INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.259

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SPECIFICATIONS OF SIGNALLING SYSTEM No. 6

SIGNAL UNIT FORMATS AND CODES

SIGNALLING - SYSTEM - CONTROL SIGNALS

ITU-T Recommendation Q.259

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.259 was published in Fascicle VI.3 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.

3.3 SIGNALLING-SYSTEM-CONTROL SIGNALS

3.3.1 *General*

The signalling-system-control signals are not related to telephone signal information. They are necessary for the proper functioning of the signalling system.

All signalling-system-control signals specified (see Recommendation Q.255) are transferred by means of lone signal units:

- acknowledgement signal unit,
- synchronization signal unit, and
- system-control signal unit.

3.3.2 *Acknowledgement signal unit (ACU)*

The function of the acknowledgement signal unit (ACU) is described in Recommendation Q.251.

3.3.2.1 *Format of the ACU*

The format of the ACU is given in Figure 8/Q.259.

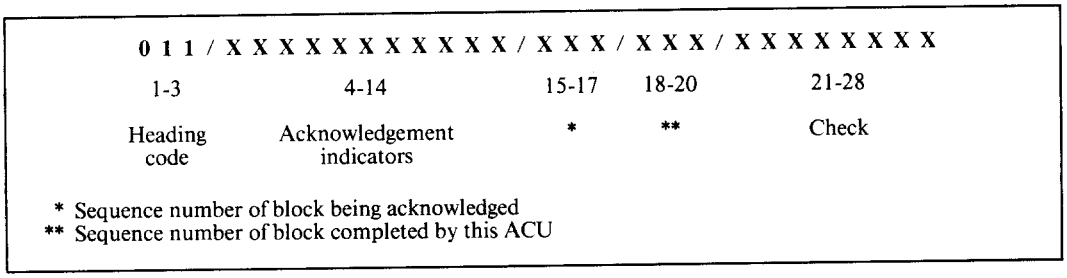

FIGURE 8/Q.259

Format of the acknowledgement signal unit

3.3.2.2 *Codes for the ACU parts*

a) *Heading*

The heading code **0 1 1** is used.

b) *Acknowledgement indicators*

The ACU contains 11 acknowledgement indicators to acknowledge sequentially the corresponding eleven signal units of a block received. That is, bit 4 refers to the first signal unit in the block being acknowledged, bit 5 refers to the second, etc. Each indicator will be coded in the following way:

0 no error detected,

1 error detected.

The error detected condition includes signals rejected by the terminal as covered in Recommendations Q.277, Q.278 and Q.293, § 8.6.1.

c) *Block sequence numbers*

Both the block being acknowledged and the block completed by the ACU are indicated by cyclic sequence numbers from the series **0 0 0**, **0 0 1**, **0 1 0**, **0 1 1**, **1 0 0**, **1 0 1**, **1 1 0**, **1 1 1**, **0 0 0** ...

3.3.3 *Synchronization signal unit (SYU)*

The function of the synchronization signal unit (SYU) is described in Recommendation Q.251.

3.3.3.1 *Format of the SYU*

The format of the SYU is given in Figure 9/Q.259.

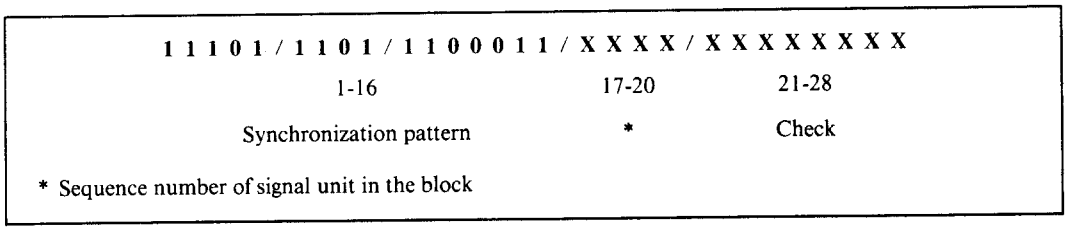

FIGURE 9/Q.259

Format of the synchronization signal unit

3.3.3.2 *Codes for the SYU parts*

a) *Synchronization pattern*

This pattern is coded as: **1 1 1 0 1 1 1 0 1 1 1 0 0 0 1 1**.

The first nine bits of the synchronization pattern may be considered to contain the heading and signal information fields which are coded **1 1 1 0 1** and **1 1 0 1** respectively.

The heading code **1 1 1 0 1** is used for signalling-system-control signals (except ACU) as well as for management signals. The spare signal information codes can be allocated either to system-control signals or to management signals.

b) *Signal unit sequence number*

The sequence number may have any code of the 4-bit binary code **0 0 0 0**, **0 0 0 1**, **0 0 1 0** up to **1 0 1 0** inclusive. The number chosen for a synchronization signal unit is determined by the position of that synchronization signal unit in the block of signal units.

The remaining codes **1 0 1 1** to **1 1 1 1** are not assigned.

3.3.4 *System-control signal units (SCU)*

The function of the system-control signal units is described in Recommendation Q.255.

3.3.4.1 *Format of an SCU*

The format of an SCU is given in Figure 10/Q.259.

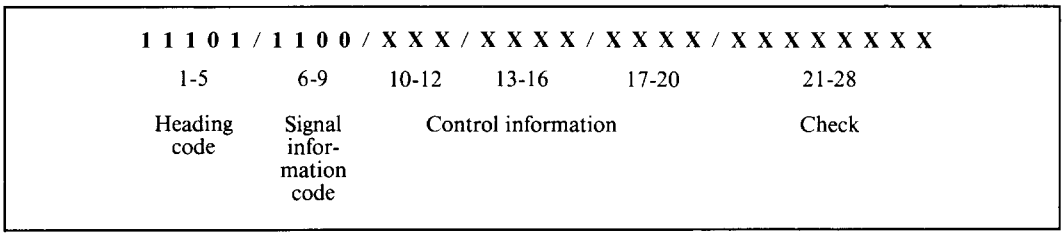

FIGURE 10/Q.259

Format of a system-control signal unit

3.3.4.2 *Codes for the SCU parts*

a) *Heading*

The heading code **1 1 1 0 1** is used.

The heading code **1 1 1 0 1** is used for signalling-system-control signals (except ACU) as well as management signals. The spare signal information codes can be allocated either to system-control signals or to management signals.

b) *Signal information*

The signal information code **1 1 0 0** is used.

c) *Control information*

- bits 10- 12 are coded as **0 0 1**. The other codes are spare.
- bits 13-16 are coded as **0 0 0 1**. The other codes are spare.
- bits 17-20 system-control signals, defined in Recommendation Q.255, are coded as follows:

0 0 0 0	spare
0 0 0 1	changeover
0 0 1 0	manual-changeover
0 0 1 1	spare
0 1 0 0	standby-ready
0 1 0 1	spare
0 1 1 0	load-transfer
0 1 1 1	emergency-load-transfer
1 0 0 0	spare
1 0 0 1	spare
1 0 1 0	manual-changeover-acknowledgement
1 0 1 1	spare
1 1 0 0	standby-ready-acknowledgement
1 1 0 1	spare
1 1 1 0	load-transfer-acknowledgement
1 1 1 1	spare

3.3.5 *Multi-block-synchronization signal units (MBS)*

The function of the multi-block-synchronization signal units is described in Recommendation Q.255.

3.3.5.1 *Format of an MBS*

The format of an MBS is given in Figure 11/Q.259.

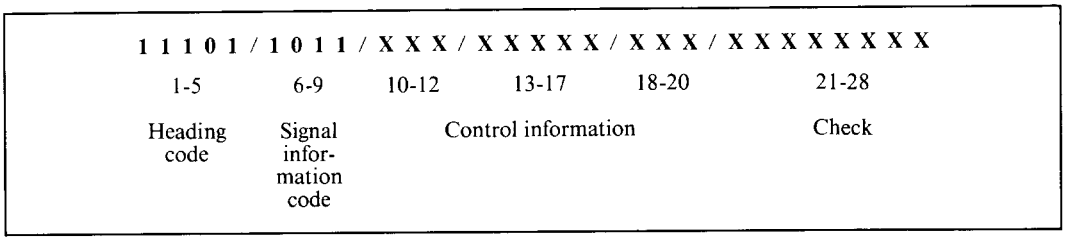

FIGURE 11/Q.259

Format of a multi-block-synchronization signal unit

3.3.5.2 *Codes for the multi-block-synchronization signal unit parts*

a) *Heading*

The heading code **1 1 1 0 1** is used.

The heading code **1 1 1 0 1** is used for signalling system control signals (except ACU) as well as management signals. See § 3.3.4.2.

b) *Signal information*

The signal information code **1 0 1 1** is used.

c) *Control information*

- bits 10-12 are coded as follows:

  0 0 0 multi-block monitoring signal

  1 0 0 multi-block acknowledgement signal

  The other codes are spare.

- bits 13-17 indicate the sequence number of the multi-block in which the multi-block monitoring signal is sent by a 5-bit binary code from the series **0 0 0 0 0**, **0 0 0 0 1**, **0 0 0 1 0**, . . ., **1 1 1 1 1**, **0 0 0 0 0**.

- bits 18-20 indicate the sequence number of the block in which the multi-block monitoring signal is sent (or placed into the output buffer) [see § 3.3.2.2, c) above].