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Series Q

Supplement 17
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SERIES Q: SWITCHING AND SIGNALLING

Technical Report TRQ.2200: Call control signalling requirements – Party call control

ITU-T Q-series Recommendations – Supplement 17

(Formerly CCITT Recommendations)

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SUPPLEMENT 17 TO ITU-T Q-SERIES RECOMMENDATIONS

TECHNICAL REPORT TRQ.2200: CALL CONTROL SIGNALLING REQUIREMENTS – PARTY CALL CONTROL

Summary

This Supplement specifies the signalling requirements for the basic call control capability. The call control functional entity actions are defined in terms of information flows.

This Supplement is intended to specify the essential UNI and NNI interactions required to develop call control functional entity actions.

Source

Supplement 17 to ITU-T Q-series Recommendations, was prepared by ITU-T Study Group 11 (1997-2000) and was approved under the WTSC Resolution 5 procedure on 3 December 1999.

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 1.

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

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CONTENTS

Supplement 17 to Q-series Recommendations

TECHNICAL REPORT TRQ.2200: CALL CONTROL SIGNALLING REQUIREMENTS – PARTY CALL CONTROL

(Geneva, 1999)

1 Scope

This Supplement presents the procedures, information flows and information elements needed for establishment, modification and release of calls without network connection. Network connections may be established/released during a call. However, these network connection addition/release procedures are covered in another Technical Report. It should be noted that the procedure of establishing/modifying/releasing call without any network connections is an advanced service capability that is typically not associated with a "POTS" voice call. This capability is needed to support non-human intervention type services where an end point located user agent will be in charge with the invocation, modification, and release decisions. When an actual bearer service is added to the call via a network connection will the user agent actually notify the end user. Table 1-1 illustrates the scope of the call control capabilities contained within this Technical Report.

Table 1-1 – Party call control capability

	Network connection type
Call establishment without any network connections	
Establish a call with two parties	NA
Establish a call with three or more parties	NA
Addition of one or more parties without network connections to an existing call	
Add one new party to an existing call requested by any party already associated with that call	NA
Add two or more new parties to an existing call requested by any party already associated with that call	NA
Release of a party without network connections from an existing call	
Release of a party from an existing two-party call	NA
Release of a party from an existing three- or more-party call	NA
Release of a call without Network Connections	
Release of a single-party call requested by the call owner	NA
Release of a two-party call requested by the call owner	NA
Release of a multiparty call requested by the call owner	NA
Release of a two-party call requested by a non-call owner party	NA
Release of a multiparty call requested by a non-call owner party	NA

2 References

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

[1] ITU-T Q-series Recommendations – Supplement 7 (1999), *Technical Report TRQ.2001*, *General aspects for the development of unified signalling requirements*.

[2] ITU-T Q-series Recommendations – Supplement 10 (1999), *Technical Report TRQ.2002*, *Information Flow Elements*.

3 Definitions

This Supplement defines the following terms:

3.1 addressed party: The party addressed by the requested signalling capability.

3.2 addressed serving node: Network equipment associated with the party addressed by the requested signalling capability.

3.3 network connection: An ATM network connection of topology type 1 to 5 as defined in Supplement 7 [1].

3.4 call: An end-to-end communications service between two- or more- party call end points, or between one call party end point and its serving node.

3.5 call owner: One who initiates a call is the call owner. There is only one call owner per call.

3.6 party: The designation given to an end point associated with a call.

3.7 party owner: One who adds a party to a call is the owner of that party. There may be several party owners within a call.

3.8 relay node: Network equipment, such as a transit bearer exchange, which contains a bearer control functional entity but no call control functional entity.

3.9 requesting party: The party requesting a signalling capability.

3.10 requesting serving node: Network equipment associated with the party requesting a signalling capability.

3.11 serving node: Network equipment, such as a local exchange (LEX) or PBX, which contains call control and bearer control functional entities.

4 Abbreviations

This Supplement uses the following abbreviations:

NA Not Applicable

PEP Party End Point

5 Information flows used in this Supplement

Table 5-1 contains the information flows that are used across the call control interfaces illustrated in the Unified Functional Model contained in Supplement 7 [1]. These information flows are used to establish, modify and release calls and their associated parties.

Table 5-1 – Information flows used for party control capability

Information Flow	Begin	Ready	Commit	Cancel	Indication
Call-Setup	✓	✓	✓	Note	
Add-Party-to-Call	✓	✓	✓	Note	
Release-Party-from-Call		✓	✓	Note	
Notify-Call-Change					✓
Remote-Release-Party-from Call		✓	✓		
Release-Call		✓	✓	Note	
NOTE – Only successful flows are shown.					

In addition to those information flows defined in Table 5-1, the full set of information flow definitions for B-ISDN can be found in Supplement 10 [2].

6 Overview of call control level peer-to-peer functional entity actions

Stage 2 flows for each signalling capability is illustrated via a high level overview. The overview model does not illustrate all possible configurations, which could exist within an actual instant of the service; however, the examples have been chosen in order to illustrate the general principles. The overview will employ the network configuration shown in Figure 6-1. The actions illustrated in this figure can be used to describe signalling control actions associated with establishment or release of a call.

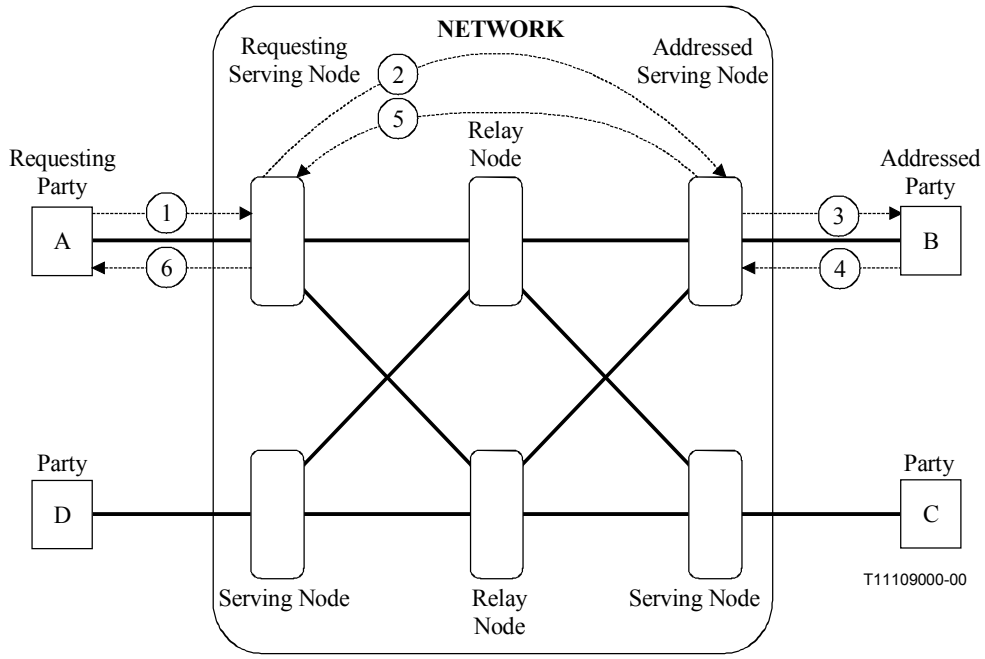


Figure 6-1 – Two party call establishment

For the purpose of this overview, the information flows and actions illustrate the establishment of a two-party call, when the requesting party is or will be associated with the specified call.

The actions illustrated in Figure 6-1 are described as follows:

1) Signalling service request issued by service requester: Receiving entity validates request, modifies internal state information, and then issues action 2.

2) Relayed signalling service request issued by requester's serving node: Receiving entity validates request, modifies internal state information, and then issues the request on the addressed party's interface as action 3.

3) Signalling service request issued by addressed party's serving node: Receiving entity validates request, modifies internal state information, and then issues its response as action 4.

4) Signalling service response issued by addressed party: Receiving entity records response, modifies internal state information and then relays response as action 5.

5) Relayed signalling service response issued by addressed party's serving node: Receiving entity records response, modifies internal state information and then relays response to the service requester as action 6.

6) Signalling service response issued by requester's serving node: Requester records response, modifies internal state information, and notifies the user of the outcome of the requested service.

The purpose of this overview model is that it provides an end-to-end pictorial representation of the signalling capability in one figure. The model does not present all possible network topologies, however, it illustrates the general configurations that would be encountered in intra-network operation. The extension to multiple networks can be extrapolated by replacing the serving nodes and relay nodes with local serving networks and transit networks.

The remaining clauses of this Supplement describe the basic call control signalling capabilities using this model.

7 Call establishment

The establishment of a call has two variations, establishing a call between two parties and establishing a call with more than two parties. These examples illustrate the necessary information to be carried in order that at the end of the example, each serving node associated with the call, contains a dull description of the call. In many service scenarios, the full description of the call is not necessary, however, it was felt the illustrations of a more complete signalling procedure would allow simplified variations to be constructed.

7.1 Two-party call establishment

Party A requests a two-party call with party B. If party B, or party B's agent, determines that the call establishment request can be accepted, the agent will indicate acceptance of the call establishment request. This is illustrated in Figure 7-1.

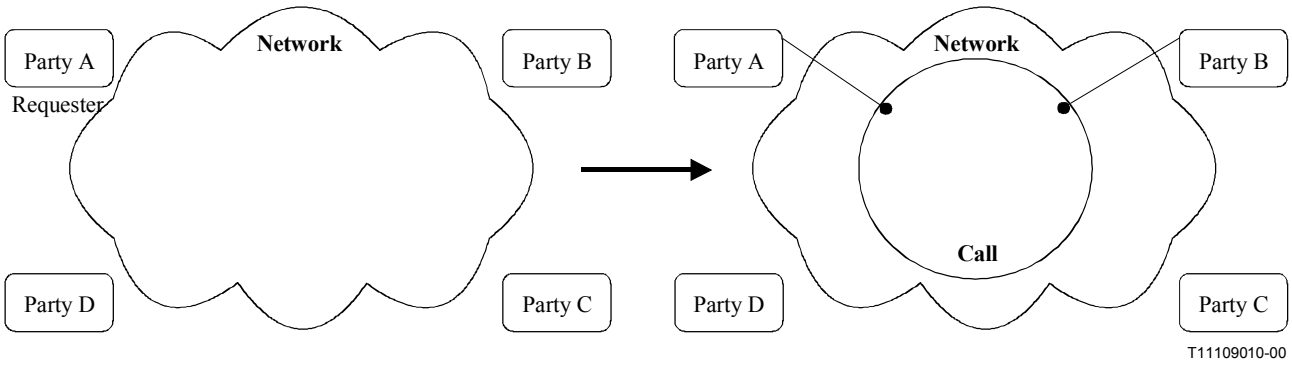


Figure 7-1 – Call transition diagram

The signalling capability of establishing this call between the two parties is illustrated in Figure 7-2.

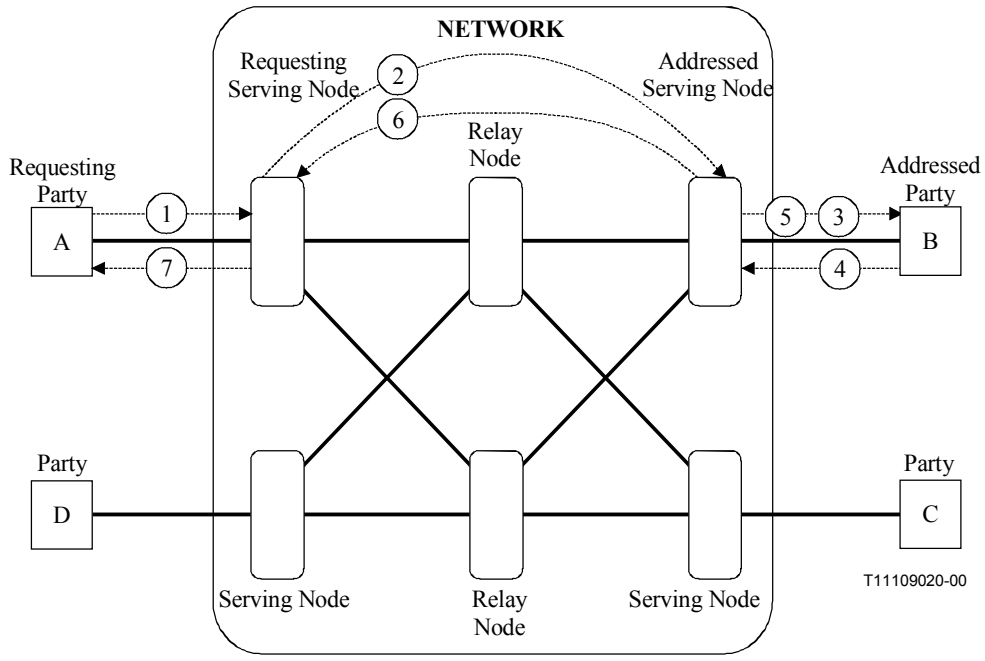


Figure 7-2 – Call establishment of a two-party call

The actions illustrated in Figure 7-2 are as follows:

Requesting party's terminal equipment issues the following information flow towards its serving node and awaits the acknowledgement of the request.

1 Call-Setup.ready		**Party A to Serving Node A**
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Addressed party Information** [PEP "B" ID, Network address], **Requesting party information** [PEP "A" ID, Network Address]	

Initiation of information flow: The requesting party's terminal equipment (party A) issues the call set-up information flow towards its serving node.

Processing upon receipt: The requester's serving node validates the request and the requesting party and determines the signalling route facility towards the addressed serving node associated with the addressed party. (Note: these validation and routing flows are not illustrated in the Figure 7-2 in order to simplify the diagram.) Since only one addressed party is specified, the requesting serving node can commit to the request and therefore issues information flow 2 towards the addressed serving node.

2	Call-Setup.ready	Serving Node A to Serving Node B
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Direct Call association** (SN(A):ref.a - SN(B):----) ID, **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed serving node initiates an incoming call establishment procedure and forwards the call set-up request towards the addressed party (flow 3). Since this party is associated with a multiparty signalling interface, the serving node issues a begin information flow.

3	Call-Setup.begin	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The terminal determines that it can accept the call, and initiates an incoming call establishment procedure and issues information flow 4 towards its associated serving node indicating that it is willing to accept the call. (Note: if the terminal cannot accept the call, it issues a cancel information flow.)

4	Call-Setup.ready	Party B to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: The addressed serving node validates the responding parties, records the responses to the action request and selects one of the responding terminals. (Note: the validation flows are not illustrated in order to simplify the example.) The selected terminal is sent information flow number 5 indicating that it has been assigned the call. The serving node then clears the non-selected terminals (Note: this action is not illustrated for simplicity of presentation), and issues information flow 6 towards the requesting serving node.

5	Call-Setup.commit	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: When the terminal receives this information flow, it records the allocation of the call. The user agent associated with the signalling procedure is notified of the call association.

6	Call-Setup.commit	Serving Node B to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: The requesting node records the establishment of a call association with the addressed terminal. The requesting serving node notifies the requesting party that the call has been established.

7	Call-Setup.commit	Serving Node A to Party A
	Call Control Segment ID **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "A" ID, Network address], Party Owner: PEP "A" ID	

Processing upon receipt: When the user equipment receives information flow 7, it records the commitment, and notifies the user agent associated with this signalling procedure of the completion of the call request.

7.2 Establishment of a call with three or more parties

Party A requests a three (or more) party call with party B and party C. If party B, or party B's agent, determines that the call establishment request can be accepted, and party C, or party C's agent, determines that the call establishment request can be accepted, then the requesting serving node will indicate acceptance of the call establishment request. This is illustrated in Figure 7-3 and its associated information flows. The procedures for a call with more than 3 parties would be extensions of this example.

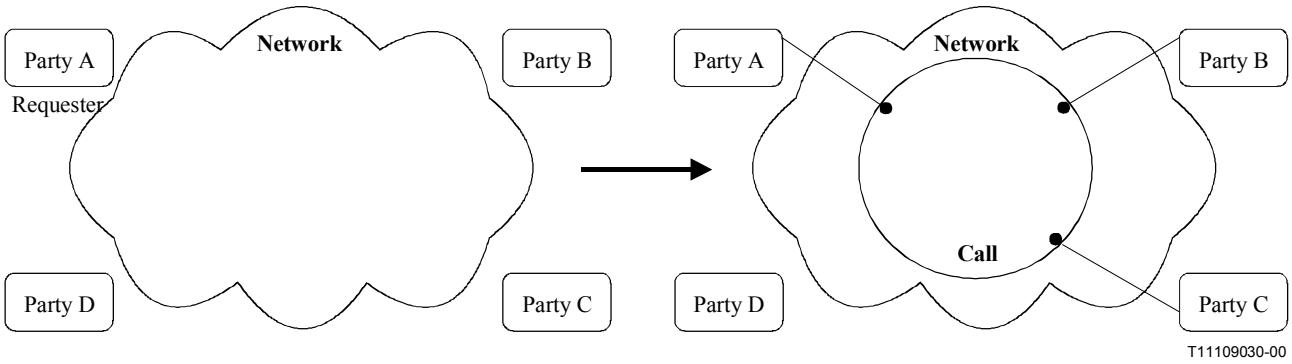


Figure 7-3 – Call transition diagram

The signalling capability of simultaneously establishing this call between the three parties is illustrated in Figure 7-4.

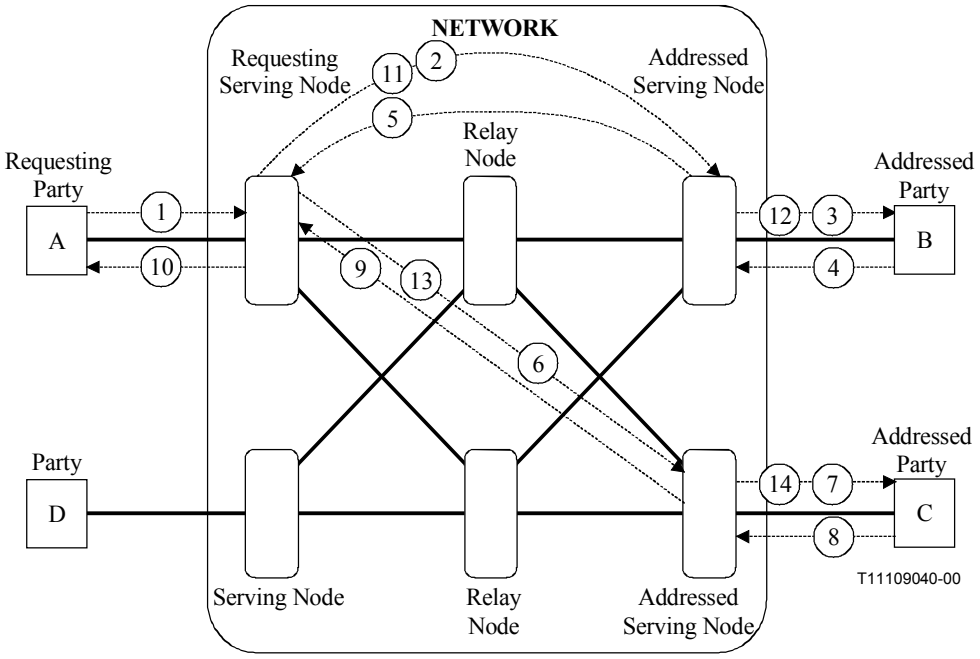


Figure 7-4 – Call establishment of a three-party call

The actions illustrated in Figure 7-4 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node. The terminal equipment then awaits the response to this request.

1	**Call-Setup.ready**	**Party A to Serving Node A**
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID** **Addressed party Information** [PEP "B" ID, Network address], **Addressed party Information** [PEP "C" ID, Network address], **Requesting party information** [PEP "A" ID, Network Address]	

Initiation of information flow: The user initiates a call request.

Processing upon receipt: The requester's serving node validates the request and the requesting party and determines the route towards the addressed serving nodes associated with the addressed parties. (Note: these validation and routing flows are not illustrated in the figure in order to simplify the diagram.) For this example, two signalling associations are needed, the serving node therefore issues information flows 2 and 6 towards the selected serving nodes.

2	Call-Setup.begin	Serving Node A to Serving Node B
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Direct Call association** (SN(A):ref.a - SN(B):----) ID, **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed serving node validates the request, then issues information flow 3 towards the addressed party.

3	Call-Setup.begin	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address Party Owner: PEP "A" ID]	

Processing upon receipt: The addressed terminal equipment issues the information flow 4 towards its associated serving node.

4	Call-Setup.ready	Party B to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: The addressed serving node records the responses to the action request and selects one of the responding terminals. The selected terminal is recorded for use in issuing flow 11. The serving node then clears the non-selected terminals (Note: this action is not illustrated for simplicity), and issues information flow 5 towards the requesting serving node.

5	Call-Setup.ready	Serving Node B to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address]	

Enabling Condition: Reception of information flows 5 and 9

Processing upon receipt: When the requesting serving node receives information flows 5 and 9, it sends information flows 11 and 13 to the addressed serving nodes, and information flow 10 to the requesting party.

6	Call-Setup.begin	Serving Node A to Serving Node C
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Direct Call association** (SN(A):ref.a - SN(C):----) **ID,** **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Initiation of information flow: Processing of information flow 1

Processing upon receipt: The addressed serving node validates the request, then issues information flow 7 towards the addressed party.

7	Call-Setup.begin	Serving Node C to Party C
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed terminal equipment issues the information flow 8 towards its associated serving node.

8	Call-Setup.ready	Party C to Serving node C
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID **Addressed party Information** [PEP "C" ID, Network address]	

Processing upon receipt: The addressed serving node records the responses to the action request and selects one of the responding terminals. The selected terminal is recorded for use in issuing flow 13. The serving node then clears the non-selected terminals (Note: this action is not illustrated for simplicity), and issues information flow 9 towards the requesting serving node.

9	Call-Setup.ready	Serving Node C to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Addressed party Information** [PEP "C" ID, Network address]	

Enabling Condition: Reception of information flows 5 and 9

Processing upon receipt: When the requesting serving node receives the information flows 5 and 9, it sends information flows 11 and 13 to the addressed serving nodes, and information flow 10 to the requesting party.

10 Call-Setup.commit **Serving Node A to Party A**

Resource information	Call information	Bearer information
	Call Control Segment ID **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "A" ID, Network address], Party Owner: PEP "A" ID	

Processing upon receipt: When the user equipment receives information flow 10, it records the commitment, and notifies the user agent of this commitment.

11 Call-Setup.commit **Serving Node A to Serving Node B**

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Remote Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Remote party Information** [PEP "C" ID, Network address], **Addressed party Information** [PEP "B" ID, Network address],	

Initiation of information flow: Processing of information flows 5 and 9

Processing upon receipt: When the addressed serving node receives information flow 11, it then sends the information flow 12 to the addressed party.

12 Call-Setup.commit **Serving Node B to Party B**

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: When the addressed party receives information flow 12, it records the commitment and informs the user.

13 Call-Setup.commit **Serving Node A to Serving Node C**

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Remote Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address], **Addressed party Information** [PEP "C" ID, Network address],	

Initiation of information flow: Processing of information flows 5a and 5b

Processing upon receipt: When the addressed serving node receives information flow 13, it then sends the information flow 14 to the addressed party.

14	Call-Setup.commit	Serving Node C to Party C
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: When the addressed party receives information flow 14, it records the commitment and informs the user.

8 Addition of one or more parties to a call

The addition of parties to a call has two variations, adding a single party to a call and adding two or more parties to a call. The number of parties added determines whether the one-phase or two-phase request mechanism is utilised.

8.1 Addition of one party to a call

This scenario assumes that party A is currently engaged in a call with party D. Party A is the owner of the call and party D is already a member of the call. Party A requests the addition of party B to the call. If party B, or party B's agent, determines that the call party addition request can be accepted, the agent will indicate acceptance of the call party addition request. The call transition diagram is illustrated in Figure 8-1.

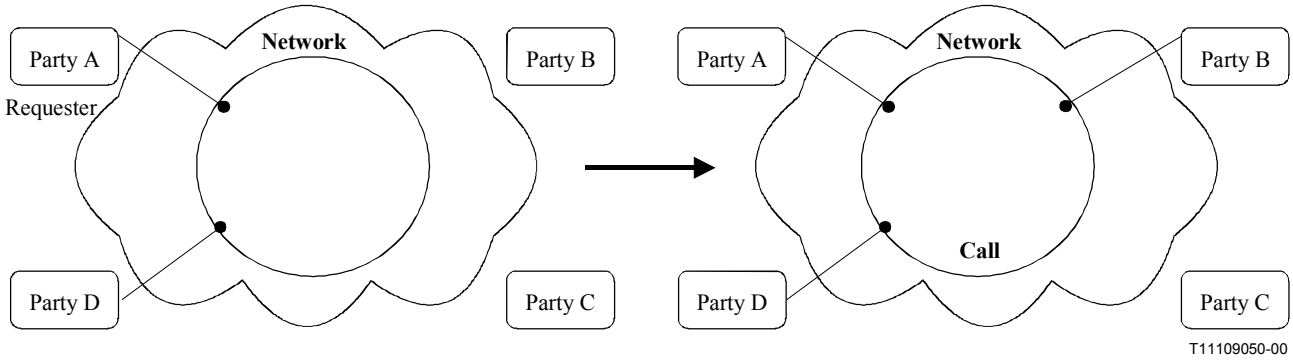


Figure 8-1 – Call transition diagram

The signalling capability of adding an additional party to the call is illustrated in Figure 8-2.

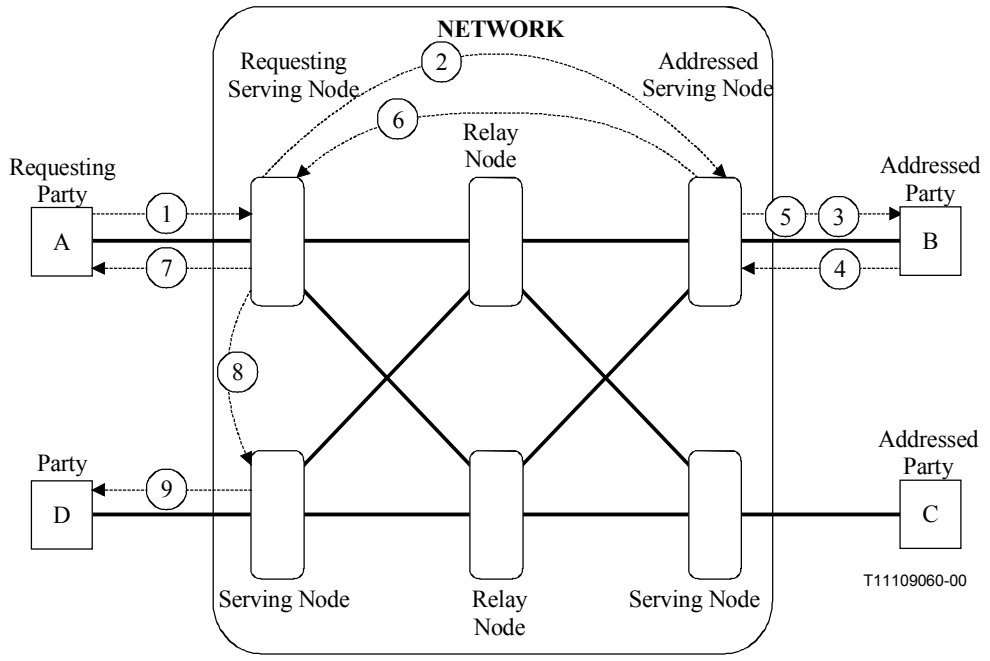


Figure 8-2 – Addition of one party to a call

The actions illustrated in Figure 8-2 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node. The terminal equipment then awaits the response to this request.

1	**Add-Party-to-Call.ready**	**Party A to Serving Node A**
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID** **Addressed party Information** [PEP "B" ID, Network address], **Requesting party information** [PEP "A" ID, Network Address]	

Initiation of information flow: Party A's terminal equipment issues information flow 1 towards its serving node.

Processing upon receipt: The requester's serving node validates the request. Since only one party is involved, the serving node delegates responsibility for committing to the request to the addressed party and issues information flow 2 towards the addressed serving node. (Note: information flow 2 may be either a Call-Set-up information if the call does not already exist in the addressed serving node, or a Add Party to Call information flow, if the call already exists in the addressed serving node.) In this example, it is assumed that the call has not been previously established within the addressed serving node.

2	Call-Setup.ready	Serving Node A to Serving Node B

Resource information	Call information	Bearer information
Session ID	**Call Control Segment ID,** **Direct Call association** (SN(A):ref.a - SN(B):---) ID, **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote Call association** **(SN(A):ref.a - SN(D):ref.d) ID,** **Remote party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed serving node validates the request. It then issues information flow 3 towards the addressed party, party B. [Note: If an Add Party to Call information flow was received (see Note associated with information flow 1), the addressed serving node will associate the request to the designated call in progress and issue the same Call Set-up information flow towards the addressed party.] In this example, it is assumed that the call was not previously established within the addressed serving node.

3	Call-Setup.begin	Serving Node B to Party B

Resource information	Call information	Bearer information
Session ID	**Call Control Segment ID,** **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed terminal equipment issues information flow 4 towards its associated serving node.

4	Call-Setup.ready	Party B to Serving Node B

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: The addressed serving node validates the parties which have responded, records the responses to the action request and selects one of the responding terminals. The selected terminal is sent information flow number 5. The serving node then clears the non-selected terminals (Note: this action is not illustrated for simplicity), and issues information flow 6 towards the requesting serving node. The selected party is added to the call within the addressed serving node. (Note: if information flow 2 was an Add Party to Call information flow, information flow 6 would be an Add Party to Call information flow.) However, in this example, it is assumed that the call was not previously established within the addressed serving node and information flow 6 is a Call-Set-up flow.

5	Call-Setup.commit	Serving Node B to Party B

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: When the addressed party receives information flow 5, it records the commitment and informs the user.

6	Call-Setup.commit	Serving Node B to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address]	

Enabling Condition: Reception of information flow 6 and notify serving node option active

Processing upon receipt: When the requesting service node receives information flow 6, it records the commitment, and relays this commitment to the requesting user equipment by issuing information flow 7. (Note: same actions will occur if an Add Party to Call information flow commit is received.) In this example, it is assumed that the notify serving node option is active. Therefore the requesting serving node then proceeds to notify all serving nodes previously associated with the call that party B has been added. In this example, party D is the only party previously added to the call. The serving node associated with party D is updated via information flow 8. (Note: if notify serving node option is not active, information flow 8 will not be issued.)

7	Add-Party-to-Call.commit	Serving Node A to Party A

Resource information	Call information	Bearer information
	Call Control Segment ID **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "A" ID, Network address], Party Owner: PEP "A" ID	

Processing upon receipt: When the user equipment receives information flow 7, it records the commitment, and notifies the user agent of this commitment.

8	Notify-Call-Change.indication	Serving Node A to Serving Node D

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D):ref.d) ID, **Remote Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Party B added to call	

Enabling Condition: Notify serving node option and the notify subscriber D option are active

Processing upon receipt: When the addressed serving node receives this flow, it updates its call status information and issues information flow 9 towards party D since the notify subscriber D option is active. If the notify option is not active, no information flow towards party D will be issued.

9	Notify-Call-Change.indication	Serving Node D to Party D
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Party B added to call	

Enabling Condition: Processing of information flow 8 and notify subscriber option active

Processing upon receipt: When the addressed terminal receives this information flow, it updates its call status information, and notifies its user agent of the change in the call.

8.2 Addition of two or more parties to a call

This scenario assumes that party A is currently engaged in a call with party D. Party A requests the addition of party B and party C to the call. If party B, or party B's agent, determines that the call party addition request can be accepted, and party C, or party C's agent, determines that the call party addition request can be accepted, the requesting serving node will indicate acceptance of the call party addition request. This is illustrated in Figure 8-3 and its associated information flows. The procedures for the addition of three or more parties to a call would be extensions of this example.

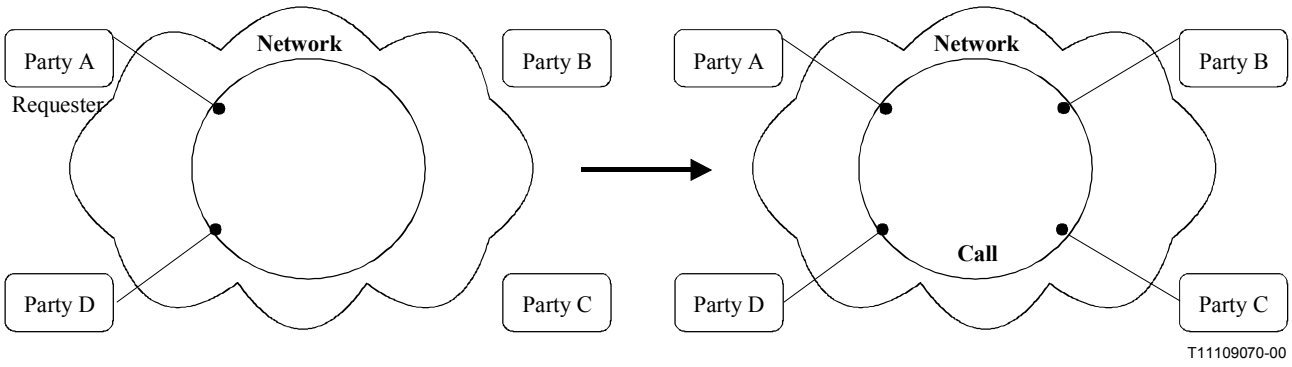


Figure 8-3 – Call transition diagram

The signalling capability of adding additional parties to the call is illustrated in Figure 8-4.

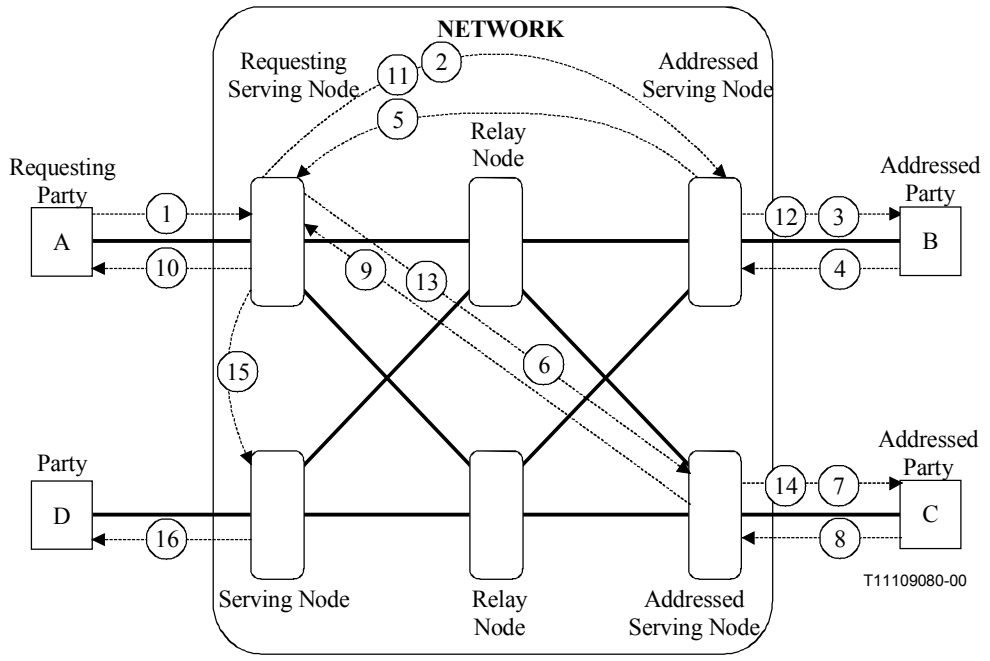


Figure 8-4 – Addition of two parties to a call

The actions illustrated in Figure 8-4 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node. The terminal equipment then awaits the response to this request.

1	**Add-Party-to-Call.ready**	**Party A to serving node A**
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID** **Addressed party Information** [PEP "B" ID, Network address], **Addressed party Information** [PEP "C" ID, Network address], **Requesting party information** [PEP "A" ID, Network Address]	

Enabling Condition: Party A's terminal equipment issues information flow 1 towards its serving node.

Processing: The requester's serving node validates the request. Since two parties are involved, the serving node retains responsibility for committing the request and therefore issues information flow 2 or 6 towards the addressed serving nodes. (Note: information flow 2 or 6 may be either a Call-Setup information if the call does not already exist in the associated addressed serving node, or an Add Party to Call information flow, if the call already exists in the addressed serving node.) In this example, it is assumed that the call has not been previously established within the addressed serving node.

2	Call-Setup.begin	Serving Node A to Serving Node B

Resource information	Call information	Bearer information
Session ID	**Call Control Segment ID,** **Direct Call association** (SN(A):ref.a - SN(B):----) ID, **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed serving node validates the request. It then issues information flow 3 towards the addressed party, party B. [Note: if an Add Party to Call information flow was received (see note associated with information flow 1), the addressed serving node will associate the request to the designated call in progress and issue the same Call Set-up information flow towards the addressed party.] In this example, it is assumed that the call was not previously established within the addressed serving node.

3	Call-Setup.begin	Serving Node B to Party B

Resource information	Call information	Bearer information
Session ID	**Call Control Segment ID,** **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed terminal equipment issues information flow 4 towards its associated serving node.

4	Call-Setup.ready	Party B to Serving Node B

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: The addressed serving node validates the parties which have responded, records the responses to the action request and selects one of the responding terminals. The serving node then clears the non-selected terminals. (Note: this action is not illustrated for simplicity), and issues information flow 5 towards the requesting serving node. (Note: if information flow 2 was an Add Party to Call information flow, information flow 5 would be an Add Party to Call information flow.) However, in this example, it is assumed that the call was not previously established within the addressed serving node and information flow 5 is a Call-Setup flow.

5 Call-Setup.ready		Serving Node B to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address]	

Enabling Condition: Reception of information flows 5 and 9 and notify serving node option active

Processing upon receipt: When the requesting service node receives information flows 5 and 9, it records the commitment, and relays this commitment to the requesting user equipment by issuing information flow 10. (Note: same actions will occur if an Add Party to Call information flow commit is received.) In addition, the requesting serving node will issue information flows 11 and 13 towards the addressed serving node indicating commitment to the selected parties using the information flow type equal to the type received (Call-Set-up or Add-Party-to-Call). In this example, it is assumed that the notify serving node option is active. Therefore the requesting serving node then proceeds to notify all serving nodes previously associated with the call that party B has been added. In this example, party D is the only party previously added to the call. The serving node associated with party D is updated via information flow 15. (Note: if notify serving node option is not active, information flow 15 will not be issued.)

6 Call-Setup.begin		Serving Node A to Serving Node C
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Direct Call association** (SN(A):ref.a - SN(C):----) ID, **Call Owner: PEP "A" ID,** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Initiation of information flow: Processing of information flow 1

Processing upon receipt: The addressed serving node validates the request. It then issues information flow 7 towards the addressed party, party C. [Note: if an Add Party to Call information flow was received (see Note associated with information flow 1), the addressed serving node will associate the request to the designated call in progress and issue the same Call Set-up information flow towards the addressed party.] In this example, it is assumed that the call was not previously established within the addressed serving node.

7	Call-Setup.begin	Serving Node C to Party C
Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,** **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Requesting party information** [PEP "A" ID, Network Address] Party Owner: PEP "A" ID	

Processing upon receipt: The addressed terminal equipment issues information flow 8 towards its associated serving node.

8	Call.Setup.ready	Party C to Serving Node C
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "C" ID, Network address]	

Processing upon receipt: The addressed serving node validates the parties who have responded, records the responses to the action request and selects one of the responding terminals. The serving node then clears the non-selected terminals (Note: this action is not illustrated for simplicity), and issues information flow 9 towards the requesting serving node. (Note: if information flow 6 was an Add Party to Call information flow, information flow 9 would be an Add Party to Call information flow.) However, in this example, it is assumed that the call was not previously established within the addressed serving node and information flow 9 is a Call-Setup flow.

9	Call-Setup.ready	Serving Node C to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Addressed party Information** [PEP "C" ID, Network address]	

Enabling Condition: Reception of information flows 5 and 9 and notify serving node option active

Processing upon receipt: When the requesting service node receives information flows 5 and 9, it records the commitment, and relays this commitment to the requesting user equipment by issuing information flow 10. (Note: same actions will occur if an Add Party to Call information flow commit is received.) In addition, the requesting serving node will issue information flows 11 and 13 towards the addressed serving node indicating commitment to the selected parties using the information flow type equal to the type received (Call-Set-up or Add-Party-to-Call). In this example, it is assumed that the notify serving node option is active. Therefore the requesting serving node then proceeds to notify all serving nodes previously associated with the call that party B has been added. In this example, party D is the only party previously added to the call. The serving node associated with party D is updated via information flow 15. (Note: if notify serving node option is not active, information flow 15 will not be issued.)

10 Add-Party-to-Call.commit		Serving Node A to Party A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID **Call Owner: PEP "A" ID** **Addressed party Information** [PEP "A" ID, Network address], Party Owner: PEP "A" ID	

Initiation of information flow: Processing of information flow 5 and 9

Processing upon receipt: When the user equipment receives information flow 10, it records the commitment, and notifies the user agent of this commitment.

11 Call-Setup.commit		Serving Node A to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Remote Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Remote party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Addressed party Information** [PEP "B" ID, Network address]	

Processing upon receipt: When the addressed serving node receives this information flow, it adds the selected terminal and the remote party C to the call. It then sends the commit flow 12 to the addressed party B.

12 Call-Setup.commit		Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Remote party Information** [PEP "C" ID, Network address] **Addressed party Information** [PEP "B" ID, Network address],	

Processing upon receipt: When the addressed party receives information flow 12, it records the commitment and informs the user.

13 Call-Setup.commit		Serving Node A to Serving Node C
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Remote Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Addressed party Information** [PEP "C" ID, Network address]	

Processing upon receipt: When the addressed serving node receives this information flow, it adds the selected terminal and the remote party B to the call. It then sends the commit flow 14 to the addressed party C.

14 Call-Setup.commit **Serving Node C to Party C**

Resource information	Call information	Bearer information
	Call Control Segment ID, **Remote party Information** [PEP "B" ID, Network address] **Addressed party Information** [PEP "C" ID, Network address],	

Processing upon receipt: When the addressed party receives information flow 14, it records the commitment and informs the user.

15 Notify-Call-Change.indication **Serving Node A to Serving Node D**

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D)::ref.d) ID, **Remote Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Remote Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Parties B and C added to call	

Initiation of information flow: Processing of information flow 5 and 9

Enabling Condition: Notify serving node option and the notify subscriber D option are active.

Processing upon receipt: When the addressed serving node receives this flow, it updates its call status information and issues information flow 16 towards party D since the notify subscriber D option is active. If the notify option is not active, no information flow towards party D will be issued.

16 Notify-Call-Change.indication **Serving Node D to Party D**

Resource information	Call information	Bearer information
	Call Control Segment ID, **Remote party Information** [PEP "B" ID, Network address], Party Owner: PEP "A" ID, **Remote party Information** [PEP "C" ID, Network address], Party Owner: PEP "A" ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Parties B and C added to call	

Enabling Condition: Processing of information flow 15 and notify subscriber option active

Processing upon receipt: When the addressed terminal receives this information flow, it updates its call status information, and notifies its user agent of the change in the call.

9 Release of a party from an existing call

9.1 General rules for release of a party

The request to remove a party from a call may be initiated by either the call owner or the designated party owner. In either case, however, the serving node associated with the party to be removed will only honour a party removal request from the serving node associated with the call owner.

When a party owner requests removal of the party it owns, the serving node associated with the party owner will relay the request to the call owner's serving node. The call owner's serving node will either invoke the call owner's service logic profile or relay the request to the call owner in order to determine if the call owner gives permission to remove the party:

- If permission is granted, the serving node associated with the call owner will transfer the ownership characteristics associated with the party to be removed into its own domain. The serving node will then issue a party removal request to the serving node associated with the party to be removed. When conformation of the party's removal is received by the call owner's serving node, it will issue a release request conformation to the requesting serving node associated with the party owner, and will notify all serving nodes still associated with the call that a party has been removed from the call. The serving node will confirm that the party has been removed. The other serving nodes associated with the call will notify their associated parties about the removal of a party from the call, if their service logic profiles indicate party notify is active.
- If permission is not granted, the party ownership of the party to be removed is transferred to the call ownership. The serving node associated with the previous party owner is sent a party removal denied information flow indicating that the party ownership has been transferred to the call owner. In addition, all serving nodes associated with the call are notified that party ownership has been transferred to the call owner. The serving node associated with the party owner will notify the requesting party that the party has not been removed and indicates that the party ownership has been transferred to the call owner. The other serving nodes associated with the call will notify their associated parties about the transfer of ownership of a party, if their service logic profiles indicate party notify is active.

9.2 Release of a party from an existing two-party call

This subclause contains two example flows illustrating the release of a party from an existing call:

1) Release of a party requested by the call owner in which the call will be cleared since the call clearing option (default option) was specified at the time of call establishment. Whenever a call has been established or modified to a two-party configuration, and the call owner requests that the other party be removed, the call will be cleared.
2) Release of a party requested by the call owner in which the call will not be cleared since the call retention option was specified at the time of call establishment. Whenever a call has been established or modified to a two-party configuration, and the call owner requests that the other party be removed, the party will be removed but the call will be retained in the network and the call owner's equipment. Note that in this case the term in the network refers to the serving node associated with the call owner. Other instances of the call will be cleared.

9.2.1 Release of a party by the call owner – Clear call option

In this example, a two-party call has been established. The call owner, and the party owner is party A. Party A requests the release of party B. This request will result in the removal of party B from the call. The call will be cleared within the network. Figure 9-1 illustrates the before and after view of this example.

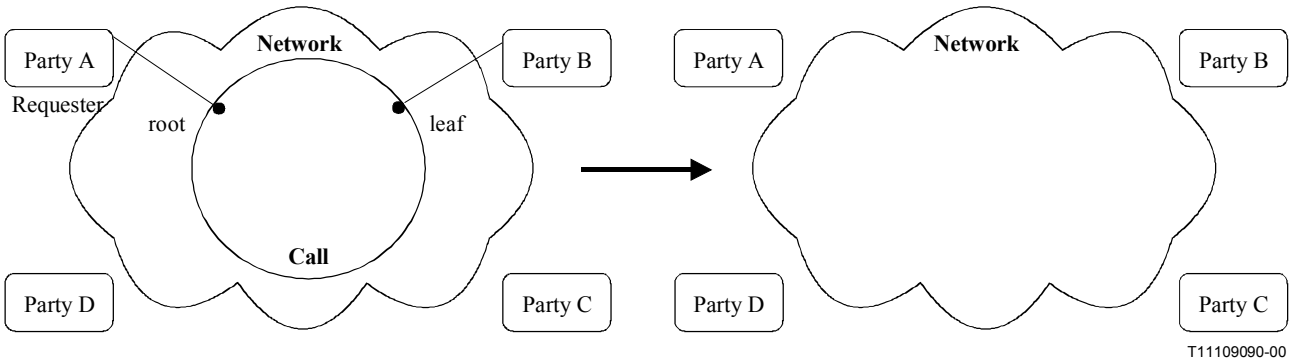


Figure 9-1 – Call transition diagram

Figure 9-2 illustrates the information flows necessary to accomplish this procedure.

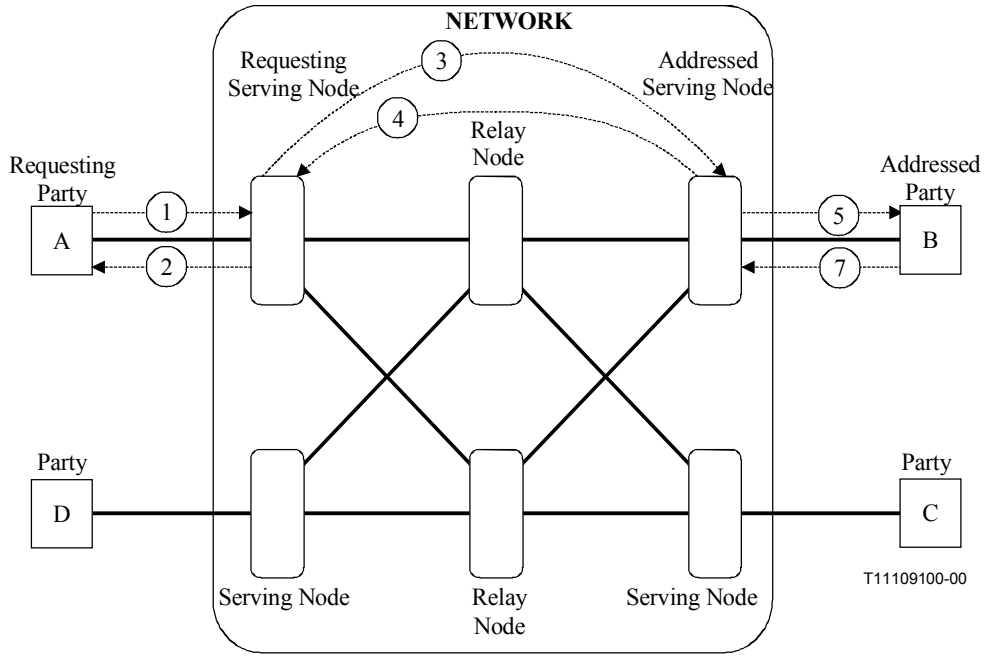


Figure 9-2 – Release party "B" from Call requested by party "A" – Clear call option

The actions illustrated in Figure 9-2 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

1	Release-Party-from Call.ready	Party A to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID **Addressed party Information** [PEP "B" ID],	

Initiation of information flow: The call owner initiates a remove party from call procedure request

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determine that it is the call owner and notes that the requested call release option is to release the call. The requesting serving node then issues information flow 2 confirming the removal of the party, issues information flow 3 towards the serving node of the party to be removed requesting that the party be removed from the call. Since no other parties are associated with the call, there is no need to issue any notify call change information flows.

2	Release-Party-from Call.commit	Serving Node A to Party A

Resource information	Call information	Bearer information
	Call Control Segment ID **Remote party Information** [PEP "B" ID, Network address],	

Processing upon receipt: When the terminal receives this information flow, it clears the call within its domain.

3	Release-Party-from Call.ready	Serving Node A to Serving Node B

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address],	

Processing upon receipt: When the serving node receives this information flow, and has noted that the requesting party is the call owner, it then issues information flow 4 towards the requesting serving node committing to remove the party, and issues a release-party-from call information flow towards the addressed party.

4	Release-Party-from Call.commit	Serving Node B to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID,	

Processing upon receipt: When the requesting service node receives this information flow, it clears its call states within its domain.

5	Release-Call.ready	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	

Processing upon receipt: When the terminal receives this information flow, it clears the call states and issues a commitment flow (6) towards the addressed serving node.

6	Release-Call.commit	Party B to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	

Processing upon receipt: When the addressed serving node receives this flow, it notes that this is the last party associated with the call within the addressed serving node, it then clears the call states within its domain.

9.2.2 Release of a party by the call owner – Retain call option

In this example, a two-party call has been established. The call owner, and party owner is party A. Call retention option has been specified by the call owner at the time of the call establishment. Party A requests the release of party B. This request will result in the removal of party B from the call. The call will not be cleared within the network. It will still persist in the serving node associated with party A. Figure 9-3 illustrates the before and after view of this example.

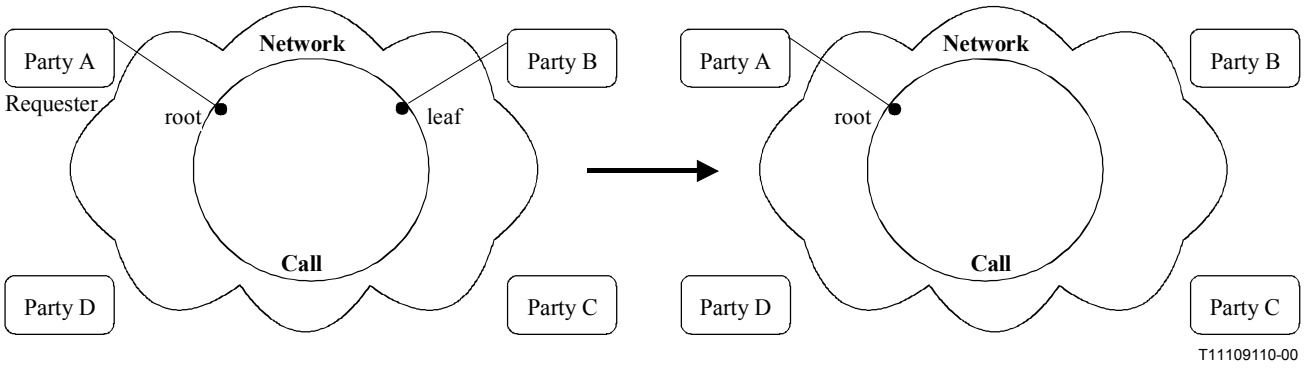


Figure 9-3 – Call transition diagram

Figure 9-4 illustrates the information flows necessary to accomplish this procedure.

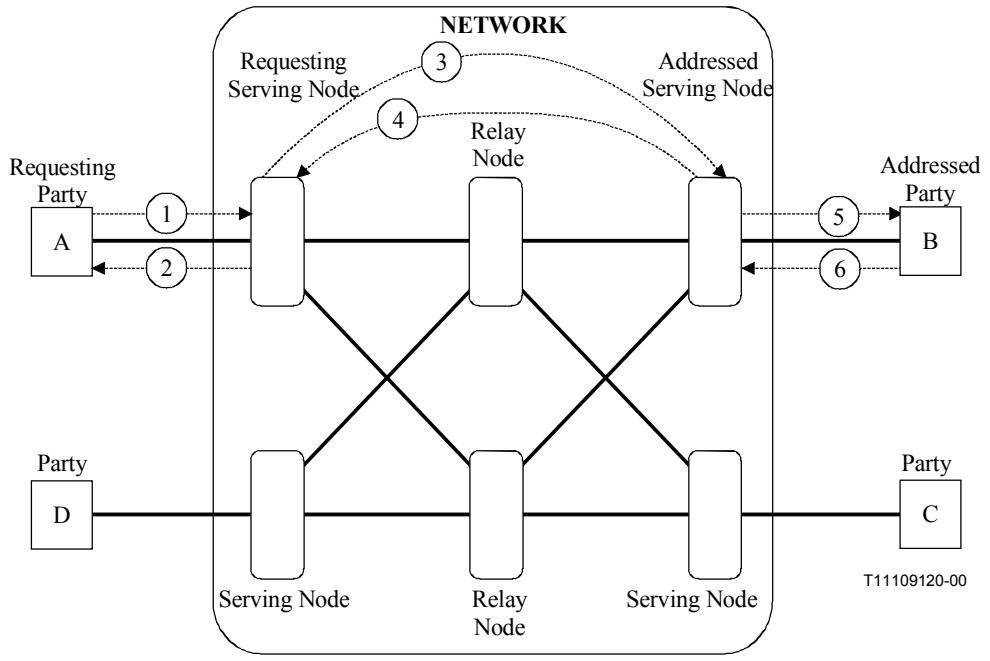


Figure 9-4 – Release party "B" from Call requested by party "A" – Retain call option

The actions illustrated in Figure 9-4 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

1	**Release-Party-from Call.ready**	**Party A to Serving Node A**
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID **Remote party Information** [PEP "B" ID]	

Initiation of information flow: The call owner initiates a remove party from call procedure request.

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determines that it is the call owner and notes that the requested call release option is to retain the call. The requesting serving node then issues information flow 2 confirming the removal of the party, issues information flow 3 towards the serving node of the party to be removed requesting that the call be cleared for party B. The call still remains active in both the requesting party and its associated serving node. Since no other parties are associated with the call, there is no need to issue any notify call change information flows.

2	**Release-Party-from Call.commit**	**Serving Node A to Party A**
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID **Remote party Information** [PEP "B" ID, Network address],	

Processing upon receipt: When the terminal receives this information flow, it removes the party from the call within its domain.

3	Release-Party-from Call.ready	Serving Node A to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address],	

Initiation of information flow: Processing of information flow 1

Processing upon receipt: When the serving node receives this information flow, and has noted that the requesting party is the call owner, it then issues information flow 4 towards the requesting serving node committing to remove the party, and issues a release-party-from call information flow towards the addressed party.

4	Release-Party-from Call.commit	Serving Node B to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID,	

Processing upon receipt: When the requesting service node receives this information flow, it is aware that the call retain option has been specified at the time of call establishment, therefore it removes the party from the call. (Note: the call is not cleared in the requesting serving node.)

5	Release-Call.ready	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	

Initiation of information flow: Processing of information flow 3

Processing upon receipt: When the terminal receives this information flow, it clears the call states and issues a commitment flow (6) towards the addressed serving node.

6	Release-Call.commit	Party B to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	

Processing upon receipt: When the addressed serving node receives this flow, it notes that this is the last party associated with the call within the addressed serving node, it then clears the call states within its domain.

9.3 Release of a party from an existing multiparty call

Two examples are contained in this subclause. The first example is a request to release a party requested by the call owner, while the second illustrates the actions that occur when the requesting party is the party owner. In both cases the example illustrates the actual removal of the party.

9.3.1 Release of a party from an existing multiparty call requested by the call owner

This scenario assumes that party A is currently engaged in a call with parties D and B. Party A, the call owner, requests the removal of party B from the call. Party D, the party owner of party B, is notified of the removal of party B. This is illustrated in Figure 9-5 and its associated information flows.

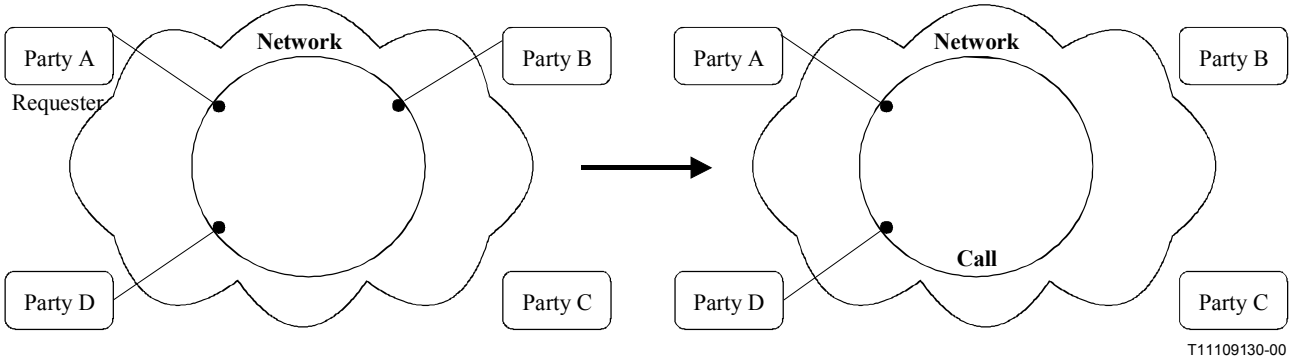


Figure 9-5 – Call transition diagram

Figure 9-6 illustrates the information flows necessary to accomplish this procedure.

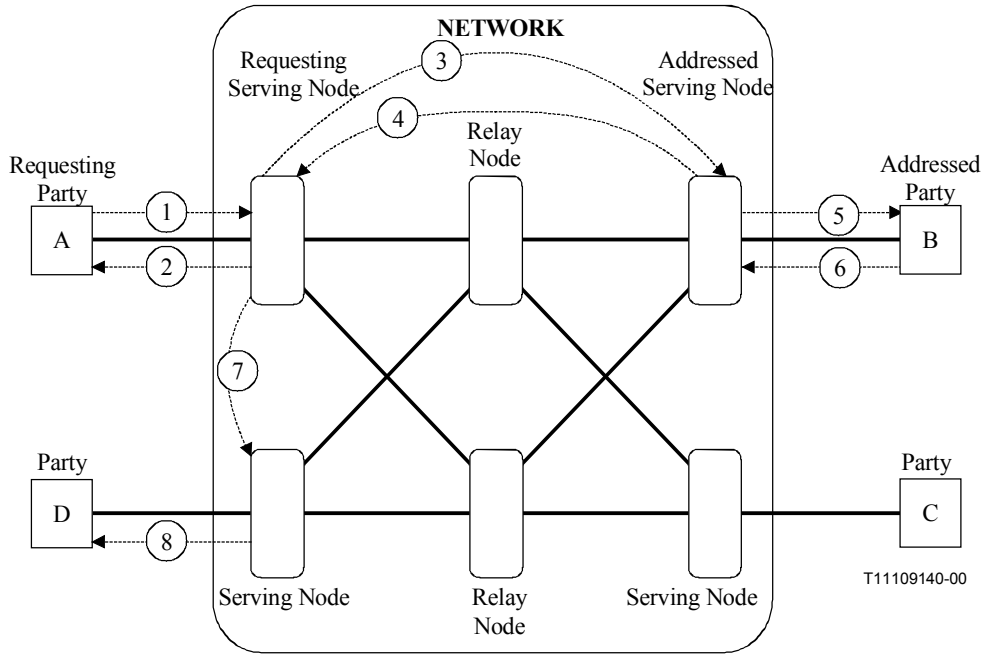


Figure 9-6 – Release party B from call requested by party A, the call owner – Party D is the owner of party B

The actions illustrated in Figure 9-6 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

1	Release-Party-from-Call.ready	Party A to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID **Remote party Information** [PEP "B" ID]	

Initiation of information flow: Party A's terminal equipment issues information flow 1 towards its serving node.

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determines that it is the call owner and notes that when the designated party is released, the call will contain more than one party, therefore no call clearing is necessary. The requesting serving node then issues information flow 2 confirming the removal of the party, issues information flow 3 towards the serving node of the party to be removed requesting that the call be cleared for party B. Since one other party is associated with the call, there is a need to issue a notify call change information flows.

2	Release-Party-from-Call.commit	Serving Node A to Party A

Resource information	Call information	Bearer information
	Call Control Segment ID **Remote party Information** [PEP "B" ID, Network address],	

Processing upon receipt: When the terminal receives this information flow, it removes the party from the call within its domain.

3	Release-Party-from Call.ready	Serving Node A to Serving Node B

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address],	

Initiation of information flow: Processing of information flow 1

Processing upon receipt: When the serving node receives this information flow, and has noted that the requesting party is the call owner, it then issues information flow 4 towards the requesting serving node committing to remove the party, and issues a release call information flow 5 towards the addressed party.

4	Release-Party-from-Call.commit	Serving Node B to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID,	

Processing upon receipt: When the requesting service node receives this information flow, it removes the party from the call within the domain of the requesting serving node. Since this example assumes that the serving node notify option is active, the requesting serving node issues information flow 7 towards the serving node associated with party D.

5	Release-Call.ready	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	

Initiation of information flow: Processing of information flow 3

Processing upon receipt: When the terminal receives this information flow, it clears the call states and issues a commitment flow (6b) towards the addressed serving node.

6	Release-Call.commit	Party B to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	

Processing upon receipt: When the addressed serving node receives this flow, it notes that this is the last party associated with the call within the addressed serving node, it then clears the call states within its domain.

7	Notify-Call-Change.indication	Serving Node A to Serving Node D
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D):ref.d) ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Party B removed from the call	

Initiation of information flow: Processing of information flow 4

Enabling Condition: Notify serving node option and the notify subscriber D option are active.

Processing upon receipt: When the addressed serving node receives this flow, it updates its call status information and issues information flow 6a towards party D since the notify subscriber D option is active. If the notify option is not active, no information flow towards party D will be issued.

8	Notify-Call-Change.indication	Serving Node D to Party D
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Party B removed from the call	

Processing upon receipt: When the addressed terminal receives this information flow, it updates its call status information, and notifies its user agent of the change in the call.

9.3.2 Release of a party from an existing multiparty call requested by the party owner

In this example, party D which is party B's owner, requests the removal of party B from the call. However, party A is the owner of the call and party D must obtain agreement of the call owner before party B can be removed. If party A or its service logic agrees to the removal, it will initiate the removal procedure and notify party D that party B has been removed from the call and notifies all other parties associated with the call that party B has been removed. Note that if the call owner or

its service logic does not agree to the removal of party B, ownership of party B is transferred to the call owner. In this example, it is assumed that the call owner agrees to the removal. Figure 9-7 illustrates the before and after view of this example.

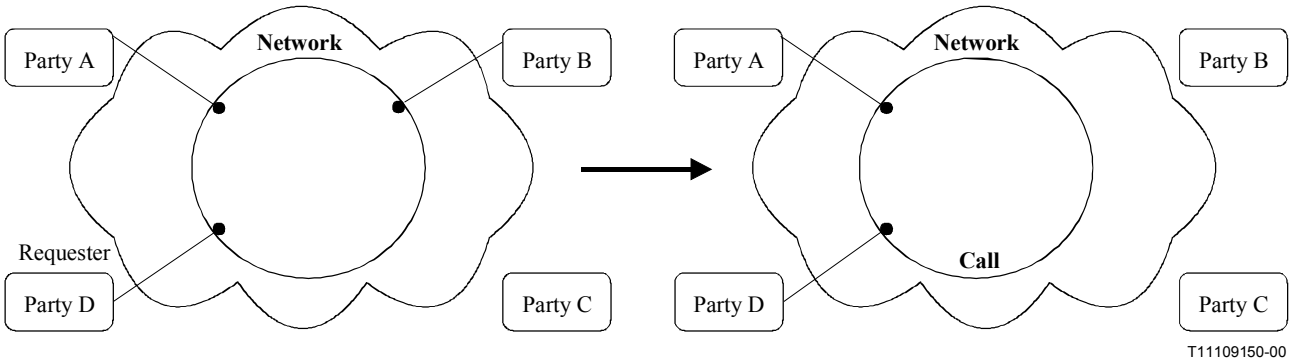


Figure 9-7 – Call transition diagram

Figure 9-8 illustrates the information flows necessary to accomplish this procedure.

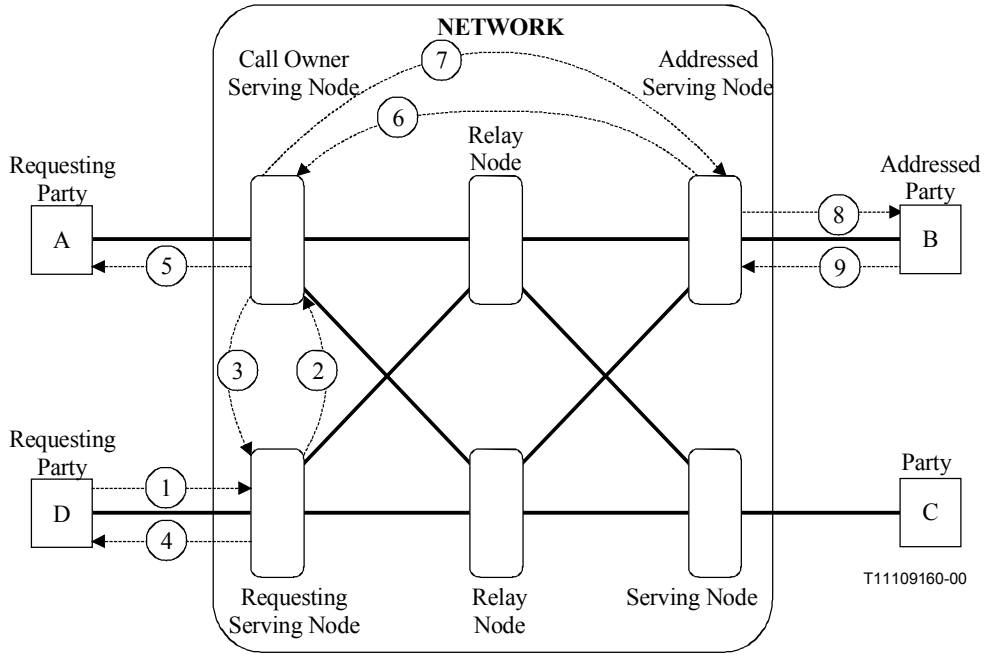


Figure 9-8 – Release party B from call requested by party D, the party owner of party B – Party A is the call owner

The actions illustrated in Figure 9-8 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

1	Release-Party-from Call.ready	Party D to Serving Node D

Resource information	Call information	Bearer information
	Call Control Segment ID **Remote party Information** [PEP "B" ID, Network address]	

Initiation of information flow: The party owner initiates a remove party from call procedure request.

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determines that it is party owner of the party to be removed from the call but not the call owner. The requesting serving node then issues information flow 2 towards the serving node associated with the party that is the call owner requesting that party B be removed from the call.

2	Remote-Release-Party-from Call.ready	Serving Node D to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D):ref.d) ID, **Addressed party Information** [PEP "A" ID, Network address], **Remote party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "D" ID, Network address],	

Processing upon receipt: When the serving node associated with the call owner receives this information flow, it will validate that the requesting party is the party owner of the remote party. Service logic specifies that party A has delegated the responsibility to make the determination if party B shall be removed from the call. The service logic agrees that the party shall be removed. The serving node issues information flow 3 towards party D committing to the party removal, information flow 5 towards party A notifying the call owner that party B is removed, and information flow 6 towards party B requesting party B's removal from the call, and awaits the response to this information flow.

3	Remote-Release-Party-from Call.commit	Serving Node A to Serving Node D

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D):ref.d) ID, **Addressed party Information** [PEP "D" ID, Network address], **Remote party Information** [PEP "B" ID, Network address]	

Processing upon receipt: When the serving node associated with the party owner receives this information flow, it will remove party B from its call state information and issues information flow 4 towards party B indicating that the requested operation has been completed.

4	Release-Party-from-Call.commit	Serving Node D to Party D

Resource information	Call information	Bearer information
	Call Control Segment ID **Remote party Information** [PEP "B" ID, Network address],	

Processing upon receipt: When the terminal receives this information flow, it removes the party from the call within its domain.

5	Notify-Call-Change.indication	Serving Node A to Party A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "A" ID, Network address], **Event:** Party B removed from the call	

Initiation of information flow: Processing of information flow 2

Enabling Condition: Processing of information flow 5 and notify subscriber option active.

Processing upon receipt: When the addressed terminal receives this information flow, it updates its call status information, and notifies its user agent of the change in the call.

6	Release-Party-from Call.ready	Serving Node A to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address],	

Initiation of information flow: Processing of information flow 2

Processing upon receipt: When the serving node receives this information flow, and has noted that the requesting party is the call owner, it then issues information flow 7 towards the requesting serving node committing to remove the party, and issues a release call information flow 8 towards the addressed party.

7	Release-Party-from-Call.commit	Serving Node B to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID,	

Processing upon receipt: When the requesting service node receives this information flow, it removes the party from the call within the domain of the call owner's serving node.

8	Release-Call.ready	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	

Initiation of information flow: Processing of information flow 6.

Processing upon receipt: When the terminal receives this information flow, it clears the call states and issues a commitment flow (9) towards the addressed serving node.

9	Release-Call.commit		Party B to Serving Node B
Resource information	**Call information**	**Bearer information**	
	Call Control Segment ID,		

Processing upon receipt: When the addressed serving node receives this flow, it notes that this is the last party associated with the call within the addressed serving node, it then clears the call states within its domain.

10 Release of a call

10.1 General rules for releasing a call

Only the call owner is allowed to invoke this operation.

If a non-call owner requests that the call be cleared, this action will result in removing the requesting party from the call. The serving node associated with the call owner will be notified that the requesting party is removed.

The serving node associated with the call owner will determine the number of remaining parties associated with the call, determines the status of the notify options and call retention option before proceeding with the received information flow. (Release-Call from the call owner or Release-Party-from-Call from another Serving Node.)

1) **Call is to be cleared and Notify serving node option inactive**: The serving node associated with the call owner will inform all the serving nodes associated with the parties associated with the call within its scope that the call is to be released. The serving nodes that receive this call clearing command will note that this message was sent by the call owner. The addressed serving node responds with a removal conformation containing the list of parties that it owns with their call related information. When the serving node associated with the call owner receives this acknowledgment, it will inform any additional serving nodes associated with the parties that are owned by the party associated with the responding serving node, that the call is to be cleared. The additional addressed serving nodes will in turn notify the serving node associated with the call owner of any additional parties associated with the call. Each addressed serving node receiving this call clearing command will proceed to clear the call by removing the parties associated with this call within its domain. The serving node associated with the call owner will either clear the call or retain the call within its domain, dependent on the call retention option status. (Note: the serving node associated with the call owner may not be aware of all parties associated with the call if the serving node notify option is not activated at the beginning of the call.)
2) **Call is to be cleared and Notify serving node option active**: The serving node associated with the call owner will inform all serving nodes associated with the parties associated with the call that the call is to be cleared. Each serving node receiving this call clearing command will proceed to clear the call within its domain. The serving node associated with the call owner will either clear the call, or retain the call within its domain, dependent on the call retention option status.
3) **Call is not to be cleared**: Ownership characteristics associated with the removed party will be transferred to the call owner. The serving node associated with the call owner will notify the other parties within the call that a party has been removed from the call and that its ownership characteristics have been transferred to the call owner.

10.2 Release of a call requested by the call owner

Two examples of call clearing are illustrated in this subclause. The first is a single-party call, while the second is an illustration of call clearing in a multiple party call. In both cases, the requesting party is the call owner.

10.2.1 Release of a single-party call requested by the call owner

In this example, a single-party call has been established. The call owner is party A. It wishes to clear this call and therefore issues a call clearing message towards its serving node. Figure 10-1 illustrates the before and after view of this example.

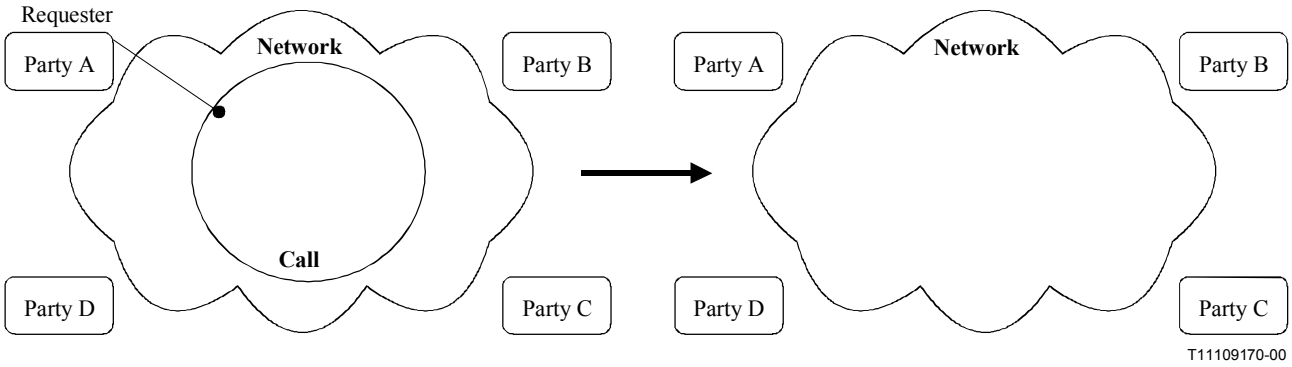


Figure 10-1 – Call transition diagram

Figure 10-2 illustrates the information flows necessary to accomplish this procedure.

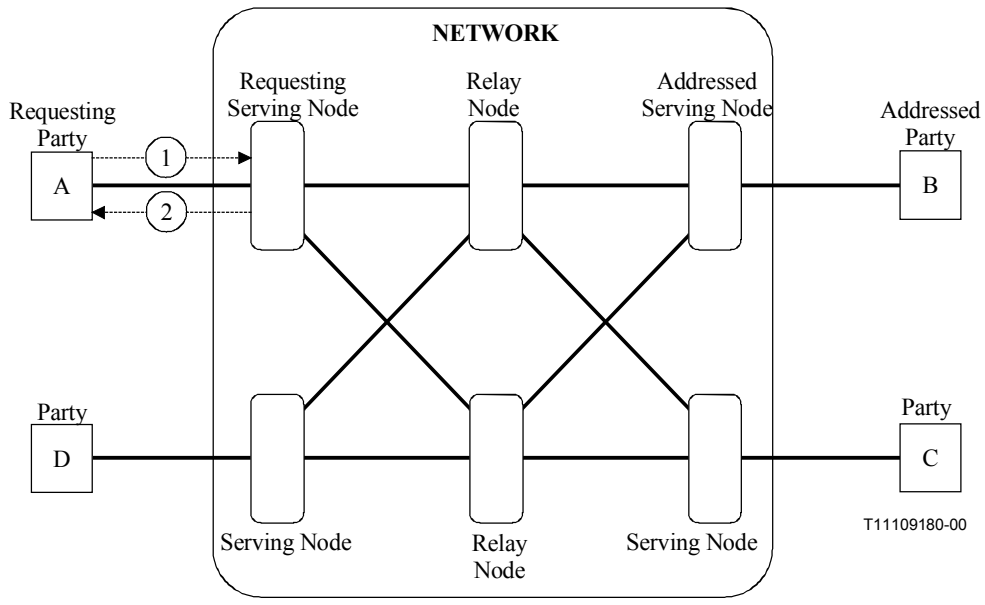


Figure 10-2 – Release Call requested by party "A"

The actions illustrated in Figure 10-2 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

1	Release-Call.ready	Party A to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	

Initiation of information flow: The call owner initiates a call clearing procedure request.

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determines that it is the call owner and has the permission to clear the call. The requesting serving node then issues information flow 2 confirming the release of the single-party call, and clears the call between the requesting party and the network.

2	Release-Party-from Call.commit	Serving Node A to Party A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	

Processing upon receipt: When the terminal receives this information flow, it clears the call within its domain.

10.2.2 Release of a multiparty call requested by the call owner

In this example, a four-party call has been established. The call owner is party A. The notify option has been used throughout the call establishment phase of the call. The call owner is aware of all parties within the call. When the call owner requests call clearing, its associated serving node will send call clearing requests to the serving nodes associated with each party associated with the call. Each serving node will notify their associated parties that the call is being cleared. Figure 10-3 illustrates the before and after view of this example.

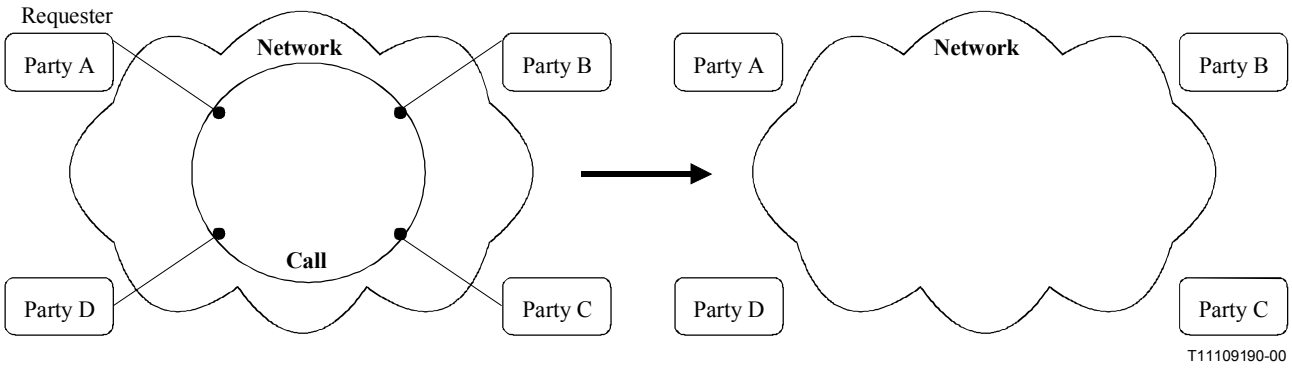


Figure 10-3 – Call transition diagram

Figure 10-4 illustrates the information flows necessary to accomplish this procedure.

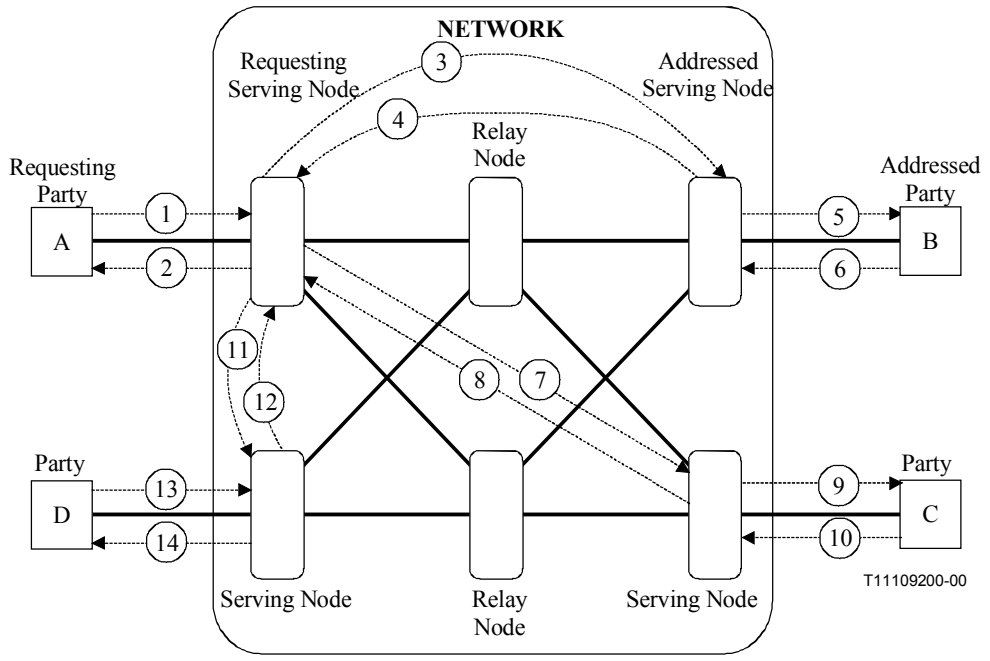


Figure 10-4 – Release Call requested by party "A" with party A as the call owner

The actions illustrated in Figure 10-4 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

---

1 Release-Call.ready **Party A to Serving Node A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	

Initiation of information flow: The call owner initiates a release call procedure request.

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determines that it is the call owner and proceeds to release the call. The requesting serving node then issues information flow 2 confirming the removal of the call, and issues 3, 7, and 11 towards the serving nodes of the parties associated with the call, requesting that the call be cleared.

---

2 Release-Call.commit **Serving Node A to Party A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	

Processing upon receipt: When the terminal receives this information flow, it clears the call within its domain.

3	Release-Call.ready	Serving Node A to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Requesting party Information** [PEP "A" ID, Network address],	

Processing upon receipt: When the addressed serving node receives this information flow, it then issues information flow 4 towards the requesting serving node committing to the call clearing procedure, and issues a call clearing information flow towards the addressed party B (information flow 5).

4	Release-Call.commit	Serving Node B to Serving Node A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID,	

Enabling Condition: Reception of information flows 4, 8 and 12

Processing upon receipt: When the requesting service node receives these information flows, it clears the call within its domain.

5	Release-Call.ready	Serving Node B to Party B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	

Initiation of information flow: Processing of information flow 3

Processing upon receipt: When the terminal receives this information flow, it clears the call and issues a commitment flow (6) towards the addressed serving node.

6	Release-Call.commit	Party B to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	

Processing upon receipt: When the serving node receives this flow, it clears the call within its domain.

7	Release-Call.ready	Serving Node A to Serving Node C

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(C):ref.c) ID, **Requesting party Information** [PEP "A" ID, Network address],	

Initiation of information flow: Processing of information flow 2

Processing upon receipt: When the addressed serving node receives this information flow, it then issues information flow 8 towards the requesting serving node committing to the call clearing procedure, and issues a call clearing information flow towards the addressed party C (information flow 9).

8	Release-Call.commit	Serving Node C to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(C):ref.c) ID,	

Enabling Condition: Reception of information flows 4, 8 and 12

Processing upon receipt: When the requesting service node receives these information flows, it clears the call within its domain.

9	Release-Call.ready	Serving Node C to Party C

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "C" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	

Initiation of information flow: Processing of information flow 7

Processing upon receipt: When the terminal receives this information flow, it clears the call and issues a commitment flow (10) towards the addressed serving node.

10	Release-Call.commit	Party C to Serving Node C

Resource information	Call information	Bearer information
	Call Control Segment ID,	

Processing upon receipt: When the serving node receives this flow, it clears the call within its domain.

11	Release-Call.ready	Serving Node A to Serving Node D

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D):ref.d) ID, **Requesting party Information** [PEP "A" ID, Network address],	

Initiation of information flow: Processing of information flow 2

Processing upon receipt: When the addressed serving node receives this information flow, it then issues information flow 12 towards the requesting serving node committing to the call clearing procedure, and issues a call clearing information flow towards the addressed party D (information flow 13).

12	Release-Call.commit	Serving Node D to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D):ref.d) ID,	

Enabling Condition: Reception of information flows 4, 8 and 12

Processing upon receipt: When the requesting service node receives these information flows, it clears the call within its domain.

13	Release-Call.ready	Serving Node D to Party D

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "D" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	

Initiation of information flow: Processing of information flow 11

Processing upon receipt: When the terminal receives this information flow, it clears the call and issues a commitment flow (14) towards the addressed serving node.

14	Release-Call.commit	Party D to Serving Node D

Resource information	Call information	Bearer information
	Call Control Segment ID,	

Processing upon receipt: When the serving node receives this flow, it clears the call within its domain.

10.3 Release of a call requested by a non-call owner

Two examples of call clearing requested by a non-call owner are illustrated in this subclause. The first illustrates a two-party call and the second illustrates a multiparty call. The first example illustrates both the call clearing option and the call retention option.

10.3.1 Release of a two-party call requested by a non-call owner

In this example, a two-party call has been established. The call owner, and the party owner is party A. Party B requests call clearing. Since party B is not the call owner, this request will result in the removal of party B from the call. The call will be either cleared or retained within the network dependent on the mode in which the call was established by party A (call retention option or call clearing option). Figure 10-5 illustrates the before and after view of this example.

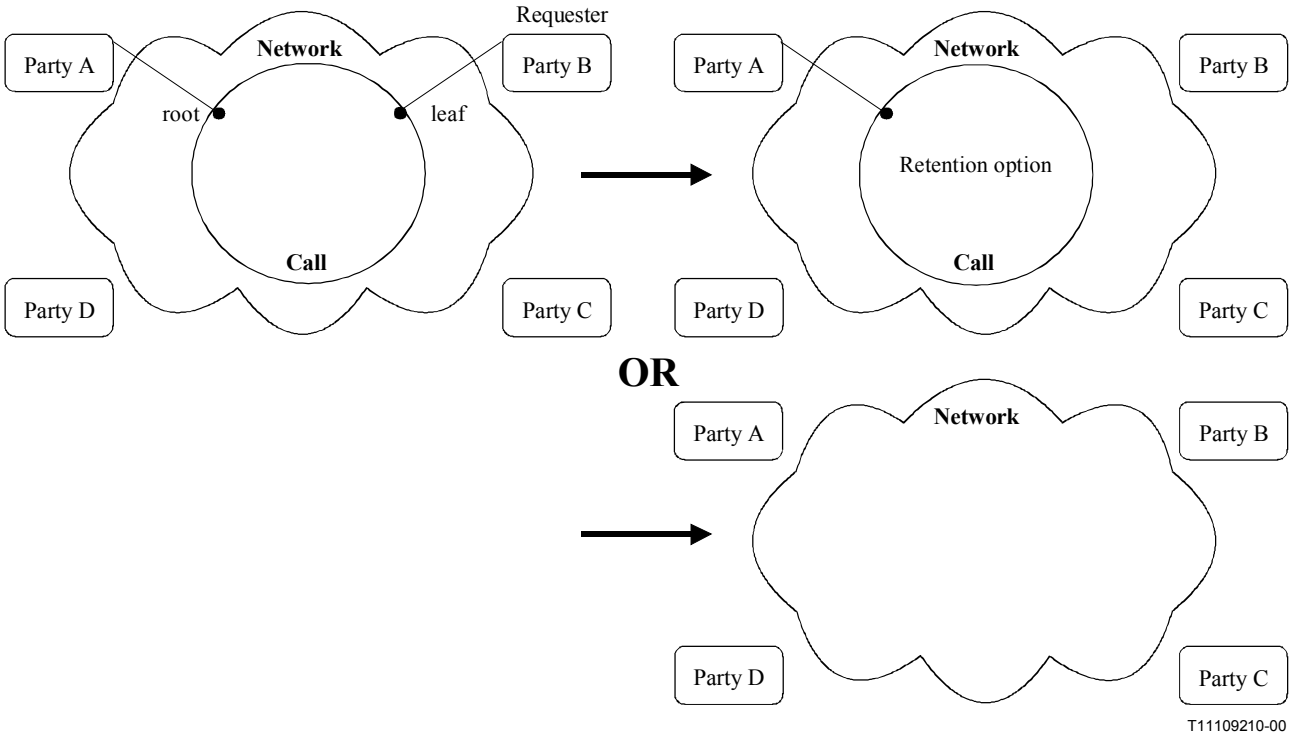


Figure 10-5 – Call transition diagram

Figure 10-6 illustrates the information flows necessary to accomplish this procedure.

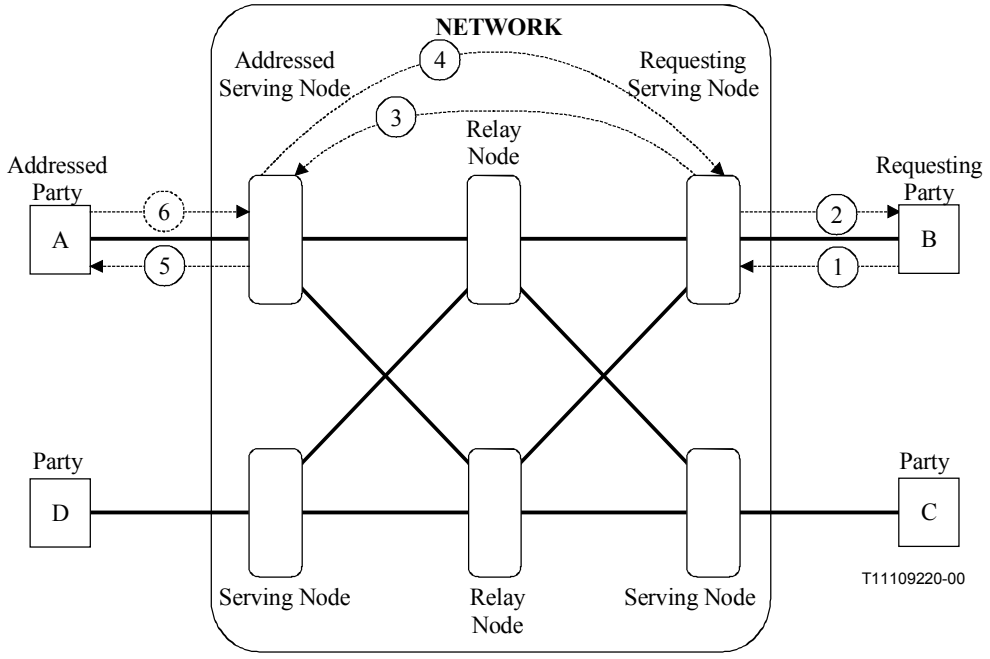


Figure 10-6 – Party "B" requests call clearing – Party "A" is the call owner

The actions illustrated in Figure 10-6 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

---

1 Release-Call.ready **Party B to Serving Node B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	

Initiation of information flow: The non-call owner initiates a call clearing request.

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determines that it is not the call owner. The serving node will initiate a party removal procedure in order to release party B from the call. The requesting serving node then issues information flow 2 confirming the removal of party B from the call, issues information flow 3 towards the serving node associated with the call owner requesting that party B be removed from the call.

---

2 Release-Call.commit **Serving Node B to Party B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	

Processing upon receipt: When the terminal receives this information flow, it clears the call within its domain.

3	Release-Call.ready	Serving Node B to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "A" ID, Network address], **Requesting party Information** [PEP "B" ID, Network address],	

Processing upon receipt: When the serving node receives this information flow, and has noted that the requesting party is not the call owner, it then issues information flow 4 towards the requesting serving node committing to remove the party, and if the call clearing option is active, issues a release-call information flow towards the addressed party. If, however, the call retention option is active, the serving note will issue a call change information flow to party A indicating that party B has been removed from the call. (Note: information flow 5 could be either a Release-Call or a call change information flow. This will be illustrated by two flows with the same number accompanied by the call option.)

4	Release-Call.commit	Serving Node A to Serving Node B

Resource information	Call information	Bearer information
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID,	

Processing upon receipt: When the requesting service node receives this information flow, it clears its call states within its domain.

5(clear)	Release-Call.ready	Serving Node A to Party A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "A" ID, Network address], **Requesting party Information** [PEP "B" ID, Network address]	

Processing upon receipt: When the terminal receives this information flow, it clears the call states and issues a commitment flow (6) towards the addressed serving node.

5(retain)	Notify-Call-Change.indication	Serving Node A to Party A

Resource information	Call information	Bearer information
	Call Control Segment ID, **Addressed party Information** [PEP "A" ID, Network address], **Event:** Party B removed from the call	

Enabling Condition: Processing of information flow 3 and notify subscriber option active

Processing upon receipt: When the addressed terminal receives this information flow, it updates its call status information, and notifies its user agent of the change in the call.

6	Release-Call.commit	Party B to Serving Node B
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	

Processing upon receipt: When the addressed serving node receives this flow, it notes that this is the last party associated with the call within the addressed serving node, it then clears the call states within its domain.

10.3.2 Release of a multiparty call requested by a non-call owner

This scenario assumes that party A is currently engaged in a call with parties D and B. Party B, a non-call owner, requests that the call be cleared. Since party B is not the call owner, it will be removed from the call. The call owner, parties A and D will be notified of the removal of party B. This is illustrated in Figure 10-7 and its associated information flows.

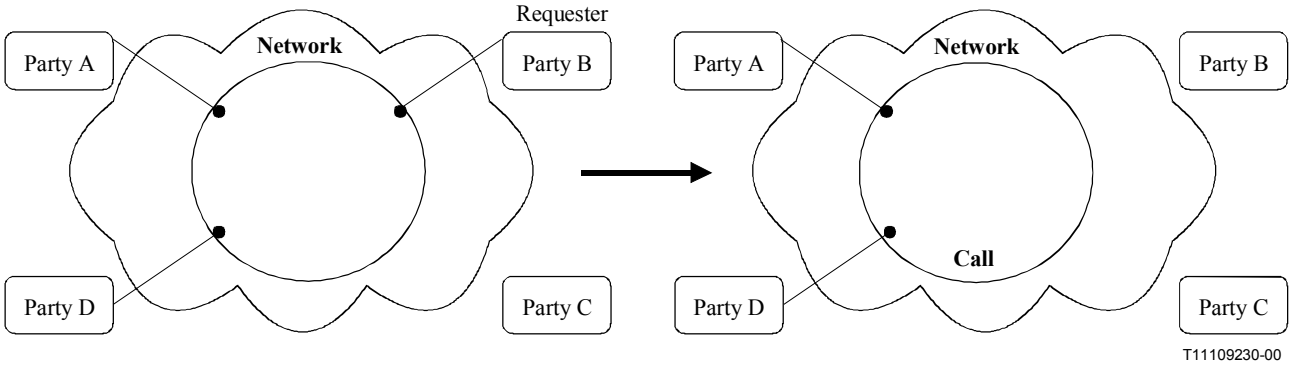


Figure 10-7 – Call transition diagram

Figure 10-8 illustrates the information flows necessary to accomplish this procedure.

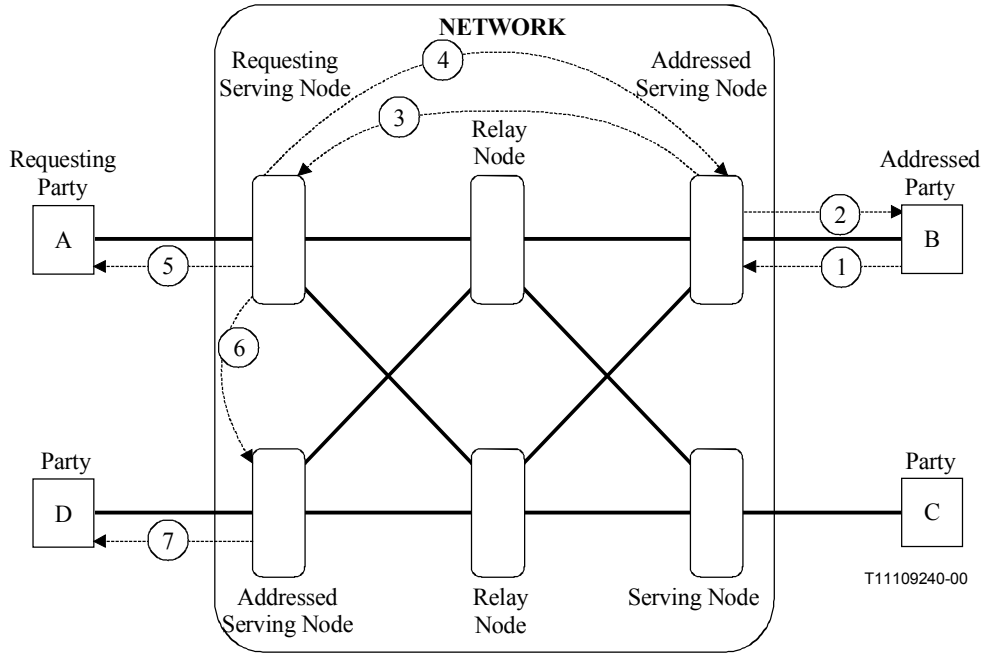


Figure 10-8 – Release party B from call requested by party A, the call owner – Party D is the owner of party B

The actions illustrated in Figure 10-8 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node.

1	Release-Call.ready		Party B to Serving Node B
Resource information		**Call information**	**Bearer information**
		Call Control Segment ID	

Initiation of information flow: Party B's terminal equipment issues information flow 1 towards its serving node.

Processing upon receipt: When the serving node associated with the requesting party receives this information flow, it will authenticate the requesting party, determines that it is not the call owner. It then releases the party from the call and since this is the last party associated with the call within its domain, issues a call clearing request to the call owner (information flow 3). The requesting serving node then issues information flow 2 confirming the clearing of the call.

2	Release-Call.commit		Serving Node B to Party B
Resource information		**Call information**	**Bearer information**
		Call Control Segment ID	

Processing upon receipt: When the terminal receives this information flow, it clears the call within its domain.

3	Release-Call.ready		Serving Node B to Serving Node A
Resource information		**Call information**	**Bearer information**
		Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID, **Addressed party Information** [PEP "A" ID, Network address], **Requesting party Information** [PEP "B" ID, Network address],	

Initiation of information flow: Processing of information flow 1

Processing upon receipt: When the serving node receives this information flow, and has noted that the requesting party is not the call owner, it then issues information flow 4 towards the requesting serving node committing to remove the party from the call, and issues notify call change information flow 5 and 6 towards the call owner, party A, and party D indicating that party B has been removed from the call.

4	Release-Call.commit		Serving Node A to Serving Node B
Resource information		**Call information**	**Bearer information**
		Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(B):ref.b) ID,	

Processing upon receipt: When the requesting service node receives this information flow, it clears the call within the domain of the requesting serving node.

5	Notify-Call-Change.indication	Serving Node A to Party A
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "A" ID, Network address], **Event:** Party B removed from the call	

Initiation of information flow: Processing of information flow 3 and notify subscriber option active

Processing upon receipt: When the addressed terminal receives this information flow, it updates its call status information, and notifies its user agent of the change in the call.

6	Notify-Call-Change.indication	Serving Node A to Serving Node D
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Direct Call association** (SN(A):ref.a - SN(D):ref.d) ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Party B removed from the call	

Initiation of information flow: Processing of information flow 3

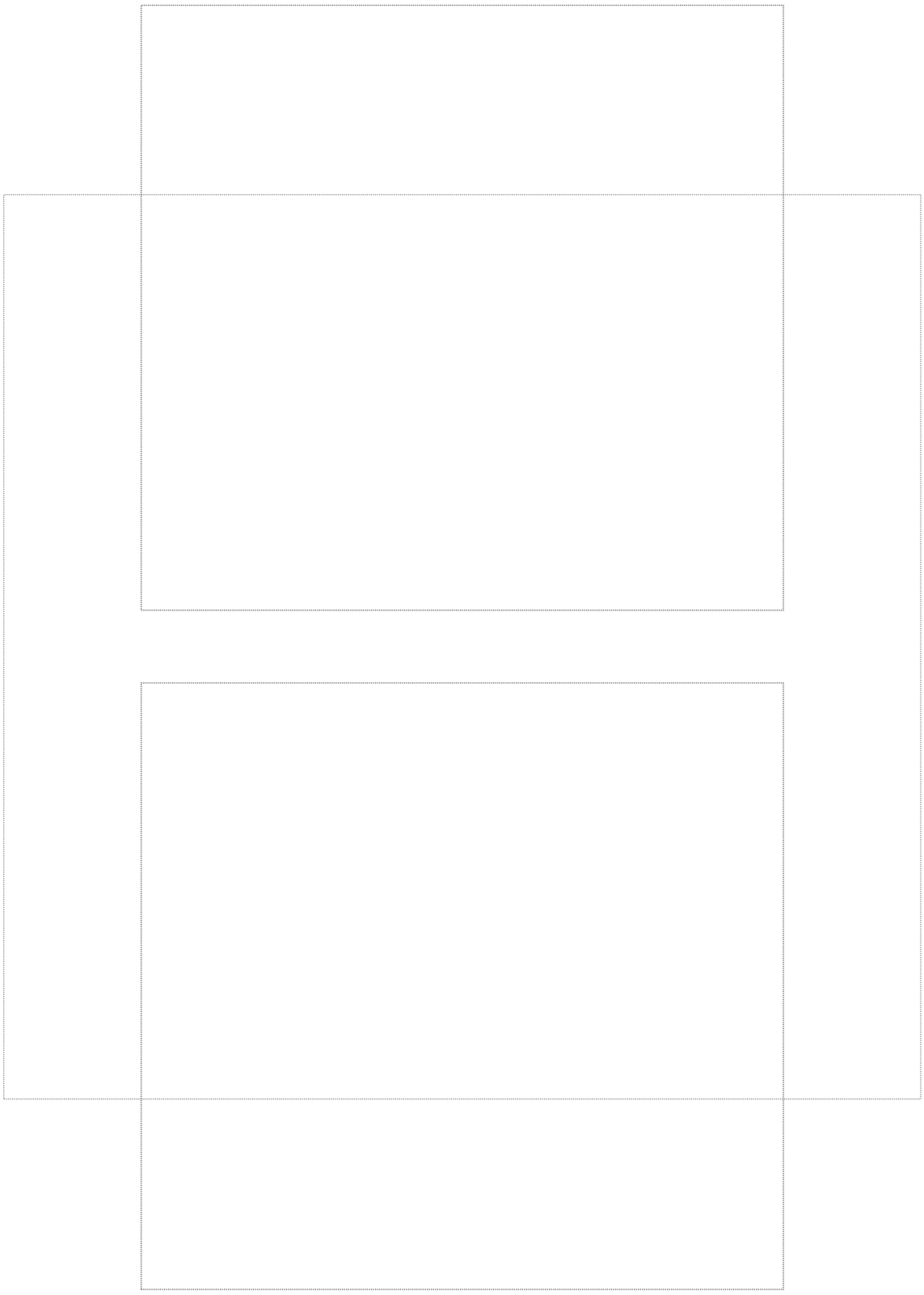
Enabling Condition: Notify serving node option and the notify subscriber D option are active.

Processing upon receipt: When the addressed serving node receives this flow, it updates its call status information and issues information flow 7 towards party D since the notify subscriber D option is active. If the notify option is not active, no information flow towards party D will be issued.

7	Notify-Call-Change.indication	Serving Node D to Party D
Resource information	**Call information**	**Bearer information**
	Call Control Segment ID, **Addressed party Information** [PEP "D" ID, Network address], Party Owner: PEP "A" ID, **Event:** Party B removed from the call	

Enabling Condition: Processing of information flow 6 and notify subscriber option active

Processing upon receipt: When the addressed terminal receives this information flow, it updates its call status information, and notifies its user agent of the change in the call.



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