PHS MoU Document B-IF0.51-02-TS

Title: Public Personal Handy-Phone System : General Description of PHS-UUS-PHS-UUS Supplementary Service-
Version: 02
Date: July 31, 1998
PHS MoU Classification: Unrestricted
List of contents:
Number of pages: 62

List of contents:

Number of pages: 62

PHS MoU Group

c/o Association of Radio Industries and Businesses (ARIB)
14F, Nittochi Bldg., 4-1, Kasumigaseki 1-choume, Chiyoda-ku, Tokyo 100, Japan
TEL +81-3-5510-8599 FAX +81-3-3592-1103

History of Revised Versions

Version	Date	Outline
01	July 11, 1997	Established
02	July 31, 1998	• Addition of description of CS Type 2.

Public Personal Handy-Phone System:

General Description of PHS-UUS

- PHS-UUS Supplementary Service -

<Summary>

1.•Relation with International Standards

This specification is based on ITU-T Recommendation Q.87.

2.•Differences from ITU-T Recommendation Q.87

This specification is to be revised in the near future in order to include items specified in ITU-T Q.87 as many as possible. The differences between this specification and ITU-T Q.87 are summarized in the following table.

3.•References

- ITU-T Recommendation Q.87
- PHS MoU Specification B-SV2.70, B-IF0.00

Table 1/B-IF0.51 Difference between this specification and ITU-T Q.87.

Item	Difference	Reason
1)Common terms	(1)“ISDN user” is changed to “PHS user” and ”network” to “ISDN”. (2)“User-to-User Signalling” is changed to “PHS User-to-User Signalling”. (3)“ITU-T Recommendation I.257.1.” is changed to “PHS MoU specification B-SV2.70.” (4)“signalling channel” is changed to “communication channel” (5)”ITU-T Recommendation Q.71,1972” is deleted. (6)“ITU-T Recommendation I.210, 1988” is changed to “PHS MoU specification B-SV0.00-02-TS.	(1)This change makes clear “ISDN user” and “network” mean. (2)This change conforms to B-SV2.70-01-TS. (3)“I.257.1” in ITU-T Recommendation correspond to “B-SV2.70” in PHS MoU specification. (4)This change conforms to B-SV2.70-01-TS (5)This change conforms to PHS-UUS. (6)“I.210” in ITU-T Recommendation correspond to “B-SV2.70” in PHS MoU specification.

2)Symbols and abbreviations	public CS public Cell Station SSP Service Switching point	This change conforms to PHS-UUS.
3)Call contention	Procedures related to call contention are deleted.	Point-to-multipoint arrangement is not specified in SV2.70-01-TR.
4)Derivation of the functional model	NOTE1 added.	This change conforms to PHS-UUS.
5)Functional entity actions (FEAs)	(1) Item 927 “INFORM 6” is changed to “INFORM 10” Item 937 “INFORM 7” is changed to “INFROM 11” Item 938 “INFORM 7” is changed to “INFROM 11” Item 939 “INFORM 6” is changed to “INFROM 10” Item 953 “INFORM 8” is changed to “INFROM 12” (2) Item 945 Procedure related point-to-multipoint arrangement is deleted.	There are obvious clerical errors in the ITU-T Rec.Q87. Point-to-multipoint arrangement is not specified in B-SV2.70.
6)Allocation of functional entities to physical locations	“Table 1-4” are revised.	This change conforms to PHS-UUS.

Public Personal Handy-Phone System:

General Description of PHS-UUS

- PHS-UUS Supplementary Service -

<Summary>

Contents

1. PHS User-to-User Signalling (PHS-UUS)

1.1 Scope

This specification specifies the Stage 2 of the public Personal Handy-Phone System as provided by the telecommunications operators for the PHS User-to-User Signalling (PHS-UUS) supplementary services. Stage 2 identifies the functional capabilities and the information flows needed to support the service description. The Stage 2 description also identifies user operations not directly associated with a call (see Recommendation I.130 [1]).

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

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

In addition this specification does not specify the requirements where the service is provided to the user via a private ISDN. This specification does not specify the requirements for the allocation of defined functional entities within a private ISDN; it does, however, define which functional entities may be allocated to a private ISDN.

This specification does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

The PHS-UUS supplementary service allows an PHS user to send/receive a limited amount of information to/from another PHS user over the communication channel in association with a call to the other PHS user.

NOTE – These procedures are applicable to user-to-user information (UUI) transfer in association with a circuit-switched telecommunication service only.

The PHS-UUS supplementary services are applicable to all telecommunication services.

This specification is applicable to the Stage 3 Recommendation for the PHS-UUS supplementary services, as defined in Recommendation I.130 [1].

1.2 References

These references are cited at the appropriate places in the text and the publications are listed hereafter. Dated references, subsequent amendments to, or revisions of any of these publications apply to this specification only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] CCITT Recommendation *Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN*, Rec. I.130, 1988.

[2] CCITT Recommendation specification *Stage 2 of the method for the characterization of services supported by an ISDN,* Rec. Q.65, 1988.

[3] PHS MoU specification *Public Personal Handy-Phone System; PHS User-to-User Signalling (PHS-UUS),*B-SV2.70-01TS.

[4] CCITT Recommendation *Vocabulary of terms for ISDNs*, Rec. I.112, 1988.

[5] PHS MoU specification *Public Personal Handy-Phone System; General Description of Services,* B-SV0.00-02-TS.

1.3 Definitions

For the purpose of this specification, the following definitions apply:
Service: telecommunication service: see 2.2/I.112 definition 201 [4].
Supplementary service: see 2.3/B-SV0.00[5].

1.4 Symbols and abbreviations

For the purpose of this specification , the following abbreviations are used:

CC	Call Control
CCA	Call Control Agent
FE	Functional Entity
FEA	Functional Entity Action
ISDN	Integrated Services Digital Network
LE	Local Exchange
np	Not Provided
p	Provided
PNX	Private Network Exchange
re	Requested and Essential
rne	Requested but Not Essential
PHS-UUS1	PHS User-to-User Signalling Service 1
PHS-UUS2	PHS User-to-User Signalling Service 2
PHS-UUS3	PHS User-to-User Signalling Service 3
TE	Terminal Equipment
UUI	User-to-User Information
PHS-UUM	PHS User-to-User Message
PHS-UUS	PHS User-to-User Signalling
public CS	public Cell Station
SSP	Service Switching point

1.5 Description

The general description of the PHS-UUS supplementary service is specified in PHS MoU specification B-SV2.70[3].

1.6 Derivation of the functional model

1.6.1 Functional model description

The model for the PHS-UUS supplementary service is shown in Figure 1-1/B-IF0.51.

FIGURE 1-1/B-IF0.51 Functional model

1.6.2 Description of the functional entities

The functional entities required by the PHS-UUS supplementary services in addition to those of the basic call as follows:

1.6.2.1 FE1

FE1 is the functional entity that serves the user and is responsible for initiating functional requests and interacting with the network.

1.6.2.2 FE2

FE2 is the functional entity within the network that cooperate with their peers to provide the services requested by FE1 and FE5.(NOTE1)

1.6.2.3 FE3

FE3 is the functional entity within the network that cooperate with their peers to provide the services requested by FE1 and FE5.

1.6.2.4 FE4

FE4 is the functional entity within the network that cooperate with their peers to provide the services requested by FE1 and FE5.(NOTE1)

1.6.2.5 FE5

FE5 is the functional entity that serves the user and is responsible for initiating functional requests and interacting with the network.

NOTE1 - This entity corresponds to public PHS network including public CS and SSP. As for this PHS-UUS service, public CS carries a message transparent.

1.6.3 Relationship with a basic service

The relationship with a basic service is shown in Figure 1-2/B-IF0.51.
Service 1 is carried across the network as part of Basic service. Services 2 and 3 allow additional messages to be accepted and processed from specific states in the basic service model. These messages do not alter the state but require an action to take place.

1.6.3.1 Description of the call control agent functional entity

The CCA functional entity supports the functionality to:

a) access the service-providing capabilities of the CC entities, using service requests to establish, manipulate and release a single call;

b) receive indications relating to the call from the CC entity and relay them to the user;

c) maintain call state information as perceived from this functional end-point of the service (i.e. a single-ended view of the call).

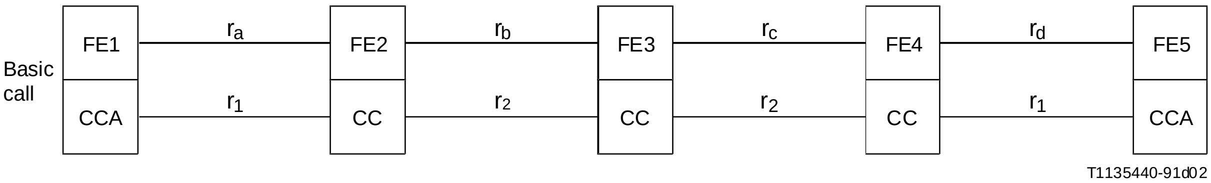


FIGURE 1-2/B-IF0.51 Relationship of UUS with a basic service

1.6.3.2 Description of the call control (CC) functional entity

The CC functional entity supports the functionality to:

a) establish, manipulate and release a single call (upon request of the CCA entity);

b) associate and relate the CCA entities that are involved in a particular call and/or service;

c) manage the relationship between the CCA entities involved in a call (i.e. reconcile and maintain the overall perspective of the call and/or service).

1.7 Information flows

1.7.1 Information flow diagrams

Information flow diagrams for PHS-UUS supplementary service call setup, service usage and call release are shown in Figures 1-3 to 1-11/B-IF0.51.

– Figure 1-3/B-IF0.51 shows a successful use of PHS-UUS Service 1 in a point-to-point configuration;

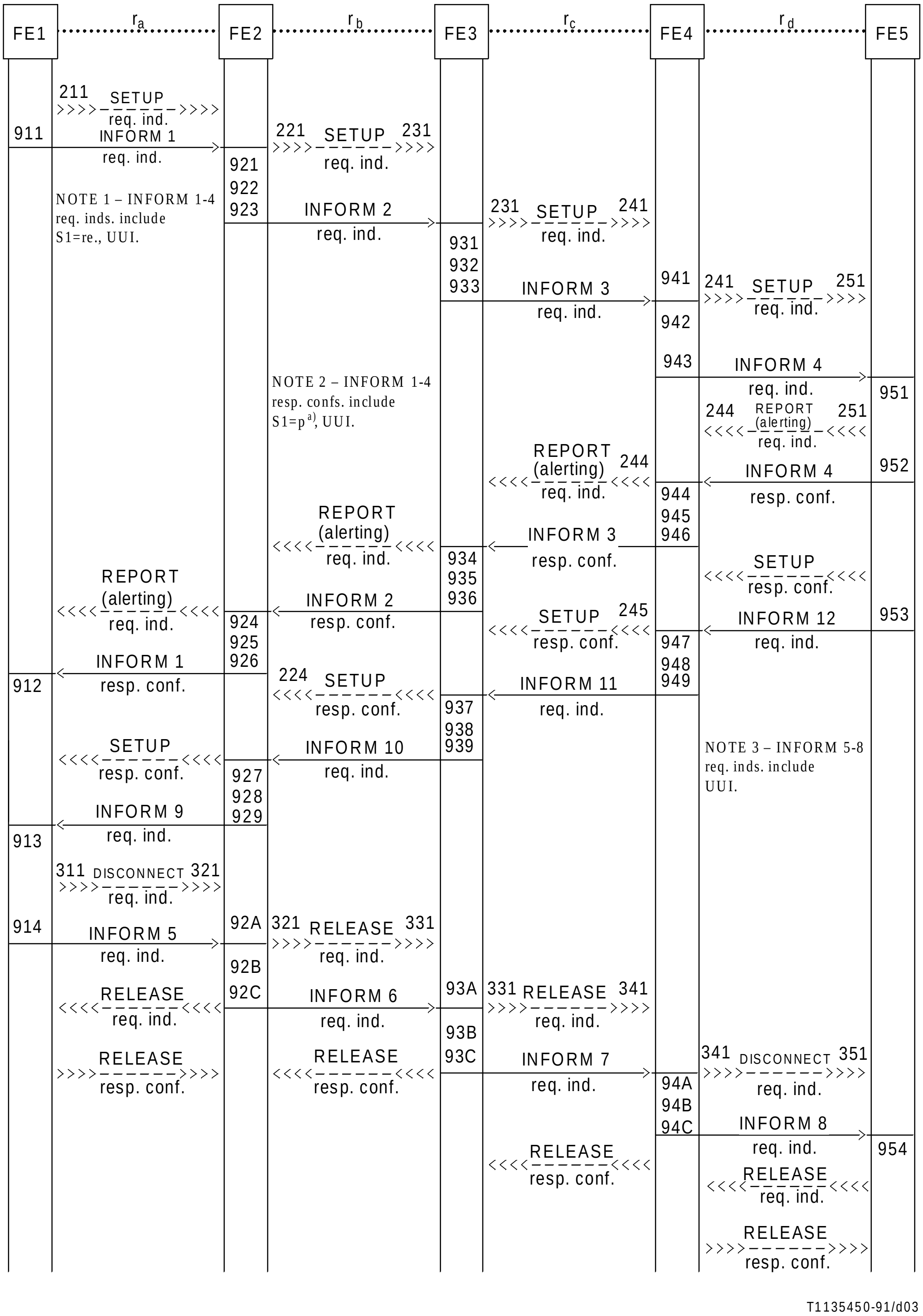
– Figure 1-5/B-IF0.51 shows a successful and an unsuccessful use of PHS-UUS Service 2 in a point-to-point configuration;

– Figure 1-7/B-IF0.51 shows a successful and an unsuccessful use of PHS-UUS Service 3 request and essential;

– Figure 1-8/B-IF0.51 shows a successful and an unsuccessful use of PHS-UUS Service 3 requested but not essential;

– Figure 1-9/B-IF0.51 shows a successful and an unsuccessful use of PHS-UUS Service 3 requested during the active phase by the calling party;

– Figure 1-10/B-IF0.51 shows a successful and an unsuccessful use of PHS-UUS Service 3 requested during the active phase by the called party;



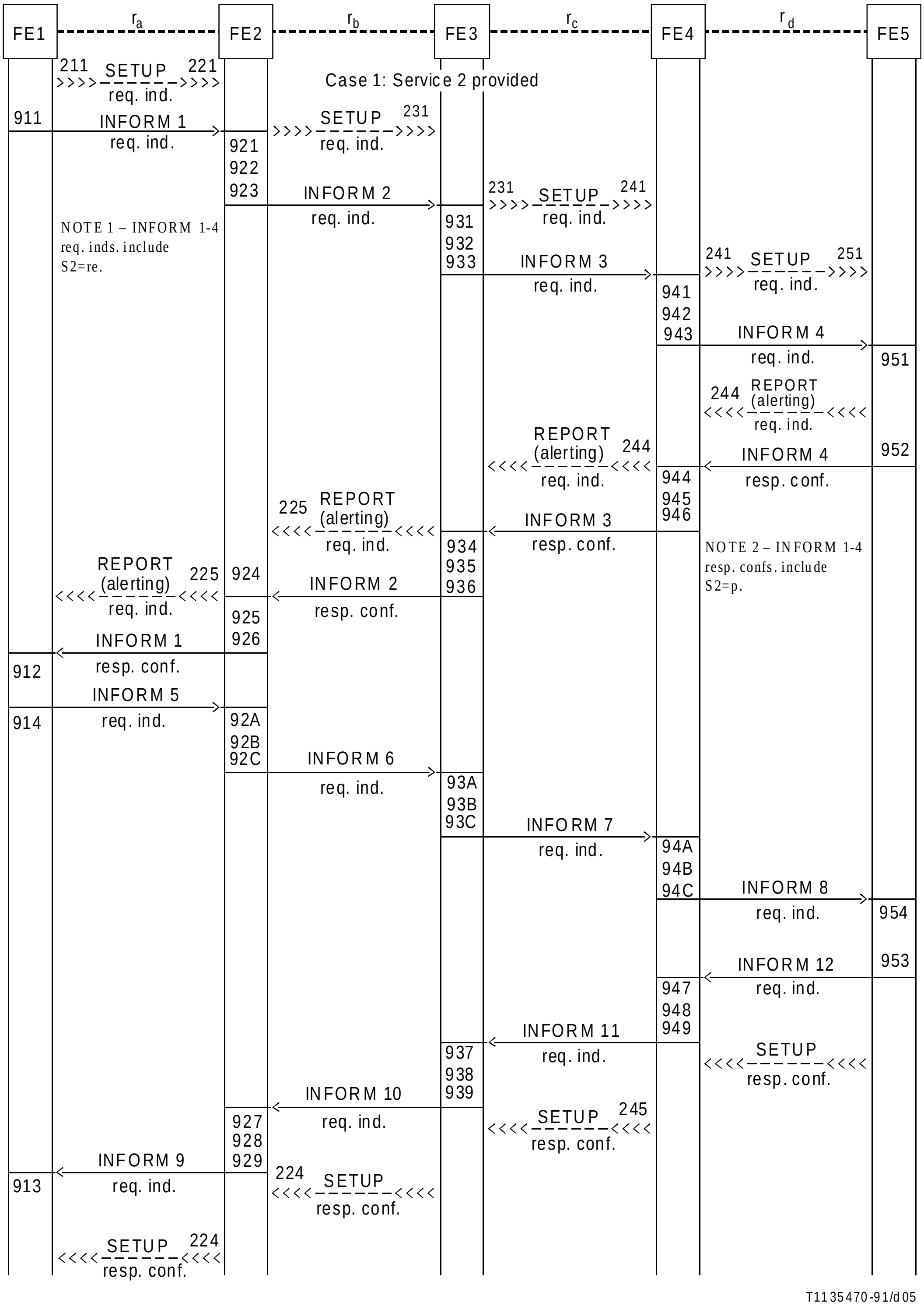
re. Requested and essential
p. Provided

a) This indication may be included in INFORM 8 req. ind. (with SETUP resp. conf.).

NOTE – Although not shown in this figure, the calling user is allowed to request Service 1 as not essential (i.e. rne.).

FIGURE 1-3/B-IF0.51

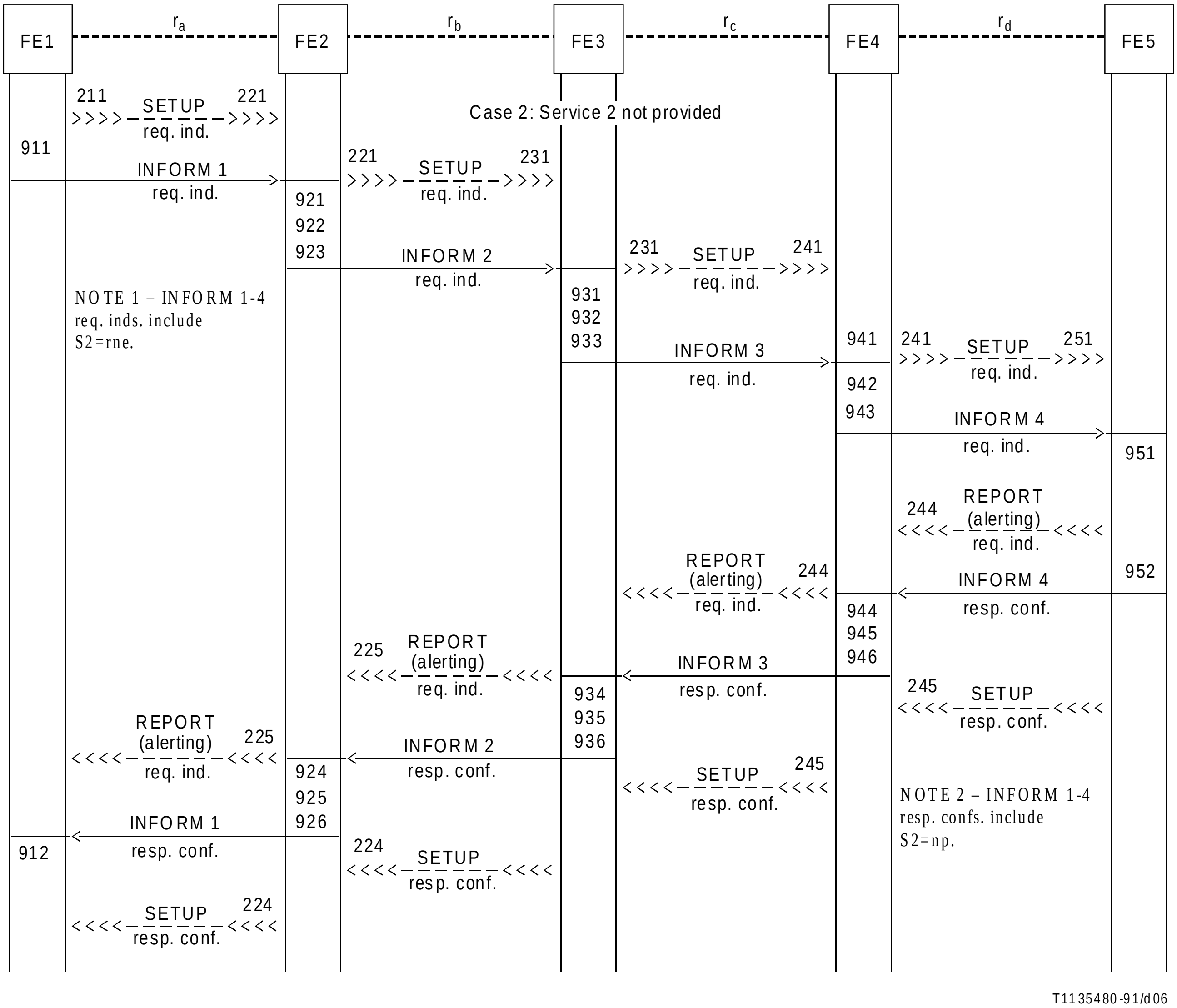
PHS-UUS Service 1-Successful case
Called user is point-to-point



re. Requested and essential
p. Provided

FIGURE 1-5/B-IF0.51(sheet 1of2)

PHS-UUS Service 2
Called user is point-to-point



rne. Requested but not essential
np. Not provided

FIGURE 1-5/B-IF0.51(sheet 2of2)

PHS-UUS Service 2
Called user is point-to-point

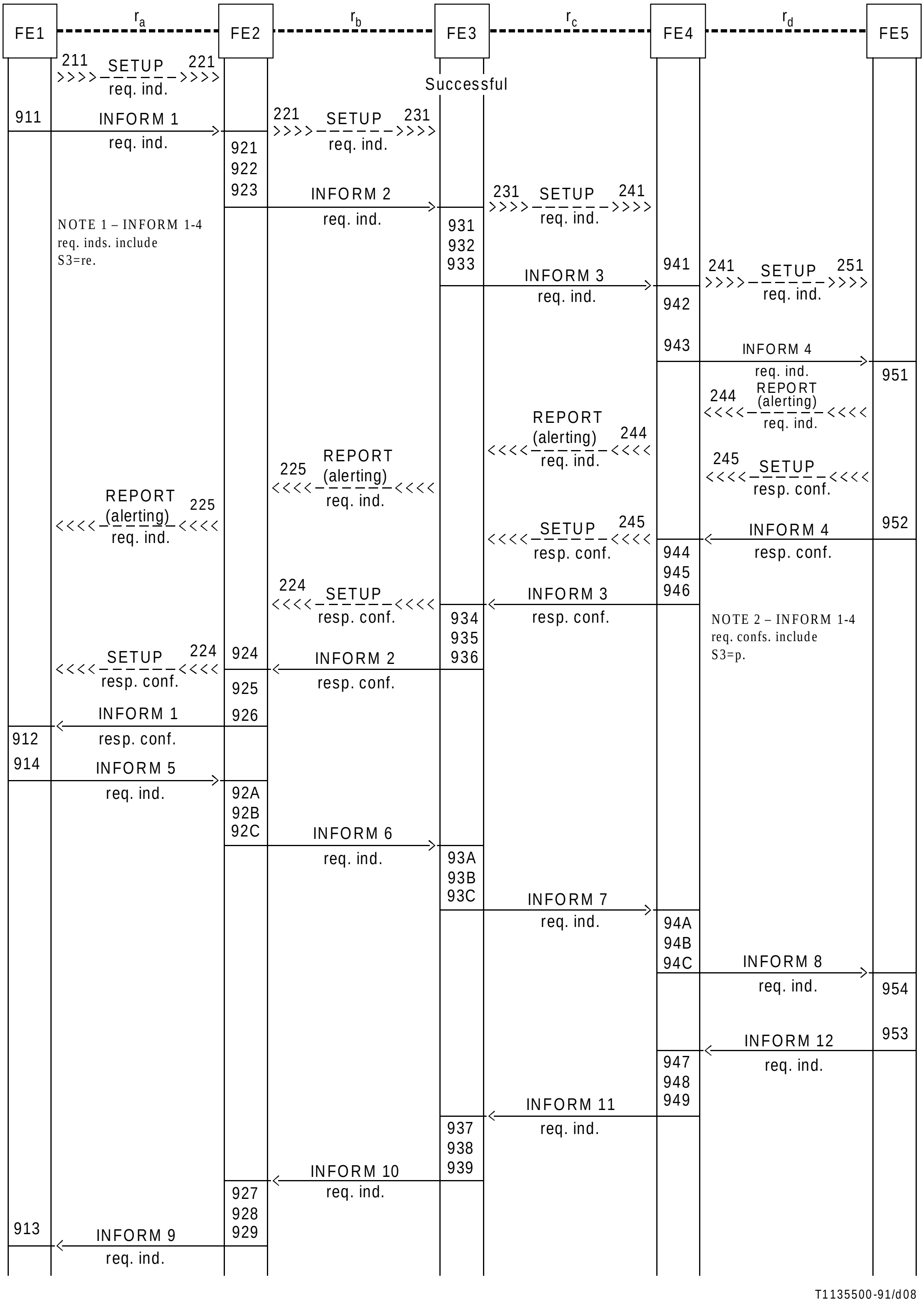
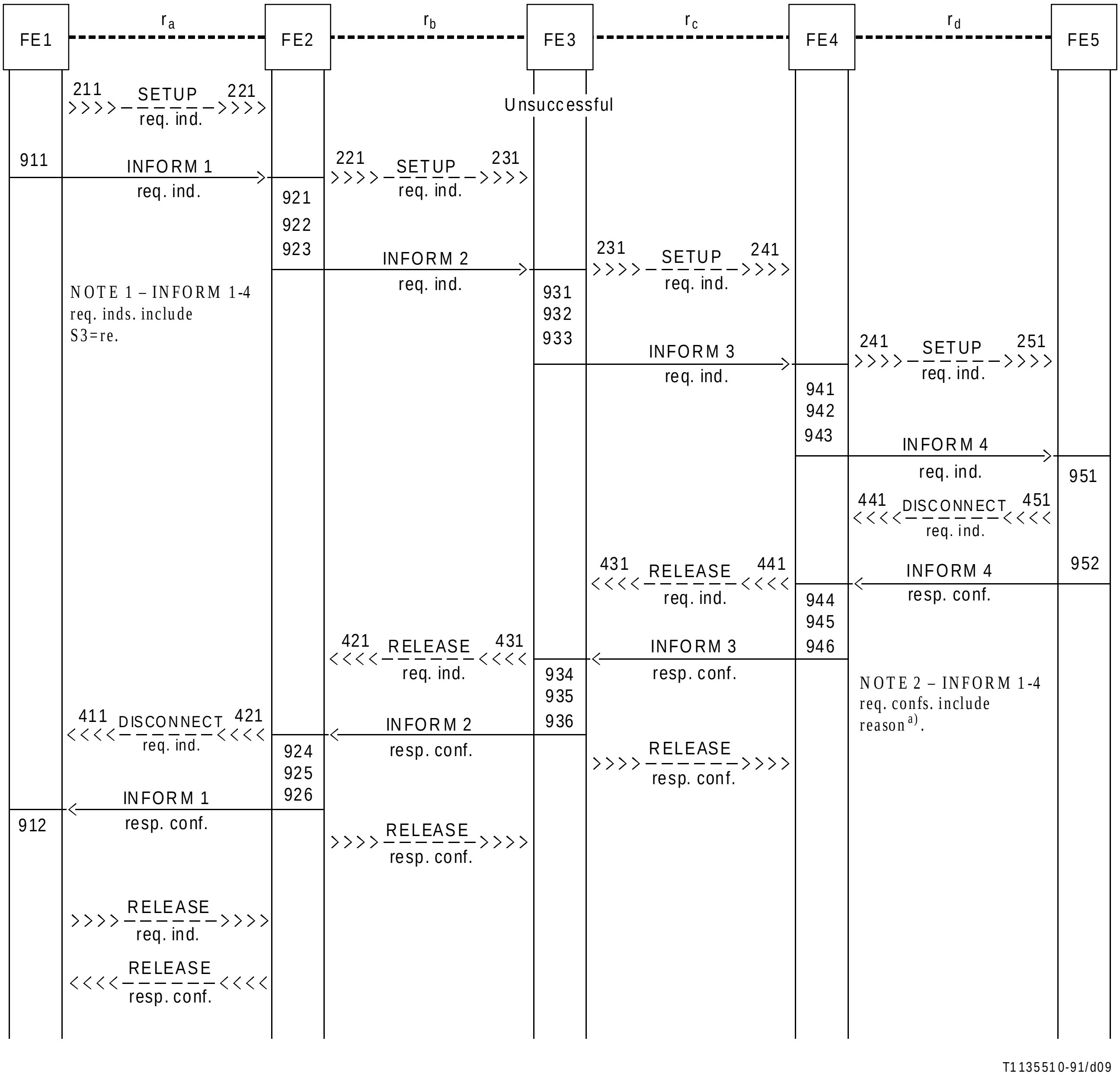


FIGURE 1-7/B-IF0.51(sheet1of2)

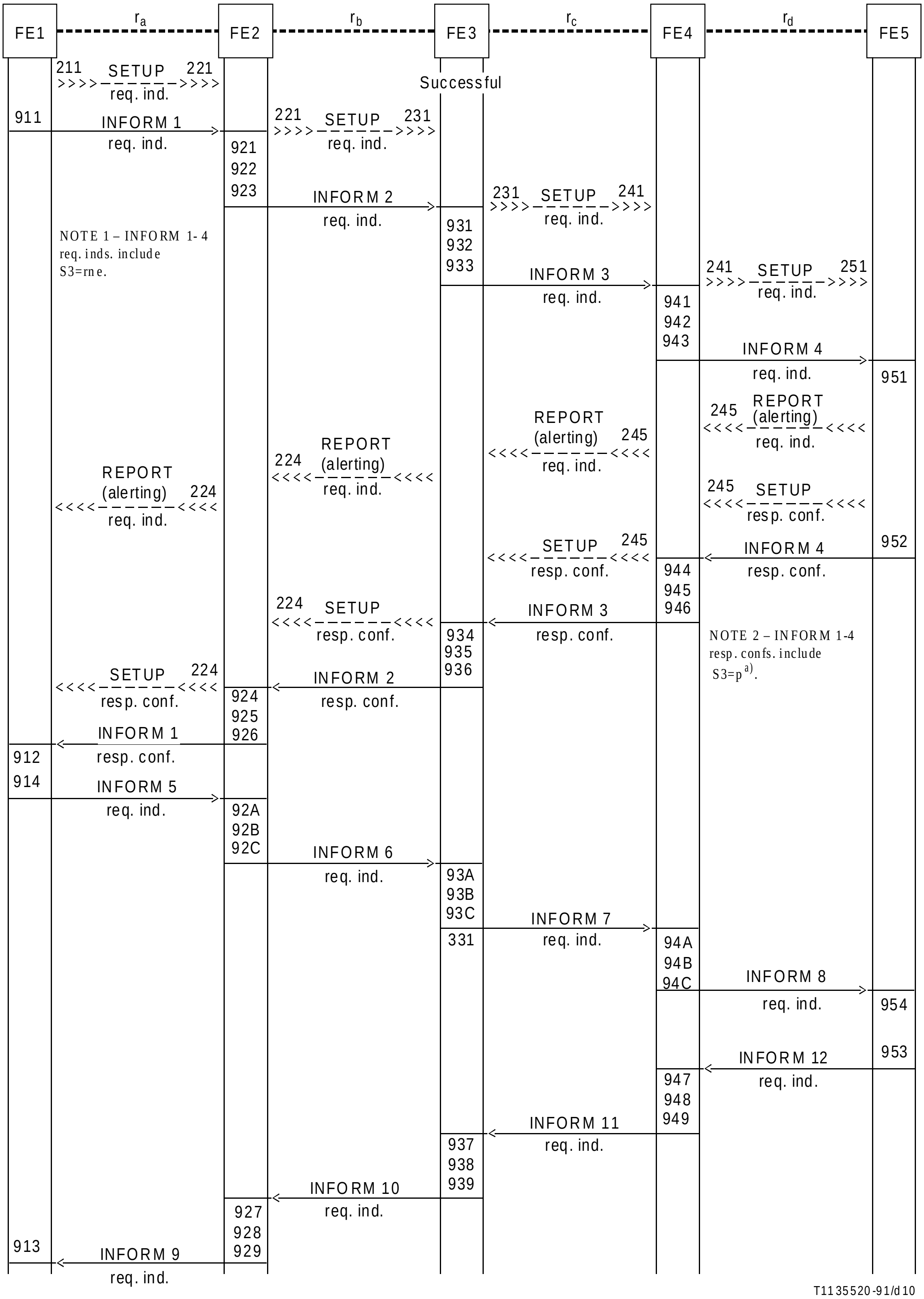
PHS-UUS Service 3
S3 requested and essential



a) The reason is “this service cannot be provided by the called user”.

FIGURE 1-7/B-IF0.51(sheet2of2)

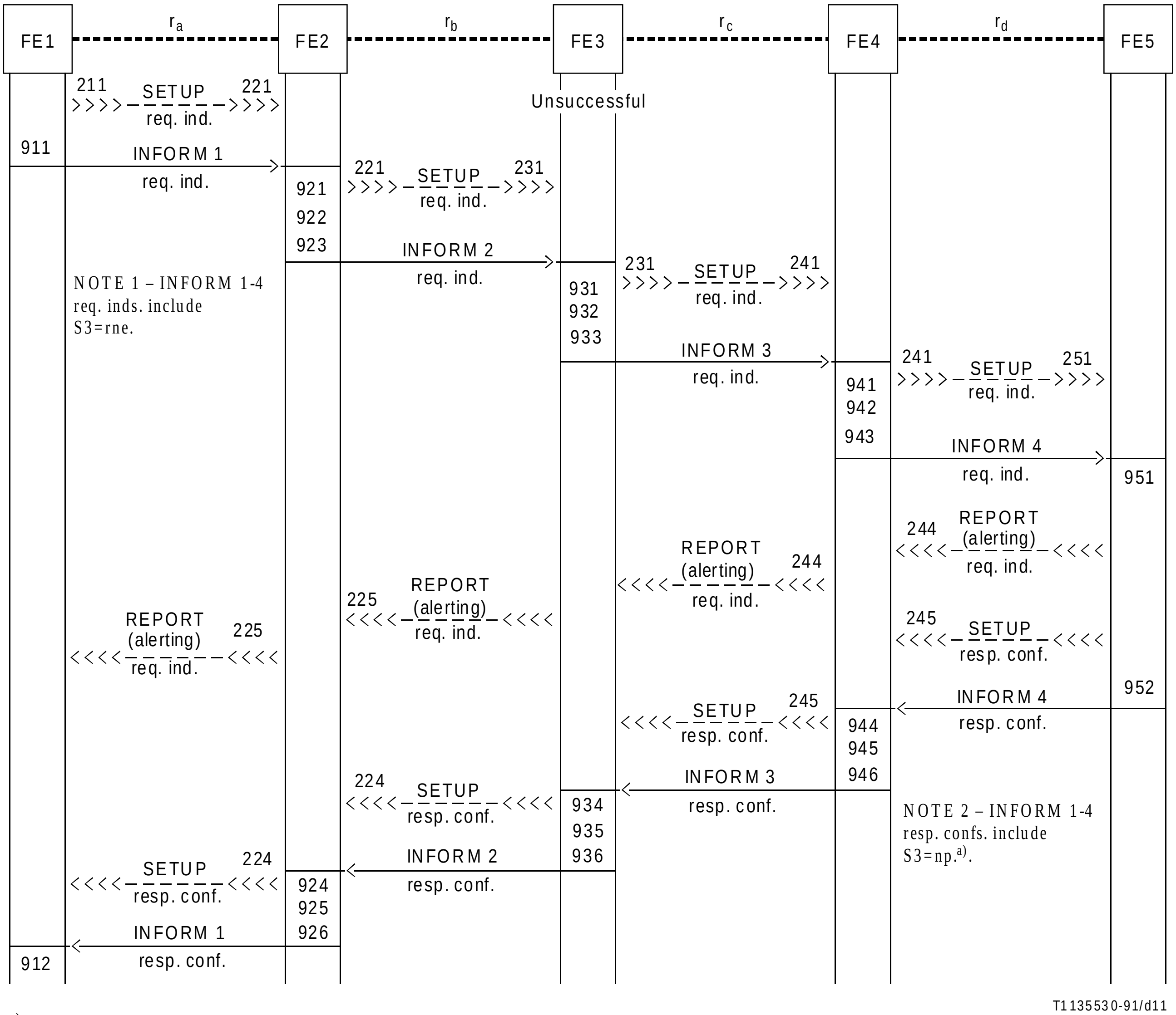
PHS-UUS Service 3
S3 requested and essential



a) INFORM 1-4 resp. conf. could be sent in REPORT (alerting) req. ind. information flow.

FIGURE 1-8/B-IF0.51(sheet1of2)

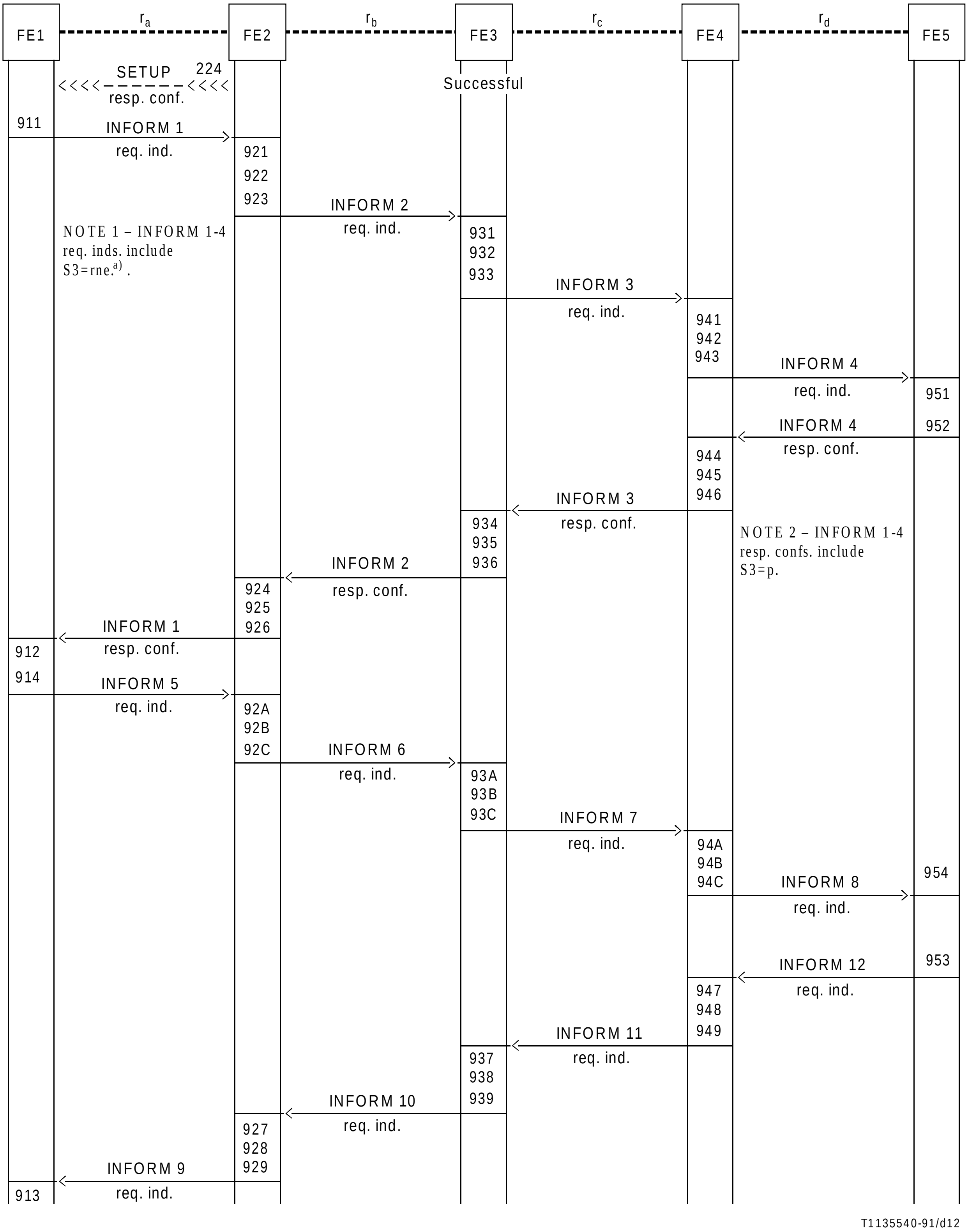
PHS-UUS Service3
S3 requested and not essential



a) INFORM 1-4 resp. conf. could be sent in REPORT (alerting) req. ind. information flow.

FIGURE 1-8/B-IF0.51(sheet2of2)

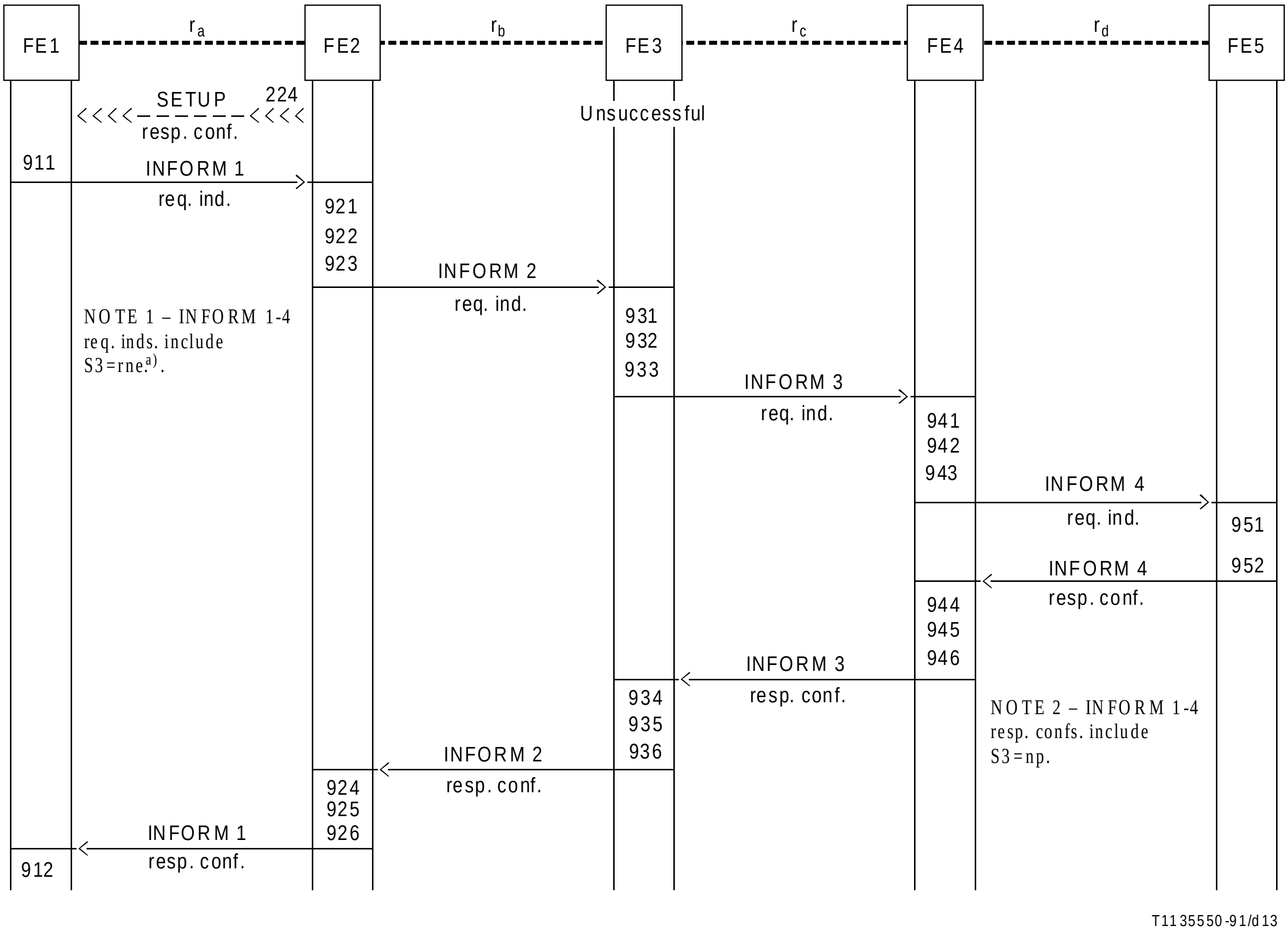
PHS-UUS Service3
S3 requested but not essential



a) There are no essential requests during the active phase.

FIGURE 1-9/B-IF0.51(sheet1of2)

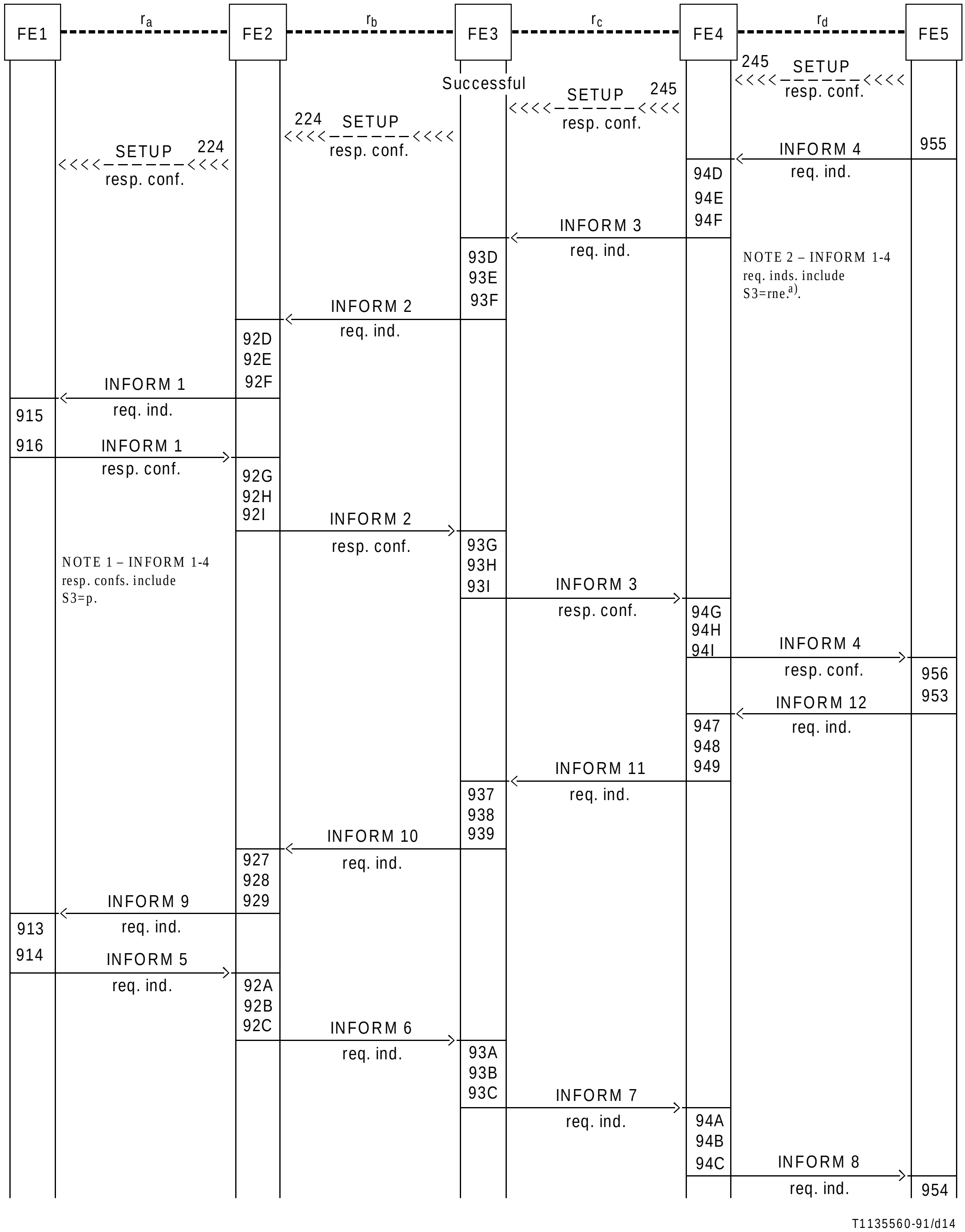
PHS-UUS Service3
Requested during active phase(by calling party)
S3 requested but not essential



[a] There are no essential requests during the active phase.

FIGURE 1-9/B-IF0.51(sheet2of2)

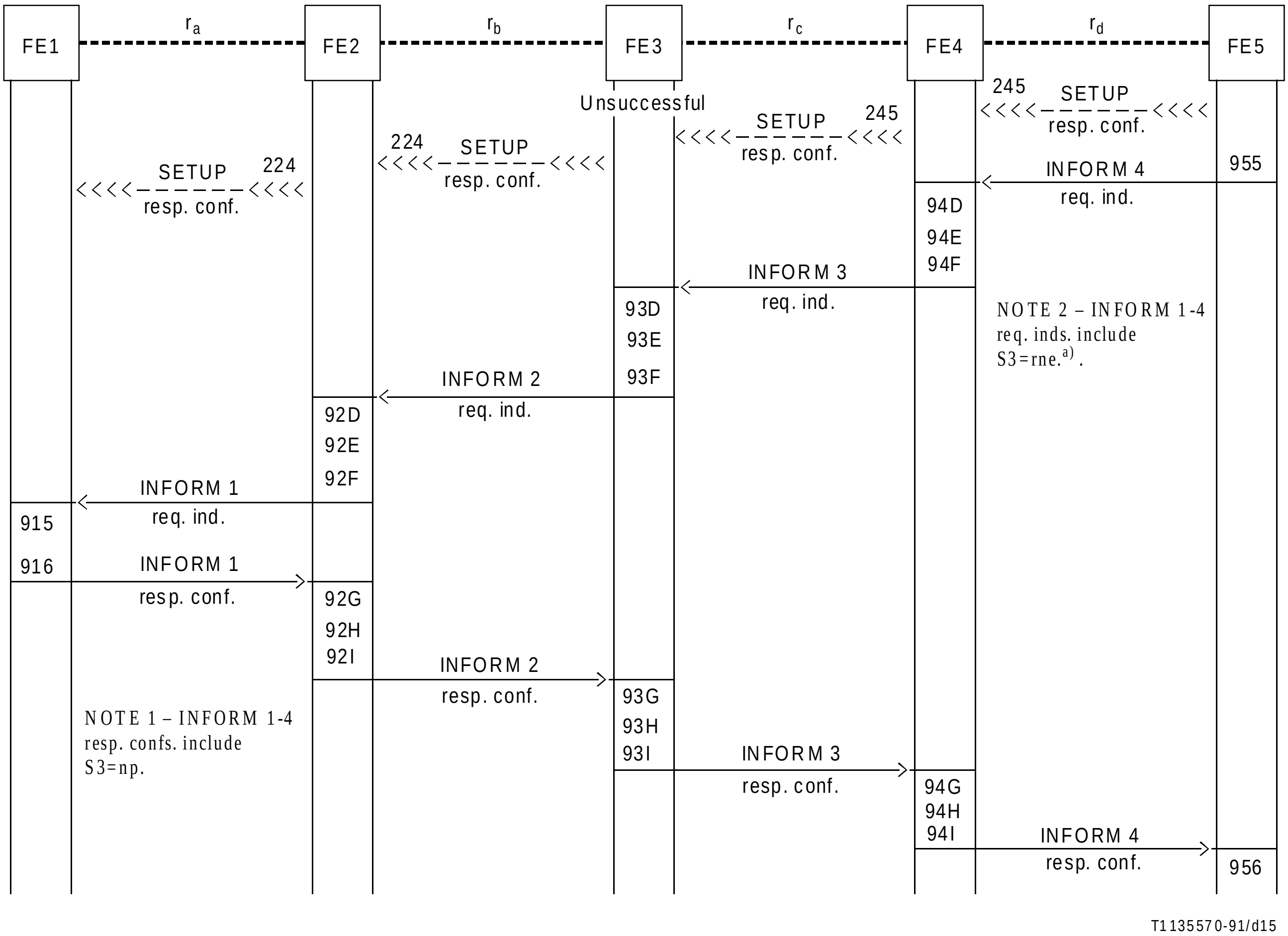
PHS-UUS Service3
Requested during active phase(by calling party)
S3 requested but not essential



[a] There are no essential requests during the active phase.

FIGURE 1-10/B-IF0.51(sheet1of2)

PHS-UUS Service3
Requested during active phase (by called party)
S3 requested but not essential



[a] There are no essential requests during the active phase.

FIGURE 1-10/B-IF0.51(sheet2of2)

PHS-UUS Service3
Requested during active phase(by called party)
S3 requested but not essential

1.7.2 Definition of Individual Information Flows

1.7.2.1 Relationship r_a

1.7.2.1.1 Contents of INFORM 1 req. ind

The contents of INFORM 1 req. ind are shown in Table 1-1/B-IF0.51.

TABLE 1-1/B-IF0.51

The contents of INFORM 1 req. ind.

Parameter	Allowed value	req. ind.
PHS-UUS Service request	S1 = re or rne S2 = re or rne S3 = re or rne	Mandatory
PHS-UUS Service Information	Maximum 127 octs	Optional

NOTES
1 re Requested and essential
rne Requested but not essential
2 At Service 3, there are no essential requests during the active phase.

1.7.2.1.2 Contents of INFORM 1 resp. conf

The contents of INFORM 1 resp. conf are shown in Table 1-2/B-IF0.51.

TABLE 1-2/B-IF0.51

The contents of INFORM 1 resp. conf.

Parameter	Allowed value	resp. conf.
PHS-UUS Service result	S1 = p or np S2 = p or np	Mandatory
	reason	Optional
	S3 = p or np	
	reason	Optional
PHS-UUS Service Information	Maximum 127 octs	Optional

NOTES
1 p provided
np not provided
2 The reason is “PHS-UUS Service 3 cannot be provided by the called user”.

1.7.2.1.3 Contents of INFORM 5 req. ind

The contents of INFORM 5 req. ind are shown in Table 1-3/B-IF0.51.

1.7.2.1.4 Contents of INFORM 9 req. ind

See 1.7.2.1.3.

TABLE 1-3/B-IF0.51
The contents of INFORM 5 req. ind.

Parameter	Allowed value	req. ind
PHS-UUS Service Information	Maximum 127 octs	Mandatory

1.7.2.2 Relationship r_b

1.7.2.2.1 Contents of INFORM 2 req. ind

See 1.7.2.1.1.

1.7.2.2.2 Contents of INFORM 2 resp. conf

See 1.7.2.1.2.

1.7.2.2.3 Contents of INFORM 6 req. ind

See 1.7.2.1.3.

1.7.2.2.4 Contents of INFORM 10 req. ind

See 1.7.2.1.3.

1.7.2.3 Relationship r_c

1.7.2.3.1 Contents of INFORM 3 req. ind

See 1.7.2.1.1.

1.7.2.3.2 Contents of INFORM 3 resp. conf

See 1.7.2.1.2.

1.7.2.3.3 Contents of INFORM 7 req. ind

See 1.7.2.1.3.

1.7.2.3.4 Contents of INFORM 11 req. ind

See 1.7.2.1.3.

1.7.2.4 Relationship r_d

1.7.2.4.1 Contents of INFORM 4 req. ind

See 1.7.2.1.1.

1.7.2.4.2 Contents of INFORM 4 resp. conf

See 1.7.2.1.2.

1.7.2.4.3 Contents of INFORM 8 req. ind

See 1.7.2.1.3.

1.7.2.4.4 Contents of INFORM 12 req. ind

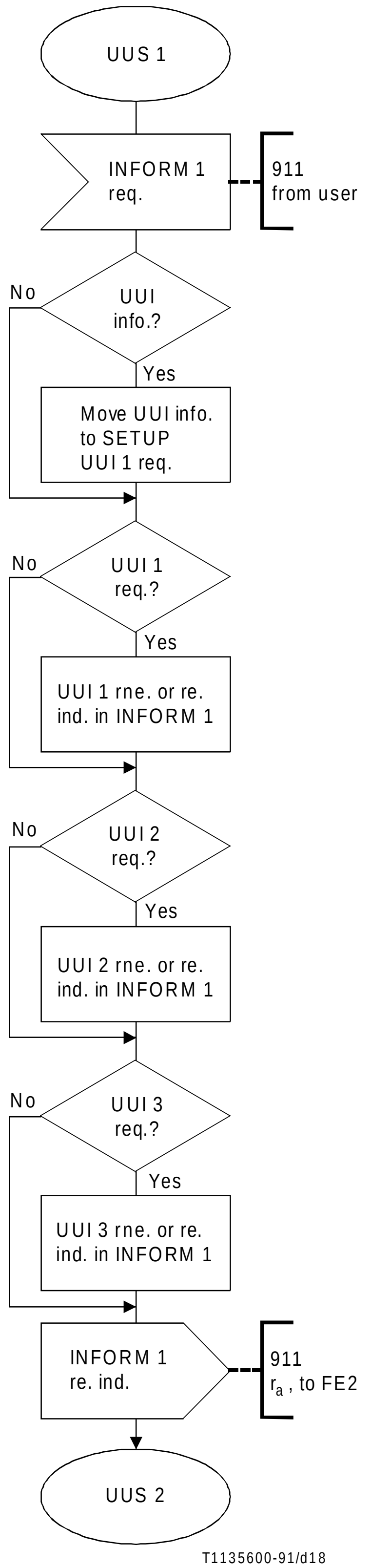
See 1.7.2.1.3.

1.8 SDL diagrams for functional entities

The term UUS in this section shall be replaced with the term PHS-UUS.

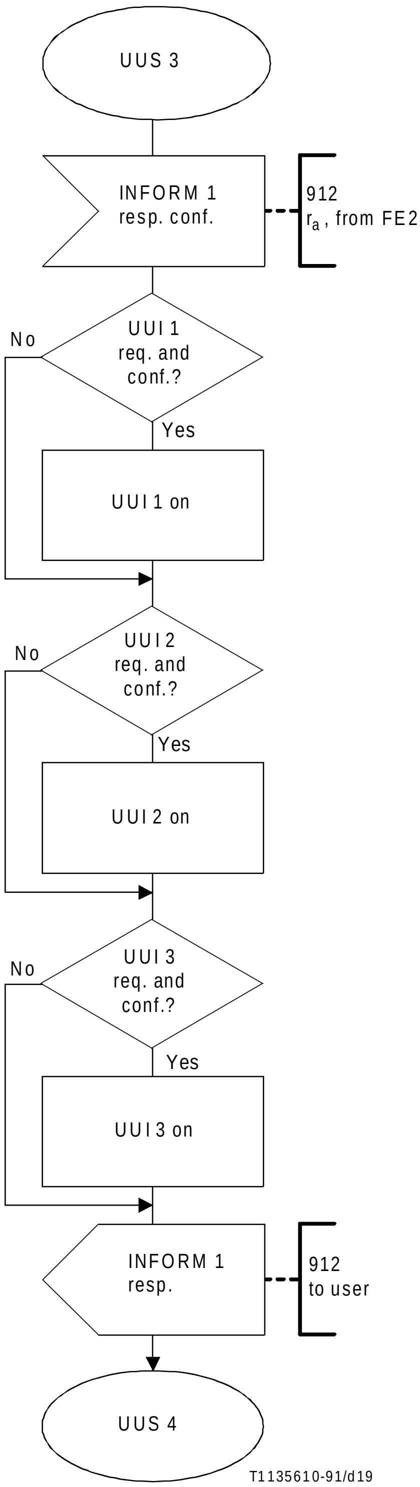
1.8.1 SDLs for FE1

See Figures 1-12 to 1-17.



NOTE – UUS 1 and UUS 2 break the basic call between connectors S1/1 and S1/2.

FIGURE 1-12/B-IF0.51
OCA additions to basic call for UUS
Process service request

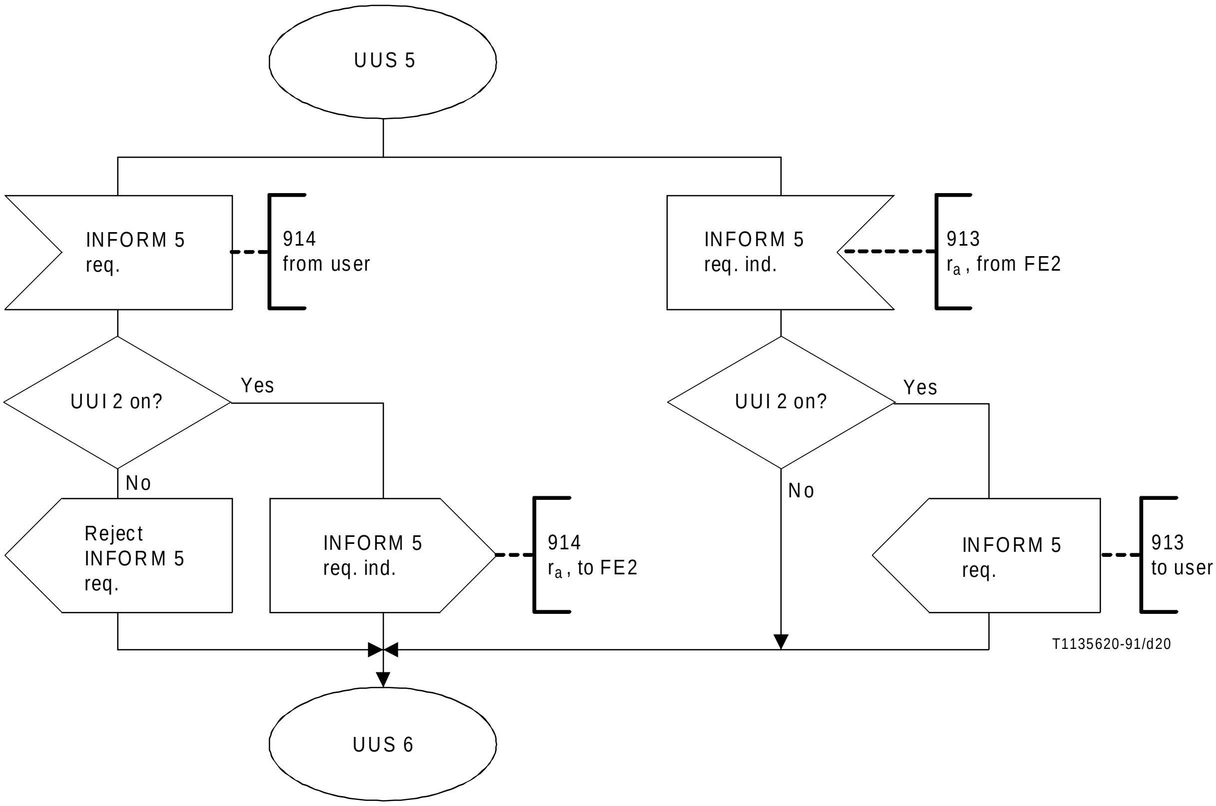


req. Requested
conf. Confirmed

NOTE – UUS 3 and UUS 4 break the basic call between connectors S1/3 and S1/4, between S1/21 and S1/22, between S1/UUS 3C and S1/UUS 4C.

FIGURE 1-13/B-IF0.51

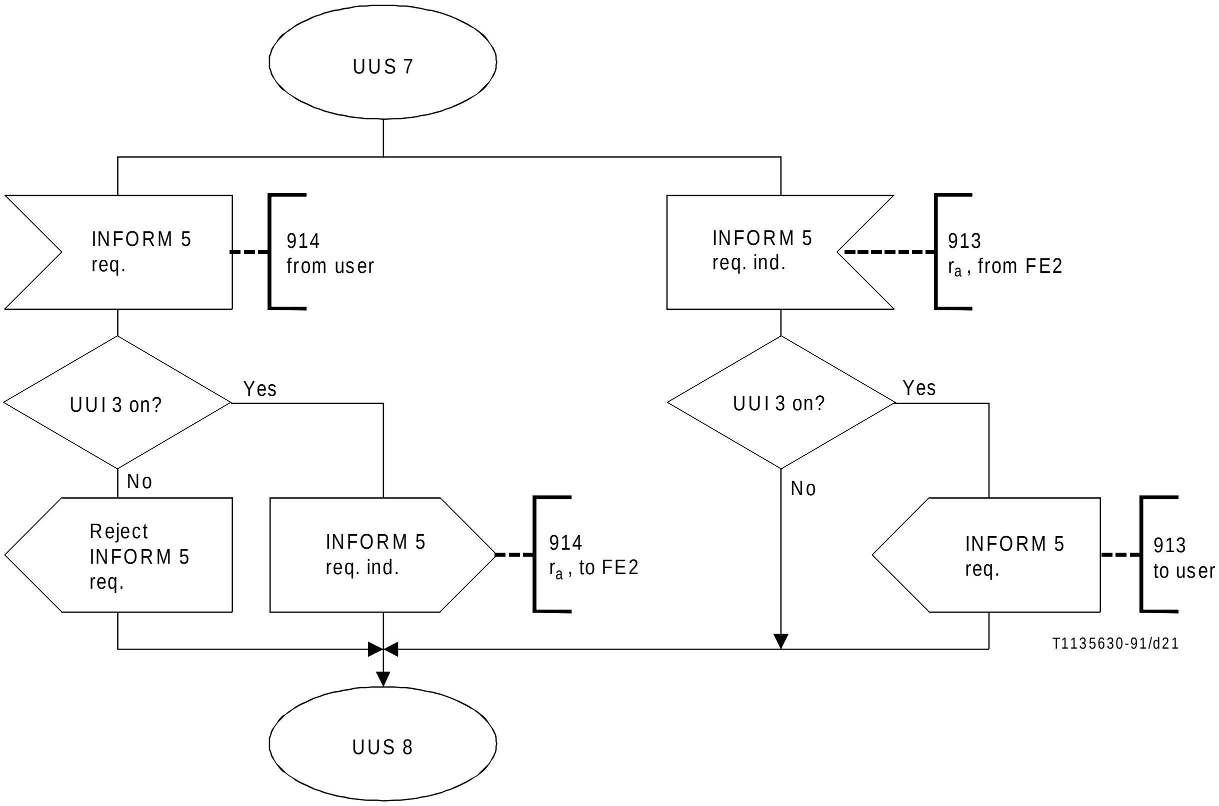
**Report ind. or report (Alerting) ind.
Processing of parameters**



NOTE – UUS 5 and UUS 6 break the basic call between connectors S1/3 and S1/4.

FIGURE 1-14/B-IF0.51

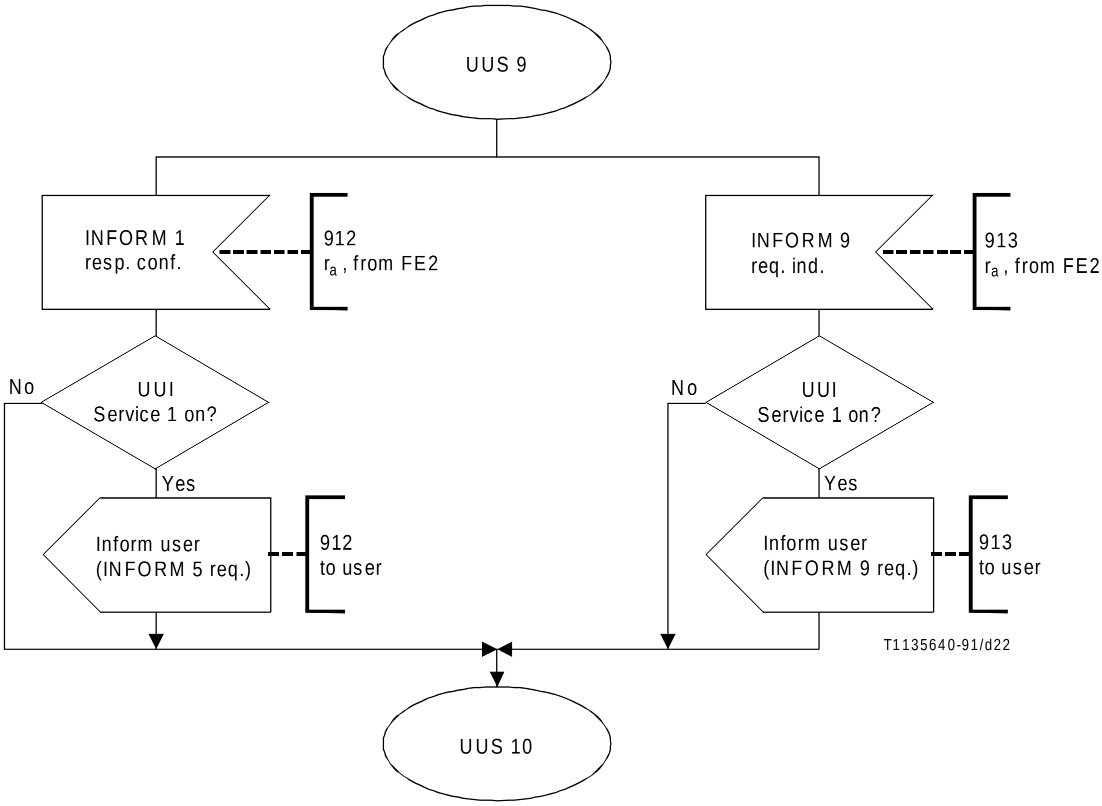
CCA r1-User INFORM 5 connection proceeding processing



NOTE – UUS 7 and UUS 8 break the basic call between S1/UUS 7 and S1/UUS 8.

FIGURE 1-15/B-IF0.51

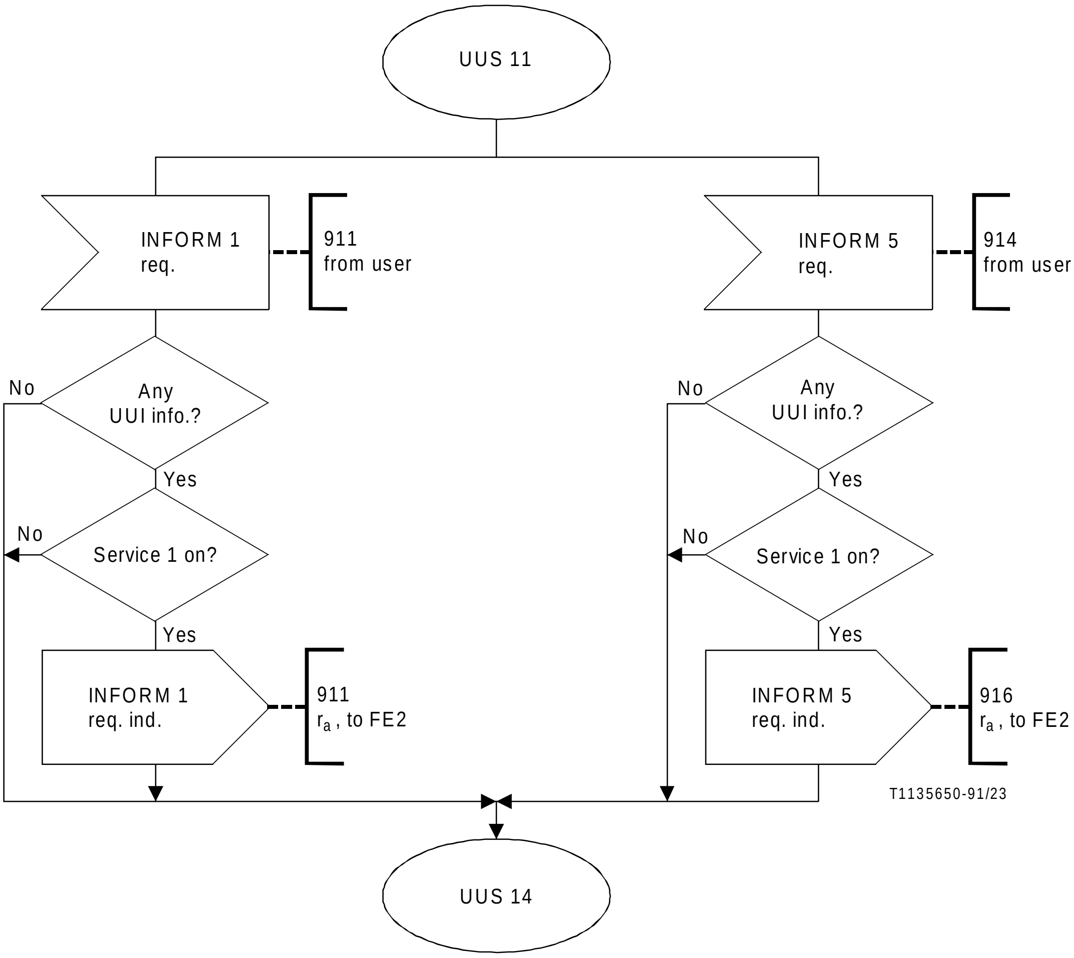
CCA r1-User INFORM 5 active processing



NOTE – UUS 9 and UUS 10 break the basic call between connectors S1/3 and S1/4, between connectors S1/21 and S1/22.

FIGURE 1-16/B-IF0.51(sheet 1 of2)

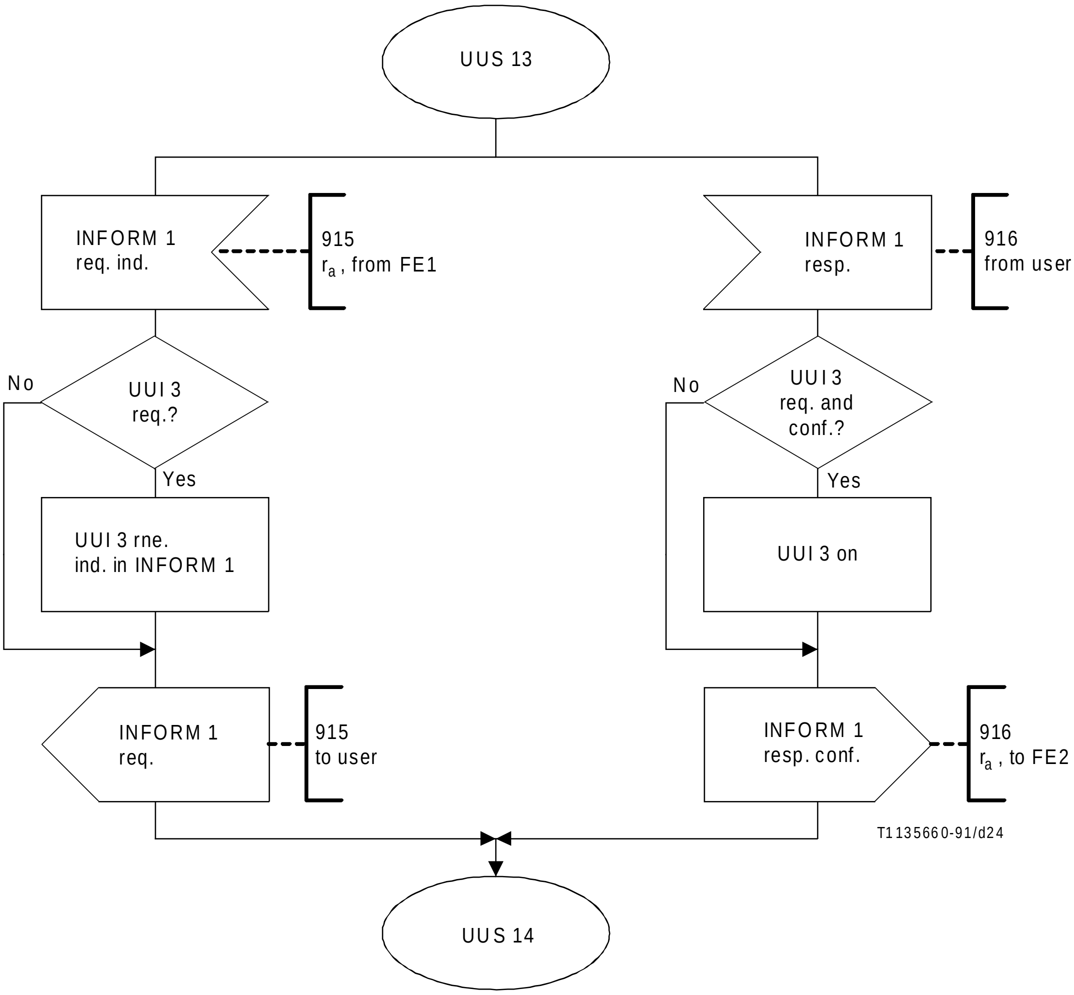
CCA r1-User UUS 1 processing
For call control message handling



NOTE – UUS 11 and UUS 12 break the basic call between connectors S1/1 and S1/2, between connectors S1/15 and S1/16.

FIGURE 1-16/B-IF0.51(sheet 2 of2)

CCA r1-User UUS 1 processing
For call control message handling



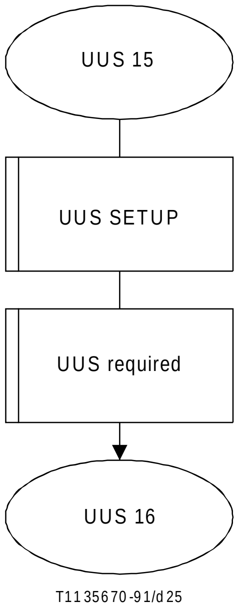
NOTE – UUS 13 and UUS 14 break the basic call between connectors S1/UUS 13 and S1/UUS 14.

FIGURE 1-17/B-IF0.51

CCA r1-User INFORM 1 active processing as a service provider option

1.8.2 SDLs for FE2 "CC functional entity (r1-r1)"

See Figures 1-18 to 1-28.



NOTE – UUS 15 and UUS 16 break the basic call between connectors S2/1 and S2/2.

FIGURE 1-18/B-IF0.51

Macrodefinition UUS originating screen

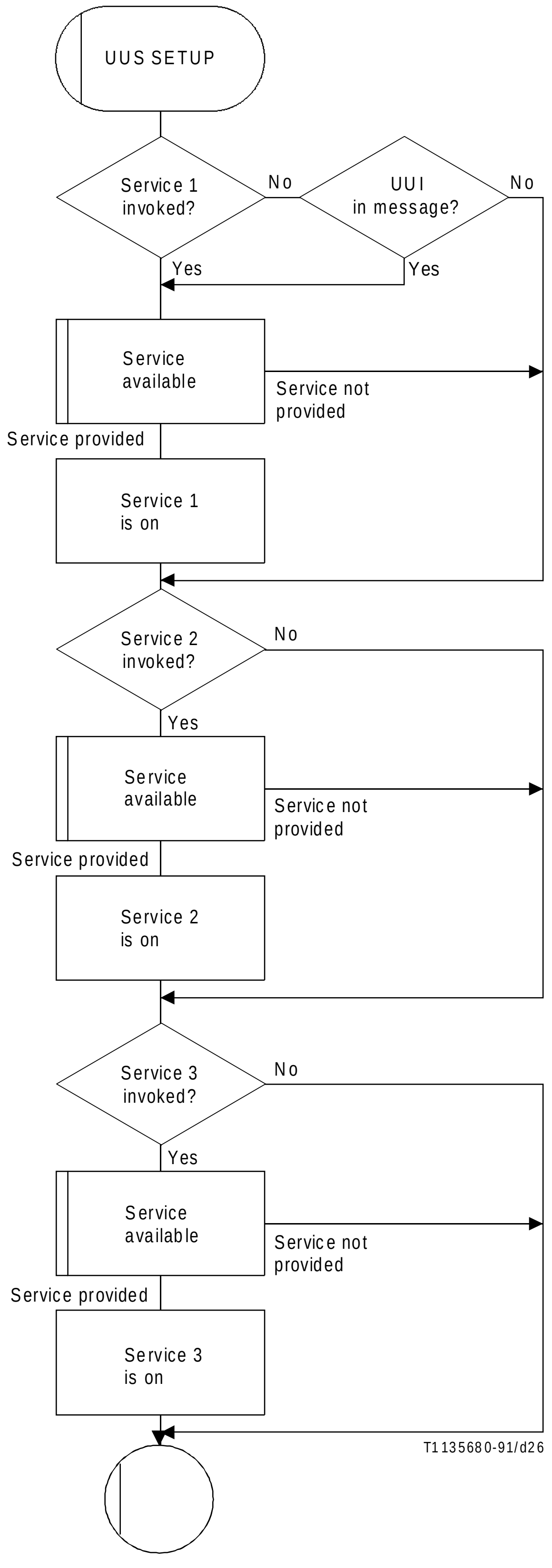


FIGURE 1-19/B-IF0.51

Macrodefinition UUS SETUP, r1-r1

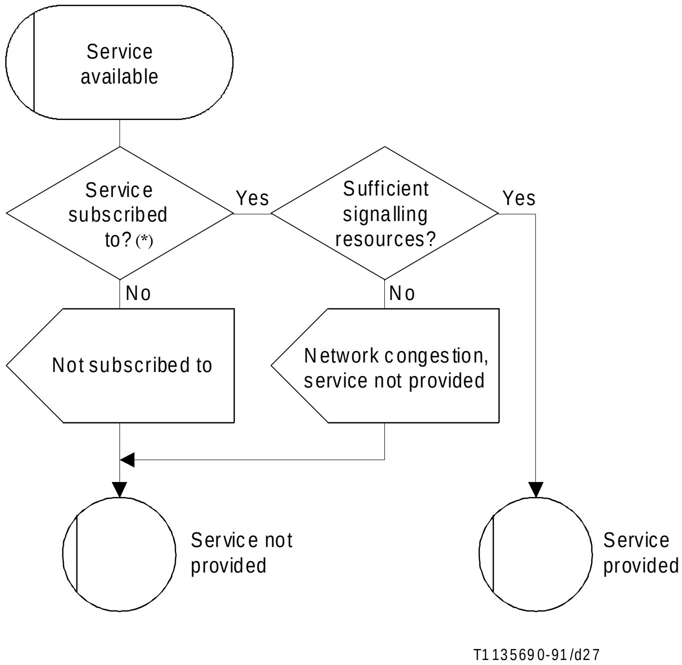


FIGURE 1-20/B-IF0.51

Macrodefinition service available

* : This process may be performed cooperating with SSF, SCF and SDF.

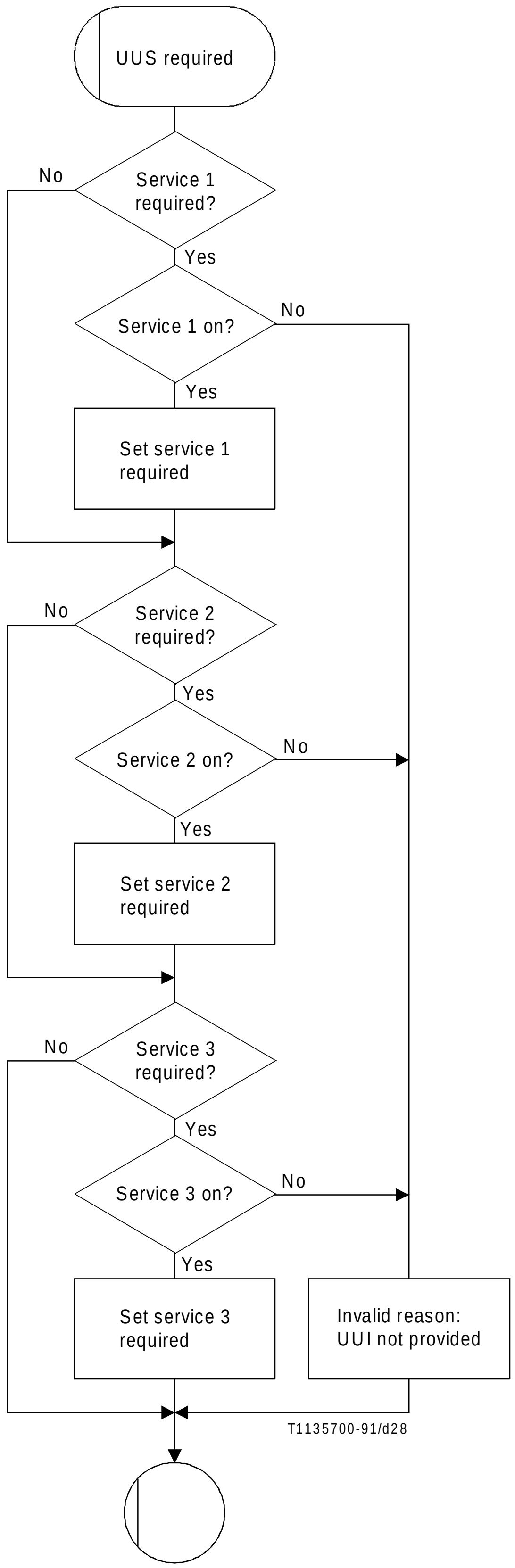
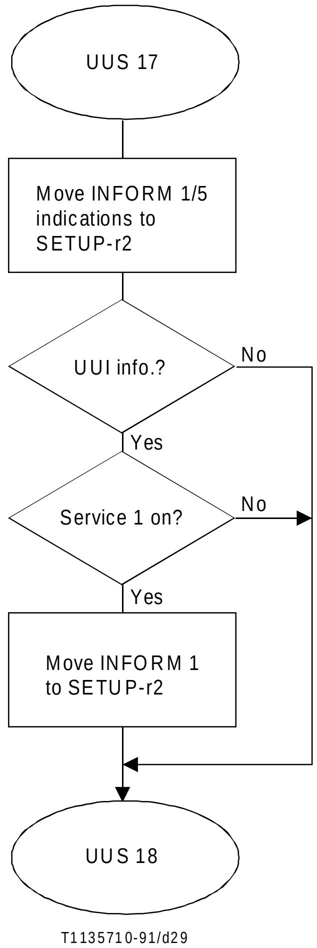


FIGURE 1-21/B-IF0.51

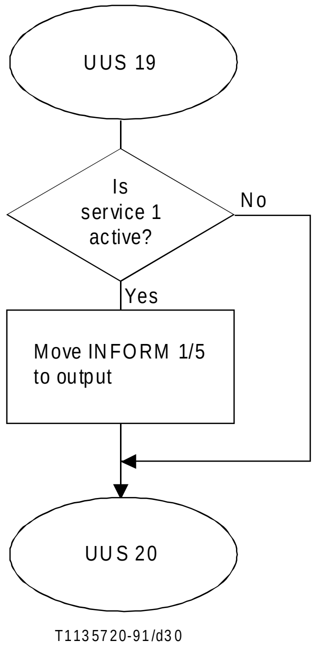
Macrodefinition UUS required



NOTE – UUS 17 and UUS 18 break the basic call between connectors S2/1 and S2/2.

FIGURE 1-22/B-IF0.51

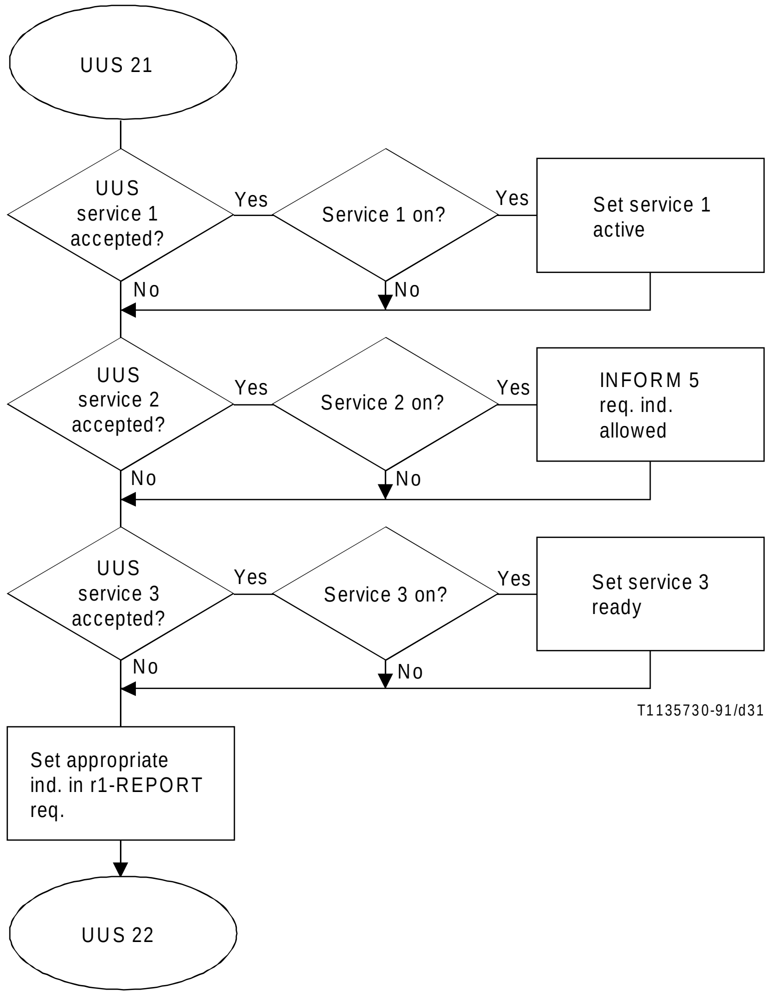
Macrodefinition UUS process



NOTE – UUS 19 and UUS 20 break the basic call between connectors S2/9 and S2/10.

FIGURE 1-23/B-IF0.51

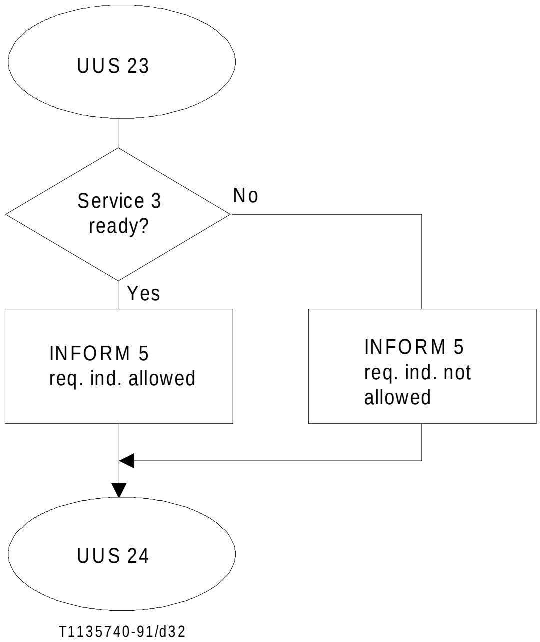
Macrodefinition UUI CMP



Note – UUS 21 and UUS 22 break the basic call between connectors S2/19 and S2/20.

FIGURE 1-24/B-IF0.51

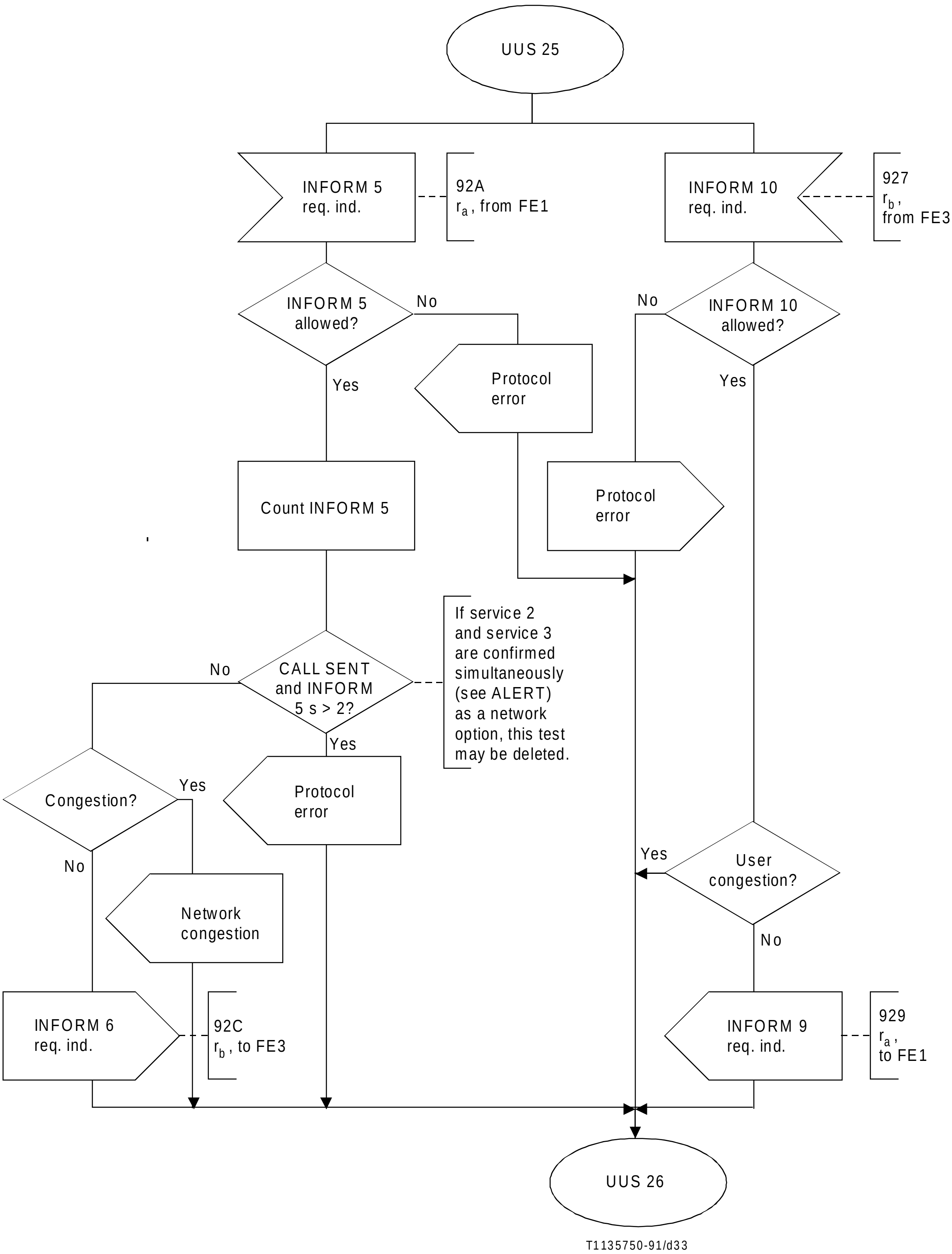
Macrodefinition UUI Alert



NOTE – UUS 23 and UUS 24 break the basic call between connectors S2/25, and S2/26.

FIGURE 1-25/B-IF0.51

Macrodefinition UUI SC



NOTES

1 A limit may be introduced for service 2 SDL INFORM 7/8 handling also found in FE4.

2 UUS 25 and UUS 26 break the basic call between connectors S2/19 and S2/20, between connectors S2/UUS 25b and S2/UUS 26b.

FIGURE 1-26/B-IF0.51

INFORM 5/6, 9/10 handling

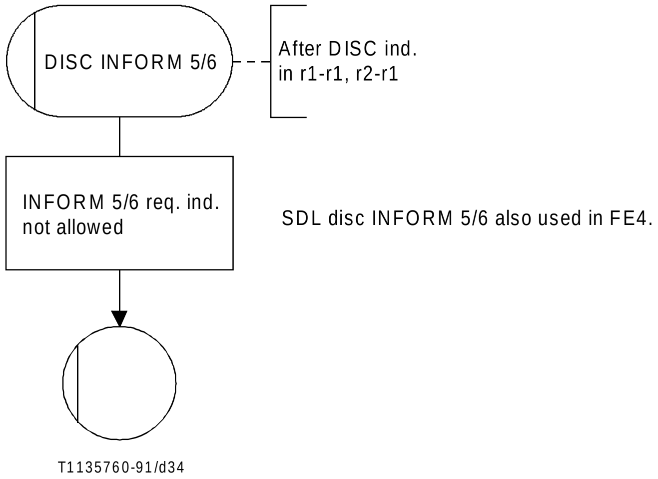
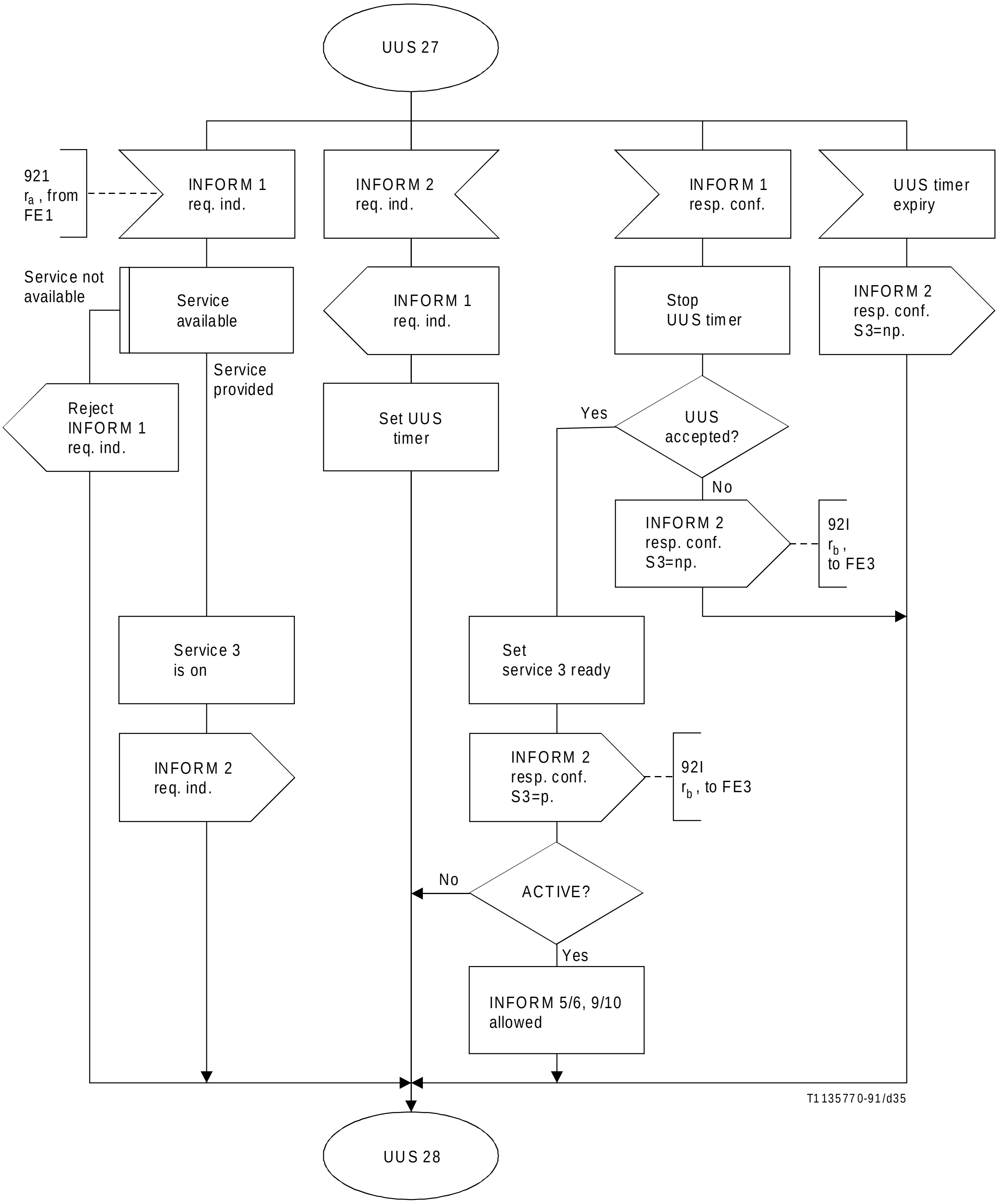


FIGURE 1-27/B-IF0.51

Macrodefinition DISC INFORM 5/6

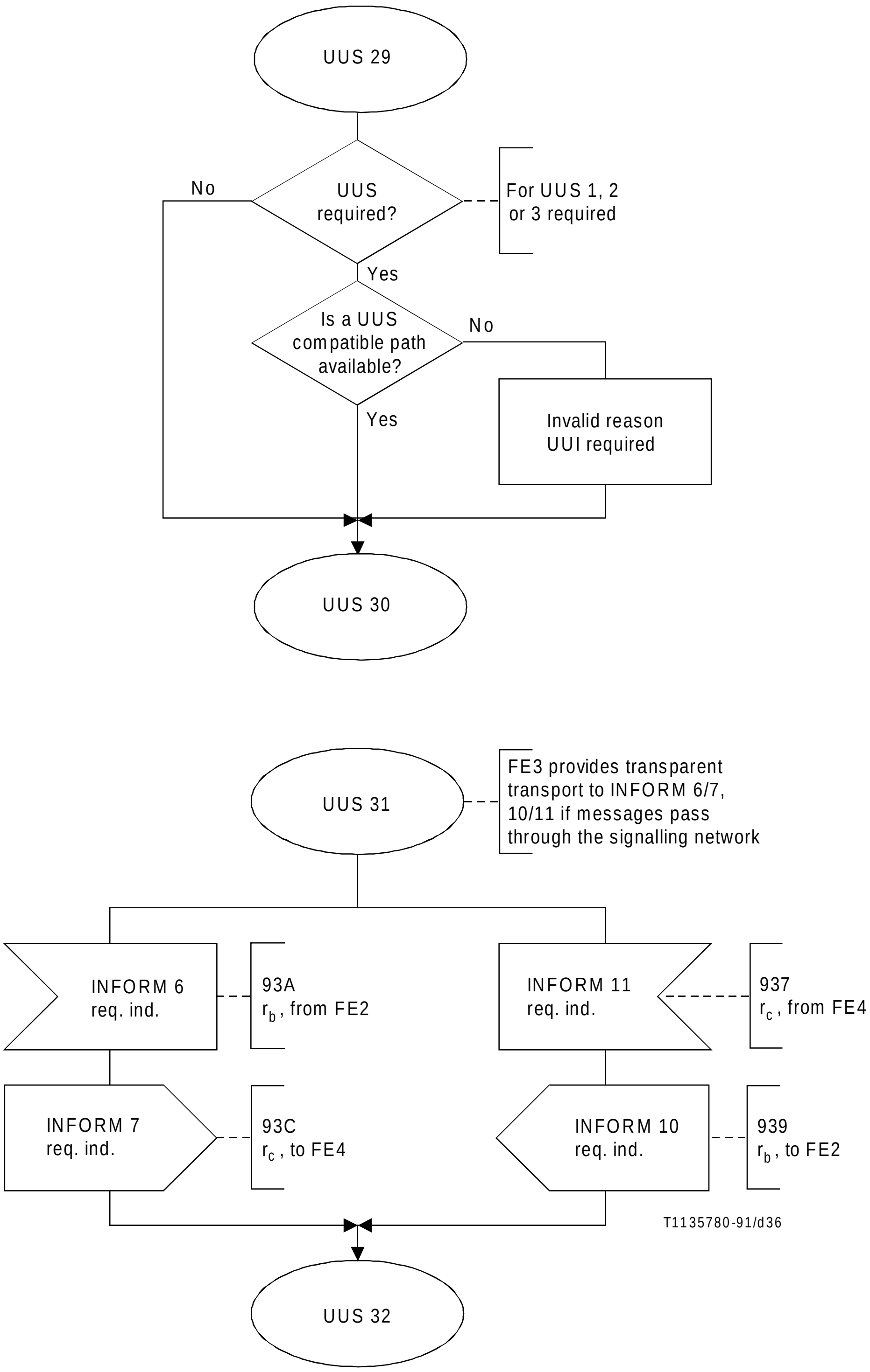


NOTE – UUS 27 and UUS 28 break the basic call between connectors S2/19 and S2/20, between connectors S2/UUS 27b and S2/UUS 28b.

FIGURE 1-28/B-IF0.51

Late invocation r1-r1

1.8.3 SDLs for FE3



NOTES

1 UUS 29 and UUS 30 break the basic call between connectors S3/5 and S3/6, between connectors S3/UUS 29b and S3/UUS 30b.

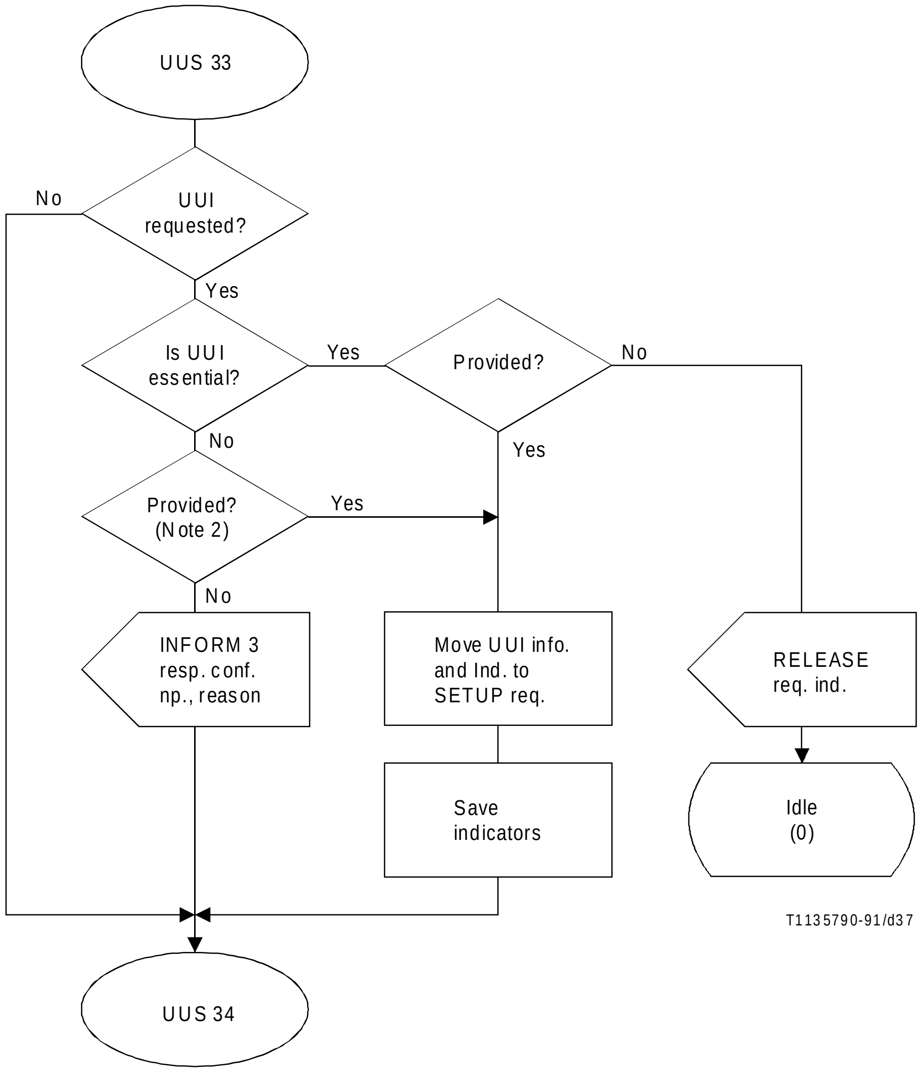
2 UUS 31 and UUS 32 break the basic call between connectors S3/UUS 31a and S3/UUS 32a, between connectors S3/UUS 31b and S3/UUS 32b.

FIGURE 1-29/B-IF0.51

SDL additions to basic call for FE3 "C r2-r2" macrodefinition PHS-UUS REQ

1.8.4 SDLs for FE4

See Figures 1-30 to 1-33.



Info. Information
req. Request

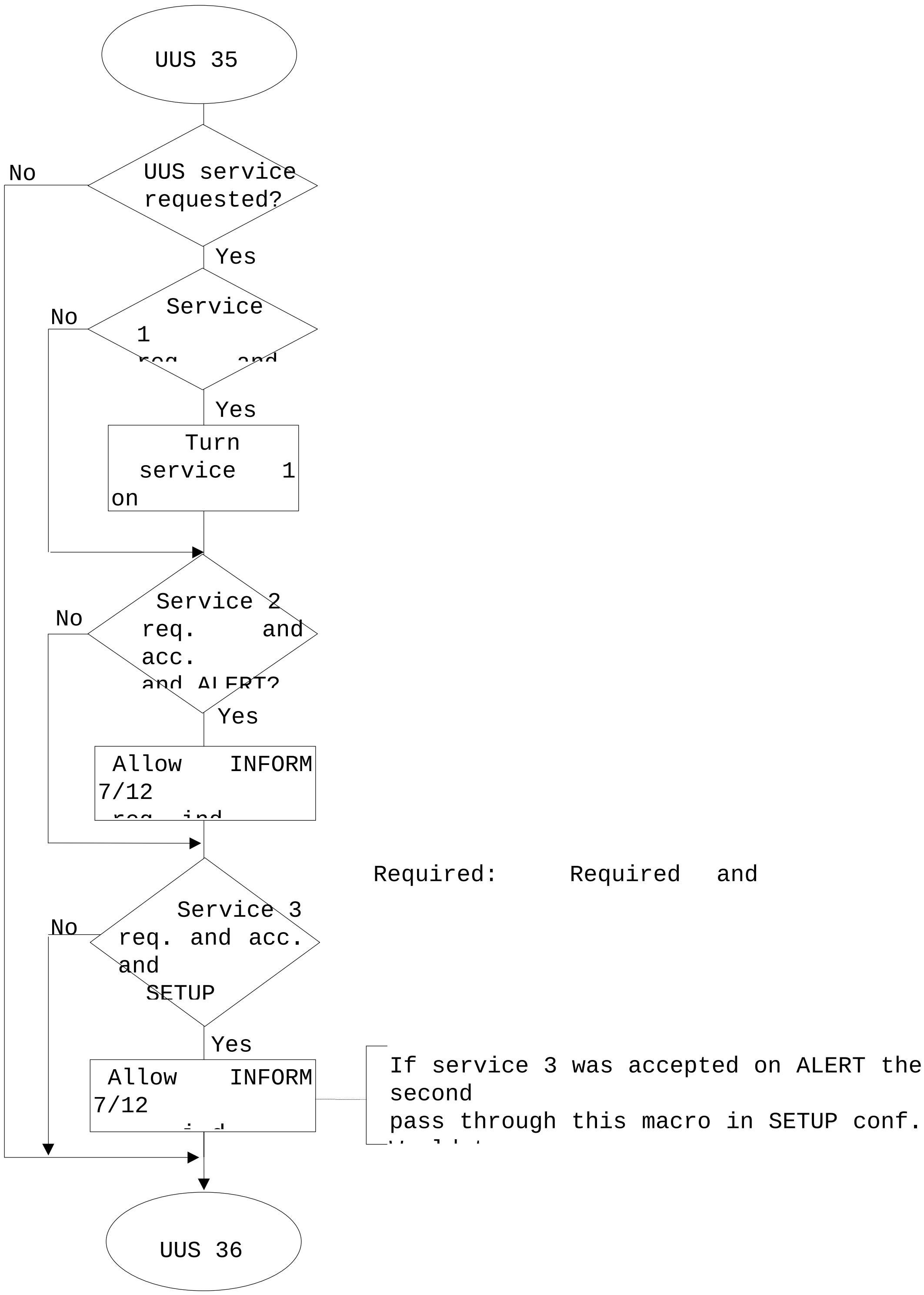
NOTES

1 UUS 33 and UUS 34 break the basic call between connectors S4/31 and S4/32.

2 On the case of the interworking with an ISDN network only supporting implicit request, if the remote user replies with UUI, FE4 select Yes. If the remote user does not reply with UUI, FE4 select No.

FIGURE 1-30/B-IF0.51

Macrodefinition TERM SETUP FE4

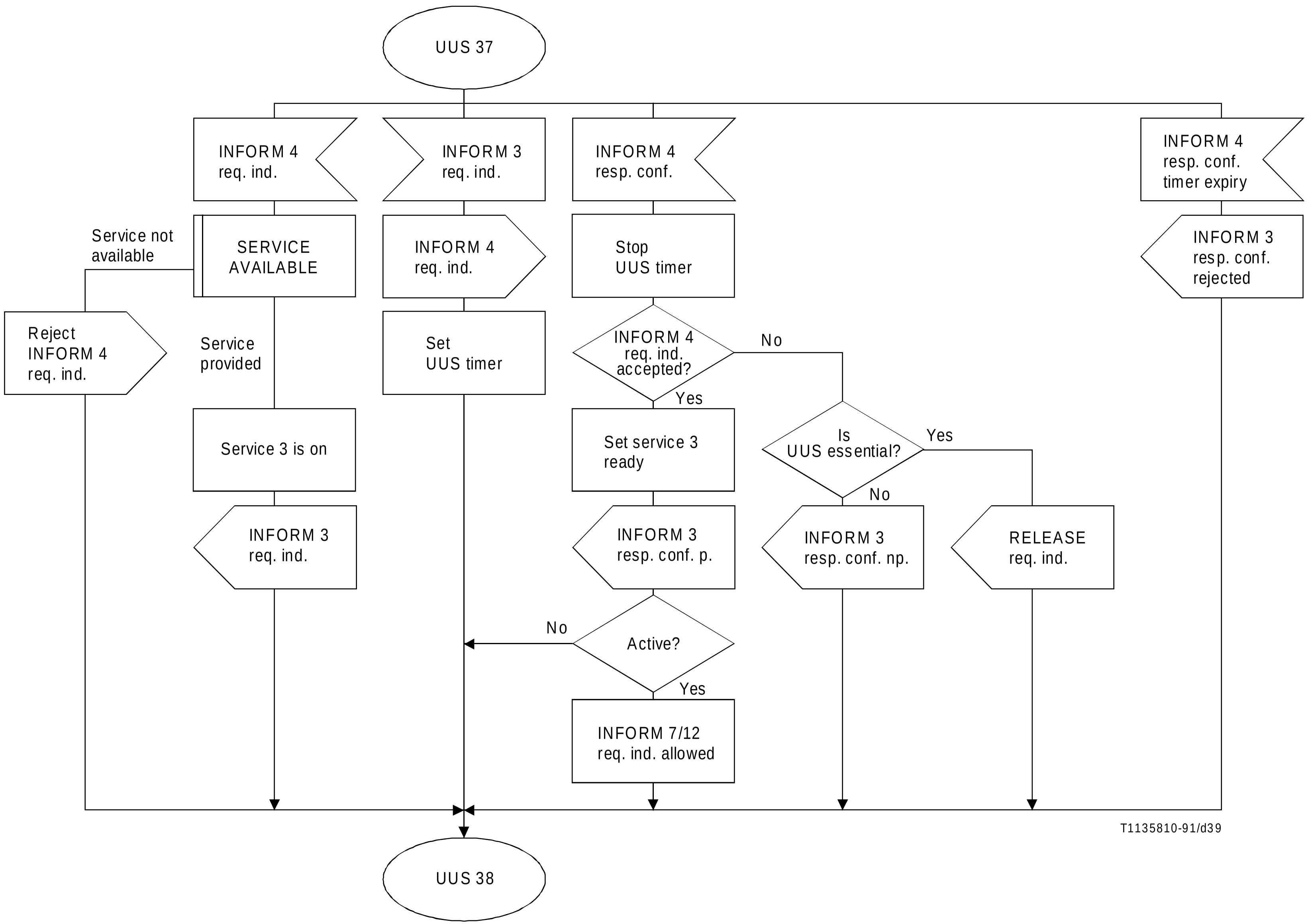


NOTES

1 UUS 35 and UUS 36 break the basic call between connectors S4/19 and S4/20, between connectors S4/5 and S4/6.

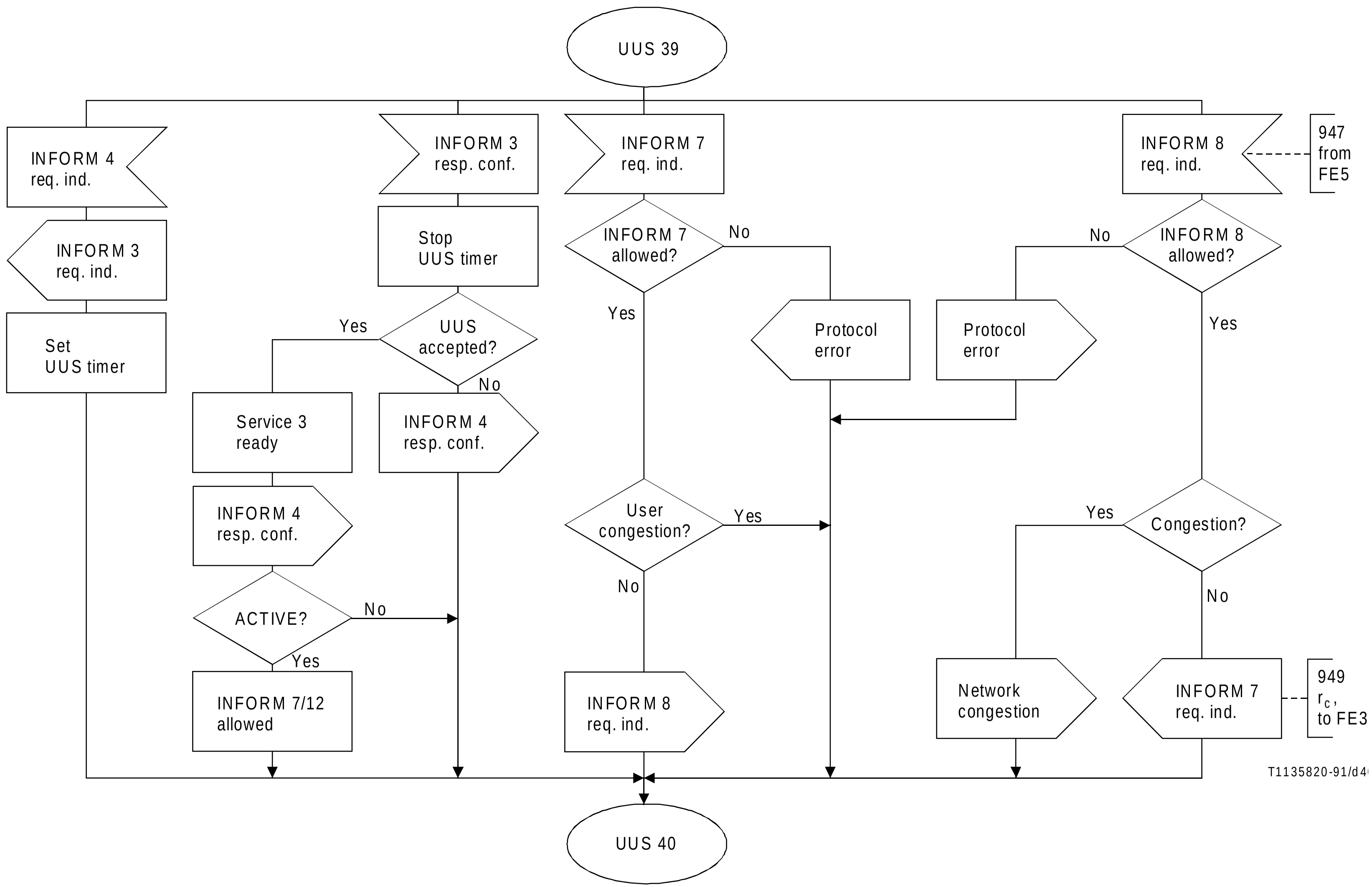
FIGURE 1-31/B-IF0.51

Macrodefinition TERM RESP FE4



NOTE – UUS 37 and UUS 38 break the basic call between connectors S4/5 and S4/6, between connectors S4/UUS 37b and S4/UUS 38b.

FIGURE 1-32/B-IF0.51 Late invocation r2-r1

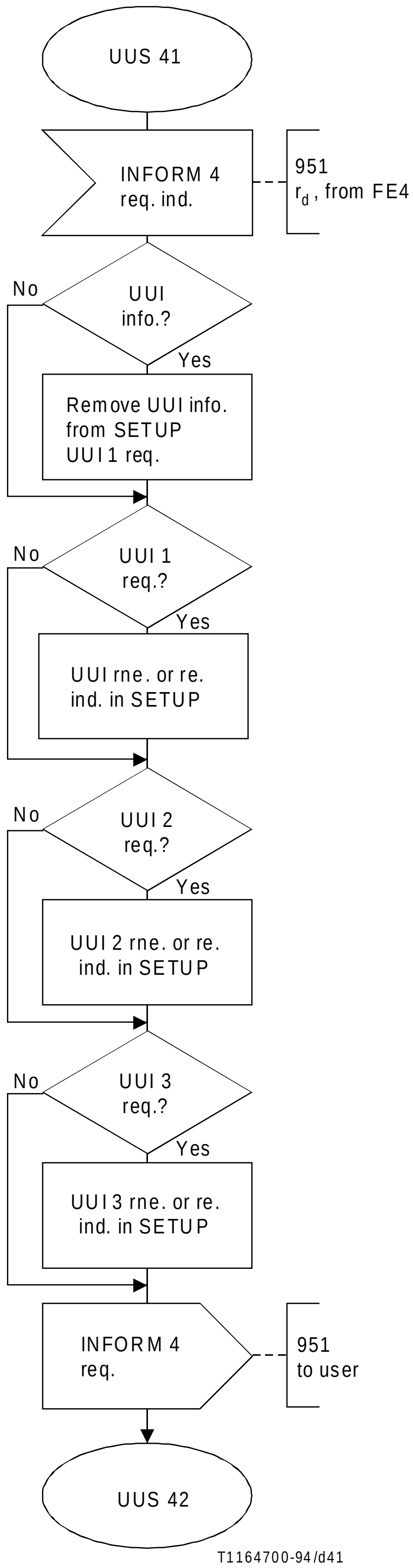


NOTE – UUS 39 and UUS 40 break the basic call between connectors S4/UUS39 and S4/UUS 40.

FIGURE 1-33/B-IF0.51 UUM handling Service provider option

1.8.5 SDLs for FES

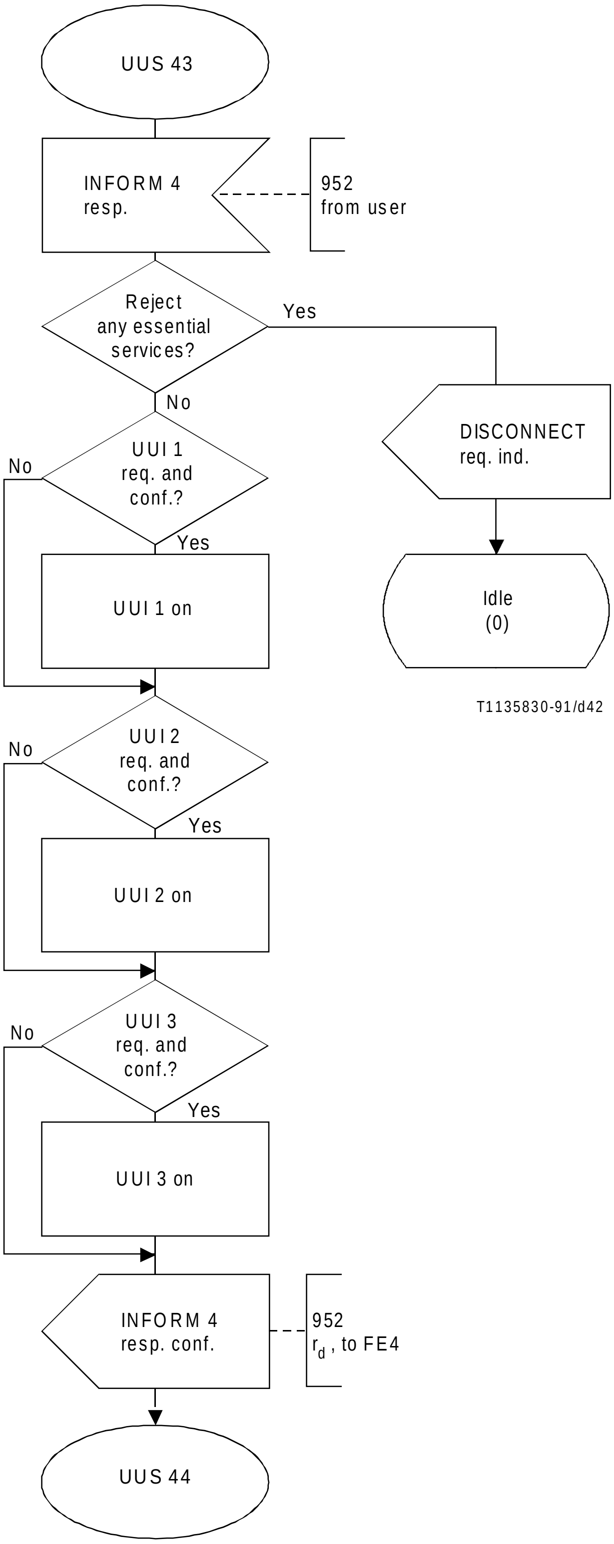
See Figures 1-34 to 1-39.



NOTE – UUS 41 and UUS 42 break the basic call between connectors S5/1 and S5/2.

FIGURE 1-34/B-IF0.51

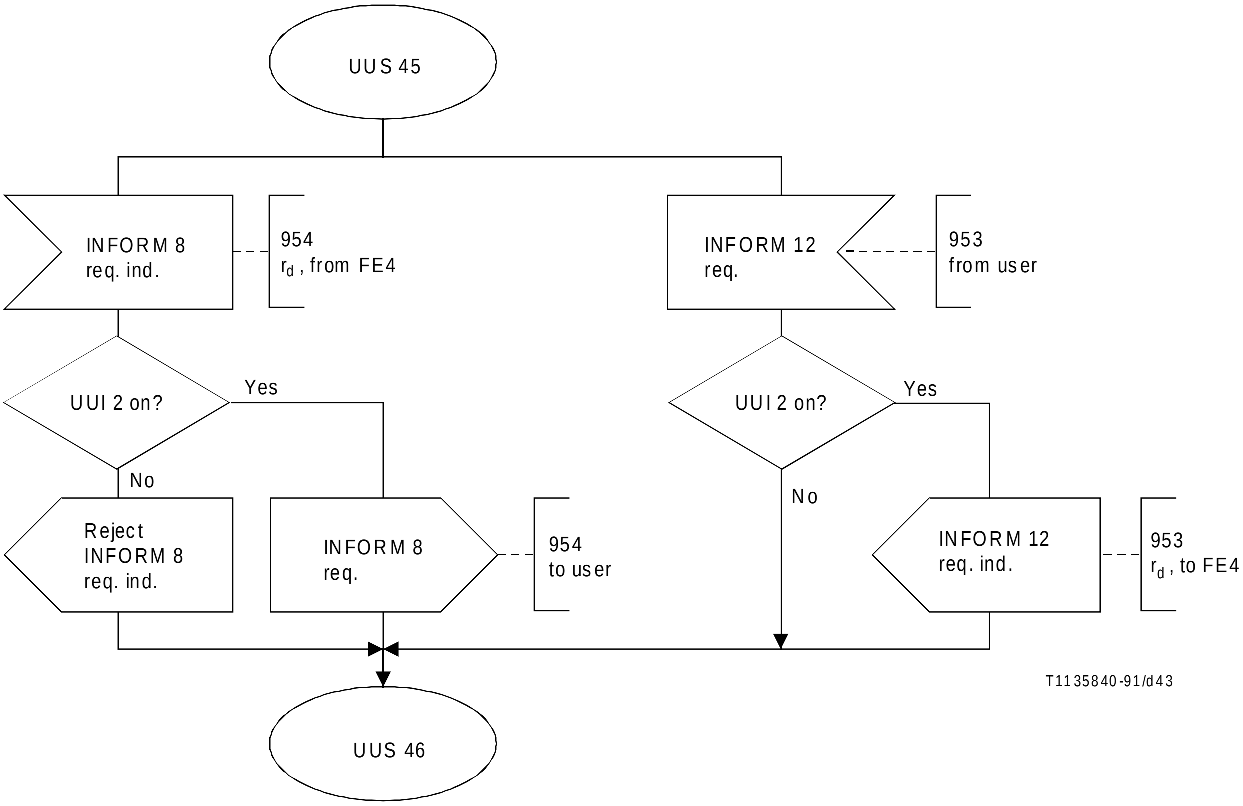
CCA additions to basic call for UUS
Process service request



NOTE – UUS 43 and UUS 44 break the basic call between connectors S5/UUS 43a and S5/UUS 44a, between connectors S5/4 and S5/5, between connectors S5/UUS 43c and S5/UUS 44.

FIGURE 1-35/B-IF0.51

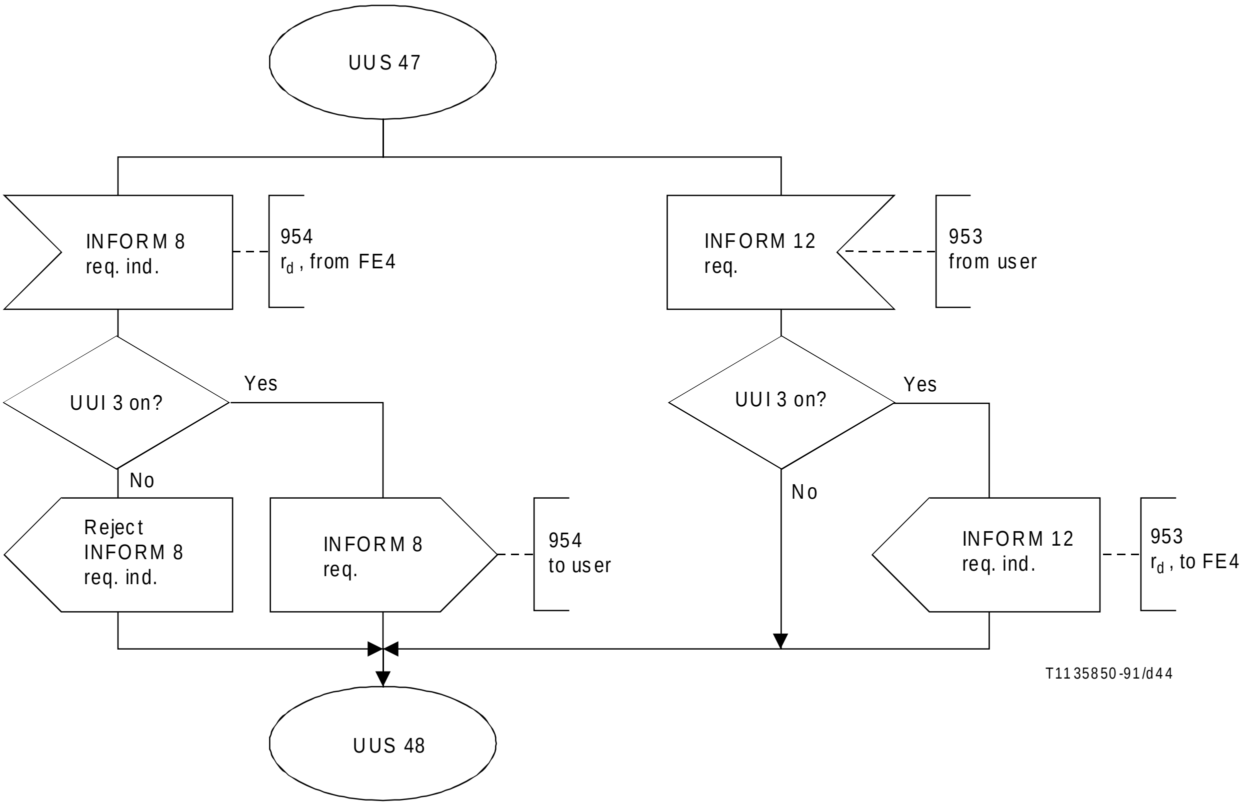
**Report ind. or report (alerting) ind.
Processing of parameters**



NOTE – UUS 45 and UUS 46 break the basic call between connectors S5/UUS 45 and S5/UUS 46.

FIGURE 1-36/B-IF0.51

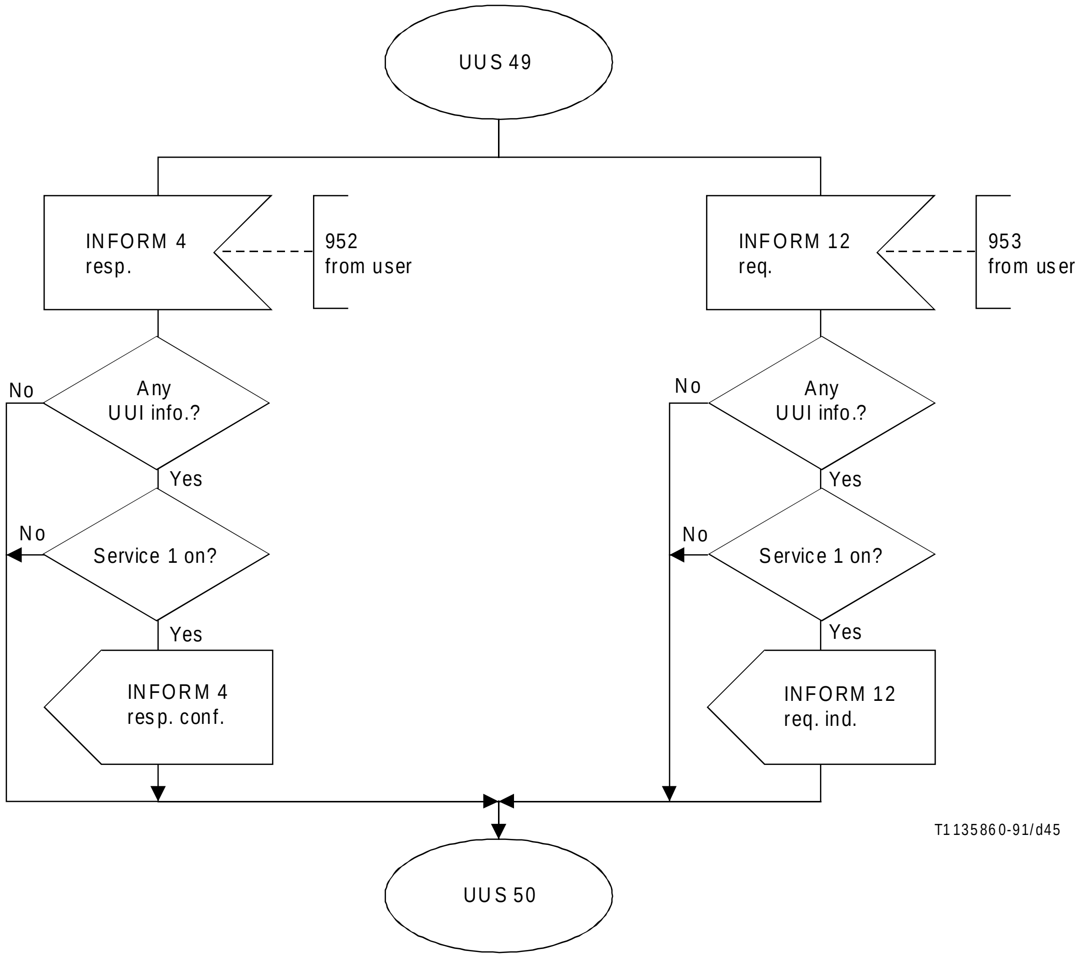
CCA r1-User INFORM 5 connection proceeding processing



NOTE – UUS 47 and UUS 48 break the basic call between connectors S5/UUS 47 and S5/UUS 48.

FIGURE 1-37/B-IF0.51

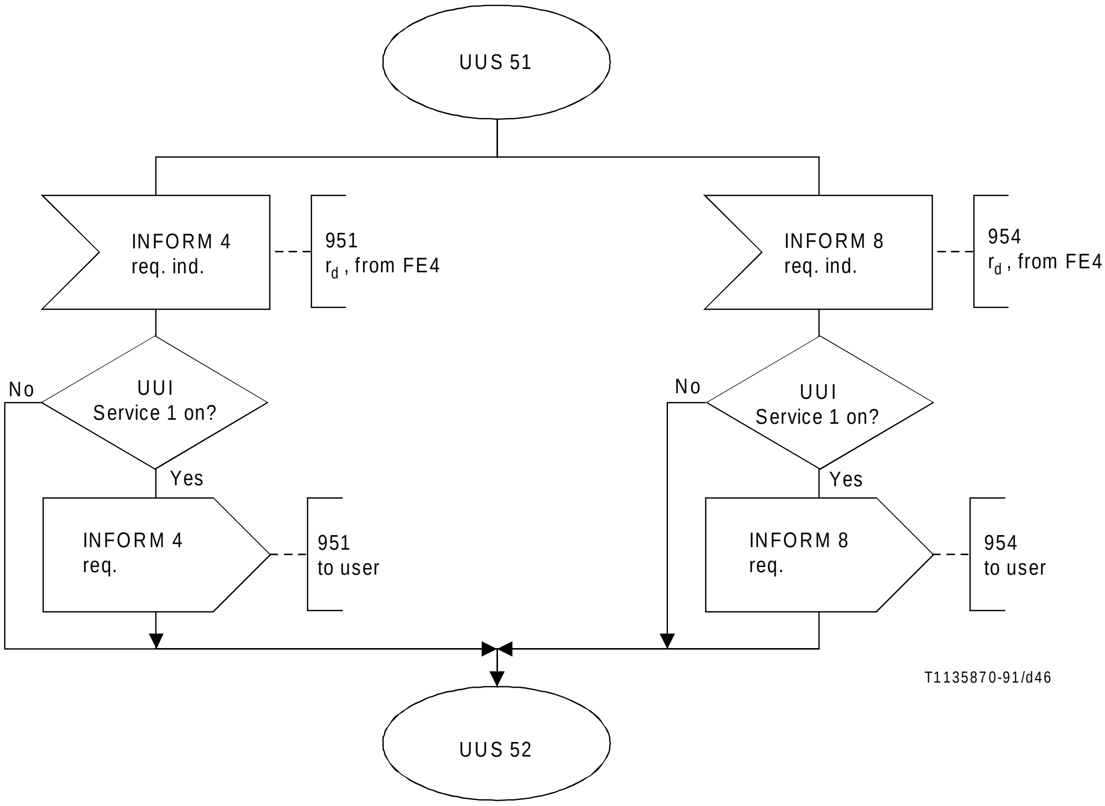
CCA r1-User INFORM 5 active processing



NOTE – UUS 49 and UUS 50 break the basic call between connectors S5/UUS 49a and S5/UUS 50a, between connectors S5/4 and S5/5.

FIGURE 1-38/B-IF0.51(sheet 1 of2)

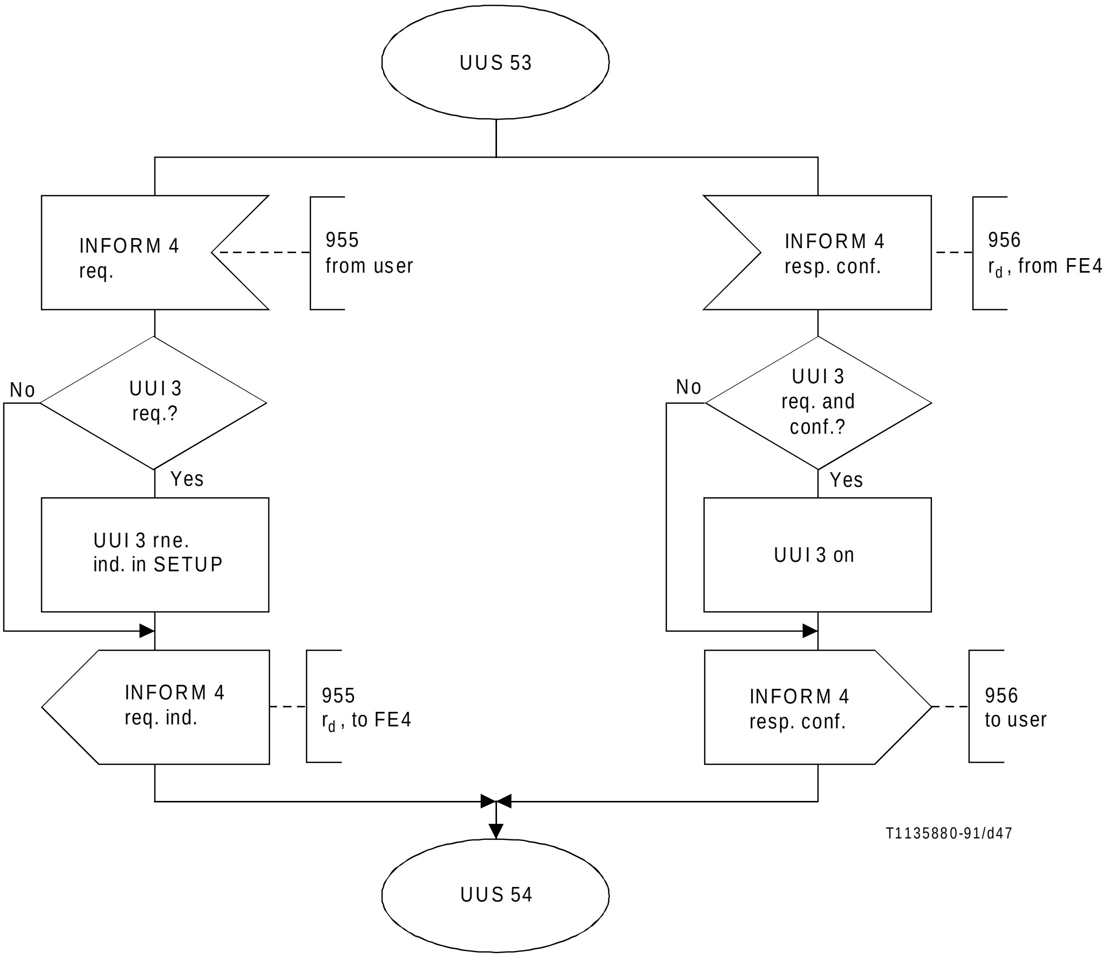
CCA rl-User UUS 1 processing
For call control message handling



NOTE – UUS 51 and UUS 52 break the basic call between connectors S5/1 and S5/2, between connectors S5/14 and S5/15.

FIGURE 1-38/B-IF0.51(sheet 2 of2)

CCA r1-User UUS 1 processing
For call control message handling



NOTE – UUS 53 and UUS 54 break the basic call between connectors S5/UUS 53 and S5/UUS 54.

FIGURE 1-39/B-IF0.51

CCA r1-User INFORM 4 active processing as a service provider option

1.9 Functional entity actions (FEAs)

1.9.1 FEAs for FE1

911 FE1 shall receive INFORM 1 req. (request for PHS User-to-User Signalling services) from user and check PHS-UUS service request.

– If there is PHS-UUS 1 req., set PHS-UUS 1 rne. or re. ind. in SETUP.

– If there is PHS-UUS 2 req., set PHS-UUS 2 rne. or re. ind. in SETUP.

– If there is PHS-UUS 3 req., set PHS-UUS 3 rne. or re. ind. in SETUP.

Then, FE1 shall send INFORM 1 req. ind (request for PHS User-to-User Signalling services) to FE2.

912 FE1 shall receive INFORM 1 resp. conf (response for PHS User-to-User Signalling services request) from FE2 and check which services are available to calling user.

– If FE1 send PHS-UUS 1 req. and receive PHS-UUS 1 conf., set PHS-UUS 1 on.

– If FE1 send PHS-UUS 2 req. and receive PHS-UUS 2 conf., set PHS-UUS 2 on.

– If FE1 send PHS-UUS 3 req. and receive PHS-UUS 3 conf., set PHS-UUS 3 on.

Then, FE1 shall inform calling user of provided services or not.

913 FE1 shall receive INFORM 5 req. ind (user-to-user information) from FE2 and check activation of the services available to calling user.

– Is there INFORM 5 req. ind?

– Is the appropriate service active?

– If INFORM 5 req. ind, is the network congested?

Then, FE1 shall inform calling user of UUI info.

914 FE1 shall receive INFORM 5 req (User-to-User information) from user and check activation of the services.

–- Is there INFORM 5 req. ind?

– Is the appropriate service active?

– If INFORM 5 req. ind, is the network congested?

Then, FE1 shall send INFORM 5 req. ind (user-to-user information) to FE2.

915 FE1 shall receive INFORM 1 req. ind (request for PHS User-to-User Signalling services) from FE2 during the active phase as a service provider option and check PHS-UUS Service 3 request.

– If there is PHS-UUS 3 rne. in INFORM 1 req. ind, set PHS-UUS 3 req.

Then, FE1 shall send INFORM 1 req. (request for PHS User-to-User Signalling services) to user.

916 FE5 shall receive INFORM 1 resp. (response for User-to-User information) from user during the active phase as a service provider option and check PHS-UUS response.

– If there is PHS-UUS 3 response, set PHS-UUS 3 on.

Then, FE1 shall send INFORM 1 resp. conf (response for PHS User-to-User Signalling services) to FE2.

1.9.2 FEAs of FE2

921 FE2 shall receive INFORM 1 req. ind (request for PHS User-to-User Signalling services) from FE1.

922 FE2 shall check PHS-UUS service request.

– Check for implicit Service 1 request.

– Check for explicit Service request.

– Determine any services are essential.

– Are services subscribed to? (Note : This process may be performed cooperating with SSF, SCF and SDF.)

– Are there sufficient signalling resources?

923 FE2 shall send INFORM 2 req. ind (request for PHS User-to-User Signalling services) to FE3.

924 FE2 shall receive INFORM 2 resp. conf (response for PHS User-to-User Signalling services) from FE3.

925 FE2 shall check which services are available to calling user.

– Which services were requested?

– Which services were confirmed by called user?

926 FE2 shall send INFORM 1 resp. conf (response for PHS User-to-User Signalling services) to FE1.

927 FE2 shall receive INFORM 10 req. ind (user-to-user information) from FE3.

928 FE2 shall check which INFORM 2 resp. conf or INFORM 10 req. ind transfer is allowed.

– Is there INFORM 2 or INFORM 10?

– Is the appropriate service active?

– If there is INFORM 10, is the network congested?

929 FE2 shall send INFORM 9 req. ind (user-to-user information) to FE1.

92A FE2 shall receive INFORM 5 req. ind (user-to-user information) from FE1.

92B FE2 shall check which INFORM 5 req. ind transfer is allowed.

– Is there INFORM 5?

– Is the appropriate service active?

– If there is INFORM 5, is the network congested?

FE2 shall check and validate subscription option.

92C FE2 shall send INFORM 6 req. ind (user-to-user information) to FE3.

92D FE2 shall receive INFORM 2 req. ind (request for PHS User-to-User Signalling services) from FE3 during the active phase as a service provider option.

92E FE2 shall check INFORM 2 to End user.

– Is INFORM 2 required?

– Is any UUI required?

– Is the calling user an ISDN user?

92F FE2 shall send INFORM 1 req. ind (request for PHS User-to-User Signalling services) to FE1.

92G FE2 shall receive INFORM 1 resp. conf (response for PHS User-to-User Signalling services) from FE1 as a service provider option.

92H FE2 shall check calling user response.

– Can user accept UUI Service 3?

92I FE2 shall send INFORM 2 resp. conf (response for PHS User-to-User Signalling services) to FE3.

1.9.3 FEAs of FE3

931 FE3 shall receive INFORM 2 req. ind (request for PHS User-to-User Signalling services) from FE2.

932 FE3 shall check INFORM 2 compatible path can be found.

– Is PHS-UUS required?

– If there is no compatible path, act appropriately.

933 FE3 shall send INFORM 3 req. ind (request for PHS User-to-User Signalling services) to FE4.

934 FE3 shall receive INFORM 3 resp. conf (response for PHS User-to-User Signalling services) from FE4.

935 FE3 shall check INFORM 3 resp. conf compatible path can be found.

- Is PHS-UUS required?
- If there is no compatible path, act appropriately.

936 FE3 shall send INFORM 2 resp. conf (response for PHS User-to-User Signalling services) to FE2.

937 FE3 shall receive INFORM 11 req. ind (user-to-user information) from FE4.

938 FE3 shall check INFORM 11compatible path can be found.

- Is PHS-UUS required?
- If there is no compatible path, act appropriately.

939 FE3 shall send INFORM 10 req. ind (user-to-user information) to FE2.

93A FE3 shall receive INFORM 6 req. ind (user-to-user information) from FE2.

93B FE3 shall check INFORM 2 or INFORM 6 compatible path can be found.

- Is PHS-UUS required?
- If there is no compatible path, act appropriately.

93C FE3 shall send INFORM 7 req. ind (user-to-user information) to FE4.

93D FE3 shall receive INFORM 3 req. ind (request for PHS User-to-User Signalling services) from FE4 during the active phase as a service provider option.

93E FE3 shall check INFORM 3 compatible path can be found.

- Is PHS-UUS 3 required?
- If there is no compatible path, act appropriately.

93F FE3 shall send INFORM 2 req. ind (request for PHS User-to-User Signalling services) to FE2.

93G FE3 shall receive INFORM 2 resp. conf (response for PHS User-to-User Signalling services) from FE2 during the active phase as a service provider option.

93H FE3 shall check INFORM 2 compatible path can be found.

- Is PHS-UUS required?
- If there is no compatible path, act appropriately.

93I FE3 shall send INFORM 3 resp. conf (response for PHS User-to-User Signalling services) to FE4.

1.9.4 FEAs of FE4

941 FE4 shall receive INFORM 3 req. ind (request for PHS User-to-User Signalling services) from FE3.

942 FE4 shall check UUI to End user.

- Is PHS-UUS requested?
- Is any UUI required?
- Is the user an ISDN user?

943 FE4 shall send INFORM 4 req. ind (request for PHS User-to-User Signalling services) to FE5.

944 FE4 shall receive INFORM 4 resp. conf (response for PHS User-to-User Signalling services) from FE5.

945 FE4 shall check called user response.

- Can user accept UUI Service 2?
- Are all required services accepted?
- If PHS-UUS is essential and PHS-UUS is not accepted, FE4 shall send RELEASE req. ind to FE3.

946 FE4 shall send INFORM 3 resp. conf (response for PHS User-to-User Signalling services) to FE3.

947 FE4 shall receive INFORM 12 req. ind (user-to-user information) from FE5.

948 FE4 shall check that INFORM 12 transfer allowed.

- Is there INFORM 12?
- Is the appropriate service active?
- If INFORM 12, is the network congested?

FE4 shall check and validate subscription option as a network provider option.

949 FE4 shall send INFORM 11 req. ind (user-to-user information) to FE3.

94A FE4 shall receive INFORM 7 req. ind (user-to-user information) from FE3.

94B FE4 shall check that INFORM 7 transfer allowed.

- Is there INFORM 7?
- Is the appropriate service active?
- If INFORM 7, is the network congested?

94C FE4 shall send INFORM 8 req. ind (user-to-user information) to FE5.

94D FE4 shall receive INFORM 4 req. ind (request for PHS User-to-User Signalling services) from FE5 during the active phase as a service provider option.

94E FE4 shall check PHS-UUS service request.

- Is PHS-UUS Service 3 required?
- Is there compatible path, act appropriately.

94F FE4 shall send INFORM 3 req. ind (request for PHS User-to-User Signalling services) to FE3.

94G FE4 shall receive INFORM 3 resp. conf (response for PHS User-to-User Signalling services) from FE3 during the active phase as a service provider option.

94H FE4 shall check service 3 is available to calling user.

- Which services are confirmed by calling user?

94I FE4 shall send INFORM 4 resp. conf (response for User-to-User Signalling service 3) to FE5.

1.9.5 FEAs of FE5

951 FE5 shall receive INFORM 4 req. ind (request for PHS User-to-User Signalling services) from FE4 and check PHS-UUS Service request.

- If there is PHS-UUS 1 rne. or re. ind. in SETUP, set PHS-UUS 1 req.
- If there is PHS-UUS 2 rne. or re. ind. in SETUP, set PHS-UUS 2 req.
- If there is PHS-UUS 3 rne. or re. ind. in SETUP, set PHS-UUS 3 req.

Then, FE5 shall send INFORM 4 req. (request for PHS User-to-User Signalling services) to user.

952 FE5 shall receive INFORM 4 resp. (response for PHS User-to-User Signalling services) from user and check PHS-UUS response.

- If FE5 receive PHS-UUS 1 req. and receive PHS-UUS 1 conf., set PHS-UUS 1 on.
- If FE5 receive PHS-UUS 2 req. and receive PHS-UUS 2 conf., set PHS-UUS 2 on.
- If FE5 receive PHS-UUS 3 req. and receive PHS-UUS 3 conf., set PHS-UUS 3 on.

Then, FE5 shall send INFORM 4 resp. conf (response for PHS User-to-User Signalling services) to FE4.

- If PHS-UUS is essential and PHS-UUS is not accepted, FE4 shall send DISCONNECT req. ind to FE4.

953 FE5 shall receive INFORM 12 req. (user-to-user information) from user and check activation of the services.

- Is there INFORM 12?
- Is the appropriate service active?

- If INFORM 12, is the network congested?

Then, FE5 shall send INFORM 12 req. ind (user-to-user information) to FE4.

954 FE5 shall receive INFORM 8 req. ind (user-to-user information) from FE4 and check activation of the services.

- Is there INFORM 8?
- Is the appropriate service active?
- If INFORM 8, is the network congested?

Then, FE5 shall inform called user of UUI information.

955 FE5 shall receive INFORM 4 req. (request for PHS-User-to-User Signalling service 3) from user during the active phase as a service provider option and check PHS-UUS service request.

- If there is PHS-UUS 3 req., set PHS-UUS 3 rne.

Then, FE5 shall send INFORM 4 req. ind (request for User-to-User Signalling service 3) to FE4.

956 FE5 shall receive INFORM 4 resp. conf (response for PHS User-to-User Signalling services) from FE4 as a service provider option and check service 3 is available to called user.

- If FE5 send PHS-UUS 3 req. and receive PHS-UUS 3 conf., set PHS-UUS 3 on.

Then, FE5 shall inform called user of provided services or not.

1.10 Allocation of functional entities to physical locations

Only one instance of the service exists irrespective of the number of the network.
The allocations of functional entities for the PHS User-to-User Signalling services are shown in Table 1-4.

TABLE 1-4/B-IF0.51

Allocations of functional entities

Scenario	FE1	FE2*	FE3	FE4*	FE5
1	TE	LE+ public CS	TR	LE+ public CS	TE

* NOTE2
- As for this PHS-UUS service, public CS carries a message transparent.

APPENDIX A

A.1 Information flow diagrams

Typical information flow diagrams for PHS-UUS Service are shown in Figures A-1/B-IF0.51 to A-10/B-IF0.51.

Figure A-1/B-IF0.51,A-2/B-IF0.51 shows a successful use of PHS-UUS Service1 (Implicit request)

Figure A-3/B-IF0.51,A-4/B-IF0.51 shows a successful use of PHS-UUS Service1 (explicit request)

Figure A-5/B-IF0.51,A-6/B-IF0.51 shows a successful use of PHS-UUS Service2

Figure A-7/B-IF0.51,A-8/B-IF0.51 shows a successful use of PHS-UUS Service3 (Invoke call establishment phase)

Figure A-9/B-IF0.51,A-10/B-IF0.51 shows a successful use of PHS-UUS Service3 (Invoke active phase)

A.1.1. Service 1 (implicit request)

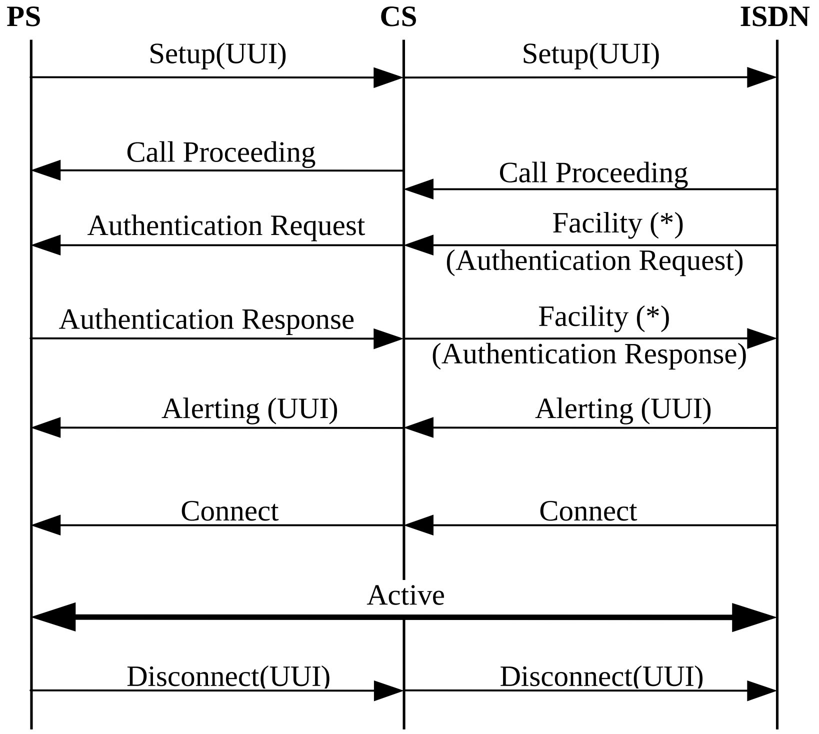


Figure A-1/B-IF0.51 Service 1 (implicit request) [Originating]

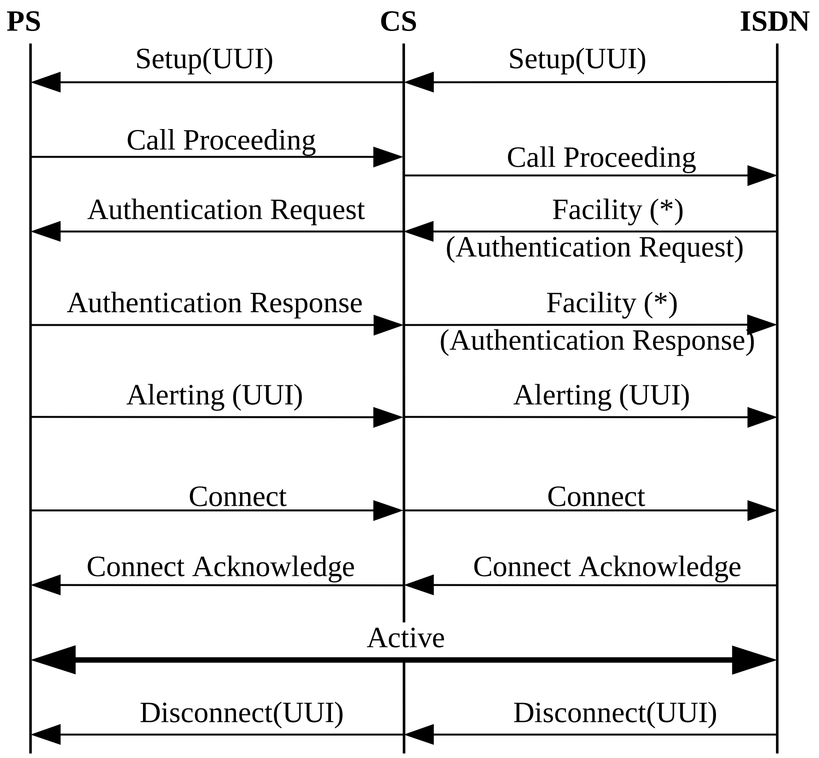


Figure A-2/B-IF0.51 Service 1 (implicit request) [Terminating]

*: This message is only used for authentication procedure for CS type 1 that is specified in B-NW1.00.

A.1.2. Service 1 (explicit request)

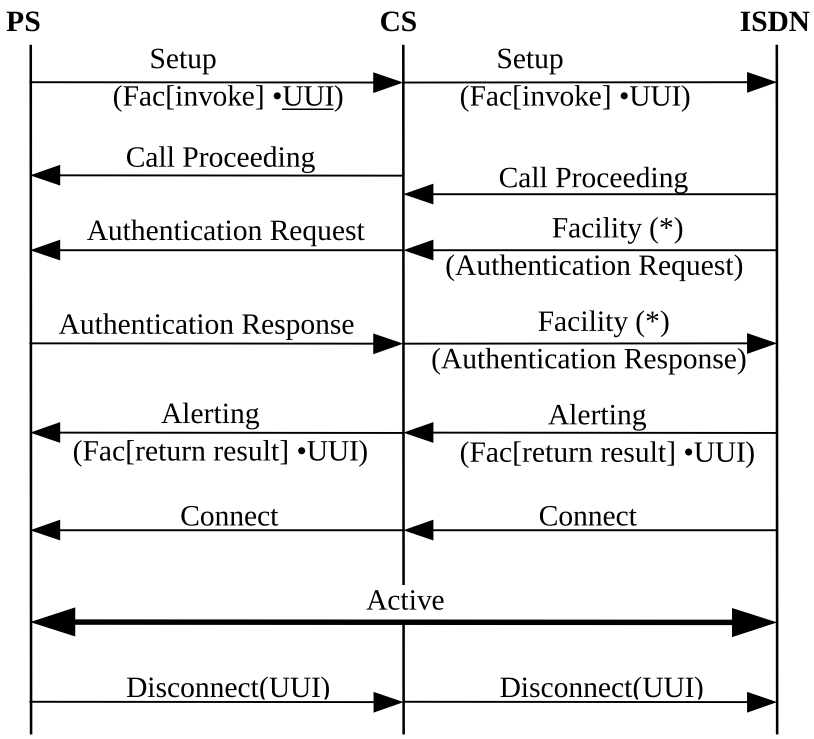


Figure A-3/B-IF0.51 Service 1 (explicit request) [Originating]

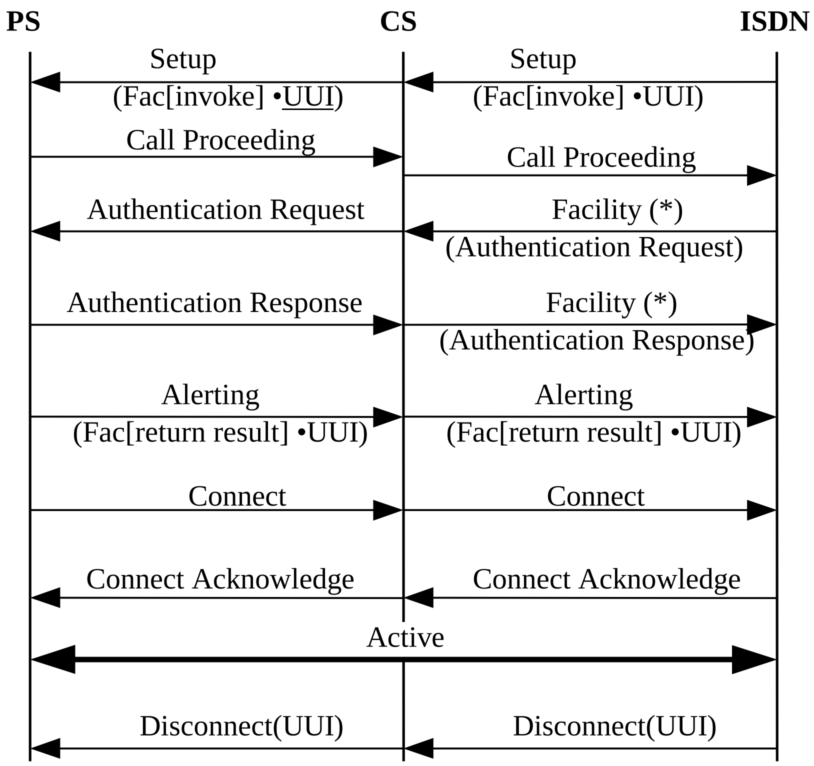


Figure A-4/B-IF0.51 Service 1 (explicit request) [Terminating]

*: This message is only used for authentication procedure for CS type 1 that is specified in B-NW1.00.

A.1.3. Service 2

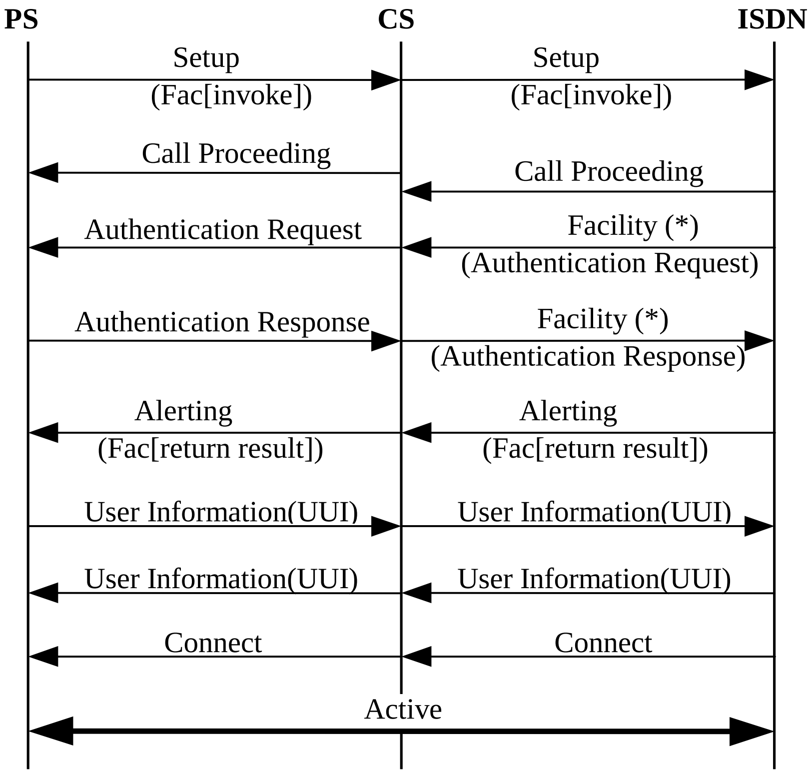


Figure A-5/B-IF0.51 Service 2 [Originating]

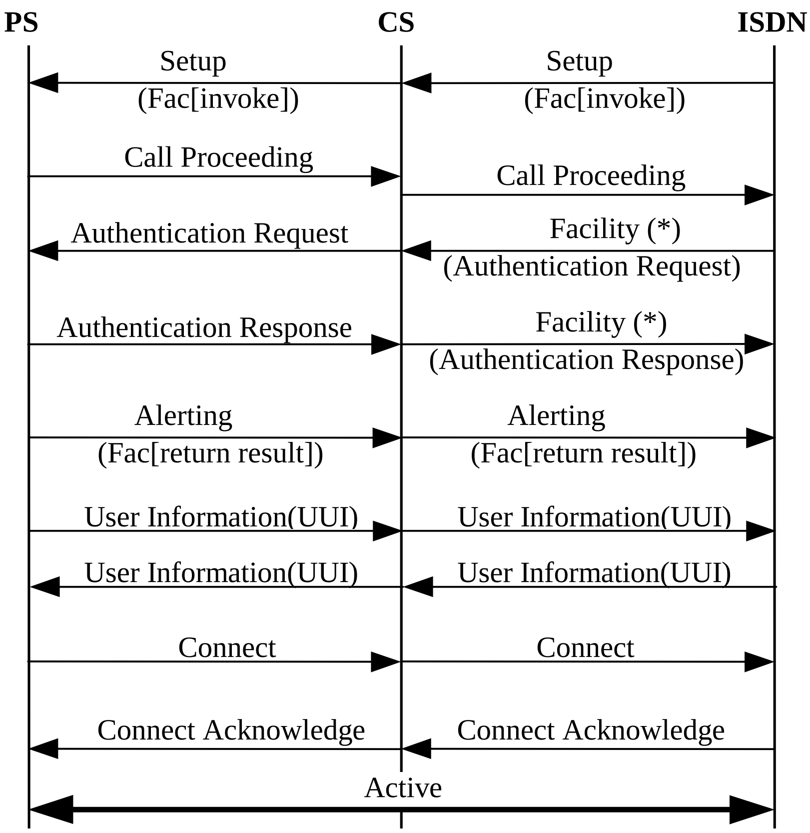


Figure A-6/B-IF0.51 Service 2 [Terminating]

*: This message is only used for authentication procedure for CS type 1 that is specified in B-NW1.00.

A.1.4. Service 3 (Invoke during call establishment phase)

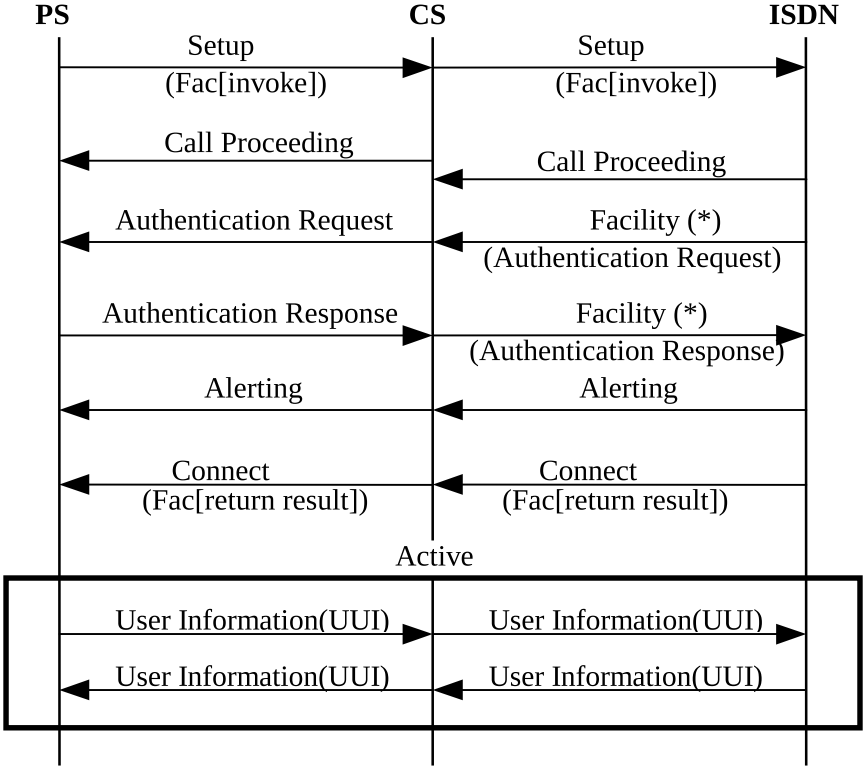


Figure A-7/B-IF0.51 Service 3 [Originating]

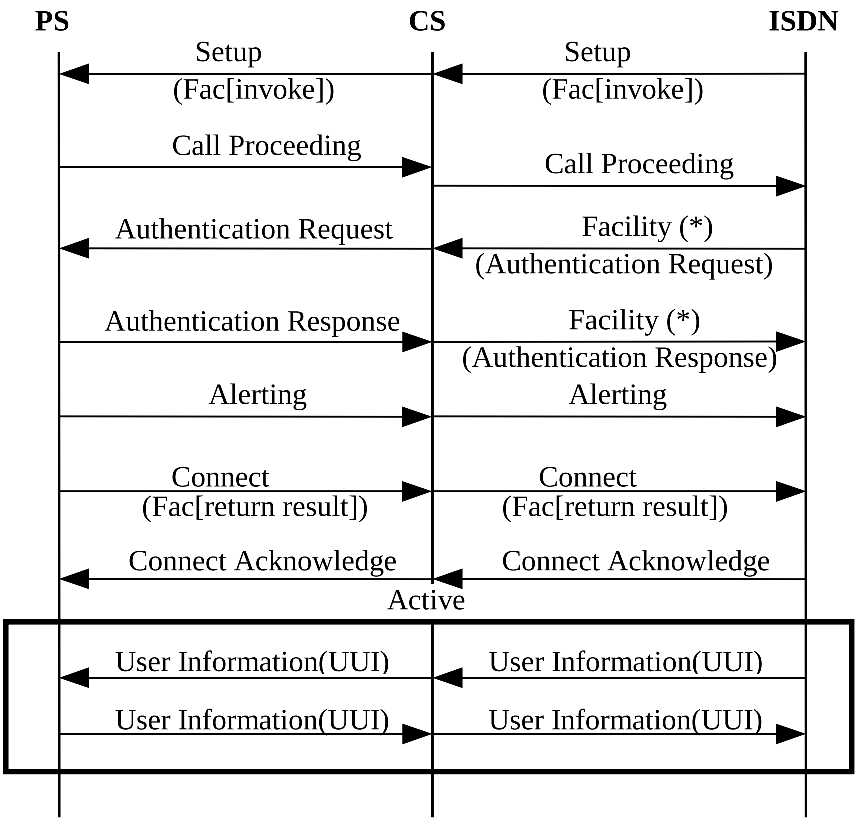


Figure A-8/B-IF0.51 Service 3 [Terminating]

*: This message is only used for authentication procedure for CS type 1 that is specified in B-NW1.00.

A.1.5. Service 3 (Invoke during active phase)

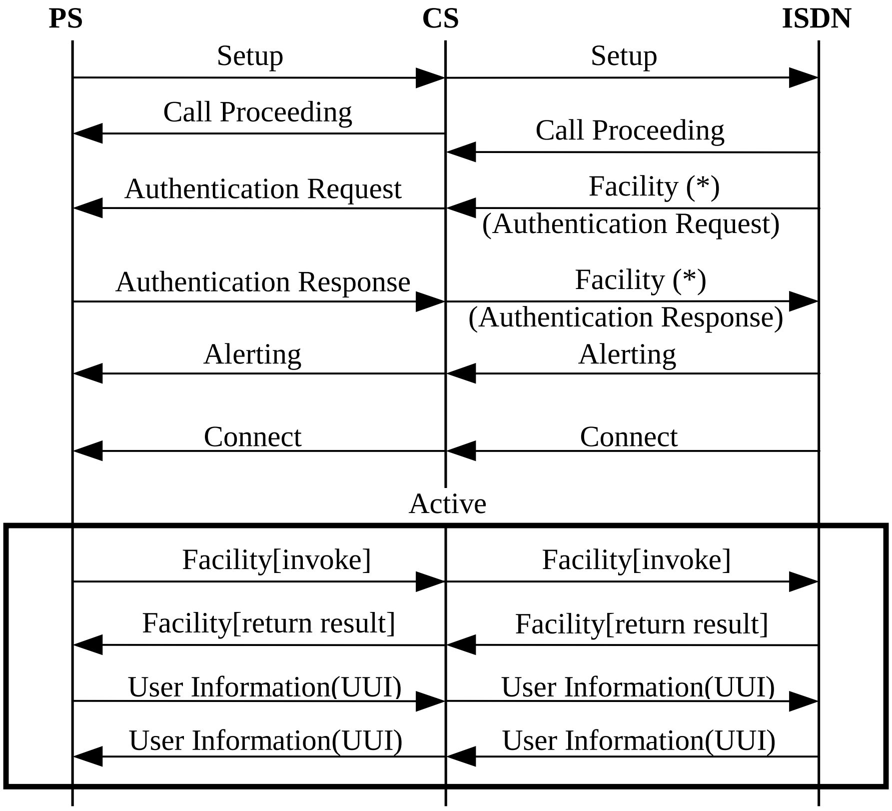


Figure A-9/B-IF0.51 Service 3 [Originating]

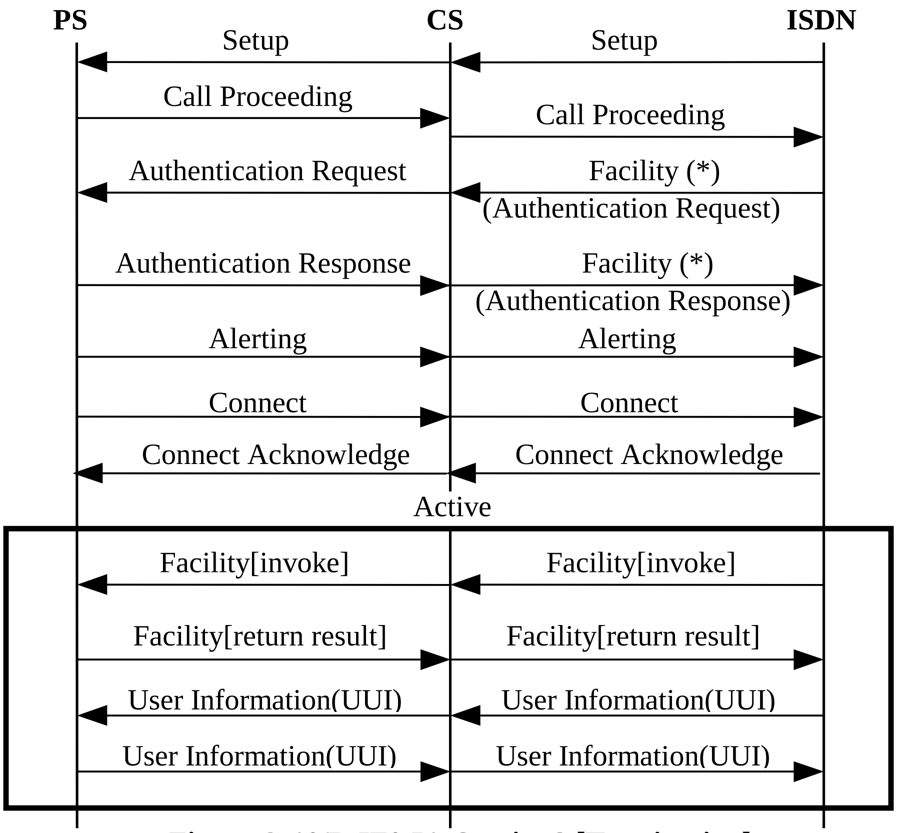


Figure A-10/B-IF0.51 Service 3 [Terminating]

*: This message is only used for authentication procedure for CS type 1 that is specified in B-NW1.00.