INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

Q.83.2

(11/1988)

SERIES Q: SWITCHING AND SIGNALLING

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

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CALL COMPLETION SUPPLEMENTARY SERVICES – CALL HOLD

Reedition of CCITT Recommendation Q.83.2 published in the Blue Book, Fascicle VI.1 (1988)

NOTES

1 CCITT Recommendation Q.83.2 was published in Fascicle VI.1 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 Q.83.2

CALL COMPLETION SUPPLEMENTARY SERVICES

2 Call hold

2.1 *Introduction*

References: CCITT Recommendation I.253, § 2, Call hold (Stage 1) Service description.

This paragraph includes treatment of the network options as described in the Stage 1 service description. Specifically, (1) optional notification to the held party indicating that the call has been placed on hold, and (2) optional notification to the held party that a call has been retrieved.

2.1.1 *Definition*

The **call hold service** allows a user to interrupt communications on an existing call/connection[1] and then subsequently, if desired, re-establish communications. A B Channel[2] may or may not be reserved after the communication is interrupted to allow the origination or possible termination of other calls. Reservation must be provided by the service provider as a user option. The Call Hold service includes the Retrieve operation which re-establishes communication on a B Channel between the served user and the held party.

2.2 *Definition of functional model*

2.2.1 *Functional model description*

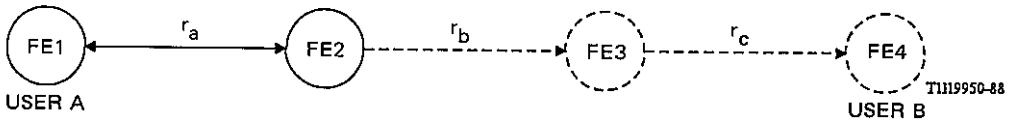

FIGURE 2-1/Q.83
Functional model

r, along with its subscripts, represents different information flow relationships between functional entities. FE3 and FE4 are shown as dashed circles to represent their optional nature in the context of the Call Hold Service.

2.2.1.1 *Description of functional entity 1*

Functional entity 1 supports the following functionality:

1) access the service providing capabilities of functional entity 2 by way of functional service requests (e.g., hold request, retrieve request);
2) receive functional indications relating to the call from functional entity 2 and relay them to the “user” of the call (e.g., hold confirmation, retrieve confirmation).

2.2.1.2 *Description of functional entity 2*

Functional entity 2 supports the following functionality:

1) receive the functional service requests from functional entity 1 and relay them into the network (e.g., receive the hold request from functional entity 1 and relay an optional notification of the held call toward user B);

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1 The applicability of the hold service a “call” versus a “connection” requires further study.

2 The applicability of this service definition to other access resources (e.g., H-channels, logical channels) for other services requires further study.

2) perform the holding function (functional entity action 201);

3) send functional indications relating to the call to functional entity 1 (e.g., hold confirmation, retrieve confirmation);

4) reserve an information channel, if reservation is subscribed to (functional entity action 203);

5) perform reservation management (functional entity action 204);

6) perform the retrieve function (functional entity action 202).

2.2.1.3 *Description of functional entity 3*

Functional entity 3 supports the following functionality:

1) receive the optional notification of call hold and the optional notification of retrieval and relay them toward functional entity 4;

2) identify the call at the FE3/FE4 interface that the optional notifications apply to (functional entity action 205).

2.2.1.4 *Description of functional entity 4*

Functional entity 4 supports the following functionality:

1) receive the optional notification of call hold and the optional notification of retrieval and inform (relay them to) user B.

2.2.2 *Relationship to basic service*

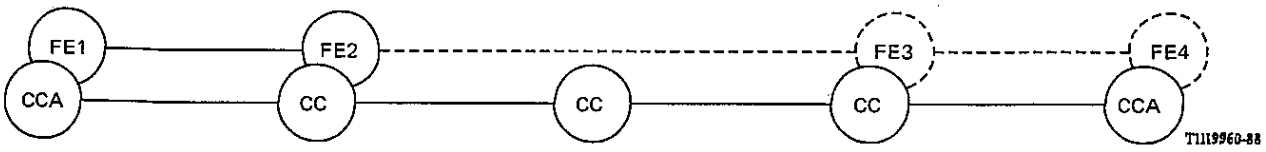

FIGURE 2-2/Q.83
Relationship to basic service

The call control agent (CCA) is the functional entity that serves the user and is responsible for initiating functional requests and interacting with the network. Call control (CC) is performed by functional entities within the network to provide the services requested by the CCA.

2.3 *Information flow description*

2.3.1 *Information flow diagram for successful operation*

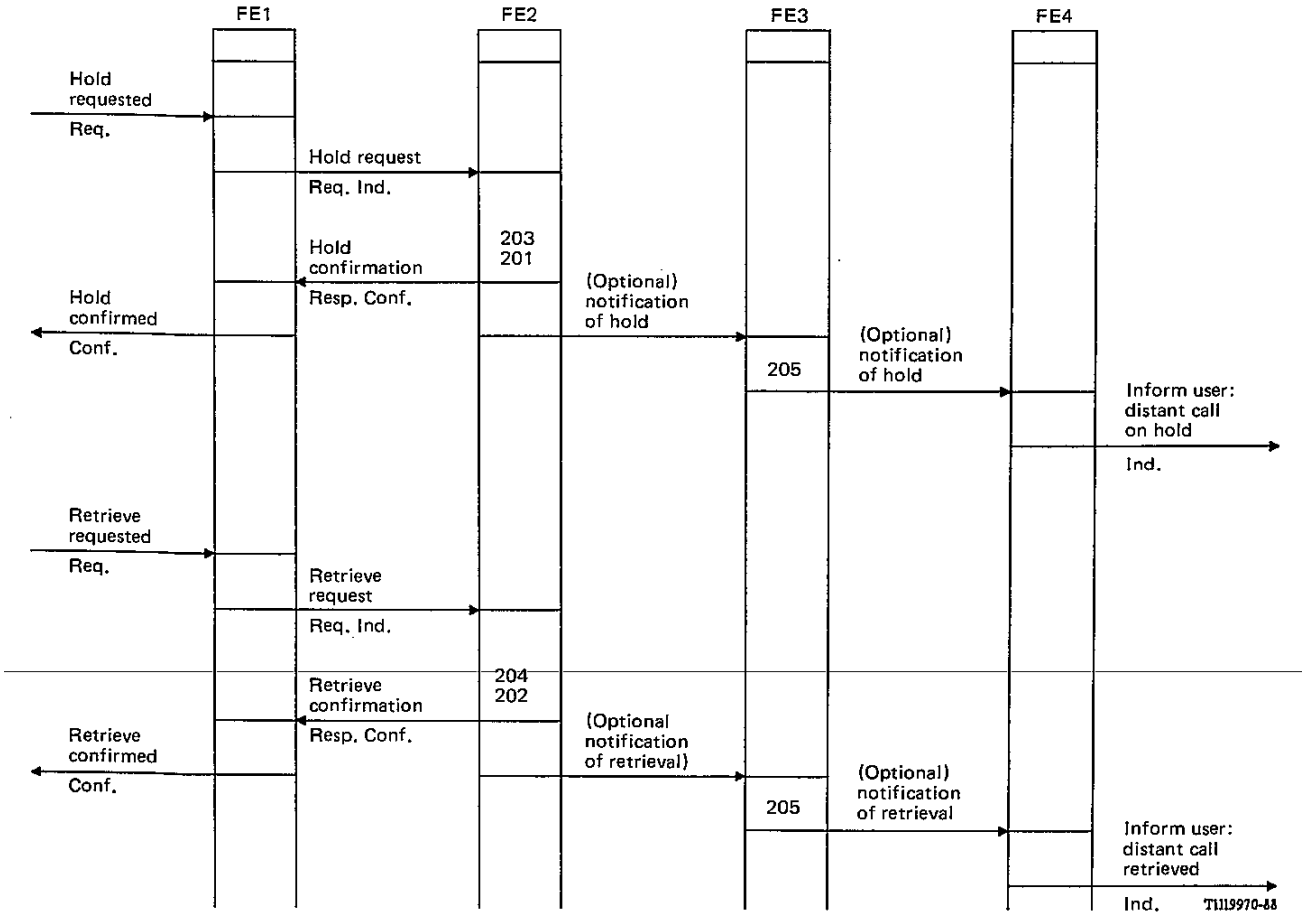

FIGURE 2-3/Q.83
Information flow diagram for call hold service

2.3.2 *Definition of individual information flows*

2.3.2.1 *Hold request*

2.3.2.1.1 *Meaning of hold request*

Hold request is the information sent from FE1 to FE2 to request that a call be placed on hold by the network.

2.3.2.1.2 *Information content for hold request*

The following information is contained in the hold request:

– an identifier of the call to which the hold request applies.

2.3.2.2 *Hold confirmation*

2.3.2.2.1 *Meaning of hold confirmation*

Hold confirmation is the information sent from FE2 to FE1 that confirms that a call has been put on hold for the user by the network.

2.3.2.2.2 *Information content for hold confirmation*

The following information is contained in the hold confirmation:

– an identifier of the call to which the hold confirmation applies.

2.3.2.3 *(Optional) notification of hold*

2.3.2.3.1 *Meaning of (optional) notification of hold*

(Optional) notification of hold is the information sent from FE2 towards B indicating that the call between FE1 and FE2 has been placed on hold.

2.3.2.3.2 *Information content for (optional) notification of hold*

The following information is contained in the (optional) notification of hold:

– an identifier of the call to which the (optional) notification of hold applies.

2.3.2.4 *Retrieve request*

2.3.2.4.1 *Meaning of retrieve request*

Retrieve request is the information sent from FE1 to FE2 to request the reconnection of a held call.

2.3.2.4.2 *Information content for retrieve request*

The following information is contained in the retrieve request:

– an identifier of the call to which the retrieve request applies;

– an optional indication that:

1) any channel is acceptable for retrieval, or

2) a specified channel is preferred for retrieval, or

3) a specified channel is exclusively required for retrieval.

2.3.2.5 *Retrieve confirmation*

2.3.2.5.1 *Meaning of retrieve confirmation*

Retrieve confirmation is the information sent from FE2 to FE1 that confirms that communications was able to be re-established and that the held call is now reconnected. If an optional indication concerning the B channel over which communications was to have been re-established was included in the retrieve request, then the retrieve confirmation serves as an acknowledgement that retrieval was carried out as requested.

2.3.2.5.2 *Information content for retrieve confirmation*

The following information is contained in the retrieve confirmation:

– an identifier of the call to which the retrieve confirmation applies;

– an identifier of the channel over which the held call is reconnected.

2.3.2.6 *(Optional) notification of retrieval*

2.3.2.6.1 *Meaning of (optional) notification of retrieval*

(Optional) notification of retrieval is the information sent from FE2 towards B indicating that the B channel between FE1 and FE2 has been reconnected.

2.3.2.6.2 *Information content for (optional) notification of retrieval*

The following information is included in the (optional) notification of retrieval:

– an identifier of the call to which the (optional) notification of retrieval applies.

2.4 *Functional entity actions*

– 201 – Perform the holding function

– 202 – Perform the retrieve function

– 203 – Perform the reservation function

– 204 – Perform the reservation management to insure that:

When a user (as identified by a terminal, other possibilities for further study) places a call on hold and reservation applies, a B channel should always be available on that user's interface for the user to retrieve that call from hold; or setup, retrieve, or connect to another call. One B channel should be kept available for the user as long as the user: (i) has one or more calls on hold with reservation and, (ii) is not currently connected to any other call. That is, the network should not reserve more than one B channel for a user, regardless of how a user is defined (as identified by a terminal, other possibilities for further study).

– 205 – identify the call at the FE3/FE4 interface that the optional notifications apply to.

2.5 *SDL diagrams for functional entities*

The SDL diagrams for functional entities 1, 2, 3 and 4 are shown in Figures 2-4/Q.83, 2-5/Q.83, 2-6/Q.83 and 2-7/Q.83.

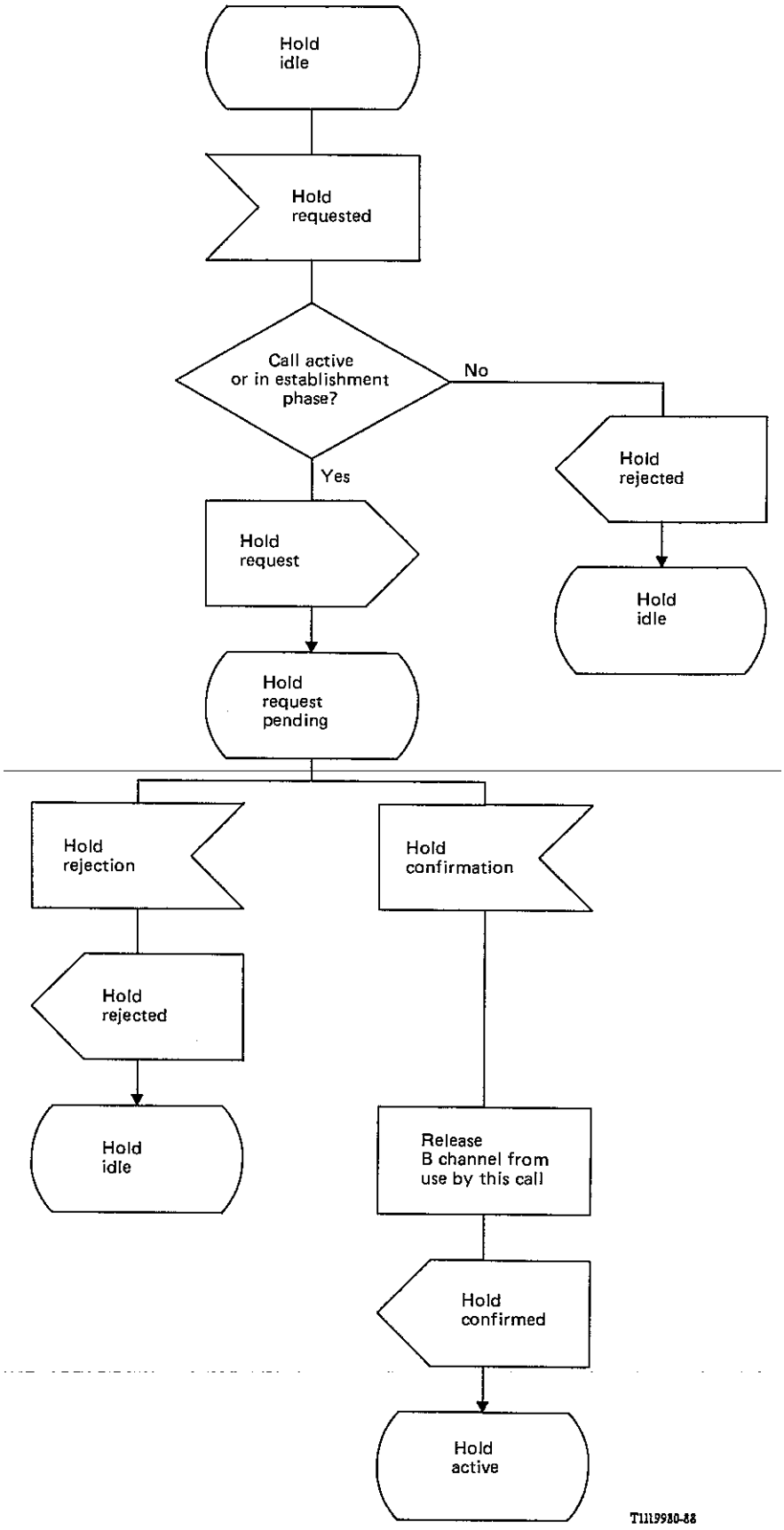

FIGURE 2-4/Q.83 (Sheet 1 of 2)
FE1

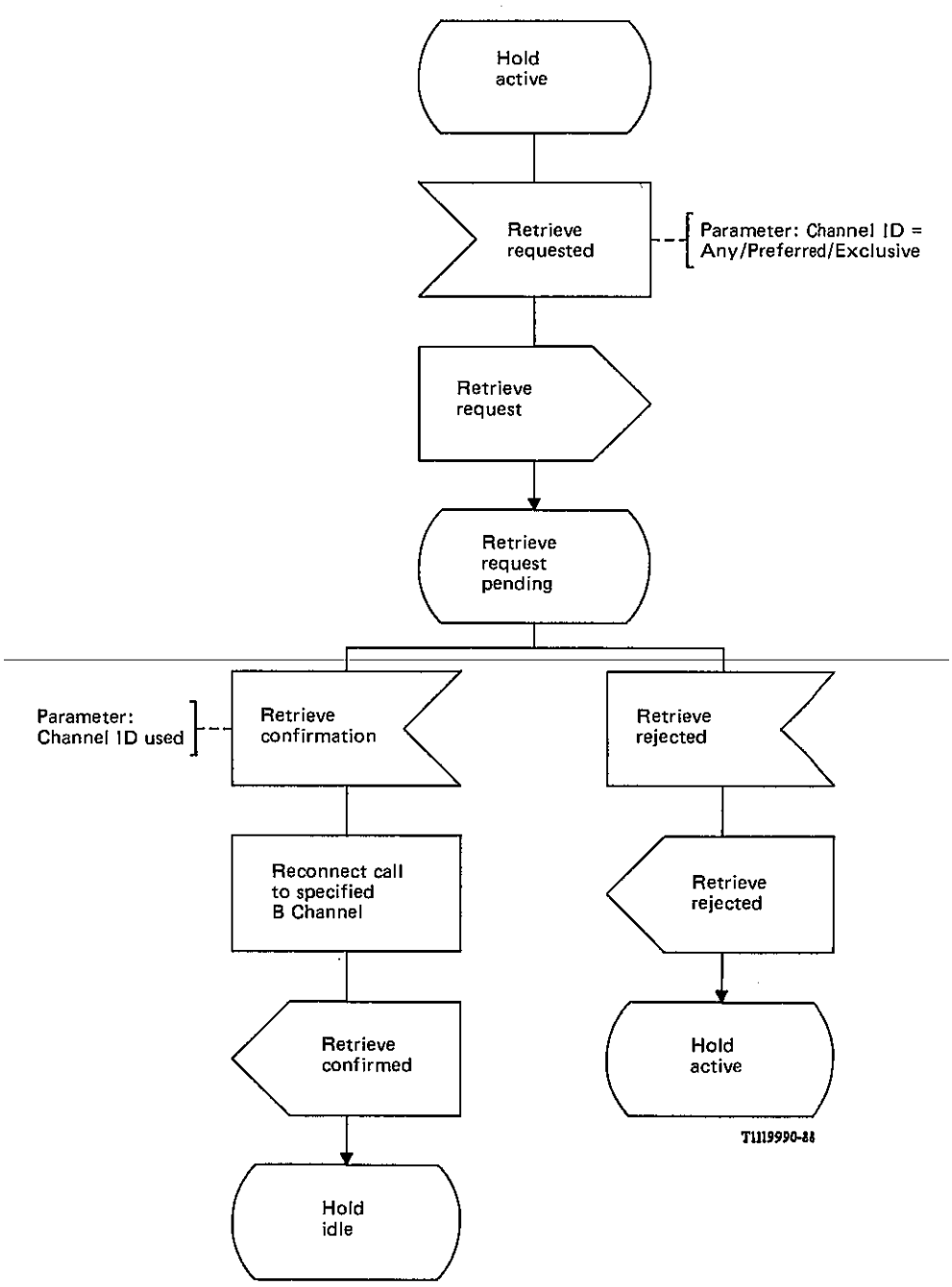

FIGURE 2-4/Q.83 (Sheet 2 of 2)
FE1

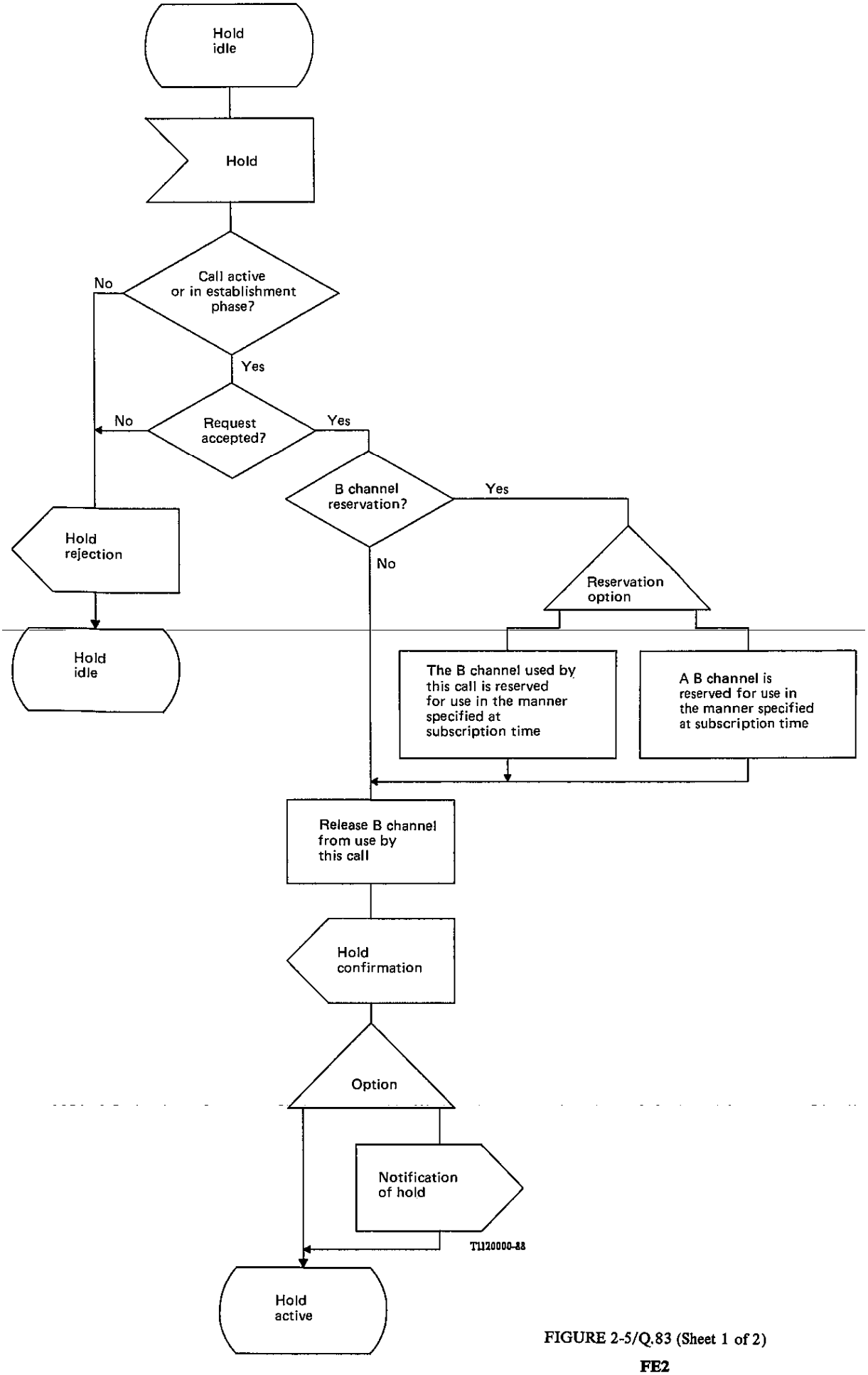

FIGURE 2-5/Q.83 (Sheet 1 of 2)

FE2

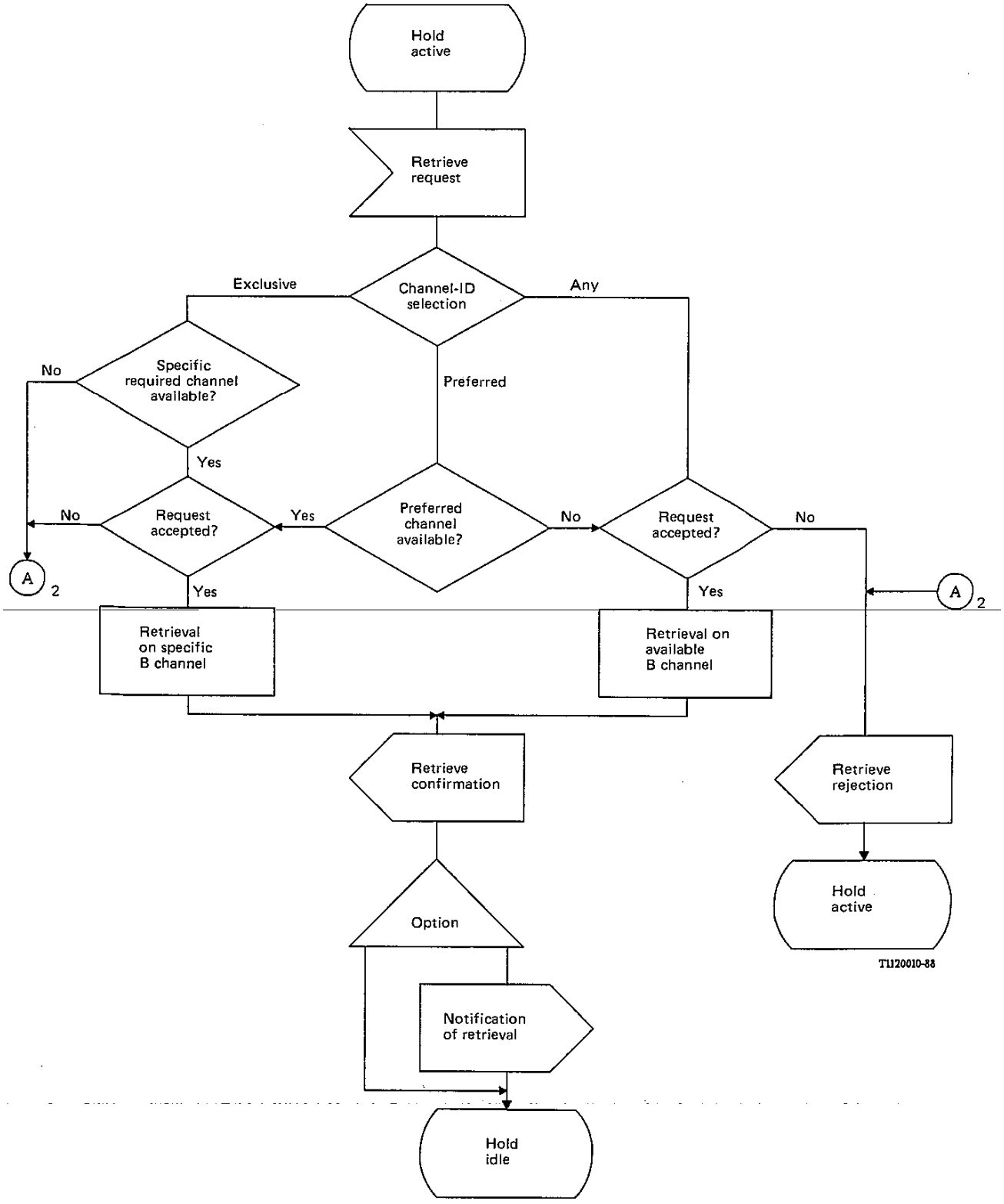

FIGURE 2-5/Q.83 (Sheeet 2 of 2)
FE2

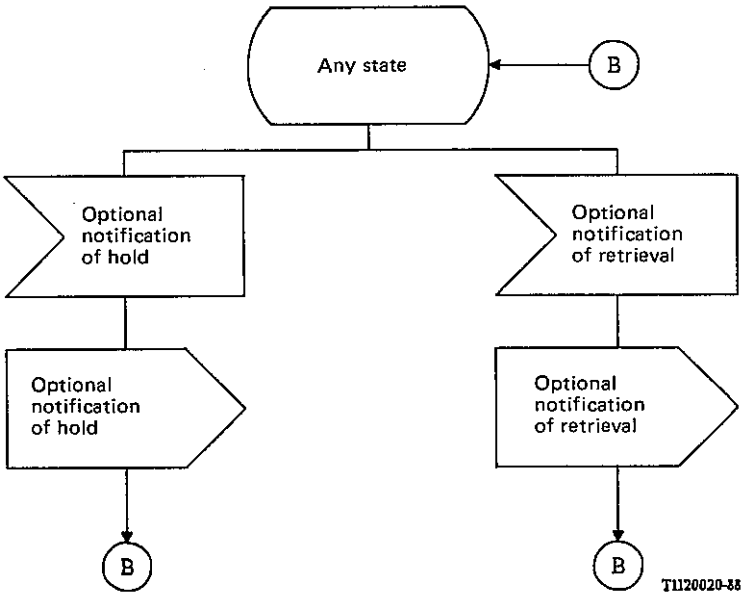

FIGURE 2-6/Q.83
FE3

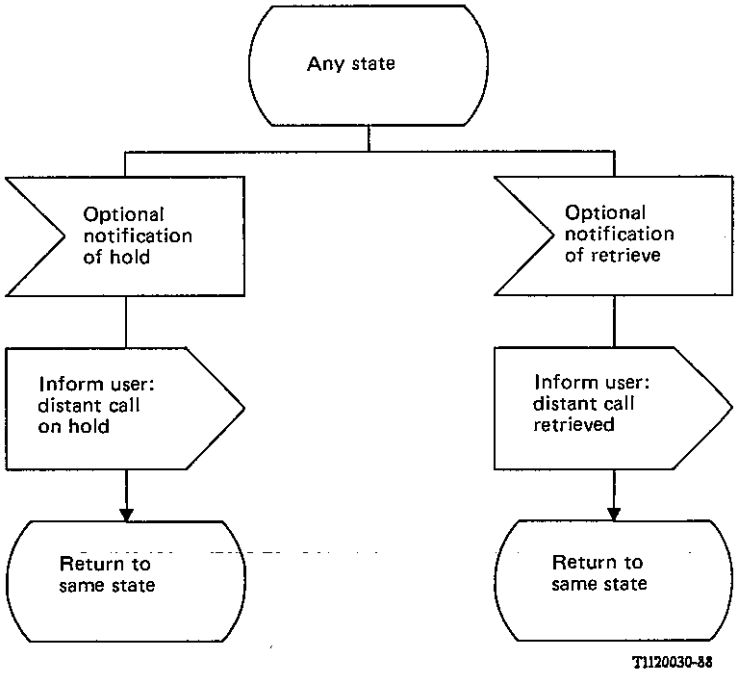

FIGURE 2-6/Q.83
FE4

2.6 *Network physical allocation scenarios*

	FE1	FE2	FE3	FE4
Scenario 1	TE	LE	LE	TE
Scenario 2	TE	NT2	NT2	TE
Scenario 3	TE	LE	NT2	TE
Scenario 4	TE	NT2	LE	TE

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Printed in Switzerland
Geneva, 2008