INTERNATIONAL TELECOMMUNICATION UNION

CCITT F.59

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

TELEGRAPH AND MOBILE SERVICES OPERATIONS AND QUALITY OF SERVICE

GENERAL CHARACTERISTICS OF THE INTERNATIONAL TELEX SERVICE

Recommendation F.59

Geneva, 1991

FOREWORD

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

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

Recommendation F.59 was prepared by Study Group I and was approved under the Resolution No. 2 procedure on the 11th of October 1991.

CCITT NOTE

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

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GENERAL CHARACTERISTICS OF THE INTERNATIONAL TELEX SERVICE

1 Introduction

1.1 *Scope*

This Recommendation summarizes the service characteristics of the international telex service and the service-related basic characteristics of telex terminal equipment.

1.2 This summary of all service-related principles for the international telex service is intended to facilitate a common understanding of this service, bearing in mind:

- that the international telex service is the only text communication subscriber service available throughout the world;
- that the perceived special merits of this service are its technical reliability and operational simplicity;
- that the operational provisions for the international telex service can be found in Recommendation F.60, but other service principles and service-oriented network and terminal characteristics have to be selected from a number of F-, R-, S- and U-Series Recommendations in addition.

1.3 This summary should also be the basis for all considerations of interworking of the international telex service with other services.

2 General characteristics of the international telex service

The international telex service is a service provided by telecommunication Administrations of almost all countries of the world for the purpose of text communication. In its basic form it is used for directly transmitting telex messages between subscriber terminal equipment connected to the telex network or to/from public telex stations.

In the international telex service:

2.1 the text of the transmitted and received message is identical with respect to the character sequence in a line and to the line sequence. There is no defined limit on the length of a telex message. There is no "page" defined in the service;

2.2 basic characteristics of telex messages are the character repertoire of the International Telegraph Alphabet No. 2 (ITA2) and a maximum line length of 69 spacing characters per line;

2.3 communication is by using half-duplex, asynchronous (start-stop) transmission, operating with a character structure of 7 1/2 elements per character at a modulation rate of 50 bauds (i.e. 6 2/3 characters/sec.);

2.4 switched connections are used in the telex networks;

2.5 continuous availability of the service, 24 hours a day, in principle, is given;

2.6 telex terminals must be ready to receive messages, even if they are unattended or used in local mode;

2.7 an answerback unit allows the identification of the telex terminals during the whole process of communication. At the beginning and at the end of each telex connection the exchange of answerback codes between transmitting and receiving telex terminals is recommended;

2.8 the automatic print-out of messages on continuous paper at the transmitting and receiving terminal in the same form and sequence as the messages are transmitted over the line is traditionally recognized as a basic feature;

2.9 another important feature is the possibility of a direct character-by-character conversation between the operators of the telex terminals.

Note – There are telex terminals for which this is not possible, that is where "conversation impossible" (CI) is applied.

3 Operational aspects and basic characteristics of telex terminals derived from the service principles

3.1 *Permanently ready to receive*

Telex terminals must be available to receive messages both whilst in unattended mode or being operated in local mode. This includes the automatic return of the answerback code in response to a WRU signal.

There is automatic recovery to this state after a power or line failure

3.2 *Automatic print-out on continuous paper* (e.g. roll)

Telex messages, as traditionally recognized, are printed at the sending and receiving terminals in the character and line sequence and in the chronological order in which they are transmitted over the line.

If character-by-character printing is not used then print-out should be no later than immediately after the connection is released.

If send/receive buffers are used, these, before print-out, must be non-volatile and not accessible, changeable or removable by the operator.

3.3 *Effect on telex connections due to failures of resources*

Prevent establishment or cause clear-down of established connections in case of: end of recording media; power failure.

3.4 *Answerback unit*

The answerback unit is permanently ready to send the answerback code on local or remote request. It is protected from access by the operator.

Answerback codes exchanged by transmitting/receiving terminals during a connection must be printed in chronological order together with the associated telex message.

A message prepared for automatic transmission must not contain a WRU combination, unless there is sufficient pause in transmission to receive an answerback after sending a WRU.

3.5 *Character set and character presentation*

The ITA2 character set is used.

Character presentation is either entirely upper-case or entirely lower-case, but not mixed.

Reception of the “bell” signal causes an instant audible signal (operator alarm).

3.6 *Special character sequences*

Special character sequences which invoke network responses should not be used within telex messages Other special character sequences should only be used for their defined purposes.

3.7 *Presentation of messages at sending and receiving terminals*

The complete printable ITA2 character set must be represented.

There is a maximum of 69 spacing character positions per line. No page format is defined.

3.8 *Conversational mode*

Character-by-character conversation must be possible, with the exception of terminals responding to a “bell” signal with “CI”. Printed documentation of conversational messages should normally be available.

Transmitted and received characters should be represented differently for distinction (i.e. by shape, colour, etc.).

ITA2 control characters must be available to the operator.

There is a manual clear-down facility. The operator at the receiving terminal must also be able to clear-down a connection.

A called telex terminal must not start automatic transmission without being requested to do so by the operator of the calling terminal.

3.9 *Stop of transmission by backward signals*

The operator at the receiving terminal should be able to stop the reception of an automatic transmission by transmitting the character sequence TTT ...

3.10 *Verification of text*

Means of verifying the text to be transmitted (in the format to be sent over the line) should be provided:

– prior to transmission when sending from memory, or

– during transmission when sending from the keyboard.

4 References

For detailed information on the service aspects of the international telex service the following references are given (see also Figure 1/F.59):

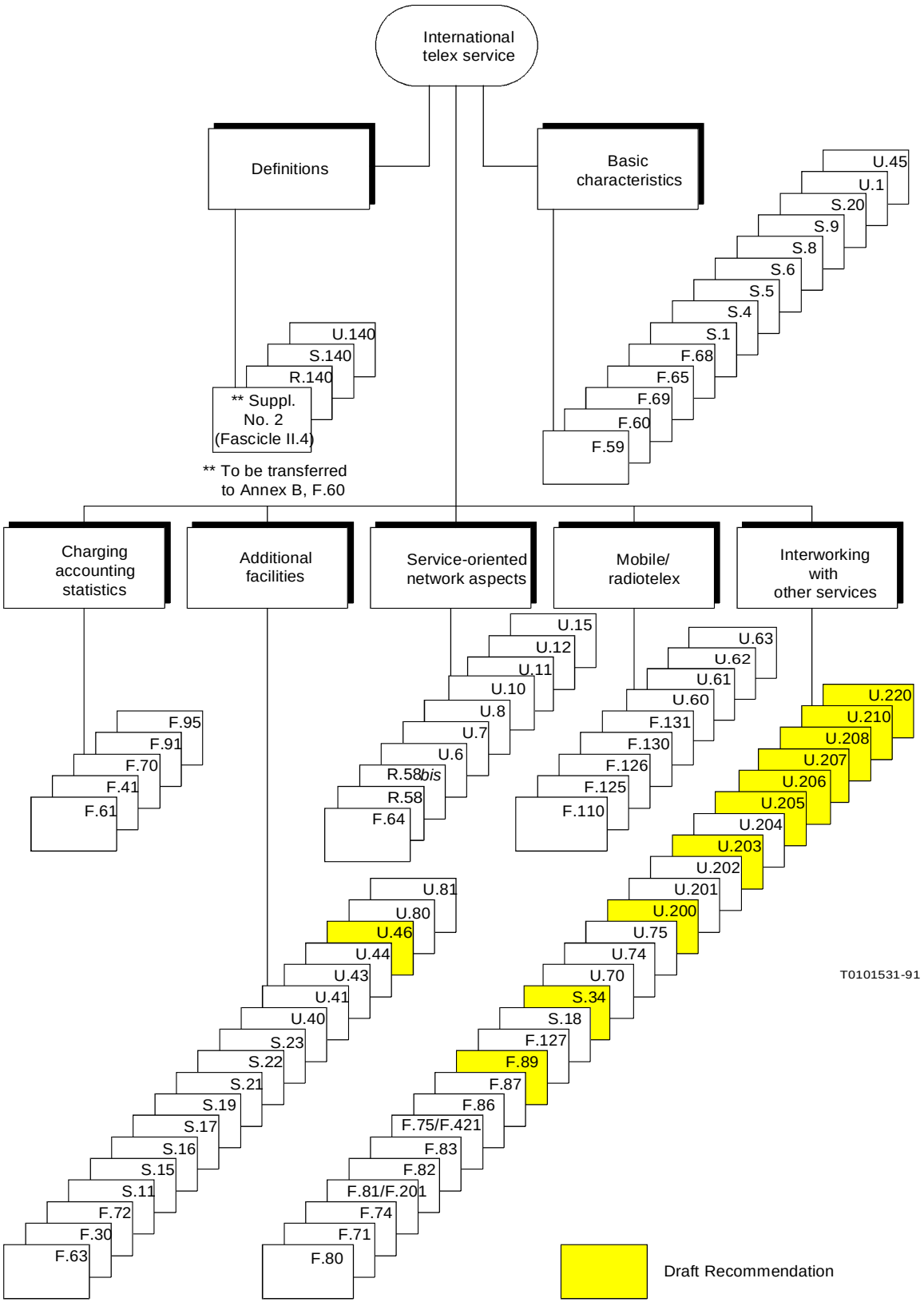

FIGURE 1/F.59

International telex service – Family of Recommendations

4.0 *Definitions*

Rec. R.140	Definitions of essential technical terms in the field of telegraph transmission
Rec. S.140	Definitions of essential technical terms relating to apparatus for alphabetic telegraphy
Rec. U.140	Definitions of essential technical terms relating to telegraph switching and signalling
Suppl. No. 2 [1)]	Terms and definitions of telex

4.1 *Basic characteristics of the international telex service*

Rec. F.59	General characteristics of the international telex service
Rec. F.60	Operational provisions for the international telex service
Rec. F.65	Time-to-answer by operators at international telex positions
Rec. F.68	Establishment of the automatic intercontinental telex network
Rec. F.69	Plan for telex destination codes
Rec. S.1	International Telegraph Alphabet No. 2
Rec. S.4	Special use of certain characters of the International Telegraph Alphabet No. 2
Rec. S.5	Standardization of page-printing start-stop equipment and cooperation between page-printing and tape-printing start-stop equipment (ITA2)
Rec. S.6	Characteristics of answerback units (ITA2)
Rec. S.8	Intercontinental standardization of the modulation rate of start-stop apparatus and of the use of combination No. 4 in figure case
Rec. S.9	Switching equipment of start-stop apparatus
Rec. S.20	Automatic clearing procedure for a telex terminal
Rec. U.1	Signalling conditions to be applied in the international telex service
Rec. U.45	Response to the not-ready condition of the telex terminal

4.2 *Additional facilities of the international telex service*

Rec. F.30	Use of various sequences of combinations for special purposes
Rec. F.63	Additional facilities in the international telex service
Rec. F.72	International telex store and forward – General principles and operational aspects
Rec. S.11	Use of start-stop reperforating equipment for perforated tape retransmission
Rec. S.15	Use of the telex network for data transmission at 50 bauds
Rec.S.16	Connection to the telex network of an automatic terminal using a V.24 DCE/DTE interface
Rec. S.17	Answerback unit simulators

1) Found in the CCITT *Blue Book*, Fascicle II.4.

Rec. S.19	Calling and answering in the telex network with automatic terminal equipment
Rec. S.21	Use of display screens in telex machines
Rec. S.22	"Conversation impossible" and or pre-recorded message in response to J/BELL signals from a telex terminal
Rec. S.23	Automatic request of the answerback of the terminal of the calling party, by the telex terminal of the called party or by the international network
Rec. U.40	Reactions by automatic terminals connected to the telex network in the event of ineffective call attempts or signalling incidents
Rec. U.41	Changed address interception and call redirection in the telex service
Rec. U.43	Follow-on calls
Rec. U.44	Multi-address calls in real time for broadcast purposes in the international telex service
Rec. U.46	Interruption of automatic transmission and flow control in the international telex service
Rec. U.80	International telex store and forward access from telex
Rec. U.81	International telex store and forward – Delivery to telex

4.3 *Charging and accounting, Quality of Service, statistics*

Rec. F.41	Operational provisions for participation in the transferred account telegraph and telematic service
Rec. F.61	Operational provisions relating to the chargeable duration of a telex call
Rec. F.70	Evaluating the quality of the international telex service
Rec. F.91	General statistics for the telegraph services
Rec. F.95	Table of international telex relations and traffic

4.4 *Service oriented network aspects*

Rec. F.64	Determination of the number of international telex circuits required to carry a given volume of traffic
Rec. R.58	Standard limits of transmission quality for the gentex and telex networks
Rec. R.58 *bis*	Limits on signal transfer delay for telegraph, telex and gentex networks
Rec. U.6	Prevention of fraudulent transit traffic in the fully automatic international telex service
Rec. U.7	Numbering schemes for automatic switching networks
Rec. U.8	Hypothetical reference connections for telex and gentex networks
Rec. U.10	Equipment of an international telex position
Rec. U.11	Telex and gentex signalling on intercontinental circuits used for intercontinental automatic transit traffic (type C signalling)
Rec. U.12	Terminal and transit control signalling system for telex and similar services on international circuits (type D signalling)
Rec. U.15	Interworking rules for international signalling systems according to Recommendations U.1, U.11 and U.12

4.5 *Mobile services (maritime, satellite)/Radiotelex*

Rec. F.110	Operational provisions for the maritime mobile service
Rec. F.125	Telex numbering plan for the mobile-satellite services of INMARSAT
Rec. F.126	Selection procedures for the INMARSAT mobile-satellite telex service
Rec. F.130	Maritime answer-back codes
Rec. F.131	Radiotelex service codes
Rec. U.60	General requirements to be met in interfacing the international telex network with maritime satellite systems
Rec. U.61	Detailed requirements to be met in interfacing the international telex network with maritime satellite systems
Rec. U.62	General requirements to be met in interfacing the international telex network with the fully automated maritime VHF/UHF radio system
Rec. U.63	General requirements to be met in interfacing the international telex network with the maritime "direct printing" system

4.6 *Interworking with other services*

Rec. F.80	Basic requirements for interworking relations between the international telex service and other services
Rec. F.71	Interconnection of private teleprinter networks with the telex network
Rec. F.74	Operational provisions relating to mailbox devices connected to the telex network
Rec. F.81/F.201	Interworking between teletex service and telex service – General principles
Rec. F.82	Operational provisions to permit interworking between the international telex service and the Intex service
Rec. F.83/F.73	Operational principles for communication between terminals on telex networks and data terminal equipment on packet switched public data networks
Rec. F.75/F.421	Message handling services – Intercommunication between the IPM service and the telex service
Rec. F.86	Interworking between the international telex service and the videotex service
Rec. F.87	Operational principles for the transfer of messages from terminals of the international telex service to Group 3 facsimile terminals connected to the public switched telephone network
Rec. F.89	Status inquiry function in the international telex service
Rec. F.127	Operational procedures for interworking between the telex service and the service offered by INMARSAT standard-C system
Rec. S.18	Conversion between International Telegraph Alphabet No. 2 and International Alphabet No. 5
Rec. S.34	Intex terminals – Requirements to effect interworking with the international telex service
Rec. U.70	Telex service signals for telex to teletex interworking
Rec. U.74	Extraction of telex selection information from a calling telex answerback

Rec. U.75	Automatic called telex answerback check
Rec. U.200	General technical requirements for interworking relations between the international telex service and other services
Rec. U.201	Interworking between the teletex service and the telex service
Rec. U.202	Requirements to be met in providing the telex service within the ISDN
Rec. U.203	Technical requirements to be met when providing real-time bothway communications between terminals of the international telex service and data terminal equipments on a PSPDN or via the PSTN
Rec. U.204	Interworking between the telex service and the public interpersonal messaging service
Rec. U.205	Store-and-retrieve facility for the delivery of messages from a telex terminal to a data terminal equipment which connects to a packet-switched public data network over the public switched telephone network
Rec. U.206	Technical requirements for interworking between the international telex service and the videotex service
Rec. U.207	Technical requirements to be met for the transfer of messages between terminals of the international telex service and Group 3 facsimile terminals connected to the PSTN
Rec. U.208	The international telex service – Interworking with the INMARSAT standard-C system using one-stage selection
Rec. U.210	Intex service network requirements to effect interworking with the international telex service
Rec. U.220	Status enquiry function within the international telex service