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**Integrated Services Digital Network (ISDN);
Terminal Portability (TP) supplementary service
Functional capabilities and information flows**

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols & Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

In accordance with CCITT Recommendation I.130 [1], the following three level structure is used to describe the supplementary telecommunications services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (ISDN):

- Stage 1: is an overall service description, from the user's standpoint;
- Stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- Stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

This ETS details the stage 2 aspects (functional capabilities and information flows) needed to support the Terminal Portability (TP) supplementary service. The stage 1 and stage 3 aspects are detailed in ETS 300 053 (1991) and ETS 300 055 (1991), respectively.

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1 Scope

This standard defines the stage two of the Terminal Portability (TP) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage two identifies the functional capabilities and the information flows needed to support the stage 1 service description. The stage two description also identifies user operations not directly associated with a call (see CCITT Recommendation I.130 [1]).

This standard is specified according to the methodology specified in CCITT Recommendation Q.65 [2].

This standard does not formally describe the relationship between this supplementary service and the basic call but, where possible this information is included for guidance.

In addition this standard does not specify the requirements where the service is provided to the user via a private ISDN. This standard 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 standard does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN

The TP supplementary service allows a user to move a terminal from one socket to another within one given basic access during the active state of a call. It also allows a user to move a call from one terminal to another terminal within one basic access during the active phase of the call.

The portability of a terminal during the idle state is part of the basic access capabilities and does not require any procedure.

The portability of a terminal in the call establishment and in the call clearing phases is not possible.

The TP supplementary service applies to some interactive circuit switched telecommunication services requiring the attendance of a human being, such as telephony, videotelephony, etc.

The TP supplementary service does not apply to non-interactive services such as facsimile, teletex, mixed-mode, computer communication, etc. However, the network will not take any action to restrict its applicability.

It is a user's responsibility to resume the call with a terminal which is compatible both with the remote terminal and with the type of connection previously established.

This standard is applicable to the stage three standards for the ISDN Integrated Services Digital Network TP supplementary service. The term "stage three" is also defined in CCITT Recommendation I.130 [1]. Where the text indicates the status of a requirement (i.e. as a strict command or prohibition, as authorisation leaving freedom, as a capability or possibility) this shall be reflected in the text of the relevant stage three standards.

Furthermore, conformance to this standard is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for this standard.

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.130 (1988): "Method for the characterisation of telecommunication services supported by an ISDN and network capabilities of an ISDN."
- [2] CCITT Recommendation Q.65 (1988): "Stage 2 of the method for the characterisation of services supported by an ISDN".
- [3] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".
- [4] CCITT Recommendation I.112 (1988): "Vocabulary of terms for ISDNs".
- [5] CCITT Recommendation Q.71 (1988): "ISDN 64 kbit/s circuit mode switched bearer services".
- [6] CCITT Recommendation I.210 (1988): "Principles of telecommunication services supported by an ISDN and the means used to describe them".
- [7] CCITT Recommendation Z.100 (1988): "Functional Specification and Description Language (SDL)".

3 Definitions

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

Integrated Services Digital Network (ISDN): see CCITT Recommendation I.112 [4], § 2.3, definition 308.

Service; telecommunications service: see CCITT Recommendation I.112 [4], § 2.2, definition 201.

Supplementary service: see CCITT Recommendation I.210 [6], § 2.4.

Basic access: see CCITT Recommendation Q.9 [3], § 1 definition 1551.

4 Symbols and abbreviations

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
TP	Terminal Portability

5 Description

Not applicable.

6 Derivation of the functional model

6.1 Functional model description

The functional model for the TP supplementary service is shown in figure 1.

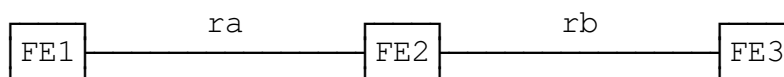


Figure 1

6.2 Description of the functional entities

The functional entities required by the TP supplementary service above those of the basic call are as follows:

- FE1: Served user's service agent.
- FE2: TP service control entity.
- FE3: Remote user's service agent.

6.3 Relationship with a basic service

The relationship with a basic service is shown in figure 2. The model for basic call handling is defined in CCITT Recommendation Q.71 [5].

NOTE: The basic call model is defined in CCITT Recommendation Q.71 [5], subclause 2.1, with the exception that r1 represents an outgoing call relationship from a CCA and r3 represents an incoming call relationship to a CCA.

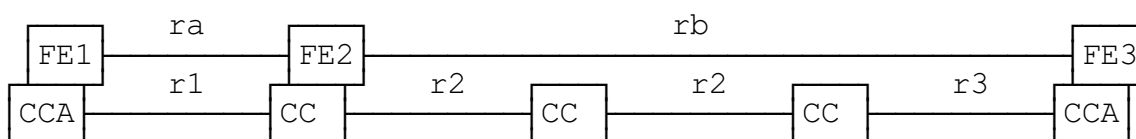


Figure 2

7 Information flows

7.1 Information flow diagrams

The information flows for the TP supplementary service are shown in figure 3 and figure 4.

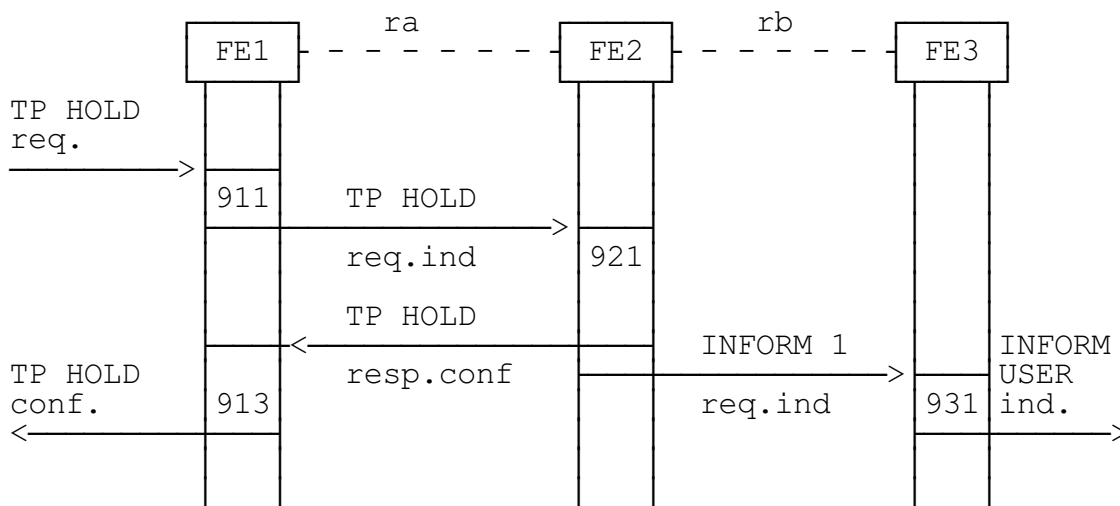


Figure 3

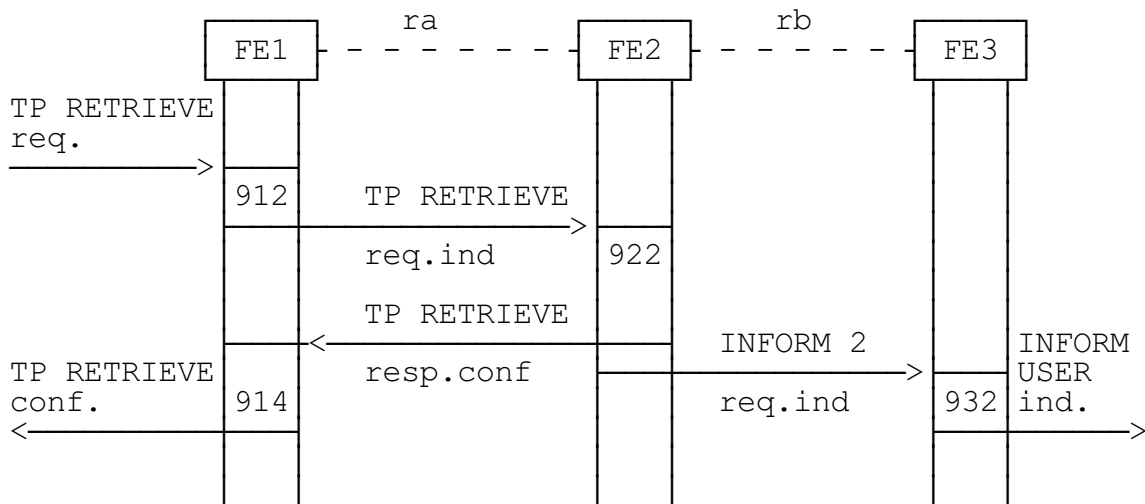


Figure 4

Figure 3 shows the progression from an active call established from A to B through to call A to B on hold. Figure 4 shows the progression from call A to B on hold through to an active call established from A to B.

7.2 Definition of the individual information flows

The contents of the information flows (see figure 3) specific to the TP supplementary service are given in the subclauses below.

7.2.1 Relationship ra

7.2.1.1 Contents of TP HOLD

The contents of TP HOLD are shown in table 1.

Table 1

Parameter	req.ind
Call identity	Optional

7.2.1.2 Contents of TP RETRIEVE

The contents of TP RETRIEVE are shown in table 2.

Table 2

Parameter	req.ind	resp.conf
Call identity	Optional	
Channel identity		Mandatory

7.2.1.3 Contents of TP HOLD REJECT

The contents of TP HOLD REJECT is shown in table 3.

Table 3

Parameter	req.ind
Reject reason	mandatory

7.2.1.4 Contents of TP RETRIEVE REJECT

The contents of TP RETRIEVE REJECT is shown in table 4

Table 4

Parameter	req.ind
Reject reason	mandatory

7.2.2 Relationship rb

7.2.2.1 Contents of INFORM 1

The contents of INFORM 1 is shown in table 5.

Table 5

Parameter	req.ind
TP HOLD	mandatory

7.2.2.2 Contents of INFORM 2

The contents of INFORM2 is shown in table 6.

Table 6

Parameter	req.ind
TP RETRIEVE	mandatory

8 SDL diagrams for functional entities

The SDLs are provided according to CCITT Recommendation Z.100 [7].

8.1 FE1

The SDL for FE1 is shown in figure 5 and figure 6.

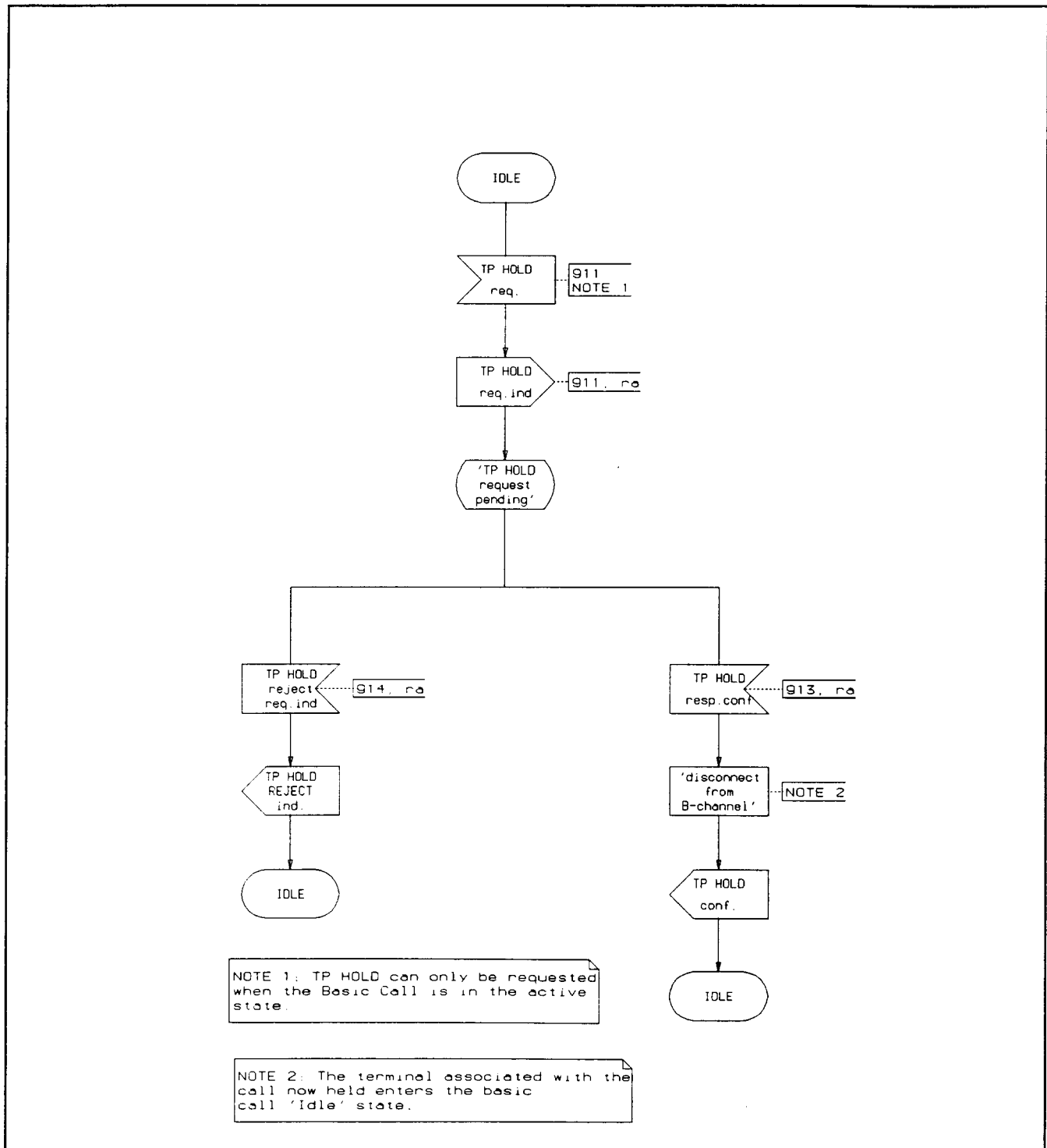


Figure 5: TP supplementary service FE1 functions

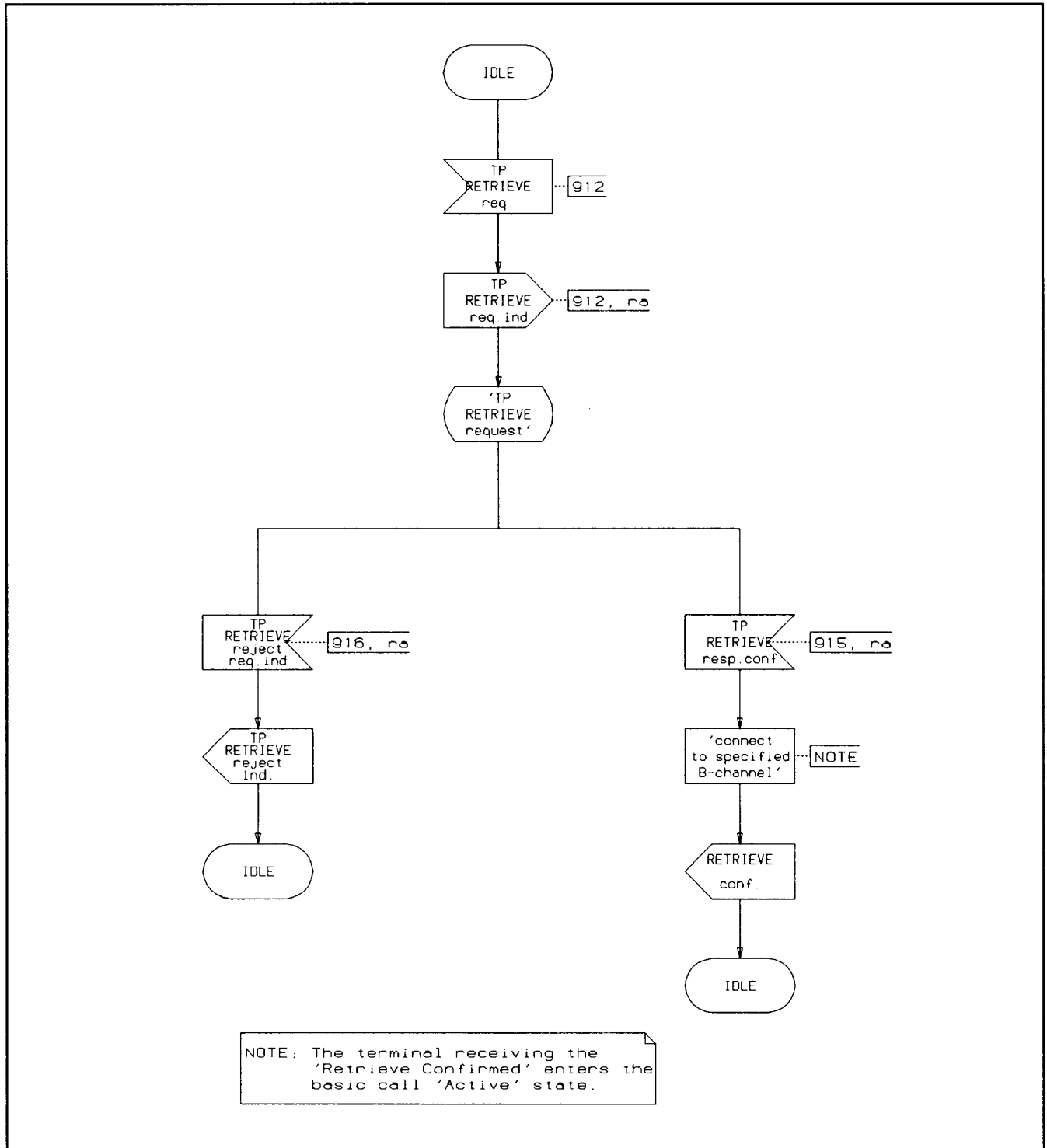


Figure 6: TP supplementary service FE1 functions

8.2 FE2

The SDL for FE2 is shown in figure 7 and figure 8.

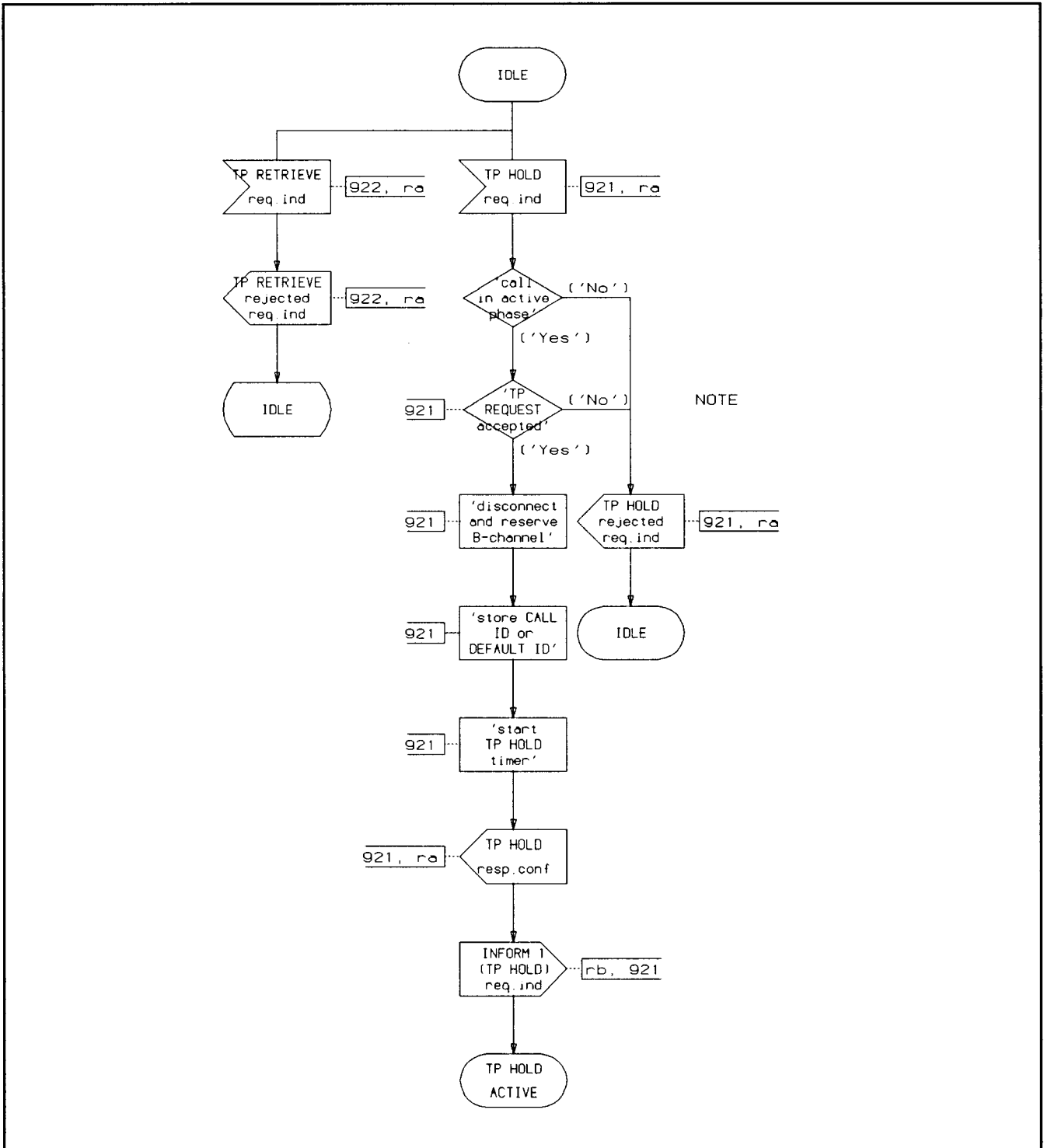


Figure 7: TP supplementary service FE2 functions

Notes to figure 7.

NOTE : The following interactions with other services will cause rejection of a TP hold request:

- Call waiting in operation
- Request made to TP hold an already waiting call
- Request made to TP hold a call on hold
- Terminal managing an Add-on Conference
- Serviced user is already a served user for the Three Party (3PTY) supplementary service.

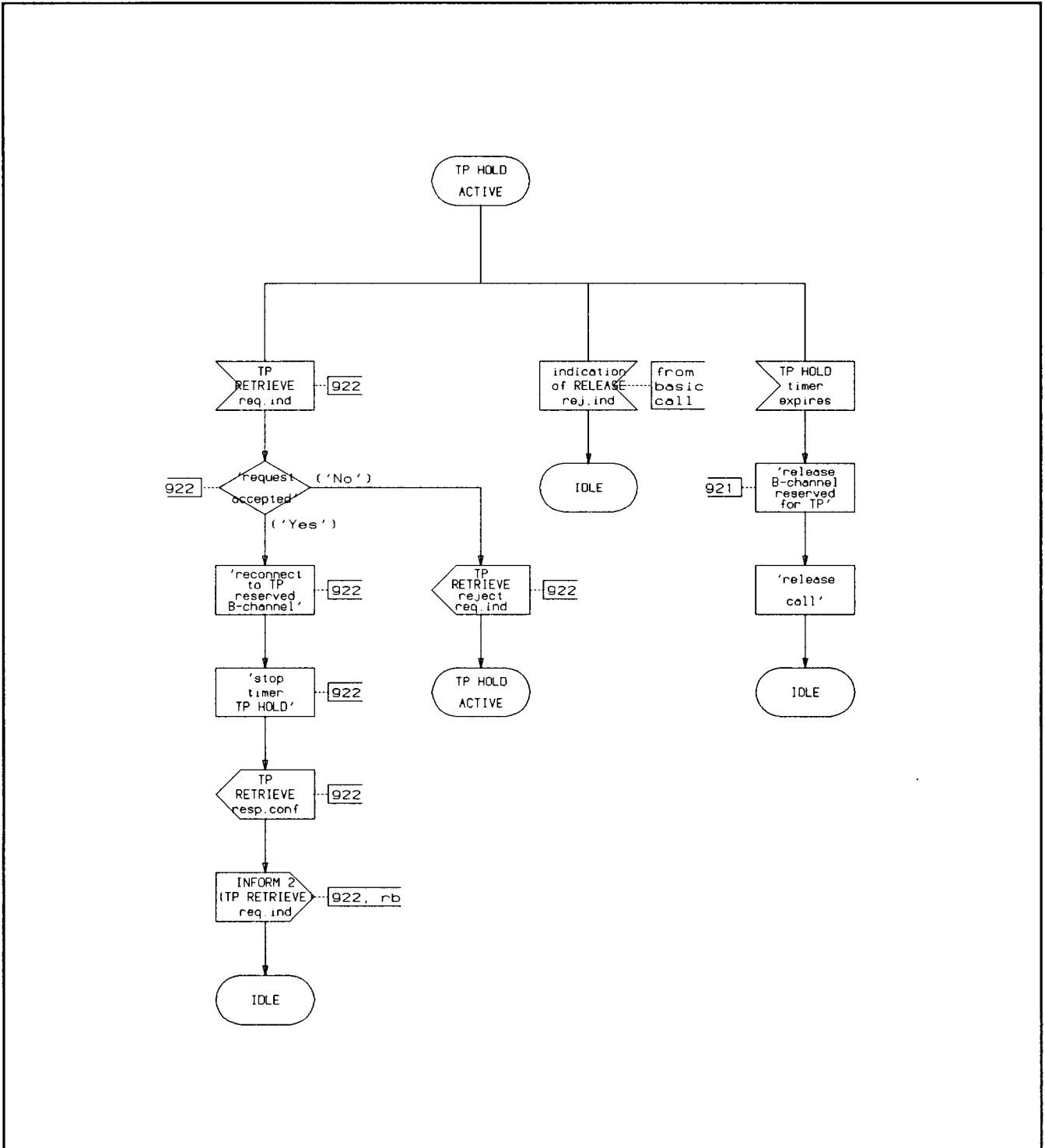


Figure 8: TP supplementary service FE2 functions

8.3 FE3

The SDL for FE3 is shown in figure 9.

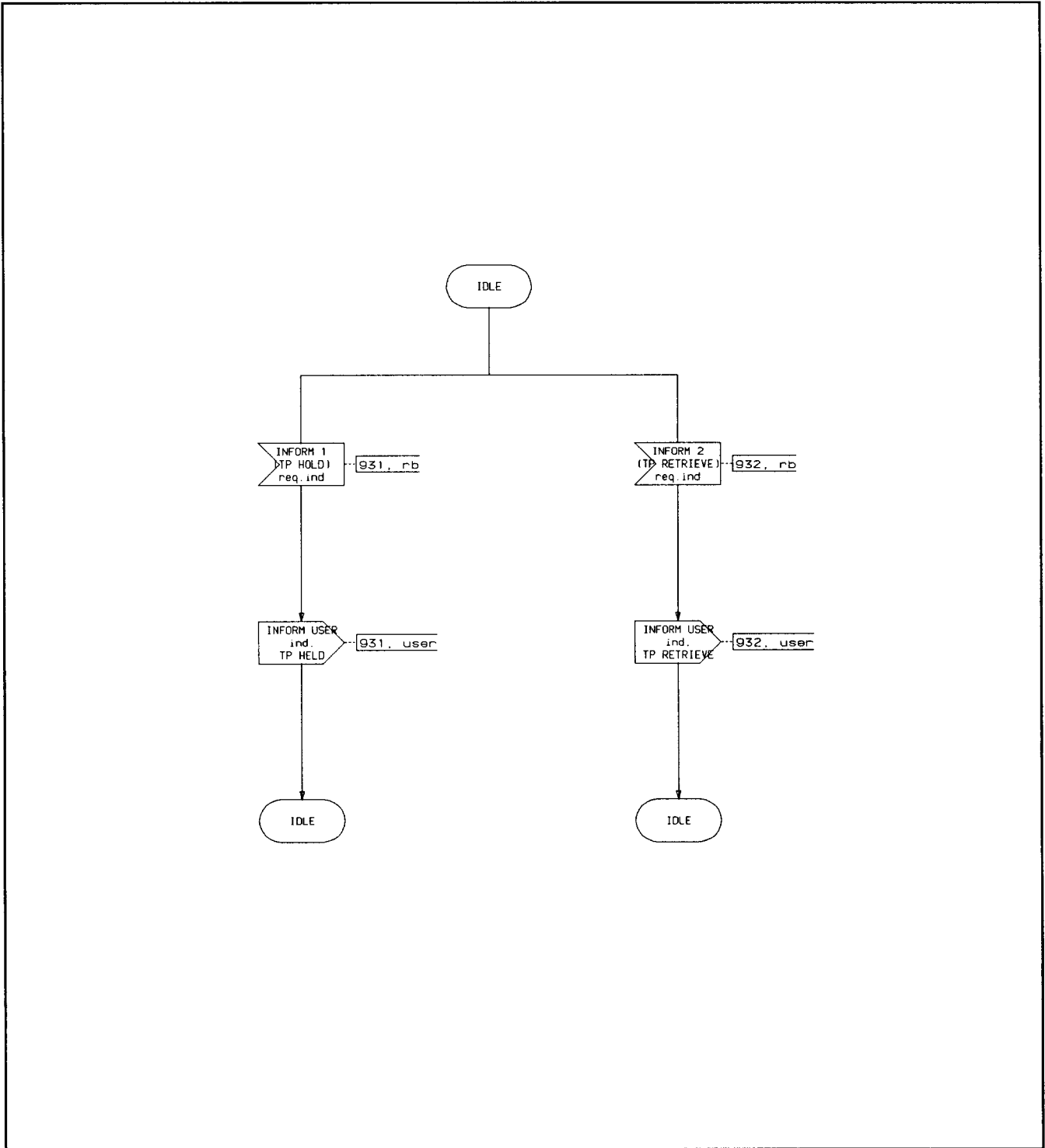


Figure 9: TP supplementary service FE3 functions

9 Functional entity actions (FEAs)

9.1 FEAs of FE1

911: The functional entity shall recognise the user's request for terminal portability hold, and, when provided by the user, shall accept an identity to identify the call for future terminal portability retrieval.

The functional entity shall generate a request to the network for terminal portability hold and, when provided by the user, shall forward the identity to enable future terminal portability retrieval.

912: The functional entity shall recognise the user's request for terminal portability retrieve for a call which had previously been held and, when provided, shall accept the user provided identity of the call on hold.

The functional entity shall generate a request to the network for terminal portability retrieve and, when provided by the user, shall forward the identity to enable future terminal portability retrieval.

913: The functional entity shall accept the TP HOLD resp.conf. from FE2; release the call from the indicated channel and send TP HOLD conf. to the served user.

914: The functional entity shall accept the TP HOLD reject req.ind and send TP HOLD reject ind. to the served user.

915: The functional entity shall accept the TP RETRIEVE resp.conf from FE2, connect the call to the indicated channel and send TP RETRIEVE conf. to the served user.

916: The functional entity shall accept the TP RETRIEVE REJECT req. ind. and shall send TP RETRIEVE REJECT ind. to the served user.

9.2 FEAs of FE2

921: The functional entity shall receive the TP HOLD req.ind from FE1, and shall confirm acceptance or indicate rejection. If the request is accepted, it shall:

- interrupt the existing call;
- reserve the resources used on that connection for a network operator specified time;
- notify the remote user's service agent that the call has been placed on terminal portability hold;
- assign the identity of the call to the identity provided by the served user's service agent or allocate the call a null value if none was received;
- start TP HOLD timer.

922: The functional entity shall receive the TP RETRIEVE req.ind from FE1 and validate the request. If the request is accepted it shall:

- re-establish the connection identified by FE1, or, in the absence of an identity from the served user's service agent, it shall use the default null value, over the reserved resources;
- notify the remote user's service agent that the call has been re-established;
- confirm the re-establishment of the connection to the controlling user;
- stop TP HOLD timer.

If the request for TP RETRIEVE req.ind is invalid, the functional entity shall inform FE1.

9.3 FEAs of FE3

931: The functional entity shall accept the terminal portability hold notification INFORM1 and relay it to the non-served user.

932: The functional entity shall accept the terminal portability retrieve notification INFORM2 and relay it to the non-served user.

10 Allocation of functional entities to physical localities

The possible physical locations of functional entities are shown in table 7.

Table 7

	FE1	FE2	FE3
Scenario 1	TE	LE	TE
Scenario 2	TE	PTNX	TE

NOTE: These allocations constrain FE1 and FE2 to be at opposite ends of a basic call (r1 or r3) relationship.

History

Document history	
October 1991	First Edition
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