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Technical Report TRQ.2300: Bearer control signalling requirements – Root-party bearer control

ITU-T Q-series Recommendations – Supplement 19

(Formerly CCITT Recommendations)

ITU-T Q-SERIES RECOMMENDATIONS

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SUPPLEMENT 19 TO ITU-T Q-SERIES RECOMMENDATIONS

TECHNICAL REPORT TRQ.2300: BEARER CONTROL SIGNALLING REQUIREMENTS – ROOT-PARTY BEARER CONTROL

Summary

This Supplement specifies the signalling requirements for bearer control capability by the root-party in a call. The bearer control functional entity actions by a root-party in a call are defined in terms of information flows.

This Supplement is intended to specify the essential UNI and NNI interactions required to develop root-party initiated bearer control functional entity actions.

FOREWORD

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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.

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NOTE

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Supplement 19 to Q-series Recommendations

TECHNICAL REPORT TRQ.2300: BEARER CONTROL SIGNALLING REQUIREMENTS – ROOT-PARTY BEARER CONTROL

(Geneva, 1999)

1 Scope

This Supplement presents the procedures, information flows and information elements needed for supporting control by the root-party of bearers involving type 1, 2, 3 and 5 network connections. Table 1-1 illustrates the scope of the capabilities contained within this Supplement.

Table 1-1 – Root-party Bearer Control Capabilities

	Network connection type
Addition of one or more new network connections to an existing call requested by the party that will be the root of the new network connection(s)	
Addition of one new network connection to an existing call	Type 1, 2, 3 and 5
Addition of one or more new network connections to an existing call	Type 1, 2, 3 and 5
Attachment of one or more existing parties to one or more existing network connections requested by the party associated with the root of the existing network connection	
Attach one or more existing parties to one or more existing connections	Type 1, 2, 3 and 5
Attach one or more existing parties to one or more new connections	Type 1, 2, 3 and 5
Detachment of one or more parties from one or more connections by either the call owner, network connection owner or the party owner	
Detach a party from its associated network connection branches in a two-party call.	Type 1, 2, 3 and 5
Detach one or more parties from their associated network connection branches in a three- or more-party call.	Type 1, 2, 3 and 5
Removal of one or more connections from a call requested by the network requested by either the connection owner or call owner	
Removal of one or more network connections from a two-party call.	Tpe 1, 2, 3 and 5
Removal of one or more network connections from a three- or more-party call.	Tpe 1, 2, 3 and 5

2 Normative 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 is 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   backward: The direction from the addressed party to the party requesting a signalling capability.

3.4   network connection: An ATM network connection of topology type 1 to 5 as defined in Q-series Recommendations Supplement 7 [1].

3.5   call: An end-to-end communications service between two- or more-call party end points, or between one call party end point and its Serving Node.

3.6   call owner: One who initiates a call is the Call Owner. There is only one Call Owner per call.

3.7   forward: The direction from the requesting party to the addressed party.

3.8   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.

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

3.10   requesting party: The party requesting a signalling capability.

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

3.12   serving node: Network equipment, such as a local exchange or private branch exchange, 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 root-party control information flows that are used across the bearer control interfaces illustrated in the Unified Functional Model contained in Q-series Recommendations Supplement 7 [1]. These information flows are used to establish, modify and release root-party requested network connections.

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

Information Flow	begin	ready	commit	cancel	indication
Add-Bearer-to-Call	✓	✓	✓		
Attach-Party-to-Bearer	✓	✓	✓		
Detach-Party-from-Bearer		✓	✓		
Notify-Bearer-Change					✓
Remote-Detach-Party-from Bearer	✓	✓	✓		
Request-Detach-Party-from Bearer	✓	✓	✓		
Release-Bearer		✓	✓		

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

6 Overview of Bearer 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 network connections.

Note that for the purpose of this overview, the information flows and actions illustrate the establishment of a two-party call with two network connections.
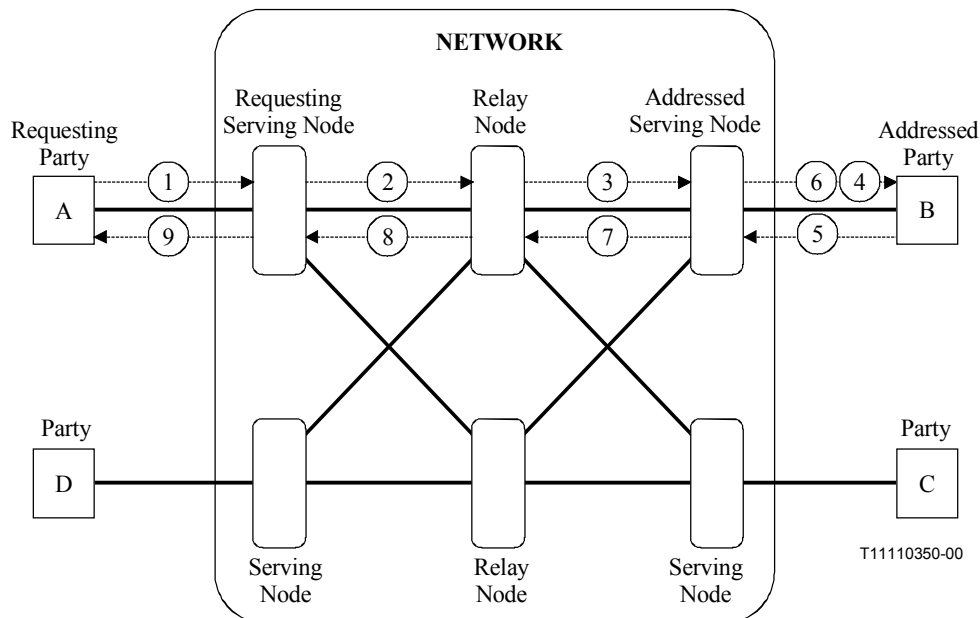
Figure 6-1 – Two-party coordinated call and network connection establishment

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) Signalling Service Request issued by requester's serving node: Receiving entity records request, modifies internal state information and then relays request as action 3.

3) Relayed Signalling Service Request issued by relay node: Receiving entity records request, modifies internal state information and then issues the request on the addressed party's interface as action 4.

4) 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 5.

5) Signalling Service Response issued by addressed party: Receiving entity records response, modifies internal state information, and then issues its confirmation as action 8 and its response as action 6.

6) Signalling Service Confirmation issued by addressed party's serving node: Receiving entity records response, modifies internal state information, and notifies the user of the outcome of the responded service.

7) Signalling Service Response issued by addressed party's serving node: Receiving entity records response, modifies internal state information and then relays response as action 8.

8) Signalling Service Response issued by relay node: Receiving entity records response, modifies internal state information and relays response to the service requester as action 9.

9) Signalling Service Response issued by requester's serving node: Receiving entity 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. Again, note that 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 following clauses will describe the basic bearer control signalling capabilities using this model.

7 Addition of one or more new network connections to an existing call

7.1 Addition of one new network connection to an existing call

Figure 7-1 assumes that a call association exists between party "A" and Party "B". Party "A" requests the addition of a new bearer to this call. The bearer to be added is designated as bearer connection 1.
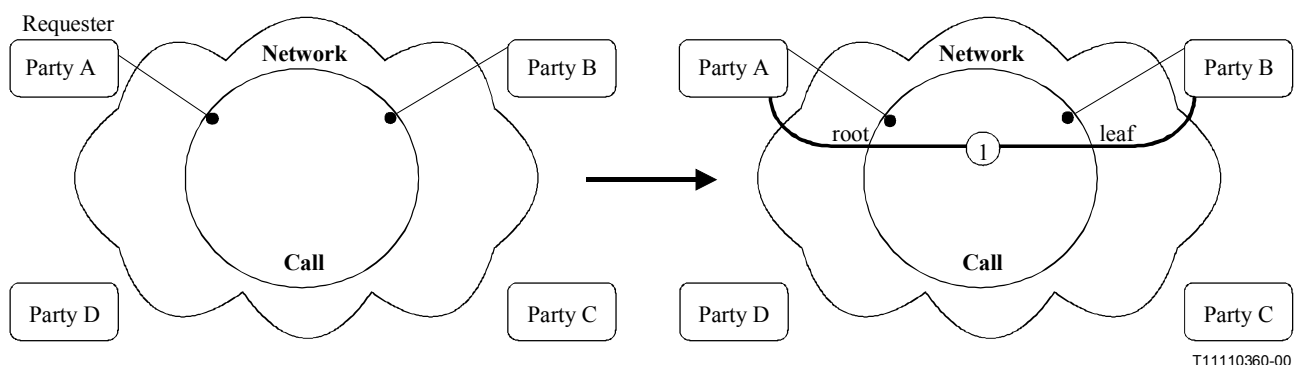
Figure 7-1 – Addition of a new bearer to an existing call

The signalling capability of coordinated control for adding a new bearer to an existing call is illustrated in Figure 7-2.
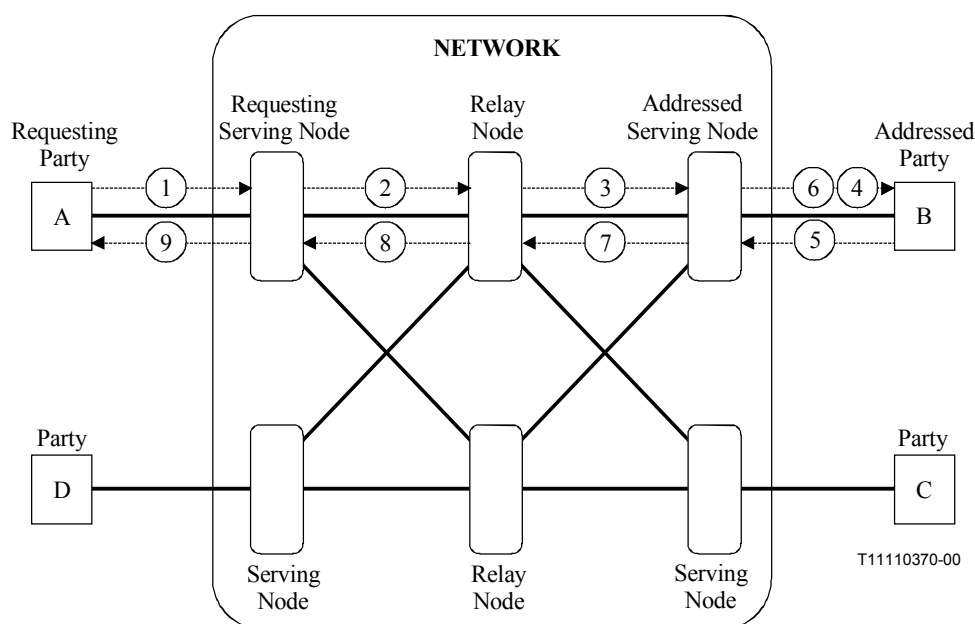
Figure 7-2 – Addition of a new bearer to an existing call

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

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

---

1   Add-Bearer-to-Call.ready   Party A to Serving Node A

Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID**	**Network connection 1**
Resource 1	**Addressed party Information**	[Bearer "1" ID, Bearer type,
[Resource 1 ID, Resource type,	[PEP "B" ID, Network address],	**Parties connected**
Parties communicating	**Requesting party information**	(PEP "A" ID, PEP "B" ID),
(PEP "A" ID, PEP "B" ID),	[PEP "A" ID, Network Address]	
		Addressed party's bearer branch information
Addressed party's service component		[(PEP "B" ID, Transit Network Selection, bearer branch
information		characteristics),
(PEP "B" ID, Service component		
characteristics)]		**Addressed party's service module information**
		[(PEP "B" ID, Service module characteristics
		Service component list
		[(Resource 1 ID)]

Initiation of information flow: The user initiates an add party to bearer procedure request.

Processing upon receipt: The requester's serving node validates the request and the requesting party and determines the route and outgoing trunk facility towards the addressed serving node associated with the addressed party. (Note: these validation and routing flows are not illustrated in the figure in order to simplify the diagram.) The SN issues the following information flow (2) towards the selected relay node.

| 2 | Add-Bearer-to-Call.ready | Serving Node A to Relay Node 1 |

Resource information
Session ID
Resource 1
 [Resource 1 ID, Resource type,
 Parties communicating
 (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
 (PEP "B" ID, Service component
 characteristics)]

Call information
Call Control Segment ID,
Direct Call association
 (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 1
 [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
 Parties connected
 (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
 [(PEP "B" ID, Transit Network Selection, bearer branch
 characteristics, branch owner: PEP "A" ID),

Addressed party's service module information
 [(PEP "B" ID, Service module characteristics
 Service component list
 [(Resource 1 ID)]

Processing upon receipt: The selected relay node validates the request and determines the route and outgoing trunk facility of the network connection. It determines that it will be the new branching point of the existing connection. The relay node commits to the request and issues the following information flow (3) towards the addressed serving node of the new party. The new connection branch may be through connected in backward direction.

| 3 | Add-Bearer-to-Call.ready | Relay Node 1 to Serving Node B |

Resource information
Session ID
Resource 1
 [Resource 1 ID, Resource type,
 Parties communicating
 (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
 (PEP "B" ID, Service component
 characteristics)]

Call information
Call Control Segment ID,
Direct Call association
 (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 1
 [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
 Parties connected
 (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
 [(PEP "B" ID, bearer branch characteristics, branch
 owner: PEP "A" ID),

Addressed party's service module information
 [(PEP "B" ID, Service module characteristics
 Service component list
 [(Resource 1 ID)]

Processing upon receipt: The addressed serving node selects the terminating interface. Since the interface is classified as a point-to-multipoint signalling interface, the addressed serving node cannot commit to the request and issues the following information flow (4) towards the selected interface. The network connection is backward through connected.

| 4 | Add-Bearer-to-Call.begin | Serving Node B to Party B |

Resource information
Session ID
Resource 1
 [Resource 1 ID, Resource type,
 Parties communicating
 (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
 (PEP "B" ID, Service component
 characteristics)]

Call information
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

Bearer information
Network connection 1
 [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
 Parties connected
 (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
 [(PEP "B" ID, bearer branch characteristics, branch
 owner: PEP "A" ID),

Addressed party's service module information
 [(PEP "B" ID, Service module characteristics
 Service component list
 [(Resource 1 ID)]

Processing upon receipt: The addressed terminal equipment determines that it can accept the requested and issues information flow 5 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

5   Add-Bearer-to-Call.ready   Party B to Serving Node B

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID**   **Network connection 1**
  [Resource 1 ID, Resource type,   **Addressed party Information**   [Bearer "1" ID,
                                              [PEP "B" ID, Network address]
Addressed party's service component   **Addressed party's bearer branch information**
information   [(PEP "B" ID, bearer branch characteristics),
  (PEP "B" ID, Service component
    characteristics)]   **Addressed party's service module information**
                                                                                  [(PEP "B" ID, Service module characteristics
                                                                                  Service component list
                                                                                    [(Resource 1 ID)]

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 6. The serving node then clears the non-selected terminals. (Note: this action is not illustrated for simplicity.) The addressed serving node uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branches between party B and the network, and the network connection branches between the addressed serving node and the requesting relay node. Information flow 6 towards the terminal and information flow 7 contain these network connection branch characteristics. The network connection is through connected in the forward direction, and if necessary, modifies the backward network connection characteristics.

6   Add-Bearer-to-Call.commit   Serving Node B to Party B

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID**   **Network connection 1**
  [Resource 1 ID, Resource type,   **Addressed party Information**   [Bearer "1" ID,
                                              [PEP "B" ID, Network address]
Addressed party's service component   **Addressed party's bearer branch information**
information   [(PEP "B" ID, bearer branch characteristics),
  (PEP "B" ID, Service component
    characteristics)]   **Addressed party's service module information**
                                                                                  [(PEP "B" ID, Service module characteristics
                                                                                  Service component list
                                                                                    [(Resource 1 ID)]

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

7   Add-Bearer-to-Call.commit   Serving Node B to Relay Node 1

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 1**
  [Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID,
                                              (SN(A):ref.a – SN(B):ref.b) ID,
Addressed party's service component   **Addressed party Information**   **Addressed party's bearer branch information**
information   [PEP "B" ID, Network address]   [(PEP "B" ID, bearer branch characteristics),
  (PEP "B" ID, Service component
    characteristics)]   **Addressed party's service module information**
                                                                                  [(PEP "B" ID, Service module characteristics
                                                                                  Service component list
                                                                                    [(Resource 1 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 8 towards the requesting serving node and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction.

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "B" ID, Service component
    characteristics)]

Call 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]

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: When the requesting serving node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between the relay node and the requesting serving node, and the network connection branch characteristics between the serving node and the requesting party. The serving node then issues information flow 9 towards the requesting party and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction.

9   Add-Bearer-to-Call.commit   Serving Node A to Party A

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "A" ID, Service component
    characteristics),

Remote party's service component
information
  (PEP "B" ID, Service component
    characteristics)]]

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

Bearer information
Network connection 1
  [Bearer "1" ID, Connection owner: PEP "A",

Addressed party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]]

Processing upon receipt: When the user equipment receives this information flow, it records the commitment, and if necessary, modifies the network connection characteristics in the backward direction, and notifies the user of the completion of the bearer establishment procedure. (Note: if the terminal or the user is not satisfied with the resultant network connection characteristics, the party could be detached from the connection or the party could be released.)

7.2   Addition of two new network connections to an existing call

Figure 7-3 assumes that a call association exists between party "A" and Party "B". Party "A" requests the addition of two new bearers to this call. The bearers to be added are designated as bearer connection 1 and bearer connection 2. In the example, these two bearers will be routed independently through the network.
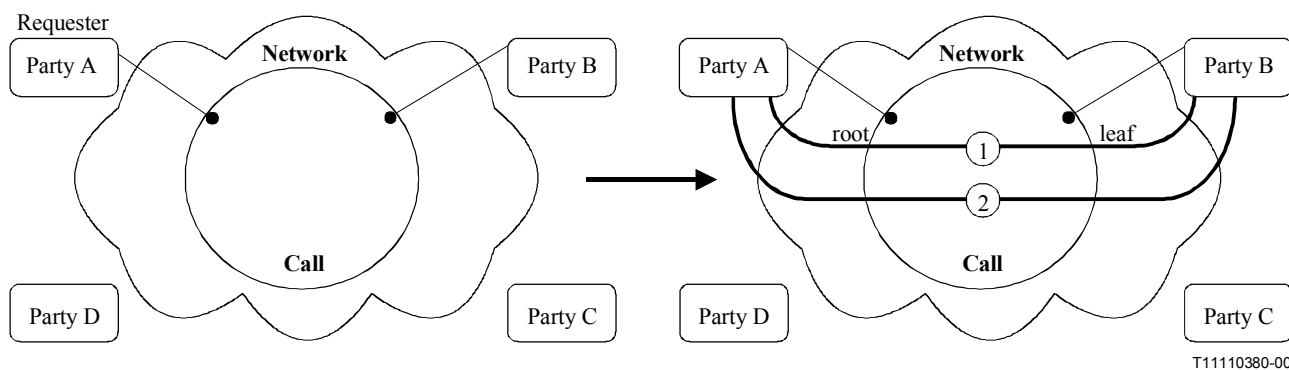
Figure 7-3 – Addition of two new bearers to an existing call

The signalling capability of coordinated control for adding a new bearer to an existing call is illustrated in Figure 7-4.

Figure 7-4 – Addition of two new bearers to an existing call
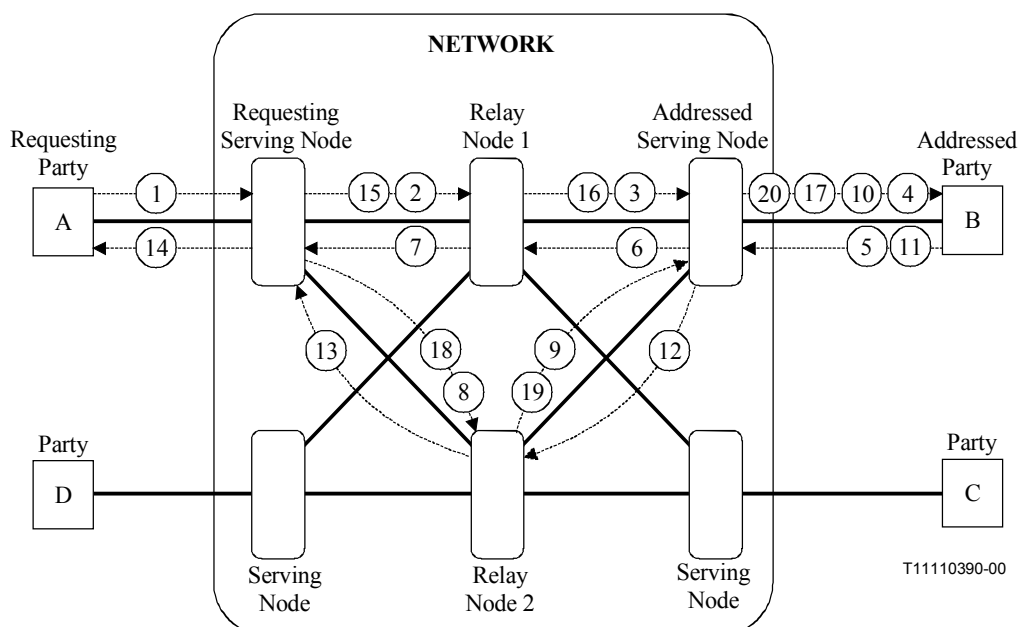
The actions illustrated in Figure 7-4 are as follows.

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

1   Add-Bearer-to-Call.ready   Party A to Serving Node A

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

Addressed party's service component
information
  (PEP "B" ID, Service component
   characteristics)]
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

Addressed party's service component
information
  (PEP "B" ID, Service component
   characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type,
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
   characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
 **Service component list**
  [(Resource 1 ID)]
Network connection 2
  [Bearer "2" ID, Bearer type,
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
   characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
  [(Resource 2 ID)]

Initiation of information flow: The user initiates an add party to bearer procedure request.

Processing upon receipt: The requester's serving node validates the request and the requesting party and determines that the most efficient handling of these bearers would be that they be routed separately through the network. The SN then selects the relay nodes that should handle these bearers and then selects the facilities to these relay nodes. The SN then issues information flows 2 and 8 and awaits the confirmation of both bearer establishments before notifying Party A of the completion of the action. (Note: these validation and routing flows are not illustrated in the figure in order to simplify the diagram.)

2   Add-Bearer-to-Call.begin   Serving Node A to Relay Node 1

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

Addressed party's service component
information
  (PEP "B" ID, Service component
   characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
   characteristics, branch owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
  [(Resource 1 ID)]

**Processing upon receipt**: The selected relay node validates the request and determines the route and outgoing trunk facility of the network connection. The relay node commits to the request and issues the following information flow (3) towards the addressed serving node of the new party. The new connection branch may be through connected in backward direction.

3	Add-Bearer-to-Call.begin	Relay Node 1 to Serving Node B

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
  (PEP "B" ID, Service component
   characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Processing upon receipt: The addressed serving node selects the terminating interface. Since the interface is classified as a point-to-multipoint signalling interface, the addressed serving node cannot commit to the request and issues the following information flow (4) towards the selected interface. The network connection is backward through connected.

4	Add-Bearer-to-Call.begin	Serving Node B to Party B

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
  (PEP "B" ID, Service component
   characteristics)]

Call information
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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Processing upon receipt: The addressed terminal equipment determines that it can accept the request and issues information flow 5 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics, it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

5	Add-Bearer-to-Call.ready	Party B to Serving Node B

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
   characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

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 recorded for use in establishing the final connection after commitment. The serving node then clears the non-selected terminals. (Note: this action is not illustrated for simplicity.) The addressed serving node uses the network connection characteristics within the information flow to determine the network connection characteristics to be assigned to the network connection branches between party B and the network, and the network connection branches between the addressed serving node and the requesting relay node. It then issues information flow 6 and awaits commitment.

6	**Add-Bearer-to-Call.ready**		**Serving Node B to Relay Node 1**

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component information
  (PEP "B" ID, Service component
    characteristics)]

Call 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]

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
Service component list
  [(Resource 1 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the ready condition, and uses the network connection characteristics within the information flow to determine the network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 7 towards the requesting serving node and awaits commitment.

7	**Add-Bearer-to-Call.ready**		**Relay Node 1 to Serving Node A**

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component information
  (PEP "B" ID, Service component
    characteristics)]

Call 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]

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
Service component list
  [(Resource 1 ID)]

Initiation of information flow: Reception of information flows 7 and 13

Processing upon receipt: When the requesting serving node receives these information flows, it records the ready condition, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the requesting serving node, and the network connection branch characteristics between the serving node and the requesting party. The serving node then issues information flow 14 towards the requesting party, information flows 15 and 18 towards the associated relay nodes, and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

8	**Add-Bearer-to-Call.begin**		**Serving Node A to Relay Node 2**

Resource information
Session ID
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
    (PEP "A" ID, PEP "B" ID),

Addressed party's service component information
  (PEP "B" ID, Service component
    characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 2
  [Bearer "2" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
    (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
    characteristics, branch owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
Service component list
  [(Resource 2 ID)]

Processing upon receipt: The selected relay node validates the request and determines the route and outgoing trunk facility of the network connection. It determines that it will be the new branching point of the existing connection. The relay node commits to the request and issues the following information flow (9) towards the addressed serving node of the new party. The new connection branch may be through connected in backward direction.

9   Add-Bearer-to-Call.begin   Relay Node 2 to Serving Node B

Resource information
Session ID
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

Addressed party's service component
information
  (PEP "B" ID, Service component
   characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 2
  [Bearer "2" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]

Processing upon receipt: The addressed serving node selects the terminating interface. Since the interface is classified as a point-to-multipoint signalling interface, the addressed serving node cannot commit to the request and issues the following information flow (10) towards the selected interface. The network connection is backward through connected.

10   Add-Bearer-to-Call.begin   Serving Node B to Party B

Resource information
Session ID
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

Addressed party's service component
information
  (PEP "B" ID, Service component
   characteristics)]

Call information
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

Bearer information
Network connection 2
  [Bearer "2" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]

Processing upon receipt: The addressed terminal equipment determines that it can accept the request and issues information flow 11 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics, it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

11   Add-Bearer-to-Call.ready   Party B to Serving Node B

Resource information
Resource 2
  [Resource 2 ID, Resource type,

Addressed party's service component
information
  (PEP "B" ID, Service component
   characteristics)]

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

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]

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 recorded for use in establishment of the final connection after commitment is received. The serving node then clears the non-selected terminals. (Note: this action is not illustrated for simplicity.) The addressed serving node uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branches between party B and the network, and the network connection branch between the addressed serving node and the requesting relay node. Information flow 12 contains the network connection branch characteristics.

| 12 | Add-Bearer-to-Call.ready | Serving Node B to Relay Node 2 |

Resource information
Resource 2
[Resource 2 ID, Resource type,

Addressed party's service component information
(PEP "B" ID, Service component characteristics)]

Call 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]

Bearer information
Network connection 2
[Bearer "2" ID,

Addressed party's bearer branch information
[(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
[(PEP "B" ID, Service module characteristics
Service component list
[(Resource 2 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the ready condition, and uses the network connection characteristics within the information flow to determine the network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 13 towards the requesting serving node and awaits commitment.

| 13 | Add-Bearer-to-Call.ready | Relay Node 2 to Serving Node A |

Resource information
Resource 2
[Resource 2 ID, Resource type,

Addressed party's service component information
(PEP "B" ID, Service component characteristics)]

Call 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]

Bearer information
Network connection 2
[Bearer "2" ID,

Addressed party's bearer branch information
[(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
[(PEP "B" ID, Service module characteristics
Service component list
[(Resource 2 ID)]

Initiation of information flow: Reception of information flows 7 and 13

Processing upon receipt: When the requesting serving node receives these information flows, it records the ready condition, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the requesting serving node, and the network connection branch characteristics between the serving node and the requesting party. The serving node then issues information flow 14 towards the requesting party, information flows 15 and 18 towards the associated relay nodes, and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

14 Add-Bearer-to-Call.commit   **Serving Node A to Party A**

Resource information
Resource 1
[Resource 1 ID, Resource type,

Addressed party's service component information
(PEP "A" ID, Service component characteristics),

Remote party's service component information
(PEP "B" ID, Service component characteristics)]]
Resource 2
[Resource 2 ID, Resource type,

Addressed party's service component information
(PEP "A" ID, Service component characteristics),

Remote party's service component information
(PEP "B" ID, Service component characteristics)]]

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

Bearer information
Network connection 1
[Bearer "1" ID, Connection owner: PEP "A",

Addressed party's bearer branch information
[(PEP "A" ID, bearer branch characteristics),

Addressed party's service module information
[(PEP "A" ID, Service module characteristics
Service component list
[(Resource 1 ID)

Remote party's bearer branch information
[(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
[(PEP "B" ID, Service module characteristics
Service component list
[(Resource 1 ID)]]
Network connection 2
[Bearer "2" ID, Connection owner: PEP "A",

Addressed party's bearer branch information
[(PEP "A" ID, bearer branch characteristics),

Addressed party's service module information
[(PEP "A" ID, Service module characteristics
Service component list
[(Resource 2 ID)

Remote party's bearer branch information
[(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
[(PEP "B" ID, Service module characteristics
Service component list
[(Resource 2 ID)]]

Processing upon receipt: When the user equipment receives this information flow, it records the commitment, and if necessary, modifies the network connection characteristics in the backward direction, and notifies the user of the completion of the bearer establishment procedure. (Note: if the terminal or the user is not satisfied with the resultant network connection characteristics, the party could be detached from the connection or the party could be released.)

15 Add-Bearer-to-Call.commit   **Serving Node A to Relay Node 1**

Resource information
Resource 1
[Resource 1 ID, Resource type,

Addressed party's service component information
(PEP "B" ID, Service component characteristics)]

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

Bearer information
Network connection 1
[Bearer "1" ID,

Addressed party's bearer branch information
[(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
[(PEP "B" ID, Service module characteristics
Service component list
[(Resource 1 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 16 towards the requesting serving node and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction.

16	Add-Bearer-to-Call.commit		Relay Node 1 to Serving Node B

Resource information
<u>Resource 1</u>
  [Resource 1 ID, Resource type,

Addressed party's service component information
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
<u>Network connection 1</u>
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: When the addressed serving node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the addressed serving node, and the network connection branch characteristics between the serving node and the addressed party. The serving node then issues information flow 17 towards the addressed party and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

17	Add-Bearer-to-Call.commit		Serving Node B to Party B

Resource information
<u>Resource 1</u>
  [Resource 1 ID, Resource type,

Addressed party's service component information
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
<u>Network connection 1</u>
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

18	Add-Bearer-to-Call.commit		Serving Node A to Relay Node 2

Resource information
<u>Resource 2</u>
  [Resource 2 ID, Resource type,

Addressed party's service component information
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
<u>Network connection 2</u>
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 19 towards the requesting serving node and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction.

19	Add-Bearer-to-Call.commit		Relay Node 2 to Serving Node B

Resource information
Resource 2
  [Resource 2 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: When the addressed serving node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the addressed serving node, and the network connection branch characteristics between the serving node and the addressed party. The serving node then issues information flow 20 towards the addressed party and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

20	Add-Bearer-to-Call.commit		Serving Node B to Party B

Resource information
Resource 2
  [Resource 2 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

8   Attachment of one or more existing parties to one or more existing network connections

8.1   Attach one existing party to one or more existing connections

8.1.1   Attach one existing party to one existing connection

In this example, a call association exists between parties A, B and D, and a network connection exists between party A and party D. The party A, which is the root of the network connection and the call owner, requests that party B is to be attached to this connection. This example also assumes that party B is connected to a point-to-multipoint signalling interface. The network does not perform a look-ahead procedure before progressing with the connection branch establishment. It is assumed that the new branching point will be at the relay node. Notification that party B has been attached to the connection will be sent to party D at the completion of the procedure. Figure 8-1 illustrates the before and after view of this example.

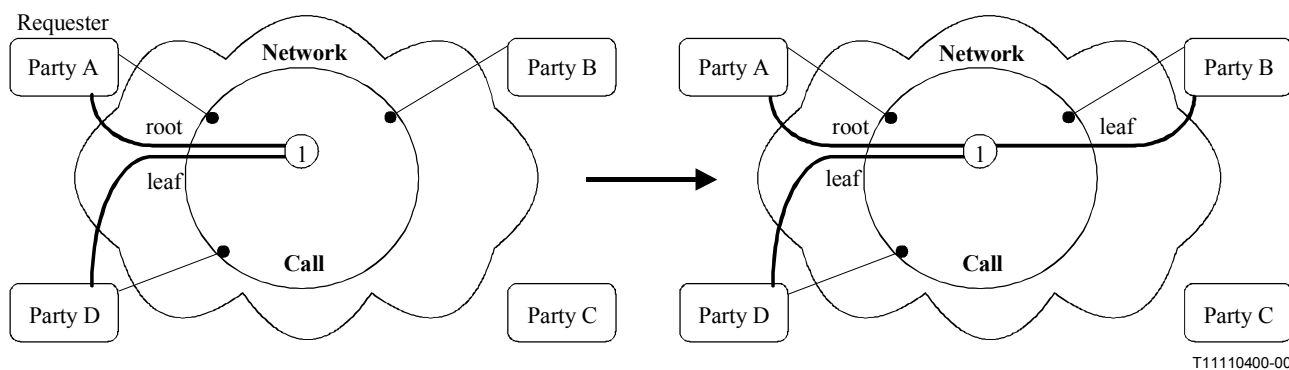**Figure 8-1 – Call and Bearer transition diagram**

The signalling capability of coordinated control for adding a new party and attaching this party to an existing connection is illustrated in Figure 8-2.
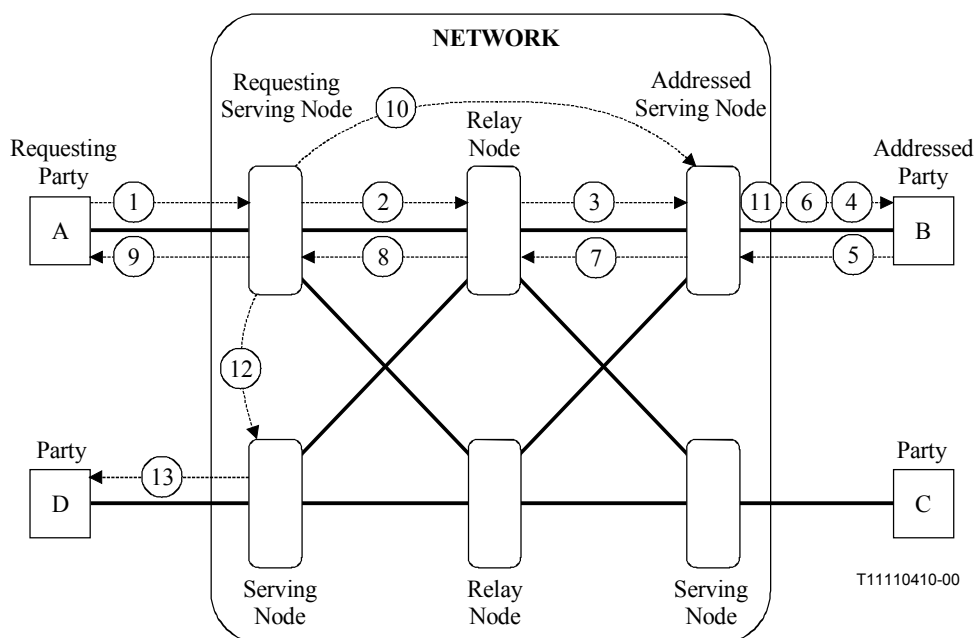

Figure 8-2 – Attach one existing party requested by a party which is the call owner and the root of the existing network connection

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

1	**Attach-Party-to-Bearer.ready**		**Party A to Serving Node A**

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Addressed party's service component information
  (PEP "B" ID, Service component
   characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
   characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Initiation of information flow: The user initiates an add party to bearer procedure request.

Processing upon receipt: The requester's serving node validates the request and the requesting party and determines the route and outgoing trunk facility towards the addressed serving node associated with the addressed party. (Note: these validation and routing flows are not illustrated in the figure in order to simplify the diagram.) It determines that it will not be the branching point of the network connection. It therefore relays the following information flow (2) towards the selected relay node.

2	**Attach-Party-to-Bearer.ready**		**Serving Node A to Relay Node 1**

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Addressed party's service component information
  (PEP "B" ID, Service component
   characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
   characteristics, branch owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Processing upon receipt: The selected relay node validates the request and determines the route and outgoing trunk facility of the network connection. It determines that it will be the new branching point of the existing connection. The relay node commits to the request and issues the following information flow (3) towards the addressed serving node of the new party. The new connection branch may be through connected in backward direction.

3	**Add-Bearer-to-Call-up.ready**		**Relay Node 1 to Serving Node B**

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Addressed party's service component information
  (PEP "B" ID, Service component
   characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref: b) 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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Processing upon receipt: The addressed serving node selects the terminating interface. Since the interface is classified as a point-to-multipoint signalling interface, the addressed serving node cannot commit to the request and issues the following information flow (4) towards the selected interface. The network connection is backward through connected.

| 4 | Add-Bearer-to-Call.begin | | Serving Node B to Party B |

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

**Addressed party's service component
information**
   (PEP "B" ID, Service component
    characteristics)]

Call information
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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: The addressed terminal equipment determines that it can accept the request and issues information flow 5 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics, it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

| 5 | Add-Bearer-to-Call.ready | | Party B to Serving Node B |

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
   (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

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 6. The serving node then clears the non-selected terminals. (Note: this action is not illustrated for simplicity.) The addressed serving node uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branches between party B and the network, and the network connection branches between the addressed serving node and the requesting relay node. Information flow 6 towards the terminal and information flow 7 contain these network connection branch characteristics. The network connection is through connected in the forward direction, and if necessary, modifies the backward network connection characteristics.

| 6 | Add-Bearer-to-call.commit | | Serving Node B to Party B |

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
   (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

7   Add-Bearer-to-Call.commit   Serving Node B to Relay Node 1

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 1**
  [Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID,
                                           (SN(A):ref.a – SN(B):ref.b) ID,
Addressed party's service component **Addressed party Information**   **Addressed party's bearer branch information**
information   [PEP "B" ID, Network address]   [(PEP "B" ID, bearer branch characteristics),
  (PEP "B" ID, Service component
    characteristics)]   **Addressed party's service module information**
                                                                                  [(PEP "B" ID, Service module characteristics
                                                                                Service component list
                                                                                  [(Resource 1 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 8 towards the requesting serving node and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction.

8   Attach-Party-to-Bearer.commit   Relay Node 1 to Serving Node A

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 1**
  [Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID,
                                           (SN(A):ref.a – SN(B):ref.b) ID,
Addressed party's service component **Addressed party Information**   **Addressed party's bearer branch information**
information   [PEP "B" ID, Network address]   [(PEP "B" ID, bearer branch characteristics),
  (PEP "B" ID, Service component
    characteristics)]   **Addressed party's service module information**
                                                                                  [(PEP "B" ID, Service module characteristics
                                                                                Service component list
                                                                                  [(Resource 1 ID)]

Processing upon receipt: When the requesting serving node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between the relay node and the requesting serving node, and the network connection branch characteristics between the serving node and the requesting party. The serving node then issues information flow 9 towards the requesting party and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction. The requesting serving node notifies party B that party D is a member of the connection via information flow 10. The serving node also notifies party D of the change of the connection status by issuing information flow 12.

9   Attach-Party-to-Bearer.commit   **Serving Node A to Party A**

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "A" ID, Service component
   characteristics),

Remote party's service component
information
  (PEP "B" ID, Service component
   characteristics)]]

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

Bearer information
Network connection 1
  [Bearer "1" ID, Connection owner: PEP "A",

Addressed party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]]

Processing upon receipt: When the user equipment receives this information flow, it records the commitment, and if necessary, modifies the network connection characteristics in the backward direction, and notifies the user of the completion of the bearer establishment procedure. (Note: if the terminal or the user is not satisfied with the resultant network connection characteristics, the party could be detached from the connection or the party could be released.)

10   Notify-Bearer-Change.indication   **Serving Node A to Serving Node B**

Resource information
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's service component
information
  (PEP "D" ID, Service component
   characteristics)

Remote party's service component
information
  (PEP "A" ID, Service component
   characteristics)]]

Call 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(D):ref.d) ID,
Remote party Information
  [PEP "D" ID, Network address],
  Party Owner: PEP "A" ID,
Addressed party Information
  [PEP "B" ID, Network address],
  Party Owner: PEP "A" ID,
Event: Party D attached to
  Network Connection 1

Bearer information
Network connection 1
  [Bearer "1" ID,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]]

Initiation of information flow: Processing of information flow 8

Enabling Condition: Notify option active

Processing upon receipt: When the serving node receives this information flow, it records that party D's service characteristics associated with this network connection have been added to the network connection information. This notify information flow is forwarded to party B via information flow 11.

11   Notify-Bearer-Change.indication   Serving Node B to Party B

Resource information
Resource 1
[Resource 1 ID, Resource type,
Parties communicating
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's service component
information
  (PEP "D" ID, Service component
    characteristics),

Remote party's service component
information
  (PEP "A" ID, Service component
    characteristics)]

Call information
Call Control Segment ID,
Remote party Information
  [PEP "D" ID, Network address],
  Party Owner: PEP "A" ID,
Addressed party Information
  [PEP "B" ID, Network address],
  Party Owner: PEP "A" ID,
Event: Party D attached to
  Network Connection 1

Bearer information
Network connection 1
  [Bearer "1" ID,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
  Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]]

Enabling Condition: Notify option active

Processing upon receipt: When the terminal receives this information flow, it records that party D has been attached to the network connection and will inform the user of this bearer state change.

---

12   Notify-Bearer-Change.indication   Serving Node A to Serving Node D

Resource information
Resource 1
[Resource 1 ID, Resource type,
Parties communicating
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's service component
information
  (PEP "B" ID, Service component
    characteristics)

Remote party's service component
information
  (PEP "A" ID, Service component
    characteristics)]]

Call 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 attached to
  Network Connection 1

Bearer information
Network connection 1
  [Bearer "1" ID,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]]

Initiation of information flow: Processing of information flow 8

Enabling Condition: Notify option active

Processing upon receipt: When the serving node receives this information flow, it records that party B has been attached to the network connection. This notify information flow is forwarded to party D via information flow 13.

13	Notify-Bearer-Change.indication	Serving Node D to Party D

Resource information
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's service component information
  (PEP "B" ID, Service component
   characteristics),

Remote party's service component information
  (PEP "A" ID, Service component
   characteristics)]]

Call 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 attached to
  Network Connection 1

Bearer information
Network connection 1
  [Bearer "1" ID,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]]

Enabling Condition: Notify option active

Processing upon receipt: When the terminal receives this information flow, it records that party B has been attached to the network connection and will inform the user of this bearer state change.

8.1.2 Attach one existing party to two existing connections

The following example assumes that a call association exists between party "A", party "D" and Party "B". Party "A" requests the attachment of party "B" to the existing bearers 1 and 2. In the example, these two bearers are routed independently through the network. Upon the completion of the attachment, party "D" will be notified that party "B" has been attached to both bearers. Figure 8-3 illustrates the initial and final call and bearer configuration.
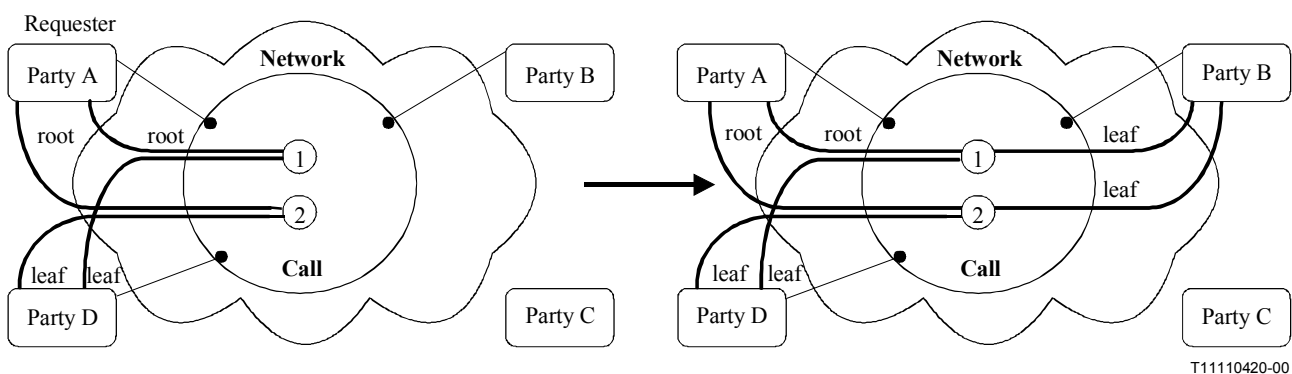
Figure 8-3 – Call and Bearer transition diagram

The signalling capability of coordinated control for adding a new party and attaching this party to an existing connection is illustrated in Figure 8-4.
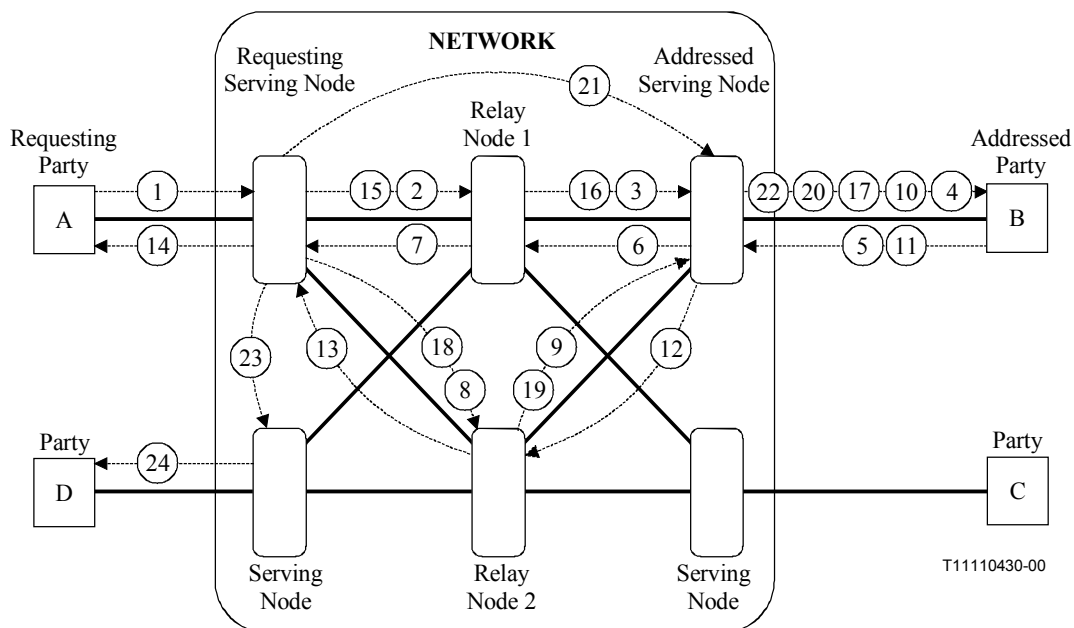
Figure 8.4 – Attachment of a party to two existing bearers

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

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

---

1   **Attach-Party-to-Bearer.ready**   **Party A to Serving Node A**

Resource information
Session ID
Resource 1
   [Resource 1 ID, Resource type,
   Parties communicating
    (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
   (PEP "B" ID, Service component
    characteristics)]
Resource 2
   [Resource 2 ID, Resource type,
   Parties communicating
    (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
   (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
   [Bearer "1" ID, Bearer type,
   Parties connected
    (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
   [(PEP "B" ID, Transit Network Selection, bearer branch
    characteristics),

Addressed party's service module information
   [(PEP "B" ID, Service module characteristics
   Service component list
    [(Resource 1 ID)]
Network connection 2
   [Bearer "2" ID, Bearer type,
   Parties connected
    (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
   [(PEP "B" ID, Transit Network Selection, bearer branch
    characteristics),

Addressed party's service module information
   [(PEP "B" ID, Service module characteristics
   Service component list
    [(Resource 2 ID)]

Initiation of information flow: The user initiates an add party to bearer procedure request.

Processing upon receipt: The requester's serving node validates the request and the requesting party and determines that the most efficient handling of these bearers would be that they be extended from the relay nodes associated with each bearer. The SN then issues information flows 2 and 8 and awaits the confirmation of both bearer branch establishments before notifying Party A of the completion of the action. (Note: these validation and routing flows are not illustrated in the figure in order to simplify the diagram.)

2   Attach-Party-to-Bearer.begin   Serving Node A to Relay Node 1

Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,**	**Network connection 1**
Resource 1	**Direct Call association**	[Bearer "1" ID, Bearer type, Connection owner: PEP "A",
[Resource 1 ID, Resource type,	(SN(A):ref.a – SN(B):ref b) ID,	**Parties connected**
Parties communicating	**Call Owner: PEP "A" ID**	(PEP "A" ID, PEP "B" ID),
(PEP "A" ID, PEP "B" ID),	**Addressed party Information**	
	[PEP "B" ID, Network address],	**Addressed party's bearer branch information**
Addressed party's service component	Party Owner: PEP "A" ID,	[(PEP "B" ID, Transit Network Selection, bearer branch
information	**Requesting party information**	characteristics, branch owner: PEP "A" ID),
(PEP "B" ID, Service component	[PEP "A" ID, Network Address]	
characteristics)]	Party Owner: PEP "A" ID	**Addressed party's service module information**
		[(PEP "B" ID, Service module characteristics
		Service component list
		[(Resource 1 ID)]

Processing upon receipt: The selected relay node validates the request and determines the route and outgoing trunk facility of the network connection. It determines that it will be the new branching point of the existing connection. The relay node commits to the request and issues the following information flow (3) towards the addressed serving node of the new party. The new connection branch may be through connected in backward direction.

3   Add-Bearer-to-Call.begin   Relay Node 1 to Serving Node B

Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,**	**Network connection 1**
Resource 1	**Direct Call association**	[Bearer "1" ID, Bearer type, Connection owner: PEP "A",
[Resource 1 ID, Resource type,	(SN(A):ref.a – SN(B):ref b) ID,	**Parties connected**
Parties communicating	**Call Owner: PEP "A" ID**	(PEP "A" ID, PEP "B" ID),
(PEP "A" ID, PEP "B" ID),	**Addressed party Information**	
	[PEP "B" ID, Network address],	**Addressed party's bearer branch information**
Addressed party's service component	Party Owner: PEP "A" ID,	[(PEP "B" ID, bearer branch characteristics, branch
information	**Requesting party information**	owner: PEP "A" ID),
(PEP "B" ID, Service component	[PEP "A" ID, Network Address]	
characteristics)]	Party Owner: PEP "A" ID	**Addressed party's service module information**
		[(PEP "B" ID, Service module characteristics
		Service component list
		[(Resource 1 ID)]

Processing upon receipt: The addressed serving node selects the terminating interface. Since the interface is classified as a point-to-multipoint signalling interface, the addressed serving node cannot commit to the request and issues the following information flow (4) towards the selected interface. The network connection is backward through connected.

4   Add-Bearer-to-Call.begin   Serving Node B to Party B

Resource information	**Call information**	**Bearer information**
Session ID	**Call Control Segment ID,**	**Network connection 1**
Resource 1	**Call Owner: PEP "A" ID**	[Bearer "1" ID, Bearer type, Connection owner: PEP "A",
[Resource 1 ID, Resource type,	**Addressed party Information**	**Parties connected**
Parties communicating	[PEP "B" ID, Network address],	(PEP "A" ID, PEP "B" ID),
(PEP "A" ID, PEP "B" ID),	Party Owner: PEP "A" ID,	
	Requesting party information	**Addressed party's bearer branch information**
Addressed party's service component	[PEP "A" ID, Network Address]	[(PEP "B" ID, bearer branch characteristics, branch
information	Party Owner: PEP "A" ID	owner: PEP "A" ID),
(PEP "B" ID, Service component		
characteristics)]		**Addressed party's service module information**
		[(PEP "B" ID, Service module characteristics
		Service component list
		[(Resource 1 ID)]

Processing upon receipt: The addressed terminal equipment determines that it can accept the request and issues information flow 5 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics, it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

5   Add-Bearer-to-Call.ready   **Party B to Serving Node B**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID**   **Network connection 1**
  [Resource 1 ID, Resource type,   **Addressed party Information**   [Bearer "1" ID,
    [PEP "B" ID, Network address]
Addressed party's service component   **Addressed party's bearer branch information**
information   [(PEP "B" ID, bearer branch characteristics),
  (PEP "B" ID, Service component
    characteristics)]   **Addressed party's service module information**
      [(PEP "B" ID, Service module characteristics
      Service component list
        [(Resource 1 ID)]

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 recorded for use in establishing the final connection after commitment. The serving node then clears the non-selected terminals. (Note: this action is not illustrated for simplicity.) The addressed serving node uses the network connection characteristics within the information flow to determine the network connection characteristics to be assigned to the network connection branches between party B and the network, and the network connection branches between the addressed serving node and the requesting relay node. It then issues information flow 6 and awaits commitment.

6   Add-Bearer-to-Call.ready   **Serving Node B to Relay Node 1**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 1**
  [Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID,
    (SN(A):ref.a – SN(B):ref.b) ID,
Addressed party's service component **Addressed party Information**   **Addressed party's bearer branch information**
information   [PEP "B" ID, Network address]   [(PEP "B" ID, bearer branch characteristics),
  (PEP "B" ID, Service component
    characteristics)]   **Addressed party's service module information**
      [(PEP "B" ID, Service module characteristics
      Service component list
        [(Resource 1 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the ready condition, and uses the network connection characteristics within the information flow to determine the network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 7 towards the requesting serving node and awaits commitment.

7   Attach-Party-to-Bearer.ready   Relay Node 1 to Serving Node A

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

Call 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]

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Initiation of information flow: Reception of information flows 7 and 13

Processing upon receipt: When the requesting serving node receives these information flows, it records the ready condition, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the requesting serving node, and the network connection branch characteristics between the serving node and the requesting party. The serving node then issues information flow 14 towards the requesting party, information flows 15 and 18 towards the associated relay nodes, information flows 21 and 23 towards the serving nodes associated with parties B and D, and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

8   Attach-Party-to-Bearer.begin   Serving Node A to Relay Node 2

Resource information
Session ID
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
  (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 2
  [Bearer "2" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
    characteristics, branch owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: The selected relay node validates the request and determines the route and outgoing trunk facility of the network connection. It determines that it will be the new branching point of the existing connection. The relay node commits to the request and issues the following information flow (9) towards the addressed serving node of the new party. The new connection branch may be through connected in backward direction.

9   Add-Bearer-to-Call.begin   Relay Node 2 to Serving Node B

Resource information
Session ID
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
  (PEP "A" ID, PEP "B" ID),

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref 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

Bearer information
Network connection 2
  [Bearer "2" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: The addressed serving node selects the terminating interface. Since the interface is classified as a point-to-multipoint signalling interface, the addressed serving node cannot commit to the request and issues the following information flow (10) towards the selected interface. The network connection is backward through connected.

10	**Add-Bearer-to-Call.begin**	Serving Node B to Party B

Resource information
Session ID
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID),

Addressed party's service component information
  (PEP "B" ID, Service component
   characteristics)]

Call information
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

Bearer information
Network connection 2
  [Bearer "2" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]

Processing upon receipt: The addressed terminal equipment determines that it can accept the request and issues information flow 11 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics, it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

11	**Add-Bearer-to-Call.ready**	Party B to Serving Node B

Resource information
Resource 2
  [Resource 2 ID, Resource type,

Addressed party's service component information
  (PEP "B" ID, Service component
   characteristics)]

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

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]

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 recorded for use in establishment of the final connection after commitment is received. The serving node then clears the non-selected terminals. (Note: this action is not illustrated for simplicity.) The addressed serving node uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branches between party B and the network, and the network connection branch between the addressed serving node and the requesting relay node. Information flow 12 contains the network connection branch characteristics.

12	**Add-Bearer-to-Call.ready**	Serving Node B to Relay Node 2

Resource information
Resource 2
  [Resource 2 ID, Resource type,

Addressed party's service component information
  (PEP "B" ID, Service component
   characteristics)]

Call 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]

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the ready condition, and uses the network connection characteristics within the information flow to determine the network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 13 towards the requesting serving node and awaits commitment.

13   Attach-Party-to-Bearer.ready   **Relay Node 2 to Serving Node A**

Resource information   **Call information**   **Bearer information**
Resource 2   **Call Control Segment ID,**   **Network connection 2**
[Resource 2 ID, Resource type,   **Direct Call association**   [Bearer "2" ID,
                                          (SN(A):ref.a – SN(B):ref.b) ID,
Addressed party's service component **Addressed party Information**   **Addressed party's bearer branch information**
information   [PEP "B" ID, Network address]   [(PEP "B" ID, bearer branch characteristics),
(PEP "B" ID, Service component
  characteristics)]   **Addressed party's service module information**
                                                                                    [(PEP "B" ID, Service module characteristics
                                                                                      Service component list
                                                                                      [(Resource 2 ID)]

Initiation of information flow: Reception of information flows 7 and 13

Processing upon receipt: When the requesting serving node receives these information flows, it records the ready condition, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the requesting serving node, and the network connection branch characteristics between the serving node and the requesting party. The serving node then issues information flow 14 towards the requesting party, information flows 15 and 18 towards the associated relay nodes, information flows 21 and 23 towards the serving nodes associated with parties B and D, and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

14   Attach-Party-to-Bearer.commit   **Serving Node A to Party A**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID**   **Network connection 1**
[Resource 1 ID, Resource type,   **Addressed party Information**   [Bearer "1" ID, Connection owner: PEP "A",
                                          [PEP "A" ID, Network address],
Addressed party's service component   Party Owner: PEP "A" ID,   **Addressed party's bearer branch information**
information   [(PEP "A" ID, bearer branch characteristics),
(PEP "A" ID, Service component
  characteristics),   **Addressed party's service module information**
                                                                                    [(PEP "A" ID, Service module characteristics
Remote party's service component   **Service component list**
information   [(Resource 1 ID)
(PEP "B" ID, Service component
  characteristics)]]   **Remote party's bearer branch information**
Resource 2   [(PEP "B" ID, bearer branch characteristics),
[Resource 2 ID, Resource type,
                                                                                    Remote party's service module information
Addressed party's service component   [(PEP "B" ID, Service module characteristics
information   **Service component list**
(PEP "A" ID, Service component   [(Resource 1 ID)]]
  characteristics),   **Network connection 2**
                                                                                    [Bearer "2" ID, Connection owner: PEP "A",
Remote party's service component
information   **Addressed party's bearer branch information**
(PEP "B" ID, Service component   [(PEP "A" ID, bearer branch characteristics),
  characteristics)]]
                                                                                    Addressed party's service module information
                                                                                    [(PEP "A" ID, Service module characteristics
                                                                                      Service component list
                                                                                      [(Resource 2 ID)

                                                                                    Remote party's bearer branch information
                                                                                    [(PEP "B" ID, bearer branch characteristics),

                                                                                    Remote party's service module information
                                                                                    [(PEP "B" ID, Service module characteristics
                                                                                      Service component list
                                                                                      [(Resource 2 ID)]]

Processing upon receipt: When the user equipment receives this information flow, it records the commitment, and if necessary, modifies the network connection characteristics in the backward direction, and notifies the user of the completion of the bearer establishment procedure. (Note: if the terminal or the user is not satisfied with the resultant network connection characteristics, the party could be detached from the connection or the party could be released.)

15   Attach-Party-to-Bearer-to-Call.commit   Serving Node A to Relay Node 1

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 16 towards the requesting serving node and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction.

16   Add-Bearer-to-Call.commit   Relay Node 1 to Serving Node B

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: When the addressed serving node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the addressed serving node, and the network connection branch characteristics between the serving node and the addressed party. The serving node then issues information flow 17 towards the addressed party and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

17   Add-Bearer-to-Call.commit   Serving Node B to Party B

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

18	Attach-Party-to-Bearer.commit		Serving Node A to Relay Node 2

Resource information
Resource 2
  [Resource 2 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: When the relay node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flow to determine the final network connection characteristics to be assigned to the network connection branch between serving node B and the relay node, and the network connection branch characteristics between the relay node and the requesting serving node. The relay node then issues information flow 19 towards the requesting serving node and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics in the backward direction.

19	Add-Bearer-to-Call.commit		Relay Node 2 to Serving Node B

Resource information
Resource 2
  [Resource 2 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: When the addressed serving node receives this information flow, it records the commitment, and uses the network connection characteristics within the information flows to determine the final network connection characteristics to be assigned to the network connection branches between the relay nodes and the addressed serving node, and the network connection branch characteristics between the serving node and the addressed party. The serving node then issues information flow 20 towards the addressed party and performs forward through-connect of the network connections, and if necessary, modifies the network connection characteristics in the backward direction.

20	Add-Bearer-to-Call.commit		Serving Node B to Party B

Resource information
Resource 2
  [Resource 2 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

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

Bearer information
Network connection 2
  [Bearer "2" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 2 ID)]

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

21   Notify-Bearer-Change.indication   Serving Node A to Serving Node B

Resource information
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

**Remote party's service component
information**
   (PEP "D" ID, Service component
    characteristics)

**Remote party's service component
information**
   (PEP "A" ID, Service component
    characteristics)]]
Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

**Remote party's service component
information**
   (PEP "D" ID, Service component
    characteristics)

**Remote party's service component
information**
   (PEP "A" ID, Service component
    characteristics)]]

Call 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(D):ref.d) ID,
Remote party Information
   [PEP "D" ID, Network address],
   Party Owner: PEP "A" ID,
Addressed party Information
   [PEP "B" ID, Network address],
   Party Owner: PEP "A" ID,
Event: Party D attached to
   Network Connection 1

Bearer information
Network connection 1
  [Bearer "1" ID,
  Parties connected
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
   [(PEP "D" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
   [(PEP "D" ID, Service module characteristics
   Service component list
    [(Resource 1 ID)

Remote party's bearer branch information
   [(PEP "A" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
   [(PEP "A" ID, Service module characteristics
   Service component list
    [(Resource 1 ID)]]
Network connection 2
  [Bearer "2" ID,
  Parties connected
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
   [(PEP "D" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
   [(PEP "D" ID, Service module characteristics
   Service component list
    [(Resource2 ID)

Remote party's bearer branch information
   [(PEP "A" ID, bearer branch characteristics, branch
    owner: PEP "A" ID),

Remote party's service module information
   [(PEP "A" ID, Service module characteristics
   Service component list
    [(Resource 2 ID)]]

Initiation of information flow: Processing of information flow 7 and 13

Enabling Condition: Notify option active

Processing upon receipt: When the serving node receives this information flow, it records that party D's service characteristics associated with this network connection have been added to the network connection information. This notify information flow is forwarded to party B via information flow 22.

Resource information

Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

**Remote party's service component
information**
  (PEP "D" ID, Service component
   characteristics),

**Remote party's service component
information**
  (PEP "A" ID, Service component
   characteristics)]

Resource 2
  [Resource 2 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "D" ID),

**Remote party's service component
information**
  (PEP "D" ID, Service component
   characteristics),

**Remote party's service component
information**
  (PEP "A" ID, Service component
   characteristics)]

Call information

Call Control Segment ID,
Remote party Information
  [PEP "D" ID, Network address],
  Party Owner: PEP "A" ID,
Addressed party Information
  [PEP "B" ID, Network address],
  Party Owner: PEP "A" ID,
Event: Party D attached to
  Network Connection 1

Bearer information

Network connection 1
  [Bearer "1" ID,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
  Service component list
   [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Network connection 2
  [Bearer "2" ID,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
  Service component list
   [(Resource 2 ID),

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]

Enabling Condition: Notify option active

Processing upon receipt: When the terminal receives this information flow, it records that party D has been attached to the network connection and will inform the user of this bearer state change.

Resource information

Resource 1
[Resource 1 ID, Resource type,
Parties communicating
 (PEP "A" ID, PEP "B" ID, PEP "D" ID),

**Remote party's service component
information**
 (PEP "B" ID, Service component
  characteristics)

**Remote party's service component
information**
 (PEP "A" ID, Service component
  characteristics)]]

Resource 2
[Resource 2 ID, Resource type,
Parties communicating
 (PEP "A" ID, PEP "B" ID, PEP "D" ID),

**Remote party's service component
information**
 (PEP "B" ID, Service component
  characteristics)

**Remote party's service component
information**
 (PEP "A" ID, Service component
  characteristics)]]

Call 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 attached to
 Network Connection 1

Bearer information

Network connection 1
[Bearer "1" ID,
Parties connected
(PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
 [(PEP "B" ID, bearer branch characteristics, branch
  owner: PEP "A" ID),

Remote party's service module information
 [(PEP "B" ID, Service module characteristics
 Service component list
  [(Resource 1 ID)

Remote party's bearer branch information
 [(PEP "A" ID, bearer branch characteristics, branch
  owner: PEP "A" ID),

Remote party's service module information
 [(PEP "A" ID, Service module characteristics
 Service component list
  [(Resource 1 ID)]]

Network connection 2
[Bearer "2" ID,
Parties connected
(PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
 [(PEP "B" ID, bearer branch characteristics, branch
  owner: PEP "A" ID),

Remote party's service module information
 [(PEP "B" ID, Service module characteristics
 Service component list
  [(Resource 2 ID)

Remote party's bearer branch information
 [(PEP "A" ID, bearer branch characteristics, branch
  owner: PEP "A" ID),

Remote party's service module information
 [(PEP "A" ID, Service module characteristics
 Service component list
  [(Resource 2 ID)]]

Initiation of information flow: Processing of information flow 7 and 13

Enabling Condition: Notify option active

Processing upon receipt: When the serving node receives this information flow, it records that party B has been attached to the network connection. This notify information flow is forwarded to party D via information flow 24.

| 24 | Notify-Bearer-Change.indication | Serving Node D to Party D |

Resource information

Resource 1
 [Resource 1 ID, Resource type,
 Parties communicating
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's service component information
  (PEP "B" ID, Service component characteristics),

Remote party's service component information
  (PEP "A" ID, Service component characteristics)]]

Resource 2
 [Resource 2 ID, Resource type,
 Parties communicating
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's service component information
  (PEP "B" ID, Service component characteristics),

Remote party's service component information
  (PEP "A" ID, Service component characteristics)]]

Call 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 attached to
  Network Connection 1

Bearer information

Network connection 1
 [Bearer "1" ID,
 Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch owner: PEP "A" ID),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]]
Network connection 2
 [Bearer "2" ID,
 Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "D" ID),

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch owner: PEP "A" ID),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 2 ID),

Remote party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics, branch owner: PEP "A" ID),

Remote party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
   [(Resource 2 ID)]]

Enabling Condition: Notify option active

Processing upon receipt: When the terminal receives this information flow, it records that party B has been attached to the network connection and will inform the user of this bearer state change.

8.2 Attach two existing parties to one or existing connections

8.2.1 Attach two existing parties to one existing connection

In this example, a call association exists between parties A, B, C and D and a network connection exists between party A and party D. The party A, which is the root of the network connection and the call owner, requests that parties B and C be attached to this connection. This example also assumes that both parties B and C are connected to a point-to-multipoint signalling interface. The network does not perform a look-ahead procedure before progressing with the connection branch establishment. It is assumed that the new branching point will be at the relay node 1 for party B and at serving node A for party C. Notification of their attachment will be sent to party D at the completion of the procedure. Figure 8-5 illustrates the before and after view of this example.
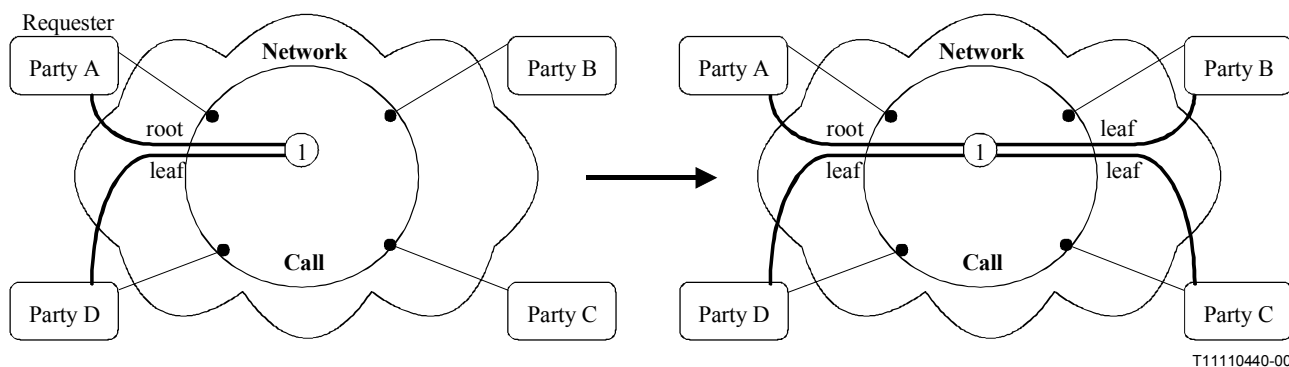
Figure 8-5 – Call and Bearer transition diagram

The signalling capability of coordinated control for adding a new party and attaching this party to an existing connection is illustrated in Figure 8-6.
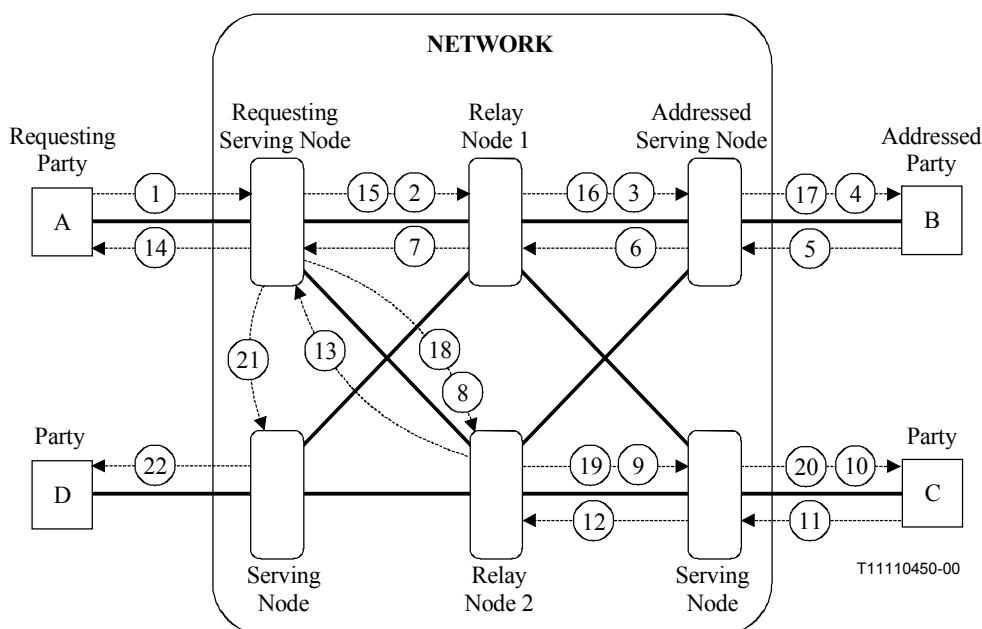
Figure 8-6 – Attach two existing parties requested by a party which is the call owner and the root of the existing network connection

The actions illustrated in Figure 8-6 are as follows.

Requesting party's terminal equipment issues the following information flow towards its serving node. The terminal equipment then attaches to the backward portion of the network connection assuming the bearer characteristics specified in the outgoing request.

1   Attach-Party-to-Bearer.ready   Party A to serving Node A

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "C" ID,
    PEP "D" ID),

**Addressed party's service component
information**
   (PEP "B", Service component
    characteristics),

**Addressed party's service component
information**
   (PEP "C" ID, Service component
    characteristics)]

Call information
Call Control Segment ID
Addressed party Information
  [PEP "B" ID, Network address],
Addressed party Information
  [PEP "C" ID, Network address],
Remote party Information
  [PEP "D" ID, Network address],
Requesting party information
  [PEP "A" ID, Network Address]

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type,
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
   characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID),

Addressed party's bearer branch information
  [(PEP "C" ID, Transit Network Selection, bearer branch
   characteristics,),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Initiation of information flow: The user initiates an add party to bearer procedure request.

Processing upon receipt: The requester's serving node validates the request and the requesting party and determines the route and outgoing trunk facility towards the addressed serving node associated with the addressed party. (Note: these validation and routing flows are not illustrated in the figure in order to simplify the diagram.) For this example, the network connection will be routed through separate relay nodes, two signalling ports are needed, the serving node cannot commit to the request and therefore issues information flows 2 and 8 towards the selected relay nodes. The new network connection branch is backward through connected.

2   Attach-Party-to-Bearer.begin   Serving Node A to Relay Node 1

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "C" ID,
    PEP "D" ID),

**Addressed party's service component
information**
   (PEP "B" ID, Service component
    characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B):ref: 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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "B" ID, Transit Network Selection, bearer branch
   characteristics, branch owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
   [(Resource 1 ID),

Processing upon receipt: The selected relay node validates the request and determines the route and outgoing trunk facility. The selected relay node issues information flow 3 towards the addressed serving node. The network connection branch in the relay node is backward through connected.

| 3 | Add-Bearer-to-Call.begin | Relay Node 1 to Serving Node B |

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
  (PEP "A" ID, PEP "B" ID, PEP "C" ID,
  PEP "D" ID),

  **Addressed party's service component
  information**
  (PEP "B" ID, Service component
  characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(B)::ref: 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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

  Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
  owner: PEP "A" ID),

  Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
  [(Resource 1 ID),

Processing upon receipt: The addressed serving node selects the terminating interface facility. Since the interface is classified as a multiple signalling entity interface, the serving node cannot commit to the addressed end point and therefore issues information flow 4 towards the selected interface facility. The network connection is backward through connected.

| 4 | Add-Bearer-to-Call.begin | Serving Node B to Party B |

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
  (PEP "A" ID, PEP "B" ID, PEP "C" ID,
  PEP "D" ID),

  **Addressed party's service component
  information**
  (PEP "B" ID, Service component
  characteristics)]

Call information
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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

  Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics, branch
  owner: PEP "A" ID),

  Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
  [(Resource 1 ID),

Processing upon receipt: The addressed terminal equipment determines that it can accept the request and issues information flow 5 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics, it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

| 5 | Add-Bearer-to-Call.ready | Party B to Serving Node B |

Resource information
Resource 1
  [Resource 1 ID, Resource type,

  **Addressed party's service component
  information**
  (PEP "B" ID, Service component
  characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

  Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

  Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
  [(Resource 1 ID),

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 recorded and then the serving node clears the non-selected terminals. (Note: this clearing action is not illustrated for simplicity of the flow diagram.) The serving node issues information flow 6 towards its associated relay node.

6 Add-Bearer-to-Call.ready   Serving Node B to Relay Node 1

Resource information
Resource 1
 [Resource 1 ID, Resource type,

Addressed party's service component
information
 (PEP "B" ID, Service component
  characteristics)]

Call 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],

Bearer information
Network connection 1
 [Bearer "1" ID,

Addressed party's bearer branch information
 [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
 [(PEP "B" ID, Service module characteristics
 Service component list
  [(Resource 1 ID),

Processing upon receipt: When the selected relay nodes receive the above responses, it records them and relays the responses to the requesting serving node in the form illustrated by the information flow 7.

7 Attach-Party-to-Bearer.ready   Relay Node 1 to Serving Node A

Resource information
Resource 1
 [Resource 1 ID, Resource type,

Addressed party's service component
information
 (PEP "B" ID, Service component
  characteristics)]

Call 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],

Bearer information
Network connection 1
 [Bearer "1" ID,

Addressed party's bearer branch information
 [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
 [(PEP "B" ID, Service module characteristics
 Service component list
  [(Resource 1 ID),

Enabling Condition: Functional entity action will only begin after both information flows 7 and 13 are received.

Processing upon receipt: When the requesting serving node receives these information flows, it records the willingness of both parties to accept the network connection and that a common set of connection characteristics exist that both parties can accept, and it sends commitment information flows towards the requesting user equipment (flow 14) and the relay nodes (flows 15 and 18), and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics of backward through-connect. The serving node also notifies party D of the change of the connection status by issuing information flow 21.

8 Add-Bearer-to-Call.begin   Serving Node A to Relay Node 2

Resource information
Session ID
Resource 1
 [Resource 1 ID, Resource type,
 Parties communicating
 (PEP "A" ID, PEP "B" ID, PEP "C" ID,
  PEP "D" ID),

Addressed party's service component
information
 (PEP "C" ID, Service component
  characteristics)]

Call information
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,
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

Bearer information
Network connection 1
 [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
 Parties connected
 (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

Addressed party's bearer branch information
 [(PEP "C" ID, Transit Network Selection, bearer branch
  characteristics, branch owner: PEP "A" ID),

Addressed party's service module information
 [(PEP "C" ID, Service module characteristics
 Service component list
  [(Resource 1 ID)]

Initiation of information flow: The processing of information flow 1

Processing upon receipt: The selected relay node validates the request and determines the route and outgoing trunk facility. The selected relay node issues information flow 9 towards the addressed serving node. The network connection in the relay node is backward through connected.

9   Add-Bearer-to-Call.begin   Relay Node 2 to Serving Node C

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "C" ID,
   PEP "D" ID),

**Addressed party's service component
information**
  (PEP "C" ID, Service component
   characteristics)]

Call information
Call Control Segment ID,
Direct Call association
  (SN(A):ref.a – SN(C):ref: 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,
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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Processing upon receipt: The addressed serving node selects the terminating interface facility. Since the interface is classified as a multiple signalling entity interface, the serving node cannot commit to the addressed end point and therefore issues information flow 10 towards the selected interface facility. The network connection is backward through connected.

10   Add-Bearer-to-Call.begin   Serving Node C to Party C

Resource information
Session ID
Resource 1
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "C" ID,
   PEP "D" ID),

**Addressed party's service component
information**
  (PEP "C" ID, Service component
   characteristics)]

Call information
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,
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

Bearer information
Network connection 1
  [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
  Parties connected
  (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics, branch
   owner: PEP "A" ID),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

Processing upon receipt: The addressed terminal equipment determines that it can accept the request and issues information flow 11 towards its associated serving node. (Note: if the terminal cannot accept the network connection characteristics, it could either respond with an alternate set of network connection characteristics or issue a cancel information flow.) If an alternate set of characteristics is desired, the ready information flow would contain these characteristics.

11   Add-Bearer-to-Call.ready   Party C to Serving Node C

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
  (PEP "C" ID, Service component
   characteristics)]

Call information
Call Control Segment ID
Addressed party Information
  [PEP "C" ID, Network address],

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
   [(Resource 1 ID)]

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 recorded and then the serving node clears the non-selected terminals. (Note: this clearing action is not illustrated for simplicity of the flow diagram.) The serving node issues information flow 12 towards its associated relay node.

12	Add-Bearer-to-Call.ready		Serving Node C to Relay Node 2

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "C" ID, Service component
    characteristics)]

Call 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],

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Processing upon receipt: When the selected relay node receives the above responses it records them and relays the responses to the requesting serving node in the form illustrated by the information flow 13.

13	Add-Bearer-to-Call.ready		Relay Node 2 to Serving Node A

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "C" ID, Service component
    characteristics)]

Call 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],

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Enabling Condition: Functional entity action will only begin after both information flows 7 and 13 are received.

Processing upon receipt: When the requesting serving node receives these information flows, it records the willingness of both parties to accept the network connection and that a common set of connection characteristics exist that both parties can accept, and it sends commitment information flows towards the requesting user equipment (flow 14) and the relay nodes (flows 15 and 18), and performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics of backward through-connect. The serving node also notifies party D of the change of the connection status by issuing information flow 21.

14	Attach-Party-to-Bearer.commit		Serving Node A to Party A

Resource information
Resource 1
  [Resource 1 ID, Resource type,

Addressed party's service component
information
  (PEP "A" ID, Service component
    characteristics)]

Call information
Call Control Segment ID
Addressed party Information
  [PEP "A" ID, Network address],

Bearer information
Network connection 1
  [Bearer "1" ID, Connection owner: PEP "A",

Addressed party's bearer branch information
  [(PEP "A" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "A" ID, Service module characteristics
  Service component list
    [(Resource 1 ID)]

Initiation of information flow: The processing of information flows 7 and 13

Processing upon receipt: When the user equipment receives this information flow, it records the commitment, and if necessary, modifies the network connection characteristics in the backward direction, and notifies the user of the completion of the bearer establishment procedure. (Note: if the terminal or the user is not satisfied with the resultant network connection characteristics, the user can either detach the parties from the connection or the parties could be released.)

15   Attach-Party-to-Bearer.commit   **Serving Node A to Relay Node 1**

Resource information
Resource 1
[Resource 1 ID, Resource type,

Addressed party's service component information
(PEP "B" ID, Service component characteristics)]

Remote party's service component information
(PEP "C" ID, Service component characteristics)]

Remote party's service component information
(PEP "D" ID, Service component characteristics)]

Call 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 Call association
(SN(A):ref.a – SN(D):ref.d) ID
Addressed party Information
[PEP "B" ID, Network address],
Remote party Information
[PEP "C" ID, Network address],
Remote party Information
[PEP "D" ID, Network address],

Bearer information
Network connection 1
[Bearer "1" ID,

Addressed party's bearer branch information
[(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
[(PEP "B" ID, Service module characteristics
Service component list
[(Resource 1 ID),

Remote party's bearer branch information
[(PEP "C" ID, bearer branch characteristics),

Remote party's service module information
[(PEP "C" ID, Service module characteristics
Service component list
[(Resource 1 ID),

Remote party's bearer branch information
[(PEP "D" ID, bearer branch characteristics),

Remote party's service module information
[(PEP "D" ID, Service module characteristics
Service component list
[(Resource 1 ID),

Initiation of information flow: The processing of information flows 7 and 13

Processing upon receipt: When the selected relay node receives the above information flow, it records the commitment, and relays this commitment to the addressed serving node by issuing information flow number 16, performs forward through-connect of the network branch connection, and if necessary, modifies the network connection characteristics of backward through-connect.

16   Add-Bearer-to-Call.commit   **Relay Node 1 to Serving Node B**

Resource information
Resource 1
[Resource 1 ID, Resource type,

Addressed party's service component information
(PEP "B" ID, Service component characteristics)]

Remote party's service component information
(PEP "C" ID, Service component characteristics)]

Remote party's service component information
(PEP "D" ID, Service component characteristics)]

Call 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 Call association
(SN(A):ref.a – SN(D):ref.d) ID,
Addressed party Information
[PEP "B" ID, Network address],
Remote party Information
[PEP "C" ID, Network address],
Remote party Information
[PEP "D" ID, Network address],

Bearer information
Network connection 1
[Bearer "1" ID,

Addressed party's bearer branch information
[(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
[(PEP "B" ID, Service module characteristics
Service component list
[(Resource 1 ID),

Remote party's bearer branch information
[(PEP "C" ID, bearer branch characteristics),

Remote party's service module information
[(PEP "C" ID, Service module characteristics
Service component list
[(Resource 1 ID),

Remote party's bearer branch information
[(PEP "D" ID, bearer branch characteristics),

Remote party's service module information
[(PEP "D" ID, Service module characteristics
Service component list
[(Resource 1 ID),

Processing upon receipt: When the addressed serving node receives this information flow, it records the commitment, it sends a commitment information flow (17) to the selected terminal. The addressed serving node then through connects network connection in the forward direction, and if necessary, modifies the network connection characteristics of backward through-connect.

17   Add-Bearer-to-Call.commit   **Serving Node B to Party B**

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "C" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "D" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
  Service component list
    [(Resource 1 ID),

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

18   Add-Bearer-to-Call.commit   **Serving Node C to Relay Node 2**

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
  (PEP "C" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "D" ID, Service component
    characteristics)]

Call 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(D):ref.d) ID,
Remote Call association
  (SN(A):ref.a – SN(D):ref.d) ID
Addressed party Information
  [PEP "C" ID, Network address],
Remote party Information
  [PEP "B" ID, Network address],
Remote party Information
  [PEP "D" ID, Network address],

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
  Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
  Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
  Service component list
    [(Resource 1 ID),

Initiation of information flow: The processing of information flows 7 and 13

Processing upon receipt: When the selected relay node receives the above information flow, it records the commitment, and relays this commitment to the addressed serving node by issuing information flow number 19, performs forward through-connect of the network connection, and if necessary, modifies the network connection characteristics of backward through-connect.

19   Add-Bearer-to-Call.commit   Relay Node 2 to Serving Node C

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
  (PEP "C" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "D" ID, Service component
    characteristics)]

Call 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 Call association
  (SN(A):ref.a – SN(D):ref.d) ID
Addressed party Information
  [PEP "C" ID, Network address],
Remote party Information
  [PEP "B" ID, Network address],
Remote party Information
  [PEP "D" ID, Network address],

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
    Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
    Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
    Service component list
    [(Resource 1 ID),

Processing upon receipt: When the addressed serving node receives this information flow, it records the commitment, it sends a commitment information flow (20) to the selected terminal. The addressed serving node then through connects the network connection in the forward direction, and if necessary, modifies the network connection characteristics of backward through-connect.

20   Add-Bearer-to-Call.commit   Serving Node C to Party C

Resource information
Resource 1
  [Resource 1 ID, Resource type,

**Addressed party's service component
information**
  (PEP "C" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "B" ID, Service component
    characteristics)]

**Remote party's service component
information**
  (PEP "D" ID, Service component
    characteristics)]

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

Bearer information
Network connection 1
  [Bearer "1" ID,

Addressed party's bearer branch information
  [(PEP "C" ID, bearer branch characteristics),

Addressed party's service module information
  [(PEP "C" ID, Service module characteristics
    Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "B" ID, Service module characteristics
    Service component list
    [(Resource 1 ID),

Remote party's bearer branch information
  [(PEP "D" ID, bearer branch characteristics),

Remote party's service module information
  [(PEP "D" ID, Service module characteristics
    Service component list
    [(Resource 1 ID),

Processing upon receipt: The terminal records the final network connection characteristics and through connects the network connections in both directions, and notifies the user of the connection establishment.

21   Notify-Bearer-Change.indication   **Serving Node A to Serving Node D**

Resource information
<u>Resource 1</u>
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "C" ID,
   PEP "D" ID),

**Remote party's service component
information**
   (PEP "B" ID, Service component
   characteristics)]

**Remote party's service component
information**
   (PEP "C" ID, Service component
   characteristics)]

Call 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],
Event: Party B & C attached to
   Network Connection 1

Bearer information
<u>Network connection 1</u>
   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
   Parties connected
   (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

Remote party's bearer branch information
   [(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
   [(PEP "B" ID, Service module characteristics
   Service component list
     [(Resource 1 ID),

Remote party's bearer branch information
   [(PEP "C" ID, bearer branch characteristics),

Remote party's service module information
   [(PEP "C" ID, Service module characteristics
   Service component list
     [(Resource 1 ID),

Initiation of information flow: The processing of information flows 7 and 13

Processing upon receipt: When the serving node receives this information flow, it records that party B attached to the network connection. This notify information flow is forwarded to party D via information flow 22.

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22   Notify-Bearer-Change.indication   **Serving Node D to Party D**

Resource information
<u>Resource 1</u>
  [Resource 1 ID, Resource type,
  Parties communicating
   (PEP "A" ID, PEP "B" ID, PEP "C" ID,
   PEP "D" ID),

**Remote party's service component
information**
   (PEP "B" ID, Service component
   characteristics)]

**Remote party's service component
information**
   (PEP "C" ID, Service component
   characteristics)]

Call 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],
Event: Party B & C attached to
   Network Connection 1

Bearer information
<u>Network connection 1</u>
   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
   Parties connected
   (PEP "A" ID, PEP "B" ID, PEP "C" ID, PEP "D" ID),

Remote party's bearer branch information
   [(PEP "B" ID, bearer branch characteristics),

Remote party's service module information
   [(PEP "B" ID, Service module characteristics
   Service component list
     [(Resource 1 ID),

Remote party's bearer branch information
   [(PEP "C" ID, bearer branch characteristics),

Remote party's service module information
   [(PEP "C" ID, Service module characteristics
   Service component list
     [(Resource 1 ID),

Enabling Condition: Notify option active

Processing upon receipt: When the terminal receives this information flow, it records that parties B and C have been attached to the network connection and will inform the user of this bearer state change.

---

9   Detachment of one or more parties from one or more connections

9.1   General Rules for the detachment of a party

The request to detach a party from a connection may be initiated by either the call owner, the branch owner, the connection owner, or the designated party owner. In all four cases, however, the serving node associated with the party to be detached will only honour a party detachment request from the serving node associated with the call owner.

When a party owner, connection owner, or a branch owner, requests detachment of a party associated within its ownership, the serving node associated with the requesting party will relay the request to the call owner's serving node. The call owner's serving node will either invoke the call owners 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 detachment request to the serving node associated with the party to be detached. The addressed serving node will release the party from the bearer and will issue bearer release information flows for all the bearers to be detached a detach conformation to the call owner's serving node. When conformation of the party's detachment is received by the call owner's serving node, it will issue a detach 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 detached from the bearer. The serving node will confirm that the party has been detached. The other serving nodes associated with the call will notify their associated parties about the detachment of a party from the bearer, if their service logic profiles indicate party notify is active.

• If permission is not granted, the ownership characteristics associated with the party to be detached is transferred to the call owner party. The serving node associated with the original request is sent a party detachment denied information flow indicating that the ownership (party, branch, and/or connection) has been transferred to the call owner. In addition, all serving nodes associated with the call are notified that the ownership characteristics have been transferred to the call owner. The serving node associated with the party owner will notify that the party has not been detached and may indicate that the ownership characteristics have been transferred to the call owner. The other serving nodes associated with the call will notify their associated parties about the transfer of ownership, if their service logic profiles indicate party notify is active.

9.2 Detach a party from its associated network connection branch in a two-party call single Connection Call

This subclause contains three example flows illustrating the detachment of a party from an existing call.

1) The first example covers the call release option case where the call and the network connection will be cleared within the network. The network connection detachment information flows progress from the requester towards the addressed party. This example is provided for backward compatibility with existing protocol implementations. This method implicitly notifies the addressed party that it is being removed from the call (removal of the last network connection releases the party).

2) The second example covers the call release option case where the call and its associated network connections will be cleared within the network. The network connection detachment information flows progress from the addressed party towards the requesting party. This example is included for the case where the call owner may not be aware that one or more additional parties are included within the call which are associated with the addressed party to be removed. This could be caused by the no notify option being specified at the time of call establishment. It is recommended that future implementations follow the procedure of explicitly notifying the party to be removed so that proper handling of the unknown remote parties can be handled.

3)   The third example covers the call release option case where the call is <u>not</u> cleared within the network after the detachment of the addressed party from the bearer. The network connection branch to the addressed party is released while the network connection branch between the requesting party and the network remains intact. The network connection branch release information flows progress from the addressed party's serving node towards the requesting party.

Which bearer detachment option is to be used was specified at the time of call establishment. The default option is that the call will be cleared. The details of these examples are contained in the following subclauses.

9.2.1   Detachment of a party by the call owner – Clear call option – Party detachment from requesting party

In this example, a two-party call associated with a single connection has been established. The call owner, party owner, and the network connection owner is party A. Party A requests the detachment of party B. This request will result in the detachment of this party from the network connection. The network connection will be cleared forward towards the serving node associated with the addressed party (party B). The call will be cleared within the network. Figure 9-1 illustrates the before and after view of this example.
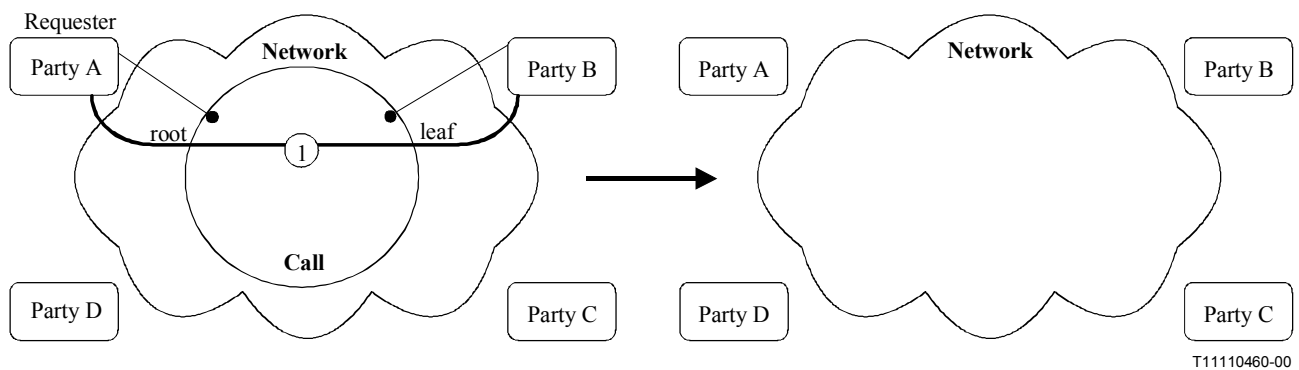

Figure 9-1 – Call and Bearer transition diagram

Figure 9-2 illustrates the information flows necessary to accomplish this procedure.
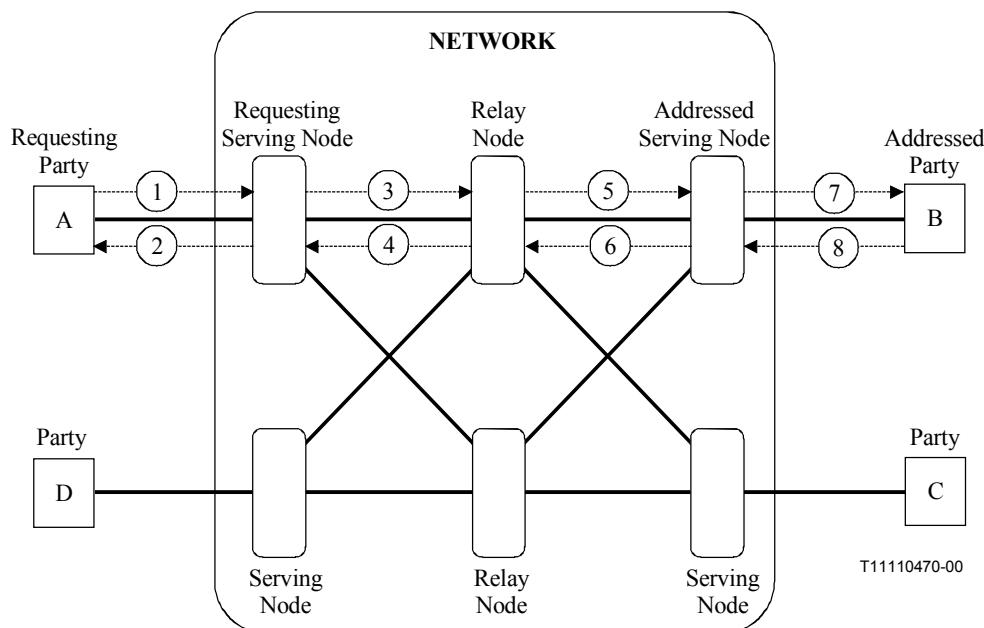
Figure 9-2 – Detach party "B" from Connection requested by party "A" – One network connection between parties A and B with party A as the call and connection owner

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   **Detach-Party-from Bearer.ready**   **Party A to Serving Node A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Addressed party Information	[Bearer "1" ID]
	[PEP "B" ID],	

Initiation of information flow: The call owner initiates a detach party from bearer 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 relay 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 and bearer, there is no need to issue any notify bearer change information flows.

---

2   **Detach-Party-from Bearer.commit**   **Serving Node A to Party A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	

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

3	Release-Party-from Call.ready		Serving Node A to Relay Node 1
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 relay node receives this information flow, it then issues information flow 4 towards the requesting serving node committing to the remove party, removes the connection branch between the requesting serving node and the relay node, and issues a release-party-from call information flow towards the addressed serving node.

4	Release-Party-from Call.commit		Relay Node 1 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 and bearer states within its domain.

5	Release-Party-from Call.ready		Relay Node 1 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 addressed serving node receives this information flow, it then issues information flow 6 towards the relay node committing to the remove party, removes the network connection branch between the addressed serving node and the relay node, notes that the call clearing option is active, and issues a call clearing information flow towards the addressed party B (information flow 7).

6	Release-Party-from Call.commit		Serving Node A to Relay Node 1
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 relay node receives this information flow, it clears its bearer states within its domain.

7	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 and bearer states and issues a commitment flow (8) towards the addressed serving node.

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

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

9.2.2 Detachment of a party by the call owner – Clear all option – Connection release from addressed party

In this example, a two-party call associated with a single connection has been established. The call owner, party owner and the network connection owner is party A. Party A requests the release of party B. This request will result in the detachment of this party from the network connection. The network connection will be cleared back to the serving node associated with the call owner (party A). The call will be cleared within the network. Figure 9-3 illustrates the before and after view of this example.
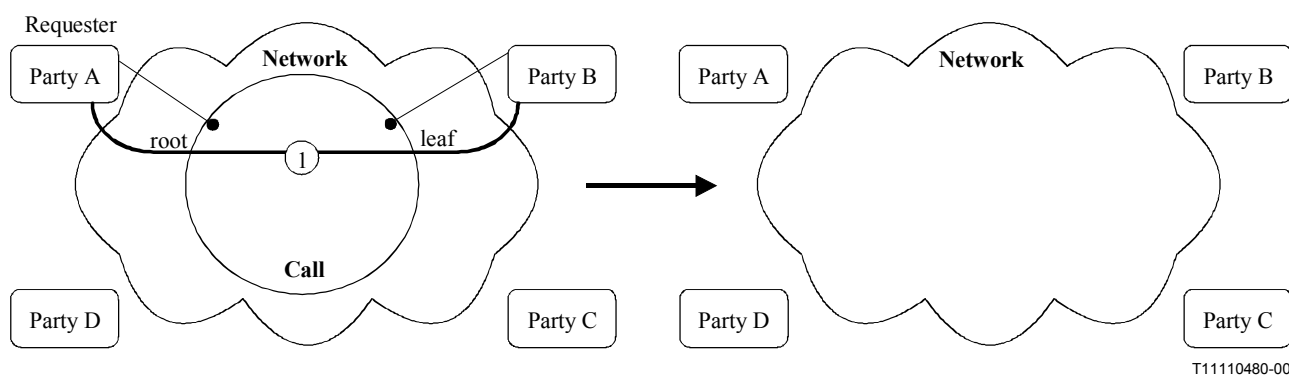
T11110480-00

Figure 9-3 – Call and Bearer transition diagram

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

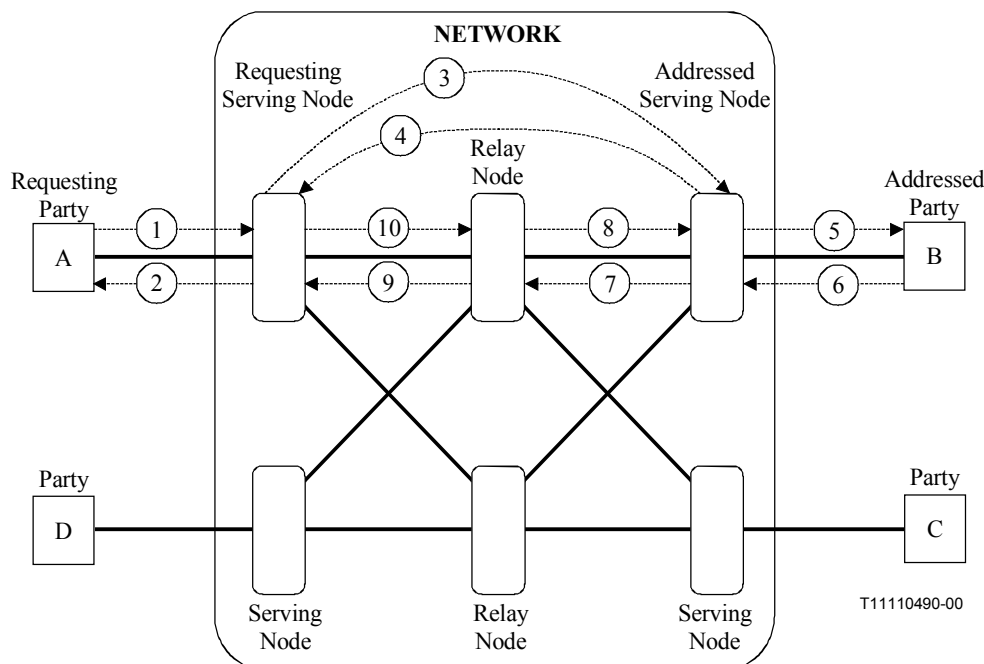**Figure 9-4 – Detach party "B" from connection requested by party "A" – One network connection between parties A and B with party A as the call and connection owner**

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	**Detach-Party-from Bearer.ready**	**Party A to Serving Node A**

<u>**Resource information**</u>	<u>**Call information**</u>	<u>**Bearer information**</u>
	Call Control Segment ID	<u>**Network connection 1**</u>
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	

Initiation of information flow: The call owner initiates a detach party from bearer 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 detachment of the party, issues information flow 3 towards the serving node of the party to be detached, requesting that the call be cleared for party B. Since no other parties are associated with the call and bearer, there is no need to issue any notify bearer change information flows.

2	**Detach-Party-from Bearer.commit**	**Serving Node A to Party A**

<u>**Resource information**</u>	<u>**Call information**</u>	<u>**Bearer information**</u>
	Call Control Segment ID	<u>**Network connection 1**</u>
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	

Processing upon receipt: When the terminal receives this information flow, it clears the bearer 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,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	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 remove party and issues a call clearing information flow towards the addressed party B (information flow 5).

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,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Enabling Condition: Reception of information flows 4 and 9

Processing upon receipt: When the requesting service node receives these information flows, it clears its call and bearer states. The serving node then issues information flow 10 towards relay node 1 indicating commitment.

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 and bearer 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 serving node receives this flow, it issues information flow 7 requesting connection removal towards the relay node and awaits its response.

7	Release-Bearer.ready		Serving Node B to Relay Node 1

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address]	

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then issues information flow 8 towards serving node B indicating commitment of the requested operation, and issues information flow 9 towards serving node A requesting network connection release.

8	Release-Bearer.commit	Relay Node 1 to Serving Node B

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

9	Release-Bearer.ready	Relay Node 1 to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address]	

Enabling Condition: Reception of information flows 4 and 9.

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states. The serving node then issues information flow 10 towards relay node 1 indicating commitment.

10	Release-Bearer.commit	Serving Node A to Relay Node 1

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

9.2.3   Detachment of a party by the call owner – Retain call option

In this example, a two-party call associated with a single connection has been established. The call owner, party owner and the network connection 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 detachment of party B. This request will result in the removal of party B from the network connection. The network connection will be cleared back to the serving node associated with the call owner (party A). The call will not be cleared within the network. It will still persist in the serving node associated with party A. In addition, party A and serving node A will be attached by a branch of the network connection originally in place. Figure 9-5 illustrates the before and after view of this example.
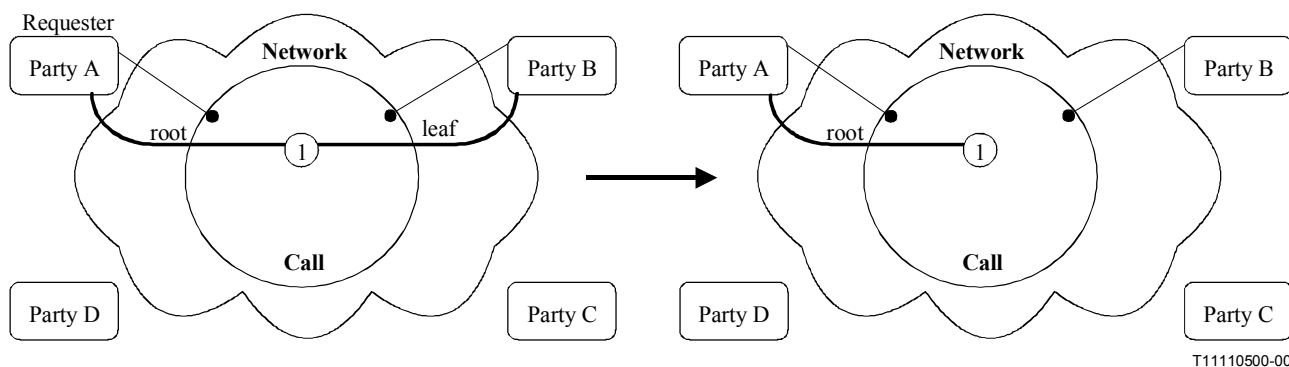
Figure 9-5 – Call and Bearer transition diagram

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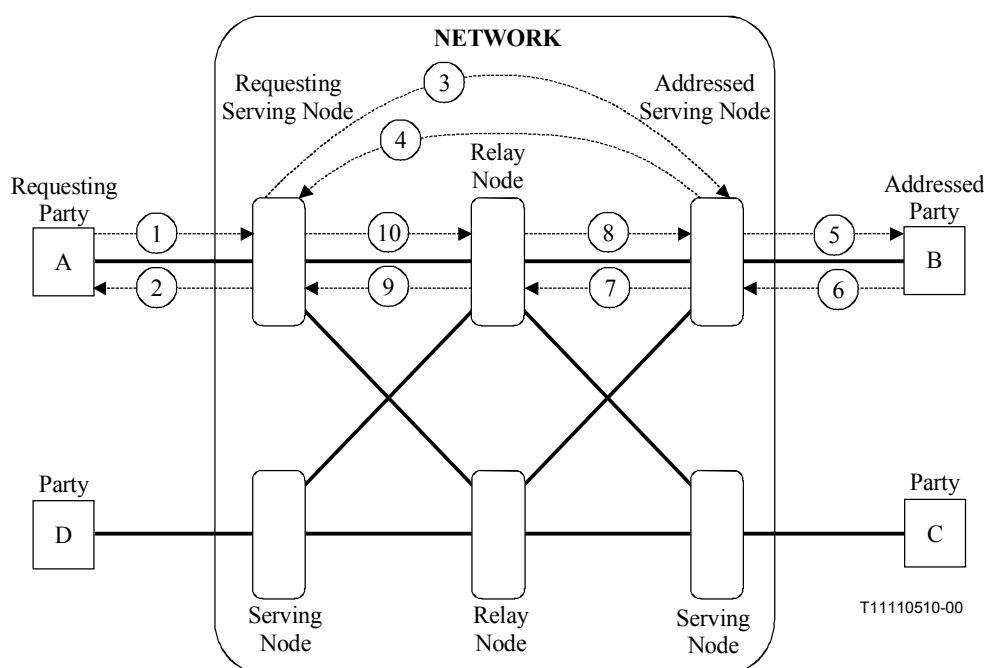

Figure 9-6 – Detach party "B" from Connection requested by party "A" – One network connection between parties A and B with party A as the call and connection owner

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	Detach-Party-from Bearer.ready		Party A to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	

Initiation of information flow: The call owner initiates a detach party from bearer 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 retain the call. The requesting serving node then issues information flow 2 confirming the detachment of the party, issues information flow 3 towards the serving node of the party to be detached requesting that the bearer branch be cleared for party B. The call and the bearer still remain active in both parties and their associated serving nodes. Since no other parties are associated with the call and bearer, there is no need to issue any notify bearer change information flows.

2	Detach-Party-from bearer.commit		Serving Node A to Party A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	

Processing upon receipt: When the terminal receives this information flow, it modifies the bearer states indicating that a single party is connected to the bearer while two parties are associated with the call. The call remains in the active state.

3	Remote-Detach-Party-from Bearer.ready		Serving Node A to Serving Node B

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	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 detachment of party B and issues a bearer clearing information flow towards the addressed party B (information flow 5).

4	Remote-Detach-Party-from Bearer.commit		Serving Node B to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Enabling Condition: Reception of information flows 4 and 9

Processing upon receipt: When the requesting service node receives these information flows, it modifies its bearer states to indicate a single-party network connection branch exists in this serving node. The single party is party A and the network connection branch is between the serving node and party A. The serving node then issues information flow 10 towards relay node 1 indicating commitment.

5	Release-Bearer.ready		Serving Node B to Party B

Resource information	**Call information** **Call Control Segment ID,** **Addressed party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	**Bearer information** **Network connection 1** [Bearer "1" ID]

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

6	Release-Bearer.commit		Party B to Serving Node B

Resource information	**Call information** **Call Control Segment ID,**	**Bearer information** **Network connection 1** [Bearer "1" ID]

Processing upon receipt: When the serving node receives this flow, it issues information flow 7 requesting connection removal towards the relay node and awaits its response.

7	Release-Bearer.ready		Serving Node B to Relay Node 1

Resource information	**Call information** **Call Control Segment ID,** **Direct Call association** (SN(A):ref.a – SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	**Bearer information** **Network connection 1** [Bearer "1" ID]

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then issues information flow 8 towards serving node B indicating commitment of the requested operation, and issues information flow 9 towards serving node A requesting network connection release.

8	Release-Bearer.commit		Relay Node 1 to Serving Node B

Resource information	**Call information** **Call Control Segment ID,** **Direct Call association** (SN(A):ref.a – SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address],	**Bearer information** **Network connection 1** [Bearer "1" ID]

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

9	Release-Bearer.ready		Relay Node 1 to Serving Node A

Resource information	**Call information** **Call Control Segment ID,** **Direct Call association** (SN(A):ref.a – SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	**Bearer information** **Network connection 1** [Bearer "1" ID]

Enabling Condition: Reception of information flows 4 and 9

Processing upon receipt: When the requesting service node receives these information flows, it modifies its bearer states to indicate a single-party network connection branch exists in this serving node. The single party is party A and the network connection branch is between the serving node and party A. The serving node then issues information flow 10 towards relay node 1 indicating commitment.

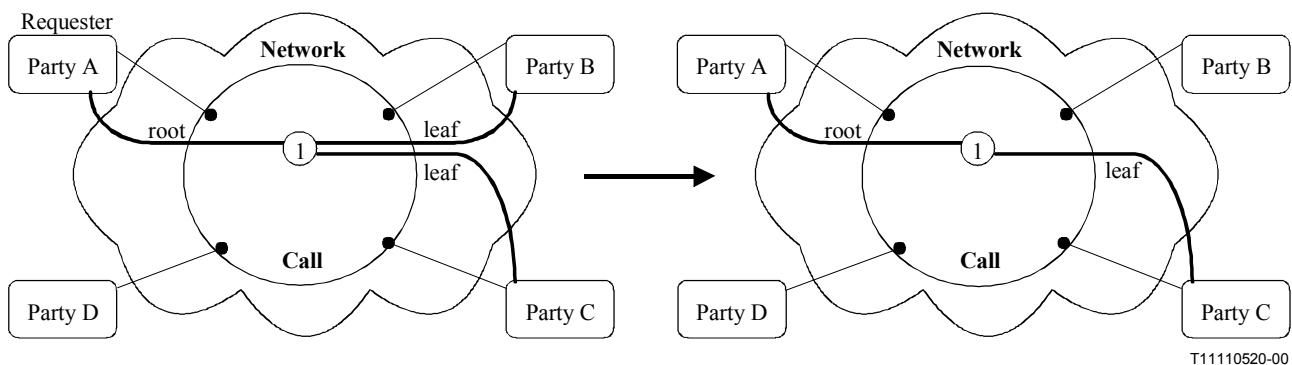| **Resource information**	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

9.3   Detach one party from its associated network connection branch in a four-party call

9.3.1   Detachment of a party requested by the call owner – Root-party is call owner

In this example, a call exists consisting of four parties (parties A, B, C and D). Party A is the call owner, party B's owner and the network connection owner and root of the connection between parties A, B and C. The branching point of the network connection occurs within relay node 1. Party A requests that party B be detached from the connection. This will result in the removal of the network connection branch between the relay node 1 and serving node B and the network connection branch between serving node B and party B. Party B will be retained in the call. Parties C and D will be notified of the change within the call and connection configuration. Figure 9-7 illustrates the before and after view of this example.

Figure 9-7 – Call and Bearer transition diagram

Figure 9-8 illustrates the information flows necessary to accomplish this procedure.
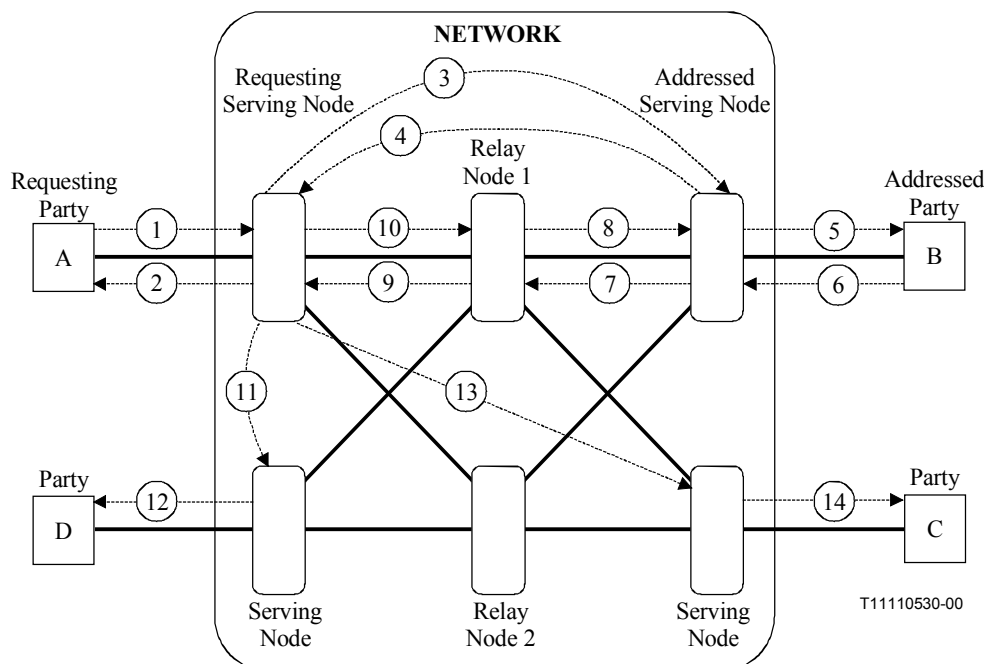
**Figure 9-8 – Detach party "B" from Connection requested by party "A" –
One network connection between parties A, B and C, party D is a member of the call –
Party A is the call and connection owner and the root-party of the connection –
Branching point occurs in the relay node 1**

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	**Detach-Party-from Bearer.ready**		**Party A to Serving Node A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address]	

Initiation of information flow: The call owner initiates a detach party from bearer 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 it is also the party owner of the party to be detached from the bearer. The requesting serving node then issues information flow 2 confirming the detachment of the party, issues information flow 3 towards the serving node of the party to be detached requesting that the bearer branch be cleared for party B.

2	**Detach-Party-from Bearer.commit**		**Serving Node A to Party A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address]	

Processing upon receipt: When the terminal receives this information flow, it modifies the bearer states indicating that the addressed party has been detached from the network connection.

3   **Remote-Detach-Party-from Bearer.ready**   **Serving Node A to Serving Node B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	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 detach party action and issues a bearer clearing information flow towards the addressed party B (information flow 5).

4   **Remote-Detach-Party-from Bearer.commit**   **Serving Node B to Serving Node A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "A" ID, Network address]	

Enabling Condition: Reception of information flows 4 and 9

Processing upon receipt: When the requesting service node receives these information flows, it modifies its bearer states to indicate that the party has been detached from the network connection. The serving node proceeds with the notification of the bearer change to the other parties associated with the call by issuing information flows 11 and 13. In addition, the serving node then issues information 10 towards relay node 1 indicating commitment.

5   **Release-Bearer.ready**   **Serving Node B to Party B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Addressed party Information	[Bearer "1" ID]
	[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 bearer states associated with network connection, and issues a commitment flow (6) towards the addressed serving node.

6   **Release-Bearer.commit**   **Party B to Serving Node B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
		[Bearer "1" ID]

Processing upon receipt: When the serving node receives this flow, it issues information flow 7 requesting connection removal towards the relay node and awaits its response.

7	Release-Bearer.ready		Serving Node B to Relay Node 1
Resource information	**Call information**		**Bearer information**
	Call Control Segment ID,		**Network connection 1**
	Direct Call association		[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,		
	Remote party Information		
	[PEP "B" ID, Network address],		
	Requesting party Information		
	[PEP "A" ID, Network address]		

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then determines that another party is connected to the specified connection and therefore issues information flow 8 towards serving node B indicating commitment of the requested operation, and issues information flow 9 towards serving node A requesting a detach party B from connection operation.

8	Release-Bearer.commit		Relay Node 1 to Serving Node B
Resource information	**Call information**		**Bearer information**
	Call Control Segment ID,		**Network connection 1**
	Direct Call association		[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,		
	Remote party Information		
	[PEP "B" ID, Network address],		

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

9	Detach-Party-from-Bearer.ready		Relay Node 1 to Serving Node A
Resource information	**Call information**		**Bearer information**
	Call Control Segment ID,		**Network connection 1**
	Direct Call association		[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,		
	Remote party Information		
	[PEP "B" ID, Network address],		
	Requesting party Information		
	[PEP "A" ID, Network address]		

Enabling Condition: Reception of information flows 4 and 9

Processing upon receipt: When the requesting service node receives these information flows, it modifies its bearer states to indicate that the party has been detached from the network connection. The serving node proceeds with the notification of the bearer change to the other parties associated with the call by issuing information flows 11 and 13. In addition, the serving node then issues information 10 towards relay node 1 indicating commitment.

10	Detach-Party-from-Bearer.commit		Serving Node A to Relay Node 1
Resource information	**Call information**		**Bearer information**
	Call Control Segment ID,		**Network connection 1**
	Direct Call association		[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,		
	Remote party Information		
	[PEP "B" ID, Network address],		

Processing upon receipt: When the relay node receives this information flow, it is aware that serving node A has detached the specified party. It then modifies the bearer configuration within its domain.

11   Notify-Bearer-Change.indication   **Serving Node A to Serving Node D**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 2**
 [Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   (SN(A):ref.a – SN(D):ref.d) ID,   **Parties connected**
 (PEP "A" ID, PEP "C" ID),   **Addressed party Information**   (PEP "A" ID, PEP "C" ID),
                                       [PEP "D" ID, Network address,
                                      Event: Party B detached from the
                                      bearer

Initiation of information flow: Processing of information flows 4 and 9

Processing upon receipt: The addressed serving node records the detachment of party B from the bearer and issues information flow 12 towards party D.

12   Notify-Bearer-Change.indication   **Serving Node D to Party D**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 2**
 [Resource 1 ID, Resource type,   **Addressed party Information**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   [PEP "D" ID, Network address,   **Parties connected**
 (PEP "A" ID, PEP "C" ID),   **Event:** Party B detached from the   (PEP "A" ID, PEP "C" ID),
                                      bearer

Processing upon receipt: The addressed party records the detachment of party B from the bearer and notifies the user of the change in the bearer configuration.

13   Notify-Bearer-Change.indication   **Serving Node A to Serving Node C**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 2**
 [Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   (SN(A):ref.a – SN(C):ref.d) ID,   **Parties connected**
 (PEP "A" ID, PEP "C" ID),   **Addressed party Information**   (PEP "A" ID, PEP "C" ID),
                                       [PEP "C" ID, Network address]
                                      Event: Party B detached from
                                      bearer

Initiation of information flow: Processing of information flows 4 and 9

Processing upon receipt: The addressed serving node records the detachment of party B from the bearer and issues information flow 14 towards party C.

14   Notify-Bearer-Change.indication   **Serving Node C to Party C**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 2**
 [Resource 1 ID, Resource type,   **Addressed party Information**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   [PEP "C" ID, Network address]   **Parties connected**
 (PEP "A" ID, PEP "C" ID),   **Event:** Party B detached from   (PEP "A" ID, PEP "C" ID),
                                      bearer

Processing upon receipt: The addressed party records the detachment of party B from the bearer and notifies the user of the change in the bearer configuration.

9.3.2   Detachment of a party requested by the party owner – Root-party is call owner

In this example, party D which is party B's owner requests the detachment 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 detached. If party A or its service logic agrees to the detachment, it will initiate the detachment procedure and notifies party D that party B has been detached from the connection and notifies all other parties associated with the call that party B has been detached. In this example, Party A is not only the call owner but is also the root of the network connection to which party B is attached. Party A also initiates the party B detachment procedure for network connection 1. Note that if the call owner or its service logic does not agree to the detachment 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 detachment. Figure 9-9 illustrates the before and after view of this example.
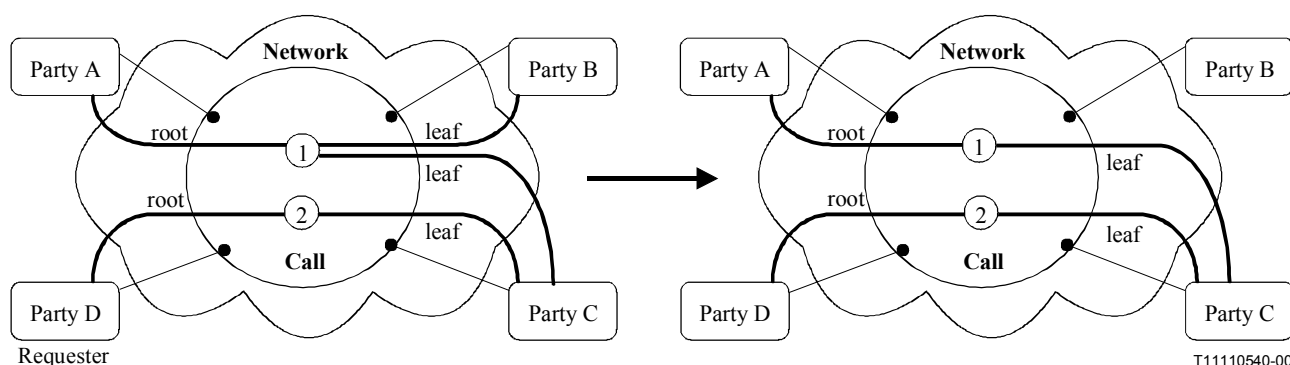

Figure 9-9 – Call and Bearer transition diagram

The signalling capability of detaching a party from a connection requested by the party owner is illustrated in Figure 9-10.
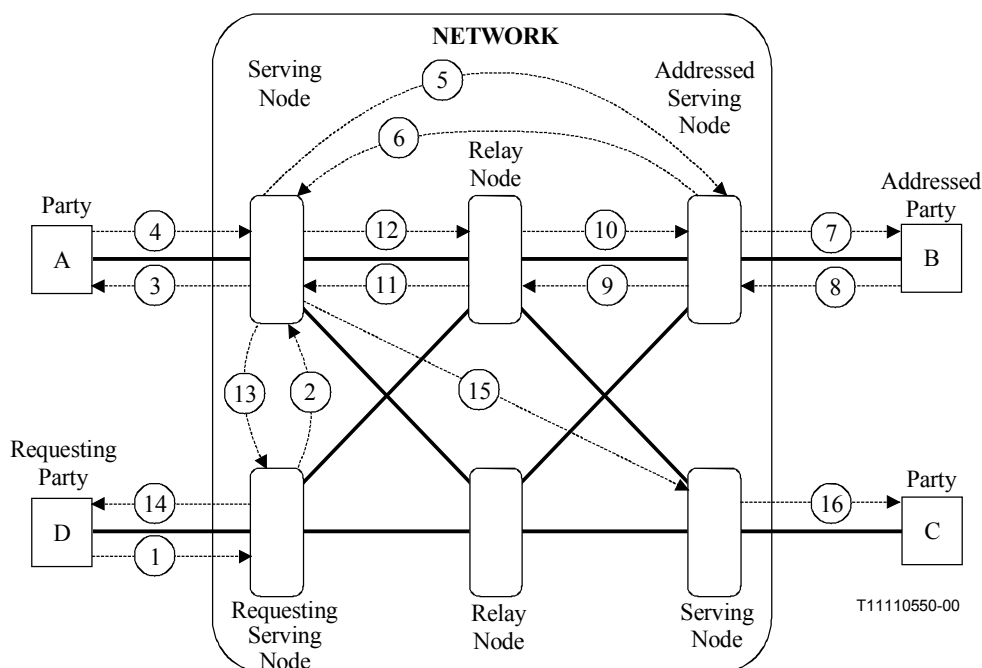
Figure 9-10 – Detach party "B" from Connection requested by party "D" – Party D is a member of the call and is the party owner of party B – One network connection (1) exists between parties A, B and C – Another network connection (2) exists between parties D and C – Party A is the call and connection owner and the root-party of the connection – Branching point occurs in the relay node 1

The actions illustrated in Figure 9-10 are as follows.

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

1	Detach-Party-from bearer.ready		Party D to Serving Node D

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address]	

Initiation of information flow: The party owner initiates a detach party from connection 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 party owner of the party to be detached from the bearer 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 detached from the connection.

2	Remote-Detach-Party-from bearer.ready		Serving Node D to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(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 shall make the determination if party B shall be detached from the connection. The serving node issues information flow 3 towards party A and awaits the response to this information flow.

3	Request-Detach-Party-from Bearer.ready		Serving Node A to Party A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "D" ID, Network address],	

Processing upon receipt: When the call owner receives this information flow, it will decide if party B shall be detached from the connection. In this example, the call owner agrees that party B can be detached. Therefore the terminal issues information flow 4 towards its associated serving node. (Note: if the call owner does not agree to the detachment of party B, it will issue a request-detach-party-from -bearer.cancel information flow and assume the ownership of party B.)

4	Request-Detach-Party-from Bearer.commit		Party A to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	**Network connection 1**
	Addressed party Information	[Bearer "1" ID]
	[PEP "D" ID, Network address],	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the serving node associated with the call owner receives this information flow, it will notify party D that party B is to be detached (information flow 13) and initiates the detachment of party B by issuing information flow 5. (Note: if the call owner disagrees with the detachment of party B, the serving node notifies party D by issuing a cancel information flow and proceeds to inform the other parties within the call of the change of party B ownership.)

| 5 | Remote-Detach-Party-from Bearer.ready | | Serving Node A to Serving Node B |

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	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 6 towards the requesting serving node committing to the detachment of the party and issues a connection clearing information flow towards the addressed party B (information flow 7).

| 6 | Remote-Detach-Party-from Bearer.commit | | Serving Node B to Serving Node A |

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "A" ID, Network address]	

Enabling Condition: Reception of information flows 6 and 11

Processing upon receipt: When the requesting service node receives these information flows, it modifies its bearer states to indicate that the party has been removed from the connection. The serving node proceeds with the notification of the bearer change to the other parties associated with the call by issuing information flows 13 and 15. In addition, the serving node then issues information 12 towards relay node 1 indicating commitment.

| 7 | Release-Bearer.ready | | Serving Node B to Party B |

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Addressed party Information	[Bearer "1" ID]
	[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 bearer state and issues a commitment flow (8) towards the addressed serving node.

| 8 | Release-Bearer.commit | | Party B to Serving Node B |

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
		[Bearer "1" ID]

Processing upon receipt: When the serving node receives this flow, it issues information flow 9 requesting connection removal towards the relay node and awaits its response.

9   Release-Bearer.ready   Serving Node B to Relay Node 1

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address]	

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then determines that another party is connected to the specified connection and therefore issues information flow 10 towards serving node B indicating commitment of the requested operation, and issues information flow 11 towards serving node A requesting a detach party B from connection operation.

10   Release-Bearer.commit   Relay Node 1 to Serving Node B

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

11   Detach-Party-from-Bearer.ready   Relay Node 1 to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address]	

Enabling Condition: Reception of information flows 6 and 11

Processing upon receipt: When the requesting service node receives these information flows, it modifies its bearer state to indicate that the party has been detached from the connection. The serving node proceeds with the notification of the bearer change to the other parties associated with the call by issuing information flows 13 and 15. In addition, the serving node then issues information 12 towards relay node 1 indicating commitment.

12   Detach-Party-from-Bearer.commit   Serving Node A to Relay Node 1

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the relay node receives this information flow, it is aware that serving node A has detached the specified party. It then modifies the bearer configuration within its domain.

13   **Remote-Detach-Party-from Bearer.commit**   **Serving Node A to Serving Node D**

Resource information   **Call information**   **Bearer information**
                               Call Control Segment ID,   **Network connection 1**
                               Direct Call association   [Bearer "1" ID]
                                  (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],

Initiation of information flow: Processing of information flows 6 and 11

Processing upon receipt: When the serving node associated with the party requesting party B's detachment from the connection, it records the agreement of the detachment procedure, modifies bearer state information by detachment of party B to network connection 1, and issues information flow 14 towards party D. (Note: if a cancel information flow was received, the serving node would modify the party ownership of party B by setting it equal to the call ownership party. It would then issue a cancel information flow to party D.)

---

14   **Detach-Party-from Bearer.commit**   **Serving Node D to Party D**

Resource information   **Call information**   **Bearer information**
                               Call Control Segment ID   **Network connection 1**
                               Remote party Information   [Bearer "1" ID]
                                  [PEP "B" ID, Network address],

Processing upon receipt: When the terminal receives this information flow, it modifies the bearer state indicating that the remote party has been detached from the network connection. (Note: if the party D receives a cancel information flow instead of the commit information flow, party B is not detached from the connection but ownership has been transferred to the call owner.)

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15   **Notify-Bearer-Change.indication**   **Serving Node A to Serving Node C**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 2**
  [Resource 1 ID, Resource type, **Direct Call association**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   (SN(A):ref.a – SN(D):ref.d) ID,   **Parties connected**
  (PEP "A" ID, PEP "C" ID),   **Addressed party Information**   (PEP "A" ID, PEP "C" ID),
                                    [PEP "D" ID, Network address]
                                  Event: Party B detached from
                                  bearer

Initiation of information flow: Processing of information flows 6 and 11

Processing upon receipt: The addressed serving node records the detachment of party B and issues information flow 16 towards party C.

---

16   **Notify-Bearer-Change.indication**   **Serving Node C to Party C**

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,**   **Network connection 2**
  [Resource 1 ID, Resource type, **Addressed party Information**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   [PEP "D" ID, Network address]   **Parties connected**
  (PEP "A" ID, PEP "C" ID),   **Event:** Party B removed from call   (PEP "A" ID, PEP "C" ID),

Processing upon receipt: The addressed party records the detachment of party B from the connection and notifies the user of the change in the bearer configuration.

10 Removal of one or more connections from a call

10.1 General rules for the removal of a connection from a call

Only the call owner or connection owner is allowed to invoke this operation. In both cases, however, serving nodes associated with the connection will only honour a connection clearing request from the serving node associated with the call owner.

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

When a connection owner requests removal of the connection it owns, the serving node associated with the connection owner will relay the request to the call owner's serving node. The serving node associated with the call owner will determine the number of remaining parties associated with the connection, determine the status of the notify options and connection retention option before proceeding with the received information flow:

1) **Connection is to be cleared and Notify serving node option inactive**: The serving node associated with the call/connection owner will inform all the serving nodes associated with the parties associated with the connection within its scope that the connection is to be released. The serving nodes that receive this connection 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 connection 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 connection. Each addressed serving node receiving this connection clearing command will proceed to clear the connection by removing the parties associated with this call within its domain. The serving node associated with the call owner will either clear the bearer branches, or retain the bearer branches between it and the call owner within its domain, dependent on the connection retention option status. (Note: the serving node associated with the call owner may not be aware of all parties associated with the connection if the serving node notify option is not activated at the beginning of the call.)

2) **Connection 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 connection is to be cleared. Each serving node receiving this connection clearing command will proceed to clear the network connections within its domain. The serving node associated with the call owner will either clear the bearer branch between it and the ownership party, or retain the bearer branch within its domain, dependent on the connection retention option status.

3) **Connection is not to be cleared**: Connection ownership characteristics associated with the self detached party will be transferred to the call owner. The serving node associated with the self detached party will issue bearer release requests on the designated bearer branches to the party that self detaches from the bearer. The serving node associated with the call owner will notify the other parties within the call that a party has been detached from the connection and that its ownership characteristics have been transferred to the call owner.

10.2 Removal of one or more network connections from a two-party call

10.2.1 Connection Release request in a two-party connection – Requested by the call owner

In this example, the call contains two parties, A and B with one connection joining both parties. The call owner is party A while the connection owner is party B. Party A requests that the connection be released. Figure 10-1 illustrates the before and after view of the connection.
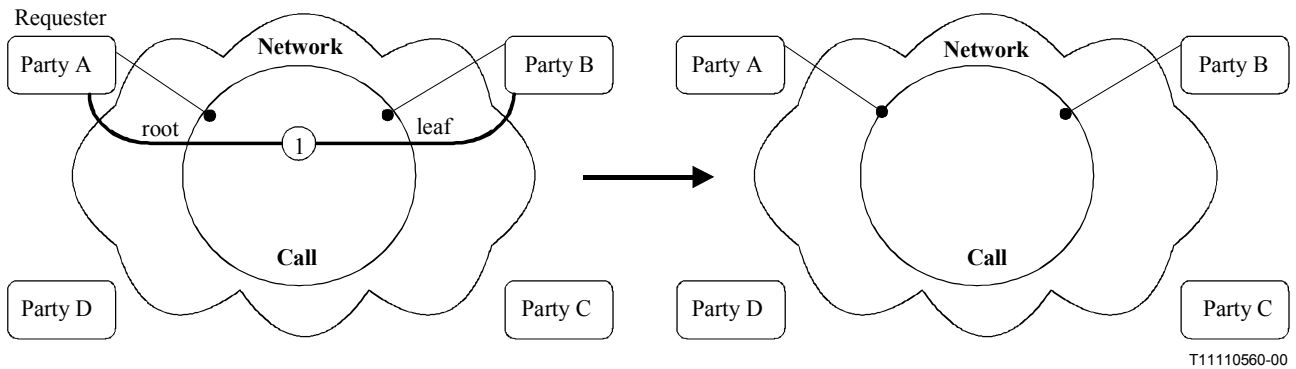
Figure 10-1 – Call and Bearer transition diagram

Figure 10-2 illustrates the information flows necessary to accomplish this procedure.
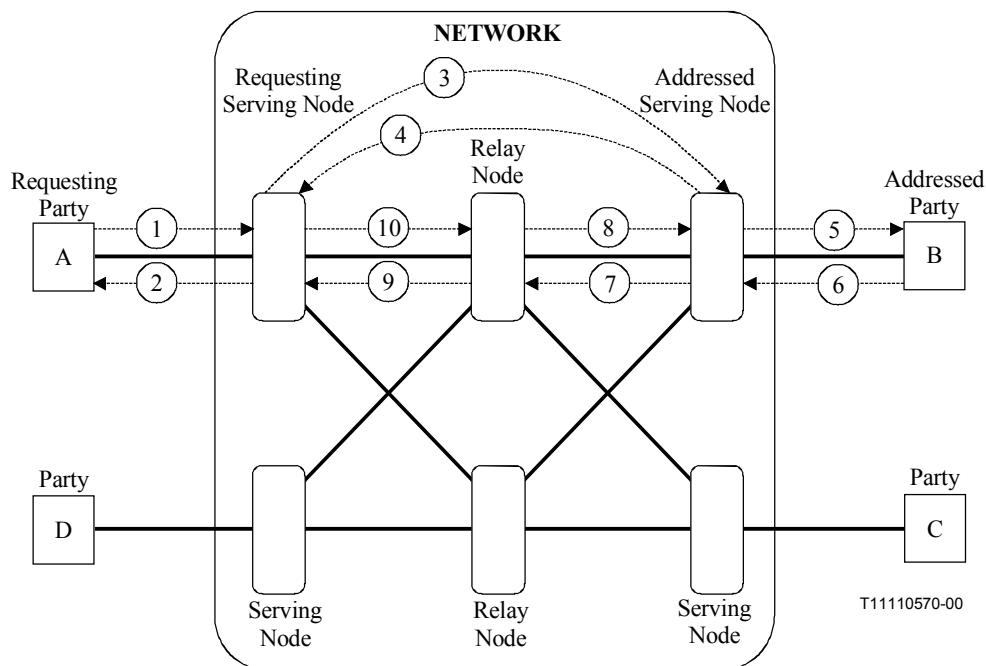
Figure 10-2 – Release Connection requested by party "A" – One network connection between parties A and B with party A as the call owner and party B as the connection owner

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-Bearer.ready	Party A to Serving Node A

| **Resource information**	**Call information** Call Control Segment ID	**Bearer information** Network connection 1 [Bearer "1" ID]

Initiation of information flow: The call owner initiates a release bearer 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 release will clear the connection. The requesting serving node then issues information flow 2 confirming the release of the bearer, issues information flow 3 towards the serving nodes of the other party associated with the connection, requesting that the connection be cleared for party B. Since no other parties are associated with the call and bearer, there is no need to issue any notify bearer change information flows.

2	Release-Bearer.commit	Serving Node A to Party A

Resource information	**Call information** Call Control Segment ID	**Bearer information** Network connection 1 [Bearer "1" ID]

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

3	Remote-Release-Bearer.ready	Serving Node A to Serving Node B

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address],
		Bearer information
		Network connection 1
		  [Bearer "1" ID]

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 removal of the connection and issues a bearer clearing information flow towards the addressed party B (information flow 5).

4	Remote-Release-Bearer.commit	Serving Node B to Serving Node A

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
		Bearer information
		Network connection 1
		  [Bearer "1" ID]

Enabling Condition: Reception of information flows 4 and 9.

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states. The serving node then issues information flow 10 towards relay node 1 indicating commitment.

5	Release-Bearer.ready	Serving Node B to Party B

Resource information	**Call information**
	Call Control Segment ID,
	Addressed party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
		Bearer information
		Network connection 1
		  [Bearer "1" ID]

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

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

Processing upon receipt: When the serving node receives this flow, it issues information flow 7 requesting connection removal towards the relay node and awaits its response.

7	Release-Bearer.ready		Serving Node B to Relay Node 1

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
		Bearer information
		Network connection 1
		  [Bearer "1" ID]	

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then issues information flow 8 towards serving node B indicating commitment of the requested operation, and issues information flow 9 towards serving node A requesting network connection release.

8	Release-Bearer.commit		Relay Node 1 to Serving Node B

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
		Bearer information
		Network connection 1
		  [Bearer "1" ID]	

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

9	Release-Bearer.ready		Relay Node 1 to Serving Node A

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
		Bearer information
		Network connection 1
		  [Bearer "1" ID]	

Enabling Condition: Reception of information flows 4 and 9.

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states. The serving node then issues information flow 10 towards relay node 1 indicating commitment.

10	Release-Bearer.commit		Serving Node A to Relay Node 1

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
		Bearer information
		Network connection 1
		  [Bearer "1" ID]	

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

10.2.2 Connection Release request in a two-party connection – Requested by connection owner

In this example, the call contains two parties, A and B with one connection joining both parties. The call owner is party B while the connection owner is party A. Party A requests that the connection be released. The Serving Node associated with party A relays the release request to the serving node associated with the call owner. This serving node service logic determines that the connection is to be leased. The serving node begins connection clearing procedures. (Note: if the serving node associated with the call owner decides to retain the connection, the ownership of the connection will be transferred to party B.) Figure 10-3 illustrates the before and after view of the connection.
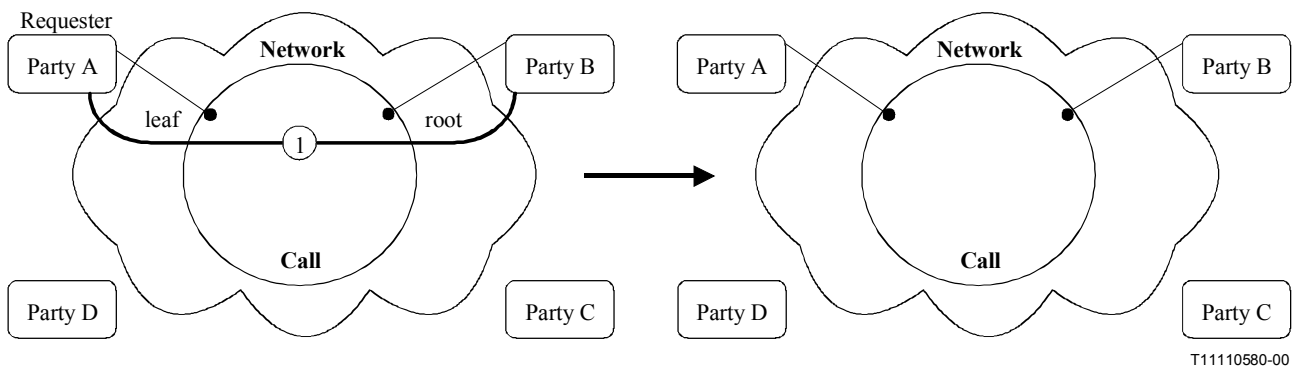
Figure 10-3 – Call and Bearer transition diagram

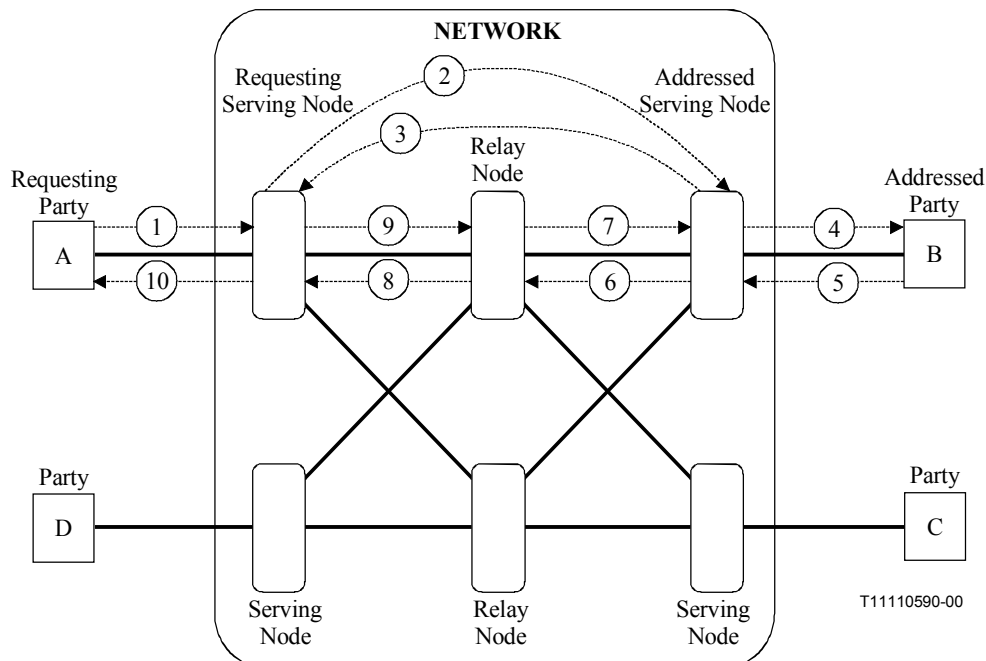Figure 10-4 illustrates the information flows necessary to accomplish this procedure.

Figure 10-4 – Release Connection requested by party "A" – One network connection between parties A and B with party A as the connection owner – Party B as the call owner

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-Bearer.ready		Party A to Serving Node A

Resource information	**Call information** Call Control Segment ID	**Bearer information** Network connection 1 [Bearer "1" ID]

Initiation of information flow: The connection owner initiates a release bearer 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 connection owner and decides to relay this request to the serving node associated with the call owner by issuing information flow 2 towards SN B and awaits the result of this request.

2	Remote-Release-Bearer.ready		Serving Node A to Serving Node B

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address],
		Bearer information
		Network connection 1
		  [Bearer "1" ID]

Processing upon receipt: When the addressed serving node receives this information flow, the service logic associated with this call indicates that the connection can be released. The serving node then issues information flow 3 towards the requesting serving node committing to the removal of the connection and issues a bearer clearing information flow towards the addressed party B (information flow 4).

3	Remote-Release-Bearer.commit		Serving Node B to Serving Node A

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
		Bearer information
		Network connection 1
		  [Bearer "1" ID]

Enabling Condition: Reception of information flows 3 and 8.

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states. The serving node then issues information flow 9 towards relay node 1 indicating commitment and information flow 10 towards the requesting party.

4	Release-Bearer.ready		Serving Node B to Party B

Resource information	**Call information**
	Call Control Segment ID,
	Addressed party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
		Bearer information
		Network connection 1
		  [Bearer "1" ID]

Processing upon receipt: When the terminal receives this information flow, it clears the bearer states and issues a commitment flow (5) towards the addressed serving node.

5	Release-Bearer.commit		Party B to Serving Node B

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

Processing upon receipt: When the serving node receives this flow, it issues information flow 6 requesting connection removal towards the relay node and awaits its response.

6   Release-Bearer.ready   Serving Node B to Relay Node 1

Resource information	**Call information**	**Bearer information**

	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
		Network connection 1
		  [Bearer "1" ID]

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then issues information flow 7 towards serving node B indicating commitment of the requested operation, and issues information flow 8 towards serving node A requesting network connection release.

7   Release-Bearer.commit   Relay Node 1 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 party Information
	  [PEP "B" ID, Network address],
		Network connection 1
		  [Bearer "1" ID]

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

8   Release-Bearer.ready   Relay Node 1 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,
	Remote party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
		Network connection 1
		  [Bearer "1" ID]

Enabling Condition: Reception of information flows 3 and 8

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states. The serving node then issues information flow 9 towards relay node 1 indicating commitment and information flow 10 towards the requesting party.

9   Release-Bearer.commit   Serving Node A to Relay Node 1

Resource information	**Call information**	**Bearer information**

	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
		Network connection 1
		  [Bearer "1" ID]

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

Resource information	Call information	Bearer information
	Call Control Segment ID	Network connection 1
		[Bearer "1" ID]

Enabling Condition: Processing of information flows 3 and 8

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

10.3 Removal of one or more network connections from a three- or more-party call

10.3.1 Removal of one network connection requested by call owner

In this example, the call contains two parties, A and B with one connection joining all parties. The call owner is party A while the connection owner is party B. Party A requests that the connection be released. Figure 10-5 illustrates the before and after view of the connection.
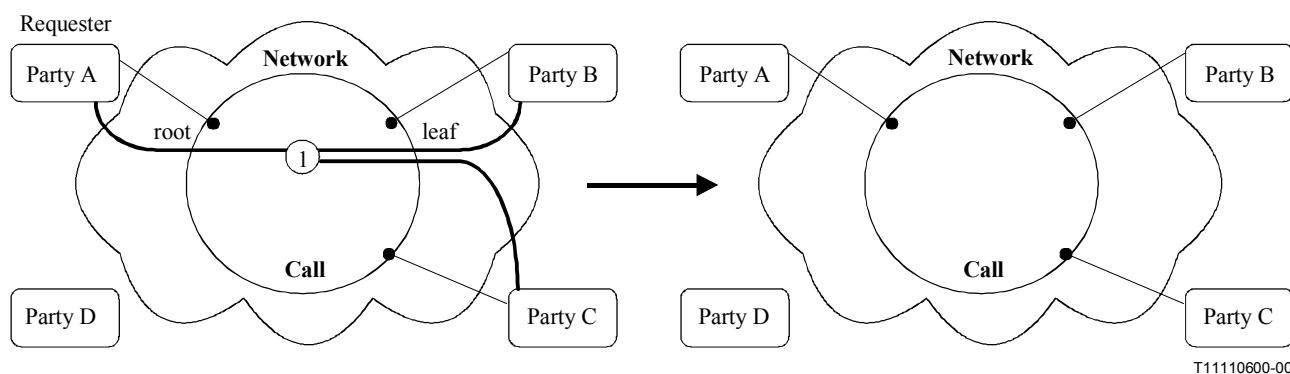

Figure 10-5 – Call and Bearer transition diagram

Figure 10-6 illustrates the information flows necessary to accomplish this procedure.
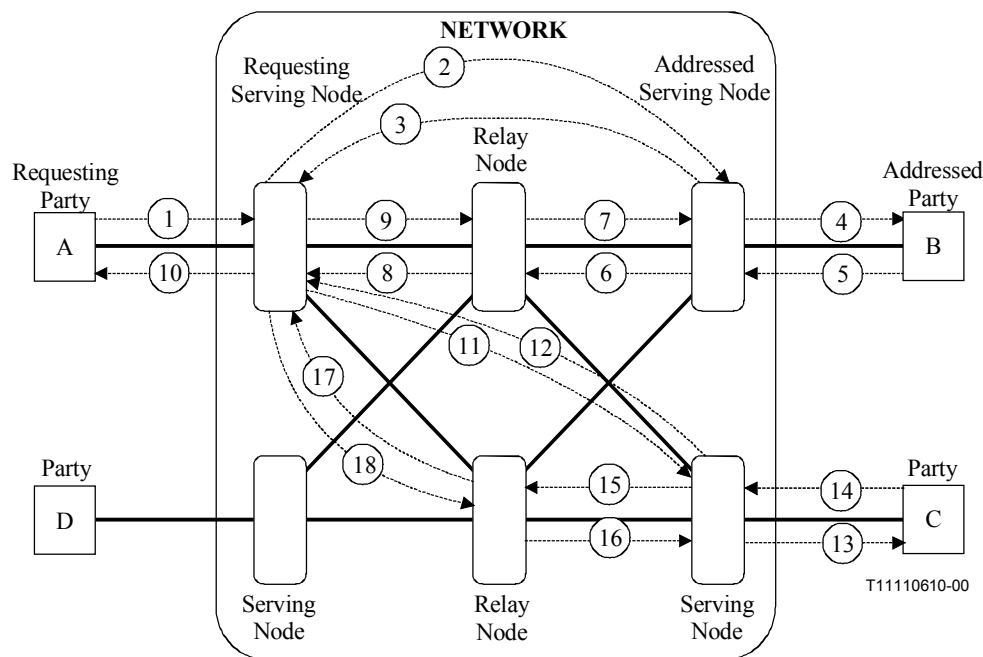
Figure 10-6 – Release Connection requested by party "A" – One network connection between parties A, B and C with party A as the call owner – Party B as the connection owner

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-Bearer.ready   Party A to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	Network connection 1
		[Bearer "1" ID]

Initiation of information flow: The call owner initiates a release bearer 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 note that the requested release will clear the connection. The requesting serving node then issues information flows 3 and 11 towards the serving nodes of the other parties associated with the connection that should be cleared.

---

2   Remote-Release-Bearer.ready   Serving Node A to Serving Node B

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(B):ref.b – SN(A):ref.a) ID,	
	Addressed party Information	
	[PEP "B" ID, Network address],	
	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 3 towards the requesting serving node committing to the removal of the connection, and issues a bearer clearing information flow towards the addressed party B (information flow 4).

3	**Remote-Release-Bearer.commit**		**Serving Node B to Serving Node A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Enabling Condition: Reception of information flows 3, 8, 12 and 17.

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states associated with the connection. The serving node then issues information flow 9 towards relay node 1 indicating commitment, information flow 18 towards relay node 2 indicating commitment, and information flow 10 towards the requesting party committing to the bearer removal request.

4	**Release-Bearer.ready**		**Serving Node B to Party B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Addressed party Information	[Bearer "1" ID]
	[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 bearer states and issues a commitment flow (5) towards the addressed serving node.

5	**Release-Bearer.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 issues information flow 6 requesting connection removal towards the relay node and awaits its response.

6	**Release-Bearer.ready**		**Serving Node B to Relay Node 1**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "A" ID, Network address],	
	Requesting party Information	
	[PEP "B" ID, Network address]	

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then issues information flow 7 towards serving node B indicating commitment of the requested operation, and issues information flow 8 towards serving node A requesting network connection release.

7	**Release-Bearer.commit**		**Relay Node 1 to Serving Node B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

8	Release-Bearer.ready		Relay Node 1 to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address]	

Enabling Condition: Reception of information flows 3, 8, 12 and 17

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states associated with connection. The serving node then issues information flow 9 towards relay node 1 indicating commitment, information flow 18 towards relay 2 indicating commitment, and information flow 10 towards the requesting party committing to the bearer removal request.

9	Release-Bearer.commit		Serving Node A to Relay Node 1

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

10	Release-Bearer.commit		Serving Node A to Party A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	Network connection 1
		[Bearer "1" ID]

Enabling Condition: Processing of information flows 3, 8, 12 and 17.

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

11	Remote-Release-Bearer.ready		Serving Node A to Serving Node C

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(C):ref.c – SN(A):ref.a) ID,	
	Addressed party Information	
	[PEP "C" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address],	

Enabling Condition: Processing of information flow 1

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 removal of the connection and issues a bearer clearing information flow towards the addressed party C (information flow 13).

12	Remote-Release-Bearer.commit		Serving Node C to Serving Node A

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.c – SN(C):ref.c) ID,
	Addressed party Information
	  [PEP "B" ID, Network address],
			Bearer information
			Network connection 1
			  [Bearer "1" ID]

Enabling Condition: Reception of information flows 3, 8, 12 and 17.

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states associated with connection. The serving node then issues information flow 9 towards relay node 1 indicating commitment, information flow 18 towards relay 2 indicating commitment, and information flow 10 towards the requesting party committing to the bearer removal request.

13	Release-Bearer.ready		Serving Node C to Party C

Resource information	**Call information**
	Call Control Segment ID,
	Addressed party Information
	  [PEP "C" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
			Bearer information
			Network connection 1
			  [Bearer "1" ID]

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

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

Processing upon receipt: When the serving node receives this flow, it issues information flow 15 requesting connection removal towards the relay node and awaits its response.

15	Release-Bearer.ready		Serving Node C to Relay Node 2

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(C):ref.c) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
	Requesting party Information
	  [PEP "A" ID, Network address]
			Bearer information
			Network connection 1
			  [Bearer "1" ID]

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node C) and the relay node. It then issues information flow 16 towards serving node B indicating commitment of the requested operation, and issues information flow 17 towards serving node A requesting network connection release.

16	Release-Bearer.commit		Relay Node 2 to Serving Node C

Resource information	**Call information**
	Call Control Segment ID,
	Direct Call association
	  (SN(A):ref.a – SN(B):ref.b) ID,
	Remote party Information
	  [PEP "B" ID, Network address],
			Bearer information
			Network connection 1
			  [Bearer "1" ID]

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

17	Release-Bearer.ready		Relay Node 2 to Serving Node A

Resource information	Call information	Bearer information
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(C):ref.c) ID,	
	Remote party Information	
	[PEP "C" ID, Network address],	
	Requesting party Information	
	[PEP "C" ID, Network address]	

Enabling Condition: Reception of information flows 3, 8, 12 and 17

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states associated with connection. The serving node then issues information flow 9 towards relay node 1 indicating commitment, information flow 18 towards relay 2 indicating commitment, and information flow 10 towards the requesting party committing to the bearer removal request.

18	Release-Bearer.commit		Serving Node A to Relay Node 2

Resource information	Call information	Bearer information
	Call Control Segment ID,	**Network connection 1**
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

10.3.2 Removal of one network connection requested by connection owner

In this example, the call contains two parties, A and B with one connection joining all parties. The call owner is party B while the connection owner is party A. Party A requests that the connection be released. The Serving Node associated with party A relays the release request to the serving node associated with the call owner. This serving node service logic determines that the connection is to be leased. The serving node begins connection clearing procedures. (Note: if the serving node associated with the call owner decides to retain the connection, the ownership of the connection will be transferred to party B.) Figure 10-7 illustrates the before and after view of the connection.
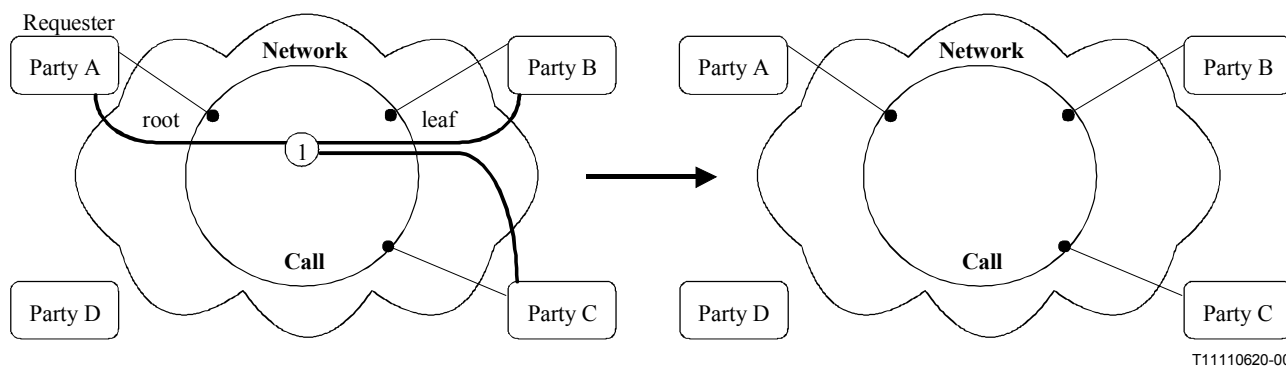

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Figure 10-7 – Call and Bearer transition diagram

Figure 10-8 illustrates the information flows necessary to accomplish this procedure.
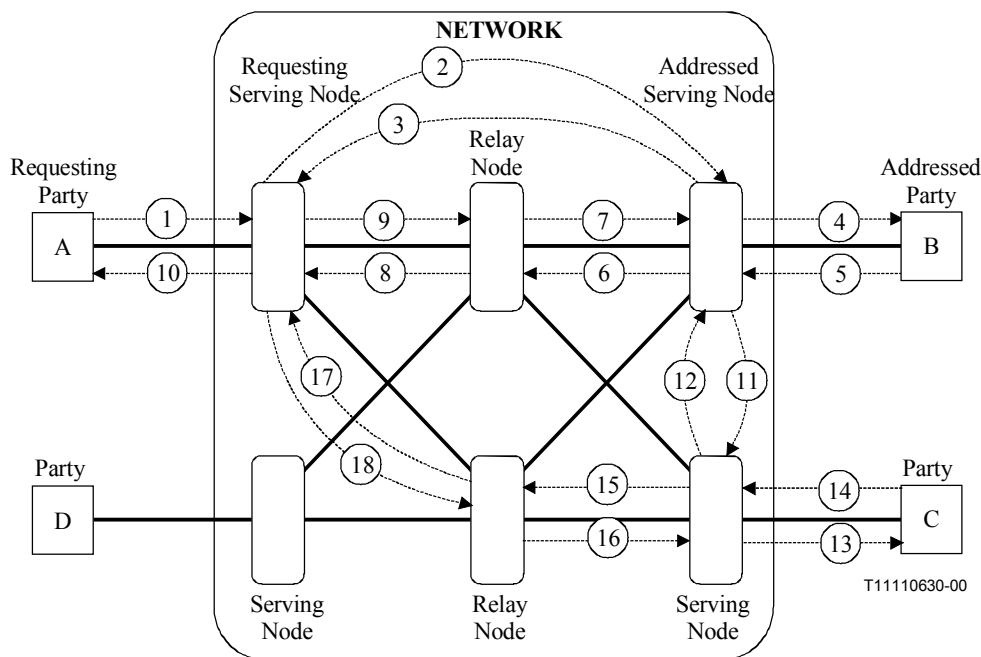
Figure 10-8 – Release Connection requested by party "A" – One network connection between parties A, B and C with party B as the call owner – Party A as the connection owner

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-Bearer.ready**		**Party A to Serving Node A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID	Network connection 1
		[Bearer "1" ID]

Initiation of information flow: The call owner initiates a release bearer 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 not the call owner and note that the requested release will clear the connection. The requesting serving node then issues information flow 3 towards the serving node of the call owner party requesting that the connection be cleared.

2	**Remote-Release-Bearer.ready**		**Serving Node A to Serving Node B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(B):ref.b – SN(A):ref.a) ID,	
	Addressed party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address],	

Processing upon receipt: When the addressed serving node receives this information flow, its service logic agrees to release the designated network connection and then issues information flow 3 towards the requesting serving node committing to the removal of the connection, issues information flow 11 towards the serving node associated with party C requesting connection release, and issues a bearer clearing information flow towards the addressed party B (information flow 4).

3   Remote-Release-Bearer.commit   Serving Node B to Serving Node A

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Enabling Condition: Reception of information flows 3 and 8

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states associated with party B. The serving node then issues information flow 9 towards relay node 1 indicating commitment, and information flow 10 towards the requesting party committing to the bearer removal request.

4   Release-Bearer.ready   Serving Node B to Party B

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Addressed party Information	[Bearer "1" ID]
	[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 bearer states and issues a commitment flow (5) towards the addressed serving node.

5   Release-Bearer.commit   Party B to Serving Node B

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

Enabling Condition: Reception of information flows 12 and 5

Processing upon receipt: When the serving node receives these flows, it issues information flow 6 requesting connection removal towards the relay node and awaits its response.

6   Release-Bearer.ready   Serving Node B to Relay Node 1

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "A" ID, Network address],	
	Requesting party Information	
	[PEP "B" ID, Network address]	

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then issues information flow 7 towards serving node B indicating commitment of the requested operation, and issues information flow 8 towards serving node A requesting network connection release.

7   Release-Bearer.commit   Relay Node 1 to Serving Node B

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

8	Release-Bearer.ready		Relay Node 1 to Serving Node A

Resource information	**Call information** **Call Control Segment ID,** **Direct Call association** (SN(A):ref.a – SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address], **Requesting party Information** [PEP "A" ID, Network address]	**Bearer information** **Network connection 1** [Bearer "1" ID]

Enabling Condition: Reception of information flows 3 and 8

Processing upon receipt: When the requesting service node receives these information flows, it clears its bearer states associated with party B. The serving node then issues information flow 9 towards relay node 1 indicating commitment, and information flow 10 towards the requesting party committing to the bearer removal request.

9	Release-Bearer.commit		Serving Node A to Relay Node 1

Resource information	**Call information** **Call Control Segment ID,** **Direct Call association** (SN(A):ref.a – SN(B):ref.b) ID, **Remote party Information** [PEP "B" ID, Network address],	**Bearer information** **Network connection 1** [Bearer "1" ID]

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

10	Release-Bearer.commit		Serving Node A to Party A

Resource information	**Call information** **Call Control Segment ID**	**Bearer information** **Network connection 1** [Bearer "1" ID]

Enabling Condition: Processing of information flows 3 and 8

Processing upon receipt: When the terminal receives these information flows, it clears the bearer within its domain.

11	Remote-Release-Bearer.ready		Serving Node B to Serving Node C

Resource information	**Call information** **Call Control Segment ID,** **Direct Call association** (SN(C):ref.c – SN(B):ref.b) ID, **Addressed party Information** [PEP "C" ID, Network address], **Requesting party Information** [PEP "B" ID, Network address],	**Bearer information** **Network connection 1** [Bearer "1" ID]

Enabling Condition: 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 removal of the connection and issues a bearer clearing information flow towards the addressed party C (information flow 13).

12	**Remote-Release-Bearer.commit**	**Serving Node C to Serving Node B**

Resource information	Call information	Bearer information
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(B):ref.b – SN(C):ref.c) ID,	
	Addressed party Information	
	[PEP "B" ID, Network address],	

Enabling Condition: Reception of information flows 12 and 5

Processing upon receipt: When the serving node receives these flows, it issues information flow 6 requesting connection removal towards the relay node and awaits its response.

13	**Release-Bearer.ready**	**Serving Node C to Party C**

Resource information	Call information	Bearer information
	Call Control Segment ID,	**Network connection 1**
	Addressed party Information	[Bearer "1" ID]
	[PEP "C" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address]	

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

14	**Release-Bearer.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 issues information flow 15 requesting connection removal towards the relay node and awaits its response.

15	**Release-Bearer.ready**	**Serving Node C to Relay Node 2**

Resource information	Call information	Bearer information
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(C):ref.c) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "A" ID, Network address]	

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node C) and the relay node. It then issues information flow 16 towards serving node B indicating commitment of the requested operation, and issues information flow 17 towards serving node A requesting network connection release.

16	**Release-Bearer.commit**	**Relay Node 2 to Serving Node C**

Resource information	Call information	Bearer information
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

| 17 | Release-Bearer.ready | | Relay Node 2 to Serving Node A |

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(C):ref.c) ID,	
	Remote party Information	
	[PEP "C" ID, Network address],	
	Requesting party Information	
	[PEP "C" ID, Network address]	

Processing upon receipt: When the requesting service node receives these information flows, it clears its remaining bearer states. The serving node then issues information flow 18 towards relay node 2 indicating commitment.

| 18 | Release-Bearer.commit | | Serving Node A to Relay Node 2 |

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	Network connection 1
	Remote party Information	[Bearer "1" ID]
	[PEP "B" ID, Network address],	

Processing upon receipt: When the relay node receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

10.3.3 Removal of one network connection requested by a party which does not own either the call or the connection

In this example, a call exists consisting of four parties (parties A, B, C and D). Party A is the call owner, party B's owner, and the network connection owner and root of the connection between parties A, B and C. The branching point of the network connection occurs within relay node 1. Party A requests that party B be detached from the connection. This will result in the removal of the network connection branch between the relay node 1 and serving node B and the network connection branch between serving node B and party B. Party B will be retained in the call. Parties C and D will be notified of the change within the call and connection configuration. Figure 10-9 illustrates the before and after view of this example.
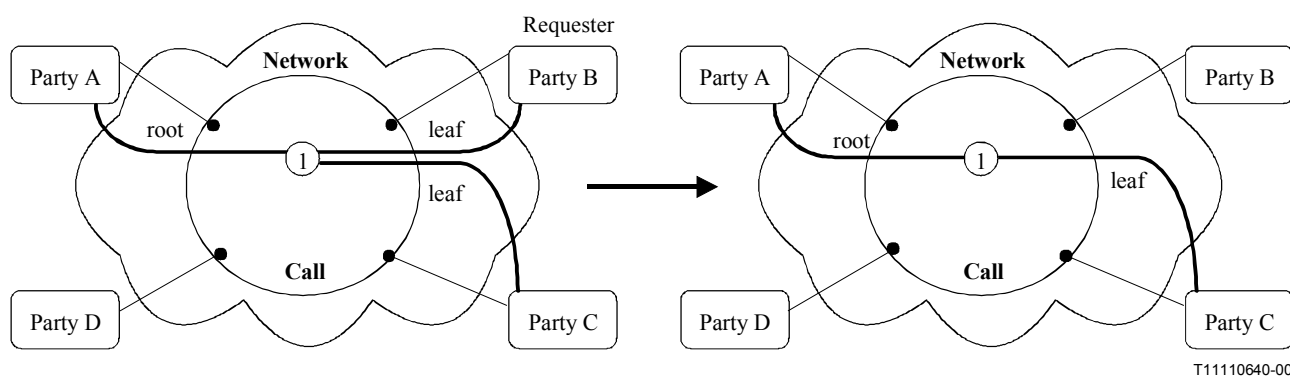
T11110640-00

Figure 10-9 – Call and Bearer transition diagram

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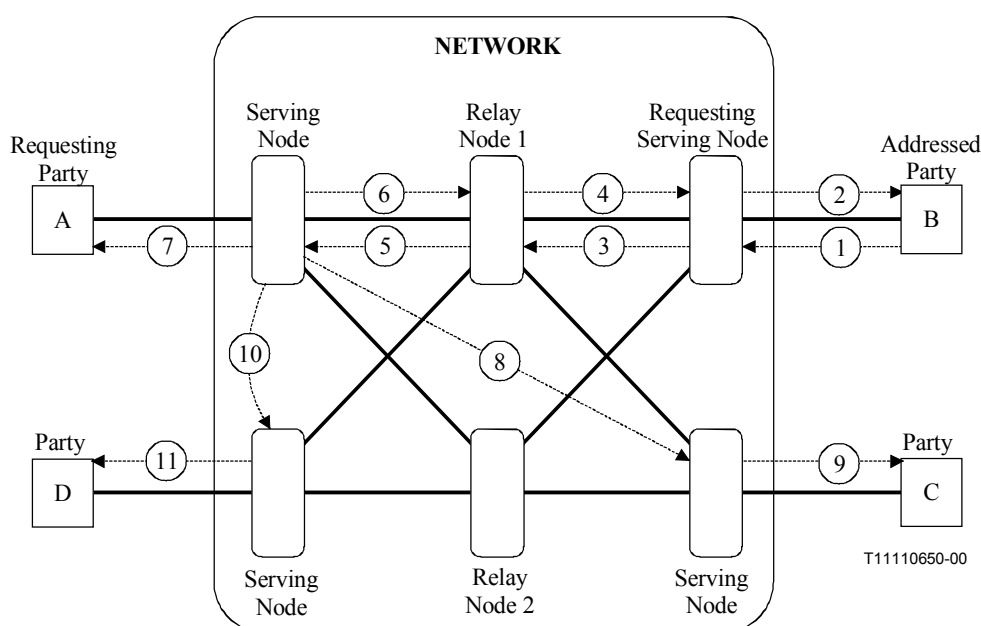

**Figure 10-10 – Connection Release requested by party "B" – One network connection
between parties A, B and C – Party D is a member of the call –
Party A is the call and connection owner and the root-party of the connection –
Branching point occurs in the relay node 1**

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

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

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

<u>Resource information</u>	<u>Call information</u>	<u>Bearer information</u>
	Call Control Segment ID	Network connection 1
		[Bearer "1" ID]

Initiation of information flow: A non-call or connection owner initiates a release bearer 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 neither the call or connection owner. The requesting serving node then issues information flow 2 confirming the release of the bearer branch between the network and the requesting party, issues information flow 3 towards the call owner serving node requesting the detachment of the requesting party. Since only one party is connected to this serving node, this detachment request is issued as a release bearer request.

2	**Release Bearer.commit**	**Serving Node B to Party B**

<u>Resource information</u>	<u>Call information</u>	<u>Bearer information</u>
	Call Control Segment ID	Network connection 1
		[Bearer "1" ID]

Processing upon receipt: When the terminal receives this information flow, it modifies the bearer states indicating that the connection has been released from party B.

3   Release-Bearer.ready   **Serving Node B to Relay Node 1**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Requesting party Information	
	[PEP "B" ID, Network address]	

Processing upon receipt: When the addressed relay node receives this information flow, it removes the network connection branch between the requesting serving node (serving node B) and the relay node. It then determines that another party is connected to the specified connection and therefore issues information flow 4 towards serving node B indicating commitment of the requested operation, and issues information flow 5 towards serving node A requesting a detach party B from connection operation.

4   Release-Bearer.commit   **Relay Node 1 to Serving Node B**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	

Processing upon receipt: When the serving node B receives this information flow, it is aware that the network connection branch between the relay node and the serving node has been removed. It then clears the bearer within its domain.

5   Detach-Party-from-Bearer.ready   **Relay Node 1 to Serving Node A**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	
	Requesting party Information	
	[PEP "B" ID, Network address]	

Processing upon receipt: When the requesting service node receives this information flow, it modifies its bearer states to indicate that the party has been detached from the network connection. The serving node proceeds with the notification of the bearer change to the other parties associated with the call by issuing information flows 7, 8 and 10. In addition, the serving node then issues information 6 towards relay node 1 indicating commitment.

6   Detach-Party-from-Bearer.commit   **Serving Node A to Relay Node 1**

Resource information	**Call information**	**Bearer information**
	Call Control Segment ID,	**Network connection 1**
	Direct Call association	[Bearer "1" ID]
	(SN(A):ref.a – SN(B):ref.b) ID,	
	Remote party Information	
	[PEP "B" ID, Network address],	

Processing upon receipt: When the relay node receives this information flow, it is aware that serving node A has detached the specified party. It then modifies the bearer configuration within its domain.

7   Notify-Bearer-Change.indication   Serving Node A to Party A

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,** **Network connection 2**
[Resource 1 ID, Resource type,   **Addressed party Information** [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   [PEP "A" ID, Network address, **Parties connected**
(PEP "A" ID, PEP "C" ID),   **Event:** Party B detached from the (PEP "A" ID, PEP "C" ID),
                                  bearer

Initiation of information flow: Processing of information flow 5

Processing upon receipt: The addressed party records the detachment of party B from the bearer.

8   Notify-Bearer-Change.indication   Serving Node A to Serving Node C

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,** **Network connection 2**
[Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   (SN(A):ref.a – SN(C):ref.c) ID, **Parties connected**
(PEP "A" ID, PEP "C" ID),   **Addressed party Information** (PEP "A" ID, PEP "C" ID),
                                  [PEP "C" ID, Network address,
                                  Event: Party B detached from the
                                  bearer

Initiation of information flow: Processing of information flow 5

Processing upon receipt: The addressed serving node records the detachment of party B from the bearer and issues information flow 9 towards party C.

9   Notify-Bearer-Change.indication   Serving Node C to Party C

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,** **Network connection 2**
[Resource 1 ID, Resource type,   **Addressed party Information** [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   [PEP "C" ID, Network address, **Parties connected**
(PEP "A" ID, PEP "C" ID),   **Event:** Party B detached from the (PEP "A" ID, PEP "C" ID),
                                  bearer

Processing upon receipt: The addressed party records the detachment of party B from the bearer and notifies the user of the change in the bearer configuration.

10   Notify-Bearer-Change.indication   Serving Node A to Serving Node D

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,** **Network connection 2**
[Resource 1 ID, Resource type,   **Direct Call association**   [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   (SN(A):ref.a – SN(D):ref.d) ID, **Parties connected**
(PEP "A" ID, PEP "C" ID),   **Addressed party Information** (PEP "A" ID, PEP "C" ID),
                                  [PEP "D" ID, Network address]
                                  Event: Party B detached from
                                  bearer

Initiation of information flow: Processing of information flow 5

Processing upon receipt: The addressed serving node records the detachment of party B from the bearer and issues information flow 11 towards party D.

11   Notify-Bearer-Change.indication   Serving Node D to Party D

Resource information   **Call information**   **Bearer information**
Resource 1   **Call Control Segment ID,** **Network connection 2**
[Resource 1 ID, Resource type,   **Addressed party Information** [Bearer "1" ID, Bearer type, Connection owner: PEP "A",
Parties communicating   [PEP "D" ID, Network address] **Parties connected**
(PEP "A" ID, PEP "C" ID),   **Event:** Party B detached from (PEP "A" ID, PEP "C" ID),
                                  bearer

Processing upon receipt: The addressed party records the detachment of party B from the bearer and notifies the user of the change in the bearer configuration.

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