



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

E.422

(02/96)

TELEPHONE NETWORK AND ISDN QUALITY OF SERVICE, NETWORK MANAGEMENT AND TRAFFIC ENGINEERING

OBSERVATIONS ON INTERNATIONAL OUTGOING TELEPHONE CALLS FOR QUALITY OF SERVICE

ITU-T Recommendation E.422

(Previously "CCITT Recommendation")

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T 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 World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation E.422 was revised by ITU-T Study Group 2 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 19th of February 1996.

NOTE

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

© ITU 1996

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.



Documents
Document Sharing Hub

CONTENTS

	<i>Page</i>
1 Objectives concerning Tables 1 to 4/E.422.....	1
2 Manual or semi-automatic observations (Table 1/E.422)	1
3 Comments concerning the use of Table 1/E.422.....	2
4 How to fill in Table 1/E.422.....	2
5 Automatic observations for CCITT Signalling Systems other than Signalling System No. 7 (Table 2/E.422)	5
6 Comments concerning the use of Table 2/E.422.....	5
7 How to fill in Table 2/E.422.....	7
8 Automatic observation for Signalling System No. 7 – TUP (Table 3/E.422).....	8
9 Comments concerning the use of Table 3/E.422.....	8
10 How to fill in Table 3/E.422.....	8
11 Automatic observations for CCITT Signalling System No. 7 – ISUP (Table 4/E.422).....	10
12 Comments concerning the use of Table 4/E.422.....	10
13 How to fill in Table 4/E.422.....	10



SUMMARY

This Recommendation describes service observation in the international service in order to assess the quality of service obtained by the calling subscriber. It is essential to have factual or objective recording of observations (i.e. successful and unsuccessful calls), and to present them in the form of tables. The purpose of the revisions to this Recommendation are to include common channel Signalling System No. 7 features, to augment the QOS observations for Signalling Systems No. 5, No. 6 and R2 already present.

Recommendation E.422**OBSERVATIONS ON INTERNATIONAL OUTGOING TELEPHONE CALLS
FOR QUALITY OF SERVICE***(revised in 1996)***1 Objectives concerning Tables 1 to 4/E.422**

1.1 The purpose of service observation in the international service is to assess the quality of service obtained by the calling subscriber. Consequently, it is essential to have factual or objective recording of observations (i.e. successful and unsuccessful calls), and to present them in the form of a table (see Table 1 for manual or semi-automatic observations, and Tables 2, 3 and 4 for automatic observations).

1.2 The modern trend is to carry out automatic measurements for the following reasons:

- operating costs are minimized (staff reduction);
- continuous observation is possible;
- it is possible to take a larger sample;
- human error is eliminated;
- automatic processing of data is facilitated;
- conversational privacy is ensured;
- the time at which observations are made can be recorded.

The increasing deployment of out-of-band signalling system as Signalling System No. 7 TUP and ISUP greatly enhance the value of these observations permitting a comprehensive analysis of traffic quality of service.

However, manual observations may prove useful in monitoring transmission impairments such as noise, echo, clipping and distortion.

1.3 Due to the different capabilities and limitations of each signalling protocol used in the international network, it is recommended that, for automatic observation:

- Table 2 be used for CCITT Signalling Systems other than Signalling System No. 7.
- Table 3 be used for CCITT Signalling System No. 7 – TUP (Telephone User Part).
- Table 4 be used for CCITT Signalling System No. 7 – ISUP (ISDN User Part).

2 Manual or semi-automatic observations (Table 1/E.422)

2.1 Table 1 should be capable of being completed through the use of a wide range of observation facilities, i.e. from the simple to the sophisticated.

2.2 Specialized training of observers should be kept to a minimum.

2.3 The table should be self-explanatory so that reference to detailed how-to-complete instructions is unnecessary.

2.4 The major categories should be selected such that:

- they identify the major factors adversely affecting the quality of service;
- they are suitable for the centralized processing of observation results.

2.5 To permit the orderly collection of data for human factors studies to identify sources of difficulty in customer use of the international (automatic) telephone service, Recommendation E.427 contains an additional table to Table 1/E.422.

TABLE 1/E.422

Observations of international outgoing telephone calls for quality of service

Country of origin Point of access:
 Outgoing international exchange National side
 Group of circuits Link circuits
 Service { automatic^{a)} Outgoing side
 { semi-automatic^{a)}
 Period: from to Time of observations

Category	Number		Percentage	
	Subtotal	Total	Subtotal	Total
A1 Calls successfully put through (see Note 1)		...		...
A2 Ring tone received but no answer		...		...
A3 Unsuccessful calls: <i>Positive</i> indication of congestion, including subscriber busy, from beyond the outgoing international exchange. Visual signal, tone or recorded announcement		...		...
3.1 Subscriber busy/congestion indicated by visual signal	...		...	
3.2 Subscriber busy/congestion indicated by busy/congestion tone	...		...	
3.3 Congestion indicated by a recorded announcement	...		...	
A4 Unsuccessful calls: Other visual signals, tones or recorded announcements, not positively identified as Category 3 or 8		...		...
4.1 Visual signal received	...		...	
4.2 Tone received	...		...	
4.3 Recorded announcement received	...		...	
A5 Unsuccessful calls for other technical reasons		...		...
5.1 Wrong number obtained	...		...	
5.2 Abandoned due to very poor speech transmission	...		...	
5.3 No tone, no answer after waiting ... seconds	...		...	
5.4 Reception of answer signal when the called party does not reply	...		...	
5.5 Other failures of a technical kind	...		...	
A6 Unsuccessful calls due to incorrect handling by the calling party		...		...
6.1 Wrong number dialled	...		...	
6.2 Incomplete number	...		...	
6.3 Call prematurely abandoned before receipt of signal, tone or announcement (within less than ... seconds)	...		...	
6.4 Call prematurely abandoned after receipt of ring tone (within less than 30 seconds)	...		...	
6.5 Other failures due to incorrect handling	...		...	