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SERIES Q: SWITCHING AND SIGNALLING

Functions and information flows for services in the ISDN –
Supplementary services

Stage 2 description for call offering supplementary
services:

Explicit call transfer

ITU-T Recommendation Q.82.7

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION Q.82-7**STAGE 2 DESCRIPTION FOR CALL OFFERING SUPPLEMENTARY SERVICES:
EXPLICIT CALL TRANSFER****Summary**

This Recommendation defines the Stage 2 of the Explicit Call Transfer (ECT) supplementary service.

The ECT supplementary service enables a user who has two calls, each of which can be an incoming or an outgoing call, to connect the other users in the two calls.

Source

ITU-T Recommendation Q.82.7 was prepared by ITU-T Study Group 11 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 9th of July 1996 .

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the 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).

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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

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Recommendation Q.82.7**STAGE 2 DESCRIPTION FOR CALL OFFERING SUPPLEMENTARY SERVICES:
EXPLICIT CALL TRANSFER***(Geneva, 1996)***1 Scope**

This Recommendation defines the Stage 2 of the Explicit Call Transfer (ECT) supplementary service. Stage 2 identifies the functional capabilities and the information flows needed to support the service as described in Stage 1. The Stage 2 description also identifies user operations not directly associated with a call (see Recommendation I.130 [2]).

This Recommendation is specified according to the methodology specified in Recommendation Q.65 [3].

In addition, this Recommendation does not specify the requirements where the service is provided to the user via a private ISDN. This Recommendation does not specify the requirements for the allocation of defined functional entities within a private ISDN, it does however define which functional entities may be allocated to a private ISDN.

This Recommendation does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

The ECT supplementary service enables a user who has two calls, each of which can be an incoming or an outgoing call, to connect the other users in the two calls.

The ECT supplementary service is applicable to all circuit-switched telecommunication services.

This Recommendation is applicable to the Stage 3 Recommendations for the integrated services digital network.

2 Normative references

The following Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision: all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Recommendation I.112 (1993), *Vocabulary of terms for ISDNs*.
- [2] CCITT Recommendation I.130 (1988), *Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN*.
- [3] CCITT Recommendation Q.65 (1988), *Stage 2 of the method for the characterization of services supported by an ISDN*.
- [4] ITU-T Recommendation Q.71 (1993), *ISDN circuit mode switched bearer services*.
- [5] ITU-T Recommendation Z.100 (1993), *CCITT Specification and Description Language (SDL)*.

3 Definitions

For the purposes of this Recommendation, the following definitions apply:

- 3.1 **integrated services digital network (ISDN):** See 2.3/I.112 [1], definition 308.
- 3.2 **primary call:** One of the user A's (answered) calls
- 3.3 **secondary call:** The other user A call (answered or alerting).
- 3.4 **service; telecommunications service:** See 2.2/I.112 [1], definition 201.
- 3.5 **transfer by join:** The effecting of transfer by joining together the primary and secondary calls at user A's local exchange.
- 3.6 **transfer by re-routing:** The effecting of transfer by establishing a new connection to replace the primary and secondary calls.
- 3.7 **user A:** The served user, i.e. the user requesting the ECT supplementary service.
- 3.8 **user B:** The other user in user A's primary call.
- 3.9 **user C:** The other user in user A's secondary call.

4 Symbols and abbreviations

For the purposes of this Recommendation, the following abbreviations are used.

CC	Call Control
CCA	Call Control Agent
ECT	Explicit Call Transfer
FE	Functional Entity
FEA	Functional Entity Action
ISDN	Integrated Services Digital Network
LE	Local Exchange
PTNX	Private Telecommunications Network Exchange
SDL	Specification and Description Language
TE	Terminal Equipment

5 Description

This Stage 2 supports only one variant of the ECT supplementary service, that of transfer by join. The functional model supports interworking with transfer by re-routing, which may occur within a private network but involving users of a public network.

Table 1 shows the states for the invocation of the ECT supplementary service.

TABLE 1/Q.82.7

States for invocation of the ECT supplementary service

Primary call	Secondary call
Active, idle	Active, idle
Active, held	Active, idle (Note 2)
Active, idle	Active, held (Note 2)
Active, idle	Alerting, idle (Note 1)
Active, held	Alerting, idle (Note 1)
Active, idle	Alerting, held (Note 1)
NOTES	
1 Only applicable for an outgoing call.	
2 These two entries are identical and there is no distinction between the information flows for the two calls, the only distinction being the held state of one of the calls.	

The procedures are currently restricted to basic telecommunication services involving a single 64 kbit/s connection. This Recommendation is not applicable to a videotelephony call involving two 64 kbit/s connections.

6 Derivation of the functional model

6.1 Functional model description

The functional model for the ECT supplementary service is shown in Figure 1.

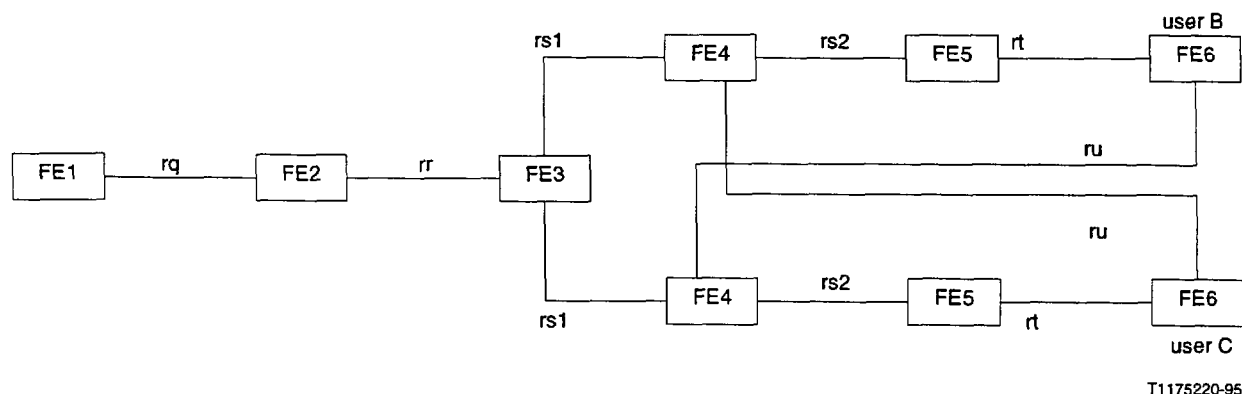


FIGURE 1/Q.82.7

Functional model for the ECT supplementary service

6.2 Description of functional entities

The Functional Entities (FEs) required by the ECT supplementary service in addition to those of basic call are as follows:

- FE1: Transfer invoke entity;
- FE2: Transfer validate entity;
- FE3: Transfer execute entity;
- FE4: Transfer screen entity;
- FE5: Transfer complete receive entity;
- FE6: Transfer inform receive entity.

6.3 Relationship with a basic service

The relationship with a basic service is as shown in Figure 2.

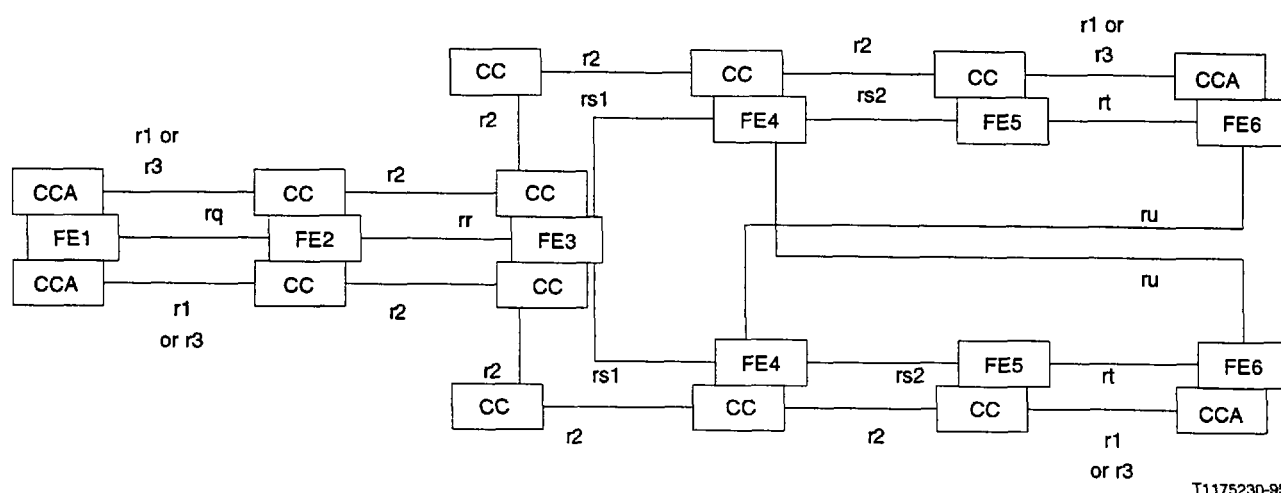


FIGURE 2/Q.82.7

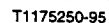
Relationship with a basic service

7 Information flows

7.1 Information flow diagrams

The information flow diagrams assume the existence of a primary call and a secondary call and that both calls are maintained until the completion of the transfer. Clearing of the primary and secondary calls with respect to the served user is not shown as this uses basic call information flows only. Similarly any information flows concerned with holding and retrieving the primary and secondary calls are outside the scope of this Recommendation.

The TERMINAL DETAILS information flow may occur between both FE6s. Where there is no information to be sent at all, the information flow is not present in either direction. The information flow is only shown in one direction in Figure 3 for reasons of clarity.



Successful call transfer

Figure 4 shows the optional procedure for preventing loops.