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SERIES I: INTEGRATED SERVICES DIGITAL  
NETWORK (ISDN)

Service capabilities – Supplementary services in ISDN

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**CALL COMPLETION SUPPLEMENTARY  
SERVICES: CALL HOLD**

Reedition of CCITT Recommendation I.253.2 published in  
the Blue Book, Fascicle III.7 (1988)

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## NOTES

1 CCITT Recommendation I.253.2 was published in Fascicle III.7 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 I.253.2

### CALL COMPLETION SUPPLEMENTARY SERVICES: CALL HOLD

(Melbourne, 1988)

## 2 I.253.2 – Call Hold

### 2.1 Definition

The Call Hold service allows a user to interrupt communications on an existing call/connection (Note 1) and then subsequently, if desired, re-establish communications. A B-channel (Note 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.

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

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

### 2.2 Description

#### 2.2.1 General description

When the Call Hold service is invoked, communication on a B-channel is interrupted and the B-channel is released from use by the existing call. If reservation is subscribed to, and depending on subscription parameters, a B-channel is reserved for use by:

- the given terminal used to invoke the Call Hold service;
- a subscription time user-defined set of terminals;
- a user, defined by a directory number (Note);
- a subscription time user-defined set of directory numbers (Note), or;
- a user, identified by a Personal Identification Number (Note).

*Note* – Methods to define implementation are for further study.

When a user (as identified by a terminal, others for further study) places a call on hold and reservation applies, a B-channel should always be available on that user's interface so that the user may retrieve that call from hold, or set up, 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.

Hence, 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, others for further study).

When the served user wishes to re-establish communications, the Retrieve operation is requested. The success of the Retrieve operation depends on whether a B-channel was reserved and whether a B-channel is currently available to the served user.

#### 2.2.2 Specific terminology

None identified.

#### 2.2.3 Qualifications on the applicability to telecommunication services

This supplementary service is considered meaningful when applied to the Telephony teleservice and the speech and 3.1 kHz audio bearer services. Furthermore, it may also be meaningful when applied to other services.

### 2.3 Procedures

#### 2.3.1 Provision/withdrawal

The type of reservation is specified at subscription time.

### 2.3.2 *Normal procedures*

#### 2.3.2.1 *Activation/deactivation/registration*

None identified.

#### 2.3.2.2 *Invocation and operation*

##### 2.3.2.2.1 *Hold request*

The served user indicates to the service provider that the communication on the interface is to be interrupted. A call may be placed on hold:

- on the calling user's interface, by the calling user at any time after completion of dialling;
- on the called user's interface, by the called user at any time after the call has been answered and before call clearing has begun.

The communication on the interface is then interrupted. The service provider acknowledges this action, and the associated channel is made available for other uses, depending on the reservation option. As an option, the network may send a notification to the held party indicating that the call has been placed on hold.

If held call(s) are cleared for any reason, the service provider will continue to reserve a channel for the specified user(s)/terminal(s) until there are no more held calls with reservation associated with the specified user(s)/terminal(s). If at any time a call is in the held state, either party may clear the call.

##### 2.3.2.2.2 *Retrieve request*

When the user who invoked the Call Hold service indicates that the call is to be retrieved, the service provider will re-establish communications, provided that a B-channel is available, and acknowledge to the served user and optionally to the held party that the call is now active.

The user may optionally indicate a B-channel selection parameter in the Retrieve request. The parameter may indicate:

- 1) any channel is acceptable;
- 2) specified channel is preferred; or
- 3) specified channel is required exclusively.

If the service provider can satisfy the request, the call will be returned to the active phase; if it cannot, the request will be rejected with the appropriate cause returned to the user.

##### 2.3.2.2.3 *Reservation processing*

The following conditions concerning reservations against a channel apply:

- 1) when the call is retrieved, any reservation against a channel associated with that call should be cleared, regardless of which channel is used to retrieve the call;
- 2) when a call is cleared, any reservation against a channel associated with the call should be cleared;
- 3) when all reservations are cleared, all channels become available for use by either the network or the user.
- 4) When any reservation is outstanding for a given user [as identified by a terminal, a set of terminals, a DN (directory number), a set of DNs or a PIN (personal identification number)] and that user is not using a channel for an active call, then the network must consider a channel as "not free" for that user for subsequent incoming calls.

If all channels are "not free" (busy or reserved) and a user has also subscribed to the Call Waiting service, the network would be able to offer an incoming call with an indication that "no interface information channels are available". The served user may accept that incoming call using a reserved channel.

### 2.3.3 *Exceptional procedures*

#### 2.3.3.1 *Activation/deactivation/registration*

None identified.

#### 2.3.3.2 *Invocation and operation*

##### 2.3.3.2.1 *Hold request*

If the user tries to hold a call while not subscribed to the service or if, for some other reason, the service provider cannot hold the call, an indication will be provided to the user with the reason of failure.

#### 2.3.3.2.2 *Retrieve request*

If the service provider cannot retrieve a previously held call, the user will be informed of the reason for failure. (For example, there may not be any channel available, or the call may be in the process of being cleared.)

#### 2.3.4 *Alternative procedures*

None identified.

#### 2.4 *Network capabilities for charging*

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information.

It shall be possible to charge the subscriber accurately for the service.

#### 2.5 *Interworking requirements*

The operation of this feature is not affected by the nature (i.e. ISDN or non-ISDN) of the far end of the connection.

#### 2.6 *Interactions with other supplementary services*

##### 2.6.1 *Call Waiting*

A user may use the hold feature to hold an active call and answer an incoming call that is being given call waiting treatment.

##### 2.6.2 *Call Transfer*

A served user may indicate to a service provider that a held call is to be transferred to another party. The transfer indication must explicitly identify the held call. A successful transfer will clear the held call from the served user's point of view. For more information, see the explicit call transfer procedure in the Call Transfer service description.

Any parties on hold to a party being transferred will continue to be on hold to that party after the transfer operation. For example, if party B, currently active or on hold to party A, is transferred to another party C by served user A, then the parties held by parties B and C before the transfer will continue to be held by those parties after the transfer.

The hold process is symmetric, i.e. both parties may place each other on hold. It is possible, therefore, for two parties that have subscribed to the Call Hold and Call Transfer services, to each place their active call on hold and to simultaneously transfer the other party. That is, if parties A and B have an active connection, party A may place the call on hold and transfer party B to another party C while at the same time party B puts his call to party A on hold and transfers party A to another party D.

##### 2.6.3 *Connected Line Identification Presentation*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

##### 2.6.4 *Connected Line Identification Restriction*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

##### 2.6.5 *Calling Line Identification Presentation*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

##### 2.6.6. *Calling Line Identification Restriction*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

##### 2.6.7 *Closed User Group*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

##### 2.6.8 *Conference Calling*

Any party involved in an active conference (i.e. the conference controller or a conferee) may place the conference call on hold and later retrieve the connection to the conference. Any party placing the conference on hold may retrieve any other party it had previously placed on hold. See also the Conference Calling service description Recommendation I.254, § 1.6.15.

2.6.9 *Direct Dialling-In*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

2.6.10 *Call Diversion (i.e. Call Forwarding) services*

2.6.10.1 *Call Forwarding Busy*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

2.6.10.2 *Call Forwarding No Reply*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

2.6.10.3 *Call Forwarding Unconditional*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

2.6.11 *Line Hunting*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

2.6.12 *Three-Party Service*

Refer to Recommendation I.254, § 2.6.15, interaction with Call Hold.

2.6.13 *User-to-User Signalling*

Any party that has placed one or more calls on hold may continue to exchange (send or receive) user-to-user information (UUI) (service 3) messages with the party(s) on hold as well as to exchange UUI (service 3) messages with an active call party. A held party that is disconnecting may receive or send UUI (service 1) messages during the clearing phase of the call.

2.6.14 *Multiple Subscriber Number*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

2.6.15 *Call Hold*

Assume that parties A and B have both subscribed to the Call Hold service. The Hold service is unidirectional and therefore, the following is possible:

- 1) only party A has party B on hold;
- 2) only party B has party A on hold;
- 3) each party has the other party on hold.

2.6.16 *Advice of Charge*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

2.7 *Dynamic description*

The dynamic description of this service is given in Figure 2/I.253.



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