INTERNATIONAL TELECOMMUNICATION UNION

ITU-T M.410

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

MAINTENANCE: INTERNATIONAL TRANSMISSION SYSTEMS (ANALOGUE)

NUMBERING OF DIGITAL BLOCKS IN TRANSMISSION SYSTEMS

ITU-T Recommendation M.410

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation M.410 was published in Fascicle IV.1 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

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

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Recommendation M.410

NUMBERING OF DIGITAL BLOCKS IN TRANSMISSION SYSTEMS

1 General

This Recommendation gives the numbering of tributaries in digital blocks and the numbering of blocks within higher order blocks and digital line system. The Series G Recommendations referred to below can be found in Volume III (Digital networks, transmission systems and multiplexing equipments).

2 Primary multiplex equipment

2.1 *Primary PCM multiplex equipment operating at 2048 kbit/s (Recommendation G.732)*

Channel time slots 1 to 15 and 17 to 31 are assigned to 30 telephone channels numbered from 1 to 30 as indicated in Figure 1/M.410.

Channel time slots	0 1 2 ..... 15 16 17 18 31
Numbering of telephone channels	– 1 2 ..... 15 – 16 17 30

FIGURE 1/M.410

Example of primary multiplex equipment assignments

2.2 *Primary PCM multiplex equipment operating at 1544 kbit/s (Recommendation G.733)*

Channel time slots 1 to 24 are assigned to 24 telephone channels numbered from 1 to 24.

2.3 *Synchronous digital multiplex equipment operating at 2048 kbit/s (Recommendation G.736)*

Channel time slots 1 to 31 are assigned to 31 channels at 64 kbit/s numbered from 1 to 31.

2.4 *Synchronous digital multiplex equipment operating at 1544 kbit/s (Recommendation G.734)*

Channel time slots 1 to 23 are assigned to 23 channels at 64 kbit/s numbered from 1 to 23.

2.5 *Primary PCM multiplex equipment at 2048 kbit/s and offering synchronous 64 kbit/s digital access options (Recommendation G.737)*

It should be possible to assign channel time slots 1 to 15 and 17 to 31 to thirty telephone channels numbered from 1 to 30 as indicated in Figure 1/M.410.

Provision should also be made to provide 64 kbit/s digital access to at least two of these channel time slots, allocated in an order of priority given in Recommendation G.737.

If there are n telephone channels and $(30 - n)$ 64 kbit/s digital accesses, the channels are numbered from 1 to 30, with the digital access channels having DA (digital access) appended to the channel number.

3 Second order PCM multiplex equipments

3.1 *Second order PCM multiplex equipment operating at 8448 kbit/s (Recommendation G.744)*

3.1.1 *Channel time slots assignement for the case of channel associated signalling*

Channel time slots 5 to 32, 34 to 65, 71 to 98 and 100 to 131 are assigned to 120 telephone channels numbered from 1 to 120 as indicated in Figure 2/M.410.

Channel time slots	0 1 2 3 4 5 6 .... 32 33 34 65
Numbering of channels	– – – – – 1 2 .... 28 – 29 60
Channel time slots	66 67 68 69 70 71 72 .... 98 99 100 131
Numbering of channels	– – – – – 61 62 .... 88 – 89 120

FIGURE 2/M.410

Example of second order PCM multiplex equipment assignments

3.1.2 *Channel time slot assignment for the case of common channel signalling*

The telephone channels corresponding to channel time slots 2 to 32, 34 to 65, 67 to 98 and 100 to 131 are numbered from 1 to 127.

When there is a bilateral agreement between the Administrations involved for using channel time slot 1 for another telephone or service channel, this channel will be numbered 0.

3.2 *Second order digital multiplex equipment operating at 8448 kbit/s (Recommendations G.742 and G.745)*

The four tributaries operating at 2048 kbit/s are numbered from 1 to 4 in the order of interleaving.

3.3 *Second order digital multiplex equipment operating at 6312 kbit/s (Recommendation G.743)*

The four tributaries operating at 1544 kbit/s are numbered from 1 to 4 in the order of interleaving.

4 Higher order multiplex equipment

4.1 *Digital multiplex equipments operating at the third order bit rate of 34 368 kbit/s (Recommendation G.751 and G.753)*

The four tributaries operating at 8448 kbit/s are numbered from 1 to 4 in the order of interleaving.

4.2 *Digital multiplex equipments operating at the fourth order bit rate of 139 264 kbit/s (Recommendations G.751 and G.754)*

4.2.1 *Method using a 3rd order bit rate in the digital hierarchy*

The four tributaries operating at 34 368 kbit/s are numbered from 1 to 4 in the order of interleaving.

4.2.2 *Method by directly multiplexing 16 digital signals at 8448 kbit/s*

The 16 tributaries at 8448 kbit/s are numbered from 1 to 16: 1 to 4 in the order of interleaving for the first intermediate tributary at 34 368 kbit/s, 5 to 8 for the second, 9 to 12 for the third and 13 to 16 for the fourth as indicated in Figure 3/M.410.

Four intermediate tributaries at 34 368 kbit/s in the order of interleaving	1 2 3 4
Tributaries at 8448 kbit/s in the order of interleaving	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

FIGURE 3/M.410

Example of third order multiplex equipment assignments

4.3 *Digital multiplex equipment based on a second order bit rate of 6312 kbit/s (Recommendation G.752)*

4.3.1 *Third order digital multiplex equipment operating at 32 064 kbit/s*

The five tributaries operating at 6312 kbit/s are numbered from 1 to 5 in the order of interleaving.

4.3.2 *Third order digital multiplex equipment operating at 44 736 kbit/s*

The seven tributaries operating at 6312 kbit/s are numbered from 1 to 7 in the order of interleaving.

5 Digital line system at 564 992 kbit/s on coaxial pairs (Recommendation G.954)

The four tributaries operating at 139 264 kbit/s are numbered from 1 to 4 in the order of interleaving.