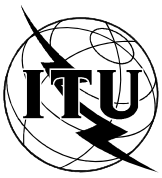

INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

Q.400

Supplement 4
(11/1988)

SERIES Q: SWITCHING AND SIGNALLING

Supplements to the Series Q Recommendations concerning Signalling Systems R1 and R2

IN-BAND LINE SIGNALLING FOR 3 kHz SPACED CHANNELS

Reedition of CCITT Recommendation Q.400, Supplement No. 4, published in the Blue Book, Fascicle VI.4 (1988)

NOTES

1 CCITT Recommendation Q.400 Supplement No. 4 was published in Fascicle VI.4 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.

Recommendation Q.400 Supplement No. 4

IN-BAND LINE SIGNALLING FOR 3 kHz SPACED CHANNELS

1 Line signalling code

1.1 *General*

For 3 kHz spaced carrier circuits, an in-band line signalling system is necessary. For this purpose the line signalling of Signalling System No. 4 (Recommendations Q.121, §§ 2.1, 2.2, 2.3 and Q.122) must be used.

1.2 *Line signals*

The following line signals of Signalling System No. 4 are necessary in combination with Signalling System R2 interregister signalling.

1.2.1 *Forward signals*

- Terminal seizing: in case of transit this is indicated by the interregister signalling;
- Forward-transfer: although the forward-transfer facility is not provided in Signalling System R2, it can be used when Recommendation Q.400, § 1.1.3 is implemented;
- Clear-forward.

1.2.2 *Backward signals*

- Answer,
- Clear-back,
- Release-guard,
- Blocking,
- Unblocking: this signal is not separately defined in the Specifications of Signalling System R2, but it is similar to restoring the tone (see Recommendation Q.412, § 2.2.2.5).

ITU-T RECOMMENDATIONS SERIES

Series A	Organization of the work of the ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	**Switching and signalling**
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communications
Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems

Printed in Switzerland

Geneva, 2011