[Note 1] refers to the names of the two towns in which the international exchanges of the circuit are located. The place names in all types of designation should always be written in Roman characters taking the official name of a town as used in the country to which it belongs. In the case of identical place names in different countries, the administrations should agree to make the place names unique.

- International Exchange Suffix

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

Function code

(One or two alphabetical characters). The function code indicates the type of circuit.

Serial number

(Maximum four numeric characters). 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.

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Implementation

It is recommended to apply the new designation types for newly installed routes starting on 1 January 1990 (or earlier after agreement of administrations involved).

Each time when a new route (circuit, block, data transmission system, etc.) is being installed the route gets the new designation. The Related Information required for maintenance and operation on the route is gathered and put into a record for that route. For circuits, reference is made to Recommendations M.570 and M.1045 "Preliminary exchange of information".

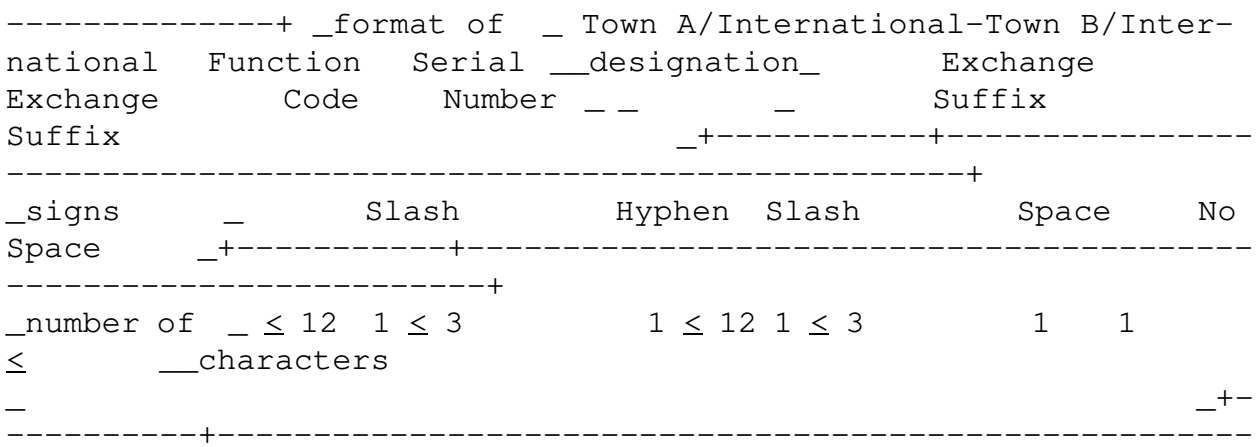
The same procedure should be used for setting up other routes: digital blocks and paths (ref. Recommendation M.465) and data transmission systems
(ref. Recommendations M.1350 and M.1370). Existing designations should be converted gradually but at the latest on 1 January 1994. For the conversion, the administration which has control station responsibility will supply a proposal which contains the new designation (if this is different) and the Related Information (so layer 1 + layer 2).

Administrations are urged to keep the Related Information up to date. To that end, the administration where the change originates will inform the other administrations involved.

1.Designations of international public switched circuits

1.1General

The format of the designation of public switched circuits is:



9) Designations of international digital paths.

10) Designation of the international mixed analogue/digital transmission network.

11) Designations of international data transmission systems.

12) Related information for international digital blocks, digital paths and data transmission systems.

At the end of the Recommendation, an annex gives the reference paragraph numbers for the various types of routes.

Note – For the definitions of unidirectional and bidirectional, as for those of one-way and both-way, reference is made to Recommendation E.600 (Definitions 14.02 –14.08).

The general format for layer 2 (Related Information) is as follows:

1. ...., ...;

2. ...., ...;

3. ...., ...;

.

.

.

.

The numbers 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.

This Recommendation on designations contains the sections:

1) Designations of international public switched circuits.

2) Related information for international public switched circuits.

3) Designations of fixed (non-switched) circuits.

4) Related information for fixed circuits.

5) Designations of international groups (bidirectional and unidirectional).

6) Designations of international group links.

7) Related information for international groups and group and line links.

8) Designations of international digital blocks (bidirectional and unidirectional).

The suffix is especially meant for international public switched circuits. It is optional for international fixed circuits, groups, group links, digital blocks and paths and data transmission systems. It supplies detailed information on the termination of the routes. The first part, the traffic relation, presents origin and destination of a route. The function code shows the type of route whilst the serial number counts the routes with the same traffic relation and same function code. If a town name exceeds 12 characters, administrations should supply 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 circuit designation by adding after the place name a three-letter country code as defined in ISO 3166. This country code must be included within the 12 characters of town name, if necessary by providing an abbreviation of the town name. The serial number is to be written without leading zero's.

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* "Route" covers here all types of telecommunication connections, circuits,
groups, blocks, etc.

Revised Recommendation M.140

DESIGNATION OF INTERNATIONAL CIRCUITS, GROUPS, GROUP AND LINE LINKS, DIGITAL PATHS, DATA TRANSMISSION SYSTEMS AND RELATED INFORMATION

Explanation

Designation of international routes*: circuits, groups, blocks etc. are of great importance for identification and information. Technical developments specially due to digital technology have brought a much greater variety of techniques and allow for a more efficient use of equipment. Information on the applied techniques are of great interest to the staff working in the field of maintenance and operation. Operational conditions nowadays can be more complicated than before, e.g. as a consequence of more competition in the field of telecommunication. On the other hand automated file handling is a necessity for the administration and standardization of designations is an important factor to enable this. To cover the need for standardized designations which are easy to handle but can give precise information, designations have been 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 3rd layer for which no standardization is intended for the time being.

The general format of layer 1 for the designations of all types of international routes is as follows:

format	Town A/ suffix - Town B/ suffix	Function code	Serial number
number of characters	≤12 1 ≤3	1 ≤12 1 ≤3	1 ≤6	≤4