



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**F.70**

**OPERATIONS AND QUALITY OF SERVICE  
TELEGRAPH SERVICES**

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**EVALUATING THE QUALITY OF  
THE INTERNATIONAL TELEX SERVICE**

**ITU-T Recommendation F.70**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation F.70 was published in Fascicle II.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 F.70**

### **EVALUATING THE QUALITY OF THE INTERNATIONAL TELEX SERVICE**

#### **1 Introduction**

1.1 The Quality of Service is a measure of the perceived performance of the telex network. The perception of the service performance varies between that of the calling subscriber, the origin Administration, the destination Administration and the called subscriber. For example, national network difficulties in reaching the origin international exchange will usually be noticed only by the calling subscriber. However, if the origin or destination Administration automatically retries to reach the wanted subscriber following an unsuccessful call attempt, these reattempts are not seen by that part of the network that precedes it. Conversely, a called subscriber is unaware of the number of times that call attempts are being made to his number, if his machine is busy or out of order.

1.2 The main criteria of service performance from the users' viewpoint are:

- a) the ease in establishing a connection;
- b) the retention of the established connection;
- c) the satisfactory transmission quality;
- d) the integrity of billing.

1.3 Where possible, the critical areas of service performance should be measured in a manner that provides both origin and destination Administrations with comparable data. For example, arrangements to ensure concurrency of the periods of observation by the two Administrations involved in each given relation is of great importance. These measurement should, if possible, show the performance as perceived in the originating network and in the destination network.

1.4 Where a subscriber number is found to be "hard to reach" (HTR), then, if possible, this number should be separately identified to allow the origin and destination Administrations mutually to analyze the cause of the problem.

#### **2 Method of measuring quality of service**

2.1 Administrations should draw up a programme for telex observations designed to evaluate the quality of the service given to subscribers in their automatic and semi-automatic international services.

2.2 Where Administrations have equipment that automatically records details of calls, this information may be used to compile details of network performance.

2.3 In order to provide compatible data between the origin and destination networks, where possible, Administrations should measure the perceived performance in the origin network (e.g., at the entry point to the international gateway exchange if applicable) in addition to the performance at the international interface looking towards the destination network.

#### **3 Analysis of results**

3.1 Administrations should exchange data on a bilaterally agreed basis, commensurate with their operational requirements and, in principle, at least once every six months.

3.2 The results may then be analyzed as shown below (see also Table 1/F.70):

- a) Check effective rate to the destination compared with the average to all destinations.
- b) Check the current rate versus the performance as measured in the past.
- c) Check the performance with results obtained by other Administrations to the same destination.
- d) If the performance has suddenly degraded, perform a detailed analysis where possible, monitor circuit group performance and analyze the performance on a destination code basis. The degradation on a circuit group could be caused by a faulty circuit which, when seized, fails to successfully switch a call.

3.3 Administrations should investigate any HTR report (greater than 50 unsuccessful attempts to one number within a day could be defined as being HTR).

3.3.1 Where national regulatory arrangements allow, Administrations should check that automatic terminal equipment complies with Recommendation U.40. Where poor terminal operating procedures exist, customers should be referred to the guidelines annexed to Recommendation F.60.

3.3.2 The destination Administration should proceed as follows:

3.3.2.1 **OCC** : the called subscriber should be advised that his telex machine is very busy and that extra machines (or terminations) may be necessary.

3.3.2.2 **DER** : is this still a working service? If not, the service signal should be changed to **NP** or **NCH**. If the service is still working, the customer should be asked if the machine is being disabled, e.g., by switching off the power. If a computer interface is being used, is the telex machine being correctly switched in when the computer is taken off-line?

3.3.2.3 **NP/NCH** : consult the origin Administration and ask it to take the matter up with the calling subscriber.

3.3.2.4 Answerback failure:

- a) Where answerback failure occurs, the reasons should be investigated by the destination Administration.
- b) Where a calling automatic terminal fails to interpret the answerback correctly, the reasons should be investigated by the origin Administration.

3.4 Where possible, Administrations should also investigate and report as necessary when frequent cases of clearing from the destination network occurs after charging commences, since a likely cause in such cases is a transmission fault during the text transmission.

3.5 Regular discussion should take place with other Administrations, on a bilateral basis, with a view towards improving the mutual network performance.

#### **4 Explanation of terms used in Table 1/F.70**

##### *4.1 Effective call*

An effective call is defined as a call for which a charge was made or that was successfully completed to a service position. Where possible, measurements should be corrected to take account of any calls for which the charge has been adjusted.

##### *4.2 Ineffective call*

Any calls or call attempts that did not result in an effective call.

##### *4.3 Chargeable time*

Duration between the call-connected signal and recognition of the clearing of a call, less 5 to 7 seconds (see Recommendation F.61).

##### *4.4 Call set-up time*

The time between circuit seizure and the receipt of a call-connected or service signal. This time will not be the same on the national and the international sides of the exchange.

##### *4.5 PTS failure*

The proceed-to-select signal has not been received within a nominated period after a call signal has been sent to the next exchange.

##### *4.6 Service signals*

(ABS, DER, NA, NC, NCH, NP, OCC) are defined in Recommendation F.60, § 4.1.

TABLE 1/F.70

**International telex service observations**

ADMINISTRATION:  
 TRAFFIC OUTGOING FROM: TO  
 PERIOD OF OBSERVATION: UTC TO UTC  
 ROUTE BUSY HOUR: UTC TO UTC

| Number of observations                                  |  | Point of observation     |                          |                          |                          |
|---|--|--------------------------|--------------------------|--------------------------|--------------------------|
| National side   | International side<br>(Includes retries) | National side            |                          | International side       |                          |
|   |  | Average this destination | Average all destinations | Average this destination | Average all destinations |
| Effective calls   | Percentage                               |                          |                          |                          |                          |
|   | Chargeable time (min. sec.)              |                          |                          |                          |                          |
|   | Call setup time (min. sec.)              |                          |                          |                          |                          |
| Ineffective calls                                       | Percentage                               |                          |                          |                          |                          |
|   | Call setup time (min. sec.)              |                          |                          |                          |                          |
| Analysis of ineffective calls (Expressed as percentage) |  |                          |                          |                          |                          |
| Outgoing circuit selected                               | PTS Failure                              |                          |                          |                          |                          |
|   | OCC Signal received                      |                          |                          |                          |                          |
|   | DER Signal received                      |                          |                          |                          |                          |
|   | NP Signal received                       |                          |                          |                          |                          |
|   | ABS Signal received                      |                          |                          |                          |                          |
|   | NC Signal from distant network           |                          |                          |                          |                          |
|   | NA Signal received                       |                          |                          |                          |                          |
|   | NCH Signal received                      |                          |                          |                          |                          |
|   | Other service signals                    |                          |                          |                          |                          |
|   | No answer back after call connect        |                          |                          |                          |                          |
|   | Clear by caller before call connect      |                          |                          |                          |                          |
|   | No call connect (time out)               |                          |                          |                          |                          |
|   | Cut off during call setup                |                          |                          |                          |                          |
|   | Wrong number reached                     |                          |                          |                          |                          |
|   | Others (specify)                         |                          |                          |                          |                          |
| No outgoing circuit selected                            | Incomplete number                        |                          |                          |                          |                          |
|   | Clearing before complete number          |                          |                          |                          |                          |
|   | Lack of outgoing circuits                |                          |                          |                          |                          |

THE FOLLOWING NUMBERS WERE IDENTIFIED AS HARD TO REACH TELEX SUBSCRIBERS:  
 SERVICE SIGNAL RECEIVED ON INTERNATIONAL SIDE

| Called number | OCC | DER | ABS | NS | Others (specify) |
|---------------|-----|-----|-----|----|------------------|
|               |     |     |     |    |                  |
|               |     |     |     |    |                  |
|               |     |     |     |    |                  |
|               |     |     |     |    |                  |
|               |     |     |     |    |                  |
|               |     |     |     |    |                  |
|               |     |     |     |    |                  |

Note – An explanation of terms is given in § 4.