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TECHNICAL SPECIFICATION

**Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
User-to-User Signalling (UUS) Supplementary Service;
Stage 3
(3GPP TS 24.087 version 13.0.0 Release 13)**

GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS

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Contents

Foreword

This Technical Specification has been produced by the 3GPP.

This TS gives the stage 3 description of the User-to-User signalling supplementary services within the 3GPP system.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of this TS, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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where:

x   the first digit:

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y   the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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1 Scope

This Technical Specification gives the stage 3 description of the User-to-User signalling supplementary services.

The User-to-user supplementary service is divided into 3 different services:

- Service 1   (UUS1)

- Service 2   (UUS2)

- Service 3   (UUS3)

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1]   3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 23.087: "Digital cellular telecommunications system (Phase 2+); User-to-User Signalling (UUS); Stage 2".

[3]   3GPP TS 24.008: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification ".

[4]   3GPP TS 24.080: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 supplementary services specification; Formats and coding".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following definitions apply:

Remote party: For service 1 and 2 the remote party is the called party of a call to which the served subscriber activates the UUS supplementary service. For service 3 the remote party can be either the called or the calling party of an established call to whom the use of the UUS supplementary service is requested by the served subscriber.

Served subscriber: The subscriber who has a provision of the UUS supplementary service and who activates the UUS supplementary service. For service 1 and 2 the served subscriber is always the calling subscriber, for service 3 either the calling or the called subscriber can be the served subscriber.

User-to-User Information (UUI): The information transferred by using the UUS supplementary service.

UUS not required: If the "UUS not required" indication is given by the subscriber, the call will be completed even if UUI cannot be passed to the called subscriber.

UUS required: If the "UUS required" indication is given by the subscriber, the call shall not be completed if UUI cannot be passed to the called subscriber.

UUS Service: The UUS services (Service 1, 2 and 3) are components of the UUS supplementary service. If the UUS supplementary service is provided to a subscriber, he can handle the UUS services independently within a call.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

MS A	Mobile Station A, the mobile station of the served subscriber
MS B	Mobile Station B, the mobile station of the remote subscriber
UUI	User-to-User Information
UUS	User-to-User Signalling
UUS1	User-to-User Signalling Service 1
UUS2	User-to-User Signalling Service 2
UUS3	User-to-User Signalling Service 3

Further GSM related abbreviations are listed in 3GPP TR 21.905.

4 User-to-User Signalling (UUS); served mobile subscriber side

4.1 UUS1

For UUS1, both parties may exchange UUI during the set-up and the clearing phases of a call by including User-user information element(s) in basic call control messages (ALERTING, CONNECT, DISCONNECT, PROGRESS, RELEASE, RELEASE COMPLETE, SETUP).

UUS1 can be activated implicitly or explicitly. When UUS1 has been activated, either subscriber may include UUI when accepting, rejecting or terminating the call.

UUS1 is automatically deactivated when the call is cleared.

4.1.1 Operation when implicitly activated

To activate UUS1 implicitly, the MS A shall include a User-user information element in the SETUP message as part of a normal call request. See 3GPP TS 24.008. Implicitly activated UUS1 is active for the duration of the call; i.e. the remote party is not required to send a response to the implicit activation request. However, the remote party may include a User-user information element in the call response.

The served subscriber or the remote party may terminate the call before a connection is established.

```
MS A                                                                                    NETWORK
                                     SETUP
 ------------------------------------------------------------------------------------------------>
                                   User-user



                                        .
                                   ALERTING
 <------------------------------------------------------------------------------------------------
                                User-user (Note 1)

                                   CONNECT
 <------------------------------------------------------------------------------------------------
                                User-user (Note 1)

                                        .

                                        .
          DISCONNECT / RELEASE / RELEASE COMPLETE
 <------------------------------------------------------------------------------------------------>
                            User-user (Note 1), (Note 2)
```
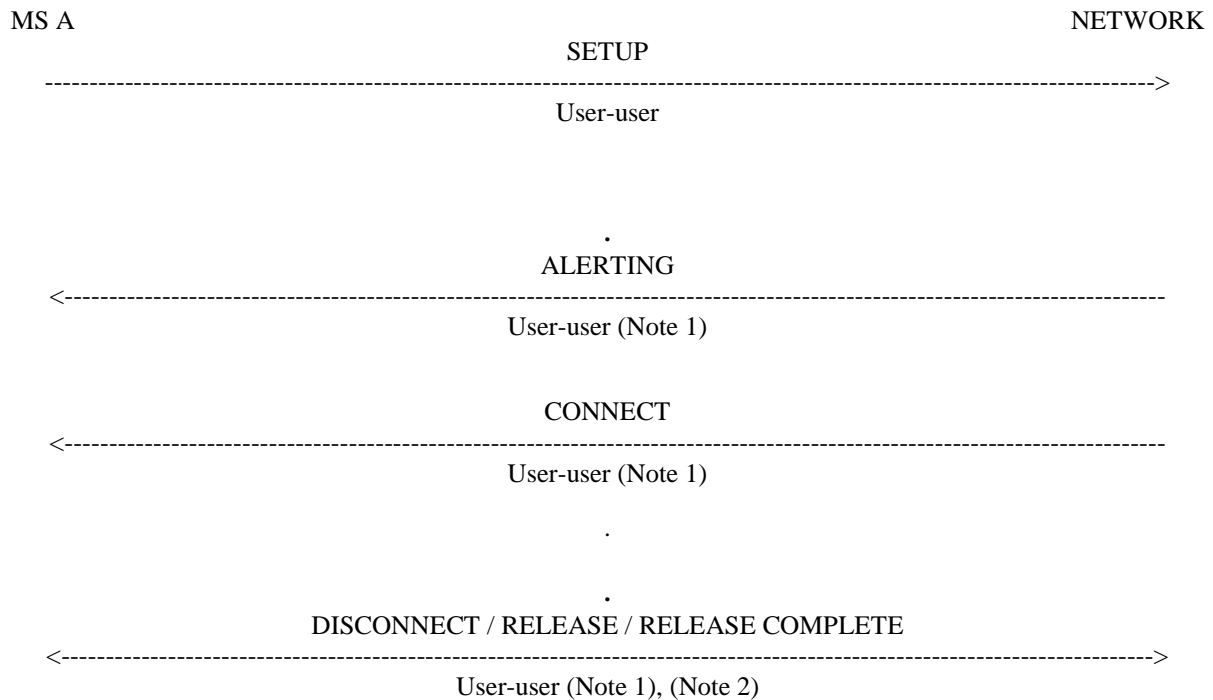
Figure 1: UUS1 when implicitly activated

NOTE 1: The User-user information element is optional.

NOTE 2: Under normal conditions DISCONNECT message is used for clearing the call, but also RELEASE or RELEASE COMPLETE message may be used as the first call clearing message.

4.1.2 Operation when explicitly activated

UUS1 is explicitly requested by the MS A when including a Facility information element with a UserUserService invoke component in the SETUP message. See 3GPP TS 24.008, 3GPP TS 24.080. The UserUserService invoke component shall indicate whether the service is "UUS required" or "UUS not required".

If the remote party accepts the request, the network shall include a Facility information element with a UserUserService Return Result component in the ALERTING or the CONNECT message sent to the MS A.

If the request is not accepted, the network shall include a Facility information element with a UserUserService Return Error component in the DISCONNECT message (when UUS required) or in the ALERTING or in the CONNECT message (when UUS not required) sent to the MS A. See errors in 3GPP TS 24.080.

An explicit activation request may include UUI. The network may include User-user information element when accepting the activation request.

The served subscriber or the remote party may terminate the call before a connection is established.

For UUS1 explicit activation SS Version Indicator value 3 or above has to be used.

4.1.2.1 UUS required

If the MS A gives the "UUS required" indication, the call shall not be completed if UUI cannot be passed to the remote party.

MS A   NETWORK
<div style="text-align:center">SETUP</div>

-->

<div style="text-align:center">Facility (Invoke=UserUserService (UUS1, UUS required)), User-user (Note 1)</div>

<div style="text-align:center">.</div>

<div style="text-align:center">.</div>

<div style="text-align:center">ALERTING</div>

<--

<div style="text-align:center">Facility (Return Result), User-user (Note 1), (Note 2)</div>

<div style="text-align:center">DISCONNECT / RELEASE COMPLETE</div>

<- -

<div style="text-align:center">Facility (Return Error (Error), Cause (Note 3)</div>

<div style="text-align:center">CONNECT</div>

<--

<div style="text-align:center">User-user (Note 1), (Note 2), (Note 4)</div>

<div style="text-align:center">.</div>

<div style="text-align:center">.</div>

<div style="text-align:center">DISCONNECT / RELEASE / RELEASE COMPLETE</div>

<--->

<div style="text-align:center">User-user (Note 1), (Note 5)</div>
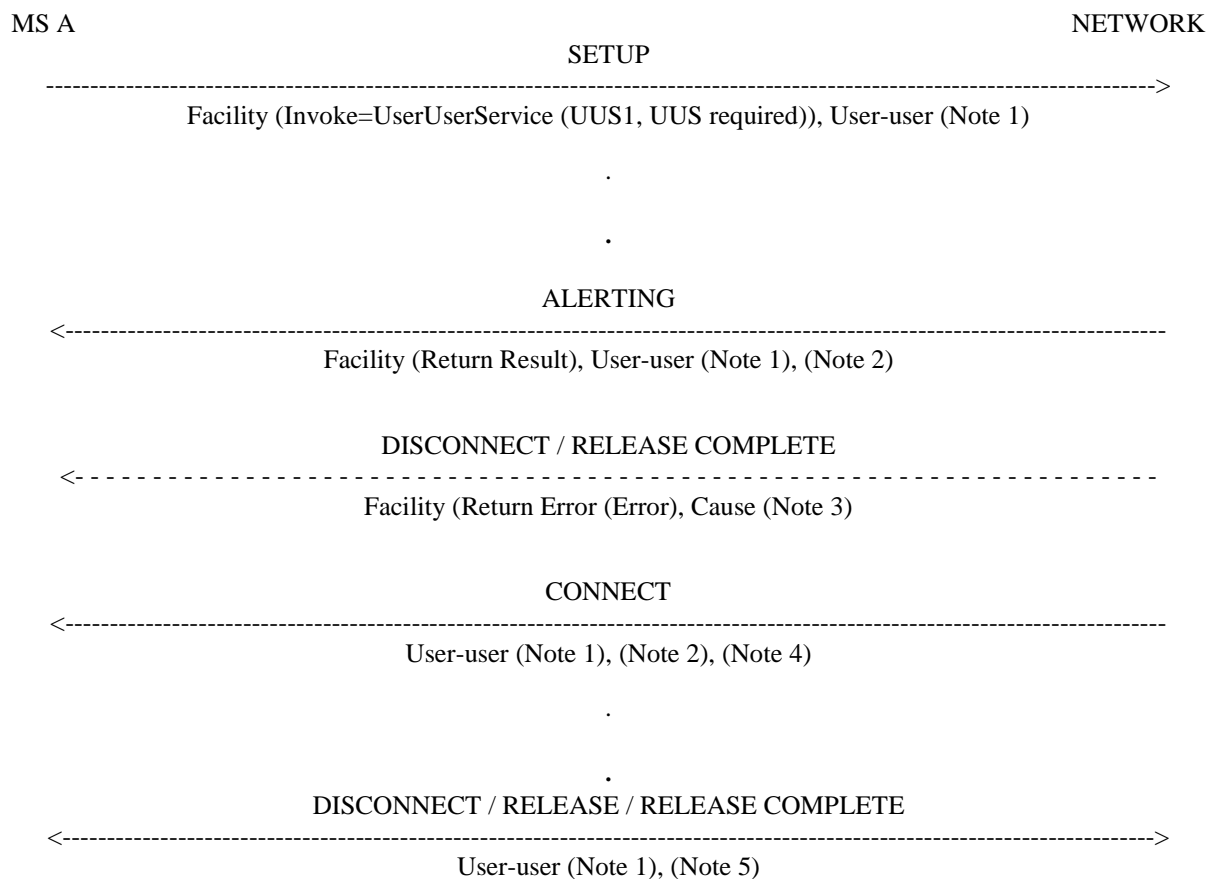
Figure 2: Request for explicit activation of UUS1, UUS required

NOTE 1: The User-user information element is optional.

NOTE 2: The Return Result component in the Facility information element shall be sent either in the ALERTING or in the CONNECT message.

NOTE 3: If the remote party rejects the service request or does not respond with an explicit service 1 acceptance or rejection, DISCONNECT message is sent to the MS A with Facility information element including Return Error component with error value "rejectedByUser". If the network rejects the request, the error value shall be "rejectedByNetwork". See information on Cause values in Annex A.

NOTE 4: If the MS A does not receive an explicit service 1 acceptance or rejection in the ALERTING or the CONNECT message, the MS A shall clear the call. UUS1 is not activated.

NOTE 5: Under normal conditions DISCONNECT message is used for clearing the call, but also RELEASE or RELEASE COMPLETE message may be used as the first call clearing message.

4.1.2.2   UUS not required

If the MS A gives the "UUS not required" indication, the call will be completed even if UUI cannot be passed to the remote party.

MS A   NETWORK

SETUP

-->

Facility (Invoke=UserUserService (UUS1, UUS not required)), User-user (Note 1)

.

.

ALERTING

<--

Facility (Return Result), User-user (Note 1), (Note 2)

ALERTING / CONNECT

<- -

Facility (Return Error (Error) (Note 3)

CONNECT

<--

User-user (Note 1), (Note 2)

.

.

.

DISCONNECT / RELEASE / RELEASE COMPLETE

<-->

User-user (Note 1), (Note 4)

Figure 3: Request for explicit activation of UUS1, UUS not required

NOTE 1: The User-user information element is optional.

NOTE 2: The Return Result component in the Facility information element shall be sent either in the ALERTING or in the CONNECT message.

NOTE 3: If the MS A does not receive an explicit service 1 acceptance or rejection in the ALERTING or the CONNECT message, the served subscriber shall continue normal call handling. UUS1 is not activated.

NOTE 4: Under normal conditions DISCONNECT message is used for clearing the call, but also RELEASE or RELEASE COMPLETE message may be used as the first call clearing message.

4.2   UUS2

For UUS2, both parties may send UUI after the alerting indication has been sent/received and until the connect indication has been sent/received. The UUI is sent in USER INFORMATION message and is limited to two messages in each direction.

UUS2 is automatically deactivated when the called subscriber is no longer being informed of the call, i.e. if the call is established or released.

4.2.1 Operation

In order to activate UUS2 the MS A shall include a Facility information element with a UserUserService invoke component indicating service 2 in the SETUP message. See 3GPP TS 24.008, 3GPP TS 24.080. The UserUserService invoke component shall also indicate whether the service is "UUS required" or "UUS not required".

If the remote party accepts the request, the network shall include a Facility information element with a UserUserService Return Result component in the ALERTING message received by the MS A.

If the request is not accepted, the network shall include a Facility information element with a UserUserService Return Error component in the DISCONNECT message (when UUS required) or in the ALERTING or in the CONNECT message (when UUS not required) sent to the MS A. See errors in 3GPP TS 24.080.

At any time between the activation of UUS2 and the connection is being established, either subscriber may transfer up to two USER INFORMATION messages in each direction to the other subscriber involved in the call.

User-user information element is mandatory in USER INFORMATION message (refer 3GPP TS 24.008). More data information element may be included in USER INFORMATION message indicating that another USER INFORMATION message pertaining to the same message block will follow.

For UUS2 activation SS Version Indicator value 3 or above has to be used.

4.2.1.1 UUS required

If the MS A gives the "UUS required" indication, the call shall not be completed if UUI cannot be passed to the remote party.

MS A   NETWORK

SETUP

-->

Facility (Invoke=UserUserService (UUS2, UUS required))

.

.

ALERTING

<--

Facility (Return Result) (Note 1)

DISCONNECT / RELEASE COMPLETE / RELEASE

<- -

Facility (Return Error (Error), Cause (Note 2)

USER INFORMATION

<-->

User-user, More data (Note 3)

.

.

CONNECT

<--

(Note 1)

Figure 4: Request for explicit activation of UUS2, UUS required

NOTE 1: If the MS A does not receive an explicit service 2 acceptance or rejection in the ALERTING message or does not receive an ALERTING message before receiving the CONNECT message, the served subscriber shall clear the call. UUS2 is not activated.
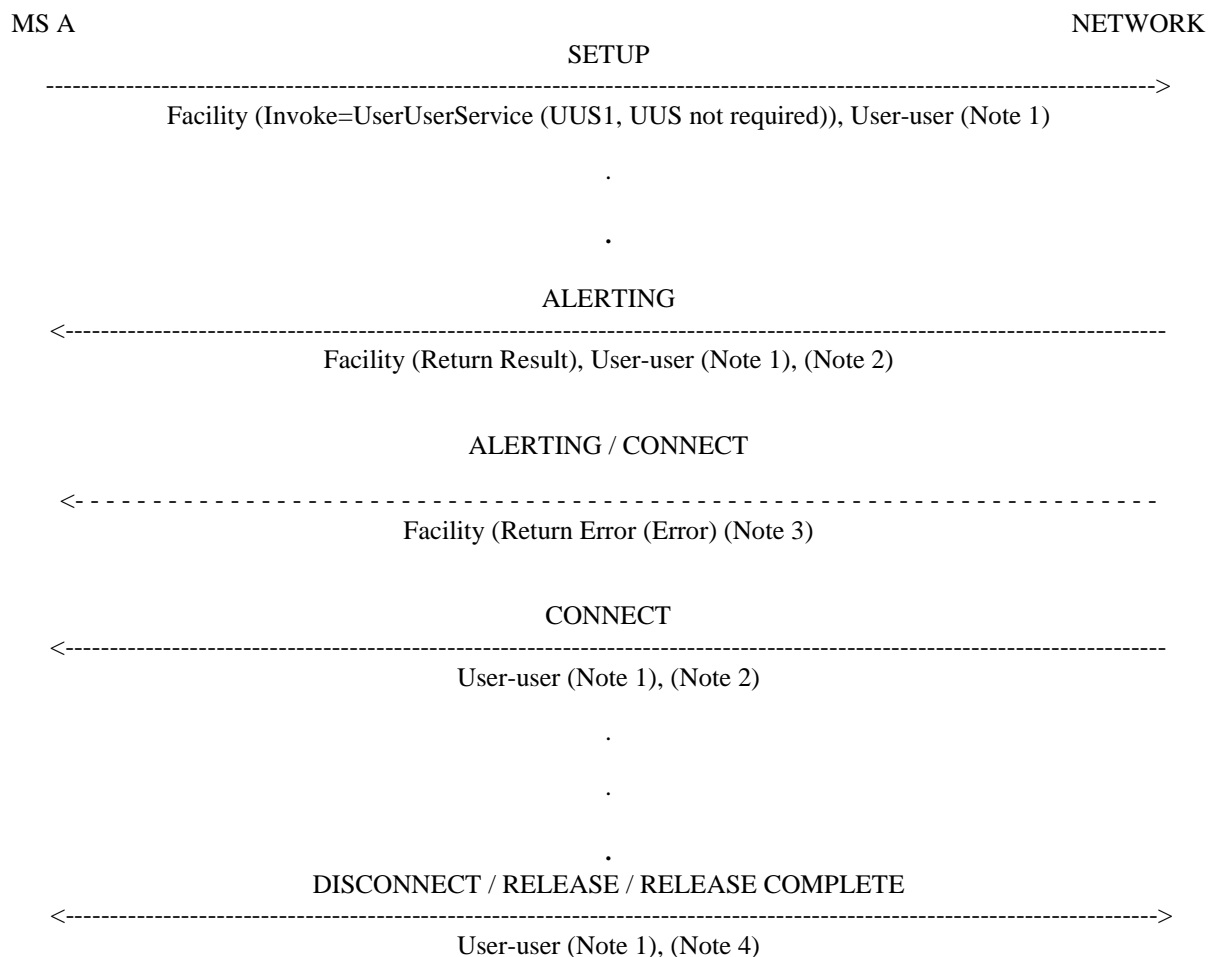
NOTE 2: If the remote party rejects the service request or does not respond with an explicit service 2 acceptance or rejection, DISCONNECT message is sent to the MS A with Facility information element including Return Error component with error value "rejectedByUser". If the network rejects the request, the error value shall be "rejectedByNetwork". See information on Cause values in Annex A.

NOTE 3: User-user information element is mandatory and More data information element is optional in USER INFORMATION message.

4.2.1.2 UUS not required

If the MS A gives the "UUS not required" indication, the call will be completed even if UUI cannot be passed to the remote party.

```
MS A                                                                              NETWORK
                                    SETUP
-------------------------------------------------------------------------------------->
               Facility (Invoke=UserUserService (UUS2, UUS not required))

                                      .

                                      .

                                  ALERTING
<--------------------------------------------------------------------------------------
                        Facility (Return Result) (Note 1)

                                  ALERTING
  <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                        Facility (Return Error (Error))

                              USER INFORMATION
<-------------------------------------------------------------------------------------->
                         User-user, More data (Note 2)

                                      .

                                      .
                                  CONNECT
<--------------------------------------------------------------------------------------
                                   (Note 1)
```

Figure 5: Request for explicit activation of UUS2, UUS not required

NOTE 1: If the MS A does not receive an explicit service 2 acceptance or rejection in the ALERTING message or does not receive an ALERTING message before receiving the CONNECT message, the served subscriber shall continue normal call handling. UUS2 is not activated.

NOTE 2: User-user information element is mandatory and More data information element is optional in USER INFORMATION message.

4.3 UUS3

For UUS3, both parties may send UUI in the active phase of a call using USER INFORMATION messages.

UUS3 shall be activated explicitly, when a call is originated or after the connection has been established.

After UUS3 has been activated, either subscriber may transfer UUI in USER INFORMATION messages to the other subscriber on the call.

UUS3 is automatically deactivated when the call is released.

For UUS3 activation SS Version Indicator value 3 or above has to be used.

4.3.1 Activation when originating a call

When UUS3 is activated during call establishment, the MS A shall include Facility information element with UserUserService operation in an Invoke component indicating UUS3 in the SETUP message. See 3GPP TS 24.008, 3GPP TS 24.080. The UserUserService operation shall also indicate whether the service is "UUS required" or "UUS not required".

If the remote party accepts the request, the network shall include a Facility information element with a UserUserService Return Result component in the CONNECT message sent to the MS A.

If the request is not accepted, the network shall include a Facility information element with a UserUserService Return Error component in the DISCONNECT message (when UUS required) or in the CONNECT message (when UUS not required) sent to the MS A. See errors in 3GPP TS 24.080.
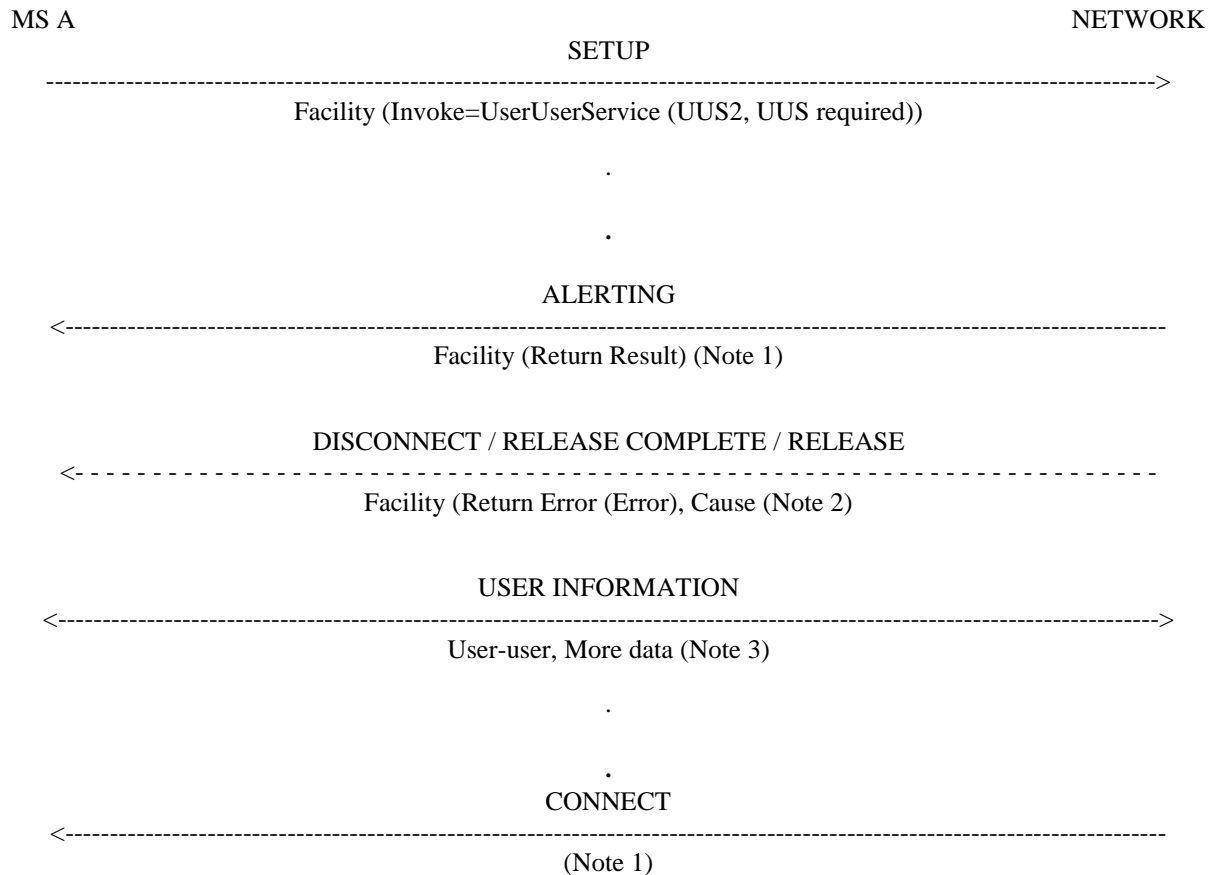
4.3.1.1 UUS required

If the MS A gives the "UUS required" indication, the call shall not be completed if UUI cannot be passed to the remote party.

```
MS A                                                                              NETWORK
                                       SETUP
 ----------------------------------------------------------------------------------------->
               Facility (Invoke=UserUserService (UUS3, UUS required))

                                          .

                                          .
                                      CONNECT
 <----------------------------------------------------------------------------------------
                      Facility (Return Result) (Note 1)


               DISCONNECT / RELEASE COMPLETE / RELEASE
 <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                    Facility (Return Error (Error), Cause (Note 2)
```
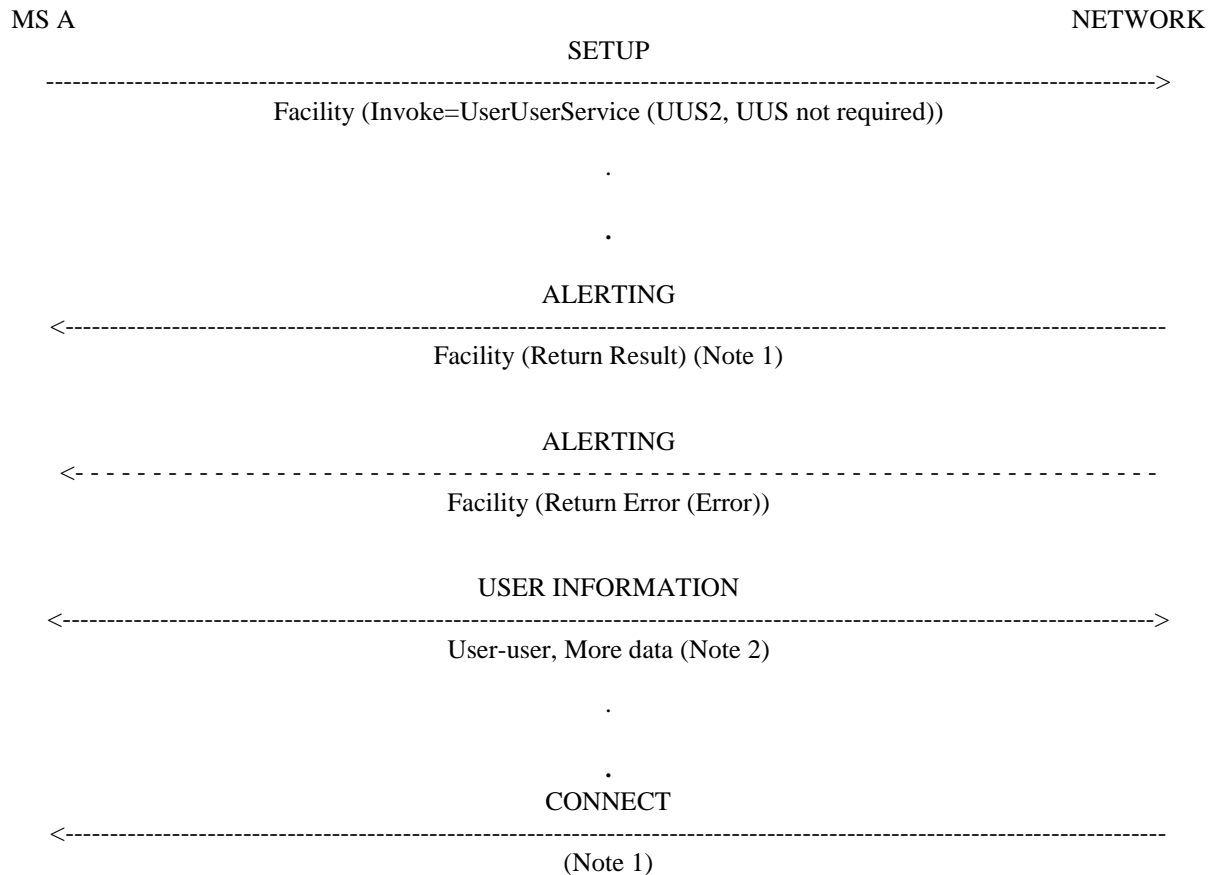
Figure 6: Request for explicit activation of UUS3 when originating a call, UUS required

NOTE 1: If the MS A does not receive an explicit service 3 acceptance or rejection in the CONNECT message, the MS A shall clear the call.

NOTE 2: If the remote party rejects the service request or does not respond with an explicit service 3 acceptance or rejection, DISCONNECT message is sent to the MS A with Facility information element including Return Error component with error value "rejectedByUser". If the network rejects the request, the error value shall be "rejectedByNetwork". See information on Cause values in Annex A.

4.3.1.2 UUS not required

If the MS A gives the "UUS not required" indication, the call will be completed even if UUI cannot be passed to the remote party.

```
MS A                                                                              NETWORK
                                       SETUP
 ----------------------------------------------------------------------------------------->
               Facility (Invoke=UserUserService (UUS3, UUS not required))

                                          .

                                          .
                                      CONNECT
 <----------------------------------------------------------------------------------------
                           Facility (Return Result)


                                      CONNECT
 <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                      Facility (Return Error (Error)) (Note 1)
```
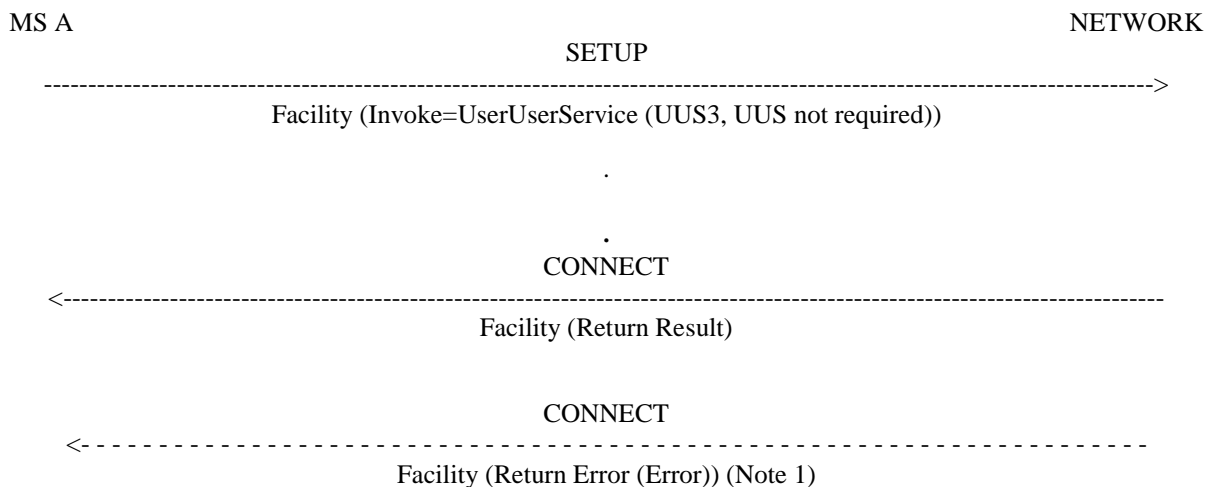
Figure 7: Request for explicit activation of UUS3 when originating a call, UUS not required

NOTE 1: If the MS A does not receive an explicit service 3 acceptance or rejection in the CONNECT message, the MS A shall continue normal call handling and assume that service 3 is not activated.
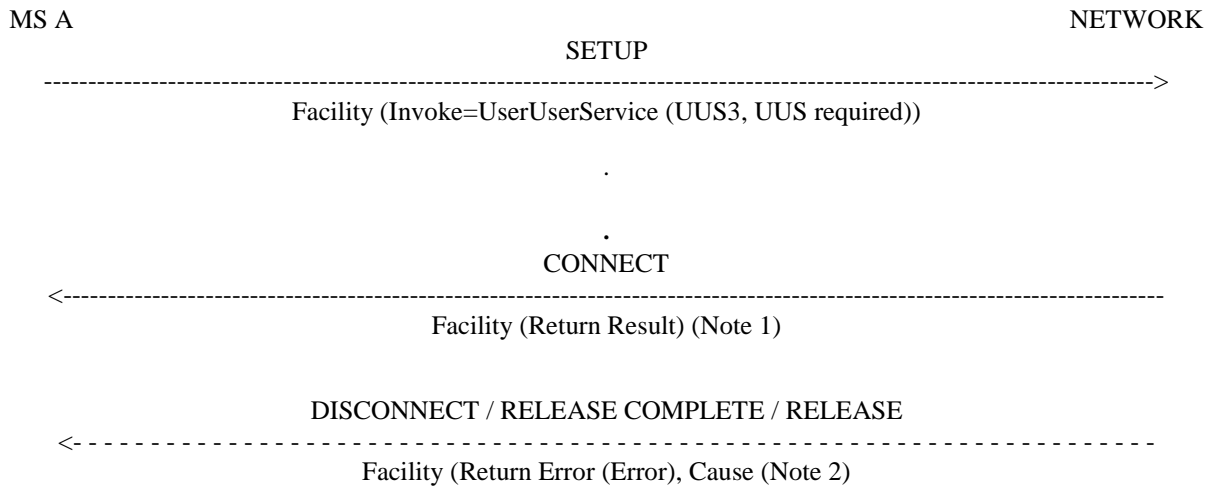
4.3.2 Activation during an active call

When UUS3 is activated during an active call, the MS A shall include a Facility information element with a UserUserService invoke component indicating service 3 in a FACILITY message. See 3GPP TS 24.008, 3GPP TS 24.080. The UserUserService operation shall indicate that the service is "UUS not required".

If the remote party accepts the request, the network shall include a Facility information element with a UserUserService Return Result component in the FACILITY message sent to the MS A.

If the request is not accepted, the network shall include a Facility information element with a UserUserService Return Error component in the FACILITY message sent to the MS A. See errors in 3GPP TS 24.080.

MS A   NETWORK

Active call
<--->

FACILITY
-->
Facility (Invoke=UserUserService (UUS3, UUS not required))

FACILITY
<--
Facility (Return Result)

FACILITY
<- -
Facility (Return Error (Error)) (Note 1)
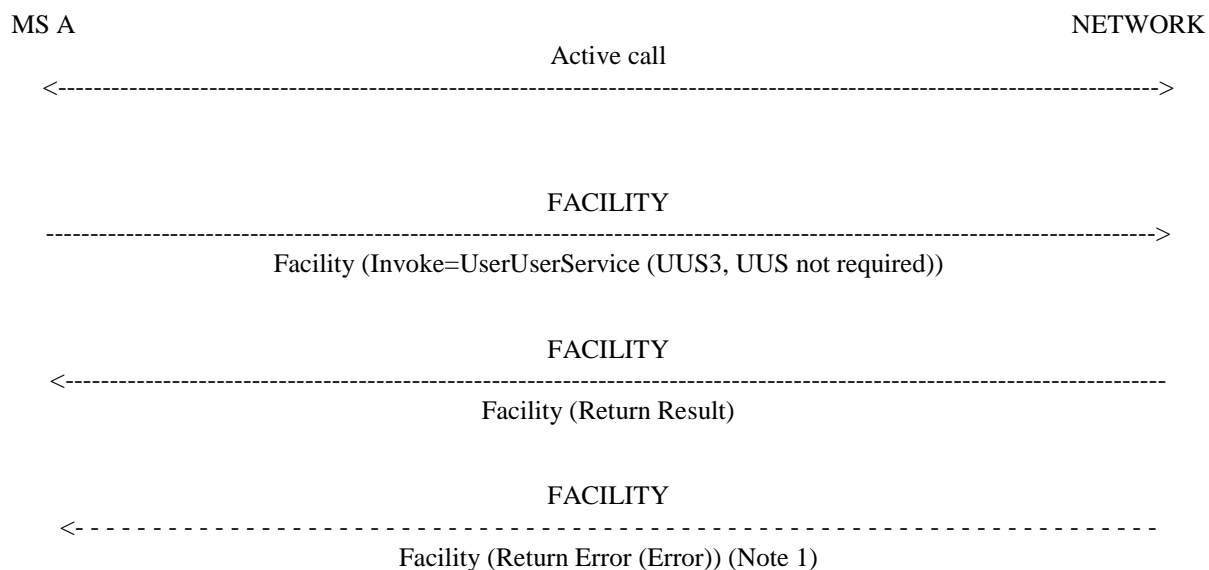
Figure 8: Request for explicit activation of UUS3 during an active call

NOTE 1: If the remote party rejects the service request or does not respond with an explicit service 3 acceptance of rejection, the FACILITY message includes Facility information element with Return Error component indicating error "rejectedByUser". If the network rejects the request, the error value shall be "rejectedByNetwork".

4.3.3   Invocation and operation

After Service 3 has been activated, either subscriber may transfer UUI in USER INFORMATION messages to the other subscriber on the call after the connection has been established. User-user information element is mandatory in USER INFORMATION message. More data information element may be included in USER INFORMATION message indicating that another USER INFORMATION message pertaining to the same message block will follow.

MS A   NETWORK
Active call
<-->

USER INFORMATION
<-->
User-user, More data (Note 1)

.

.
DISCONNECT /RELEASE / RELEASE COMPLETE
<-->
(Note 2)
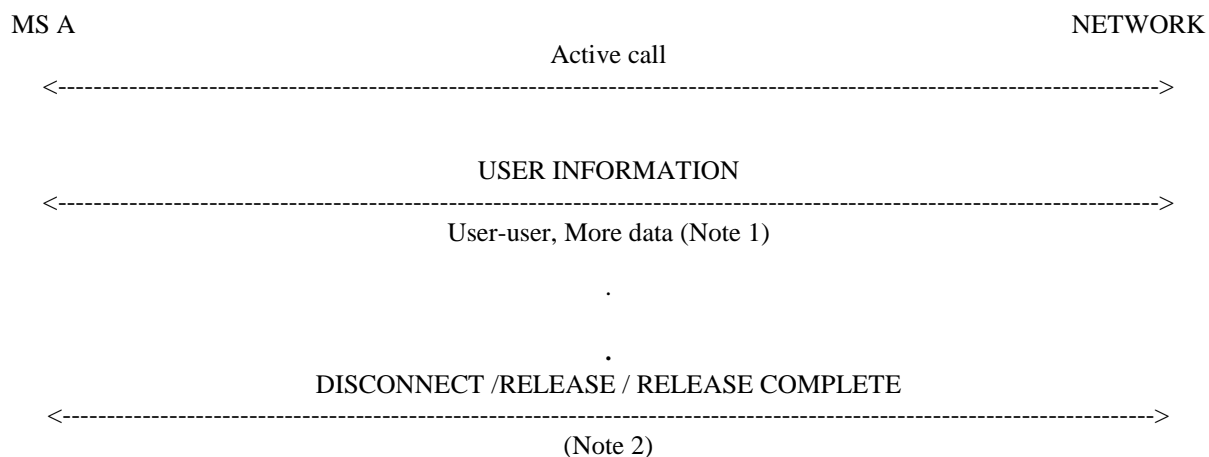
Figure 9: Sending USER INFORMATION messages when UUS3 has been activated

NOTE 1:   User-user information element is mandatory and More data information element is optional in USER INFORMATION message.

NOTE 2:   Under normal conditions DISCONNECT message is used for clearing the call, but also RELEASE or RELEASE COMPLETE message may be used as the first call clearing message.

4.3.4   Flow Control

Network flow control mechanisms shall exist after the call has entered the Active call state to control USER INFORMATION message flow in each direction.

If USER INFORMATION messages are received at a rate which exceeds the flow control limit set by the network, the network shall discard the USER INFORMATION messages that cannot be handled and respond to the first discarded USER INFORMATION message with a control indication.

If USER INFORMATION message has been discarded due to flow control, a CONGESTION CONTROL message shall be sent to the MS.

When the flow control restrictions are removed, and a USER INFORMATION message has been discarded due to that restriction, an indication that further USER INFORMATION messages can be accepted shall be given.

MS A   NETWORK

Active call

<--->

USER INFORMATION

-->

User-user, More data (Note 1)

.

.

USER INFORMATION

-->

User-user, More data (Note 1), (Note 2)

CONGESTION CONTROL

<--

Congestion level = receiver not ready, Cause #43 (access information discarded)

.

USER INFORMATION

-->

User-user, More data (Note 1), (Note 2)

.

.

CONGESTION CONTROL

<--

Congestion level = receiver ready
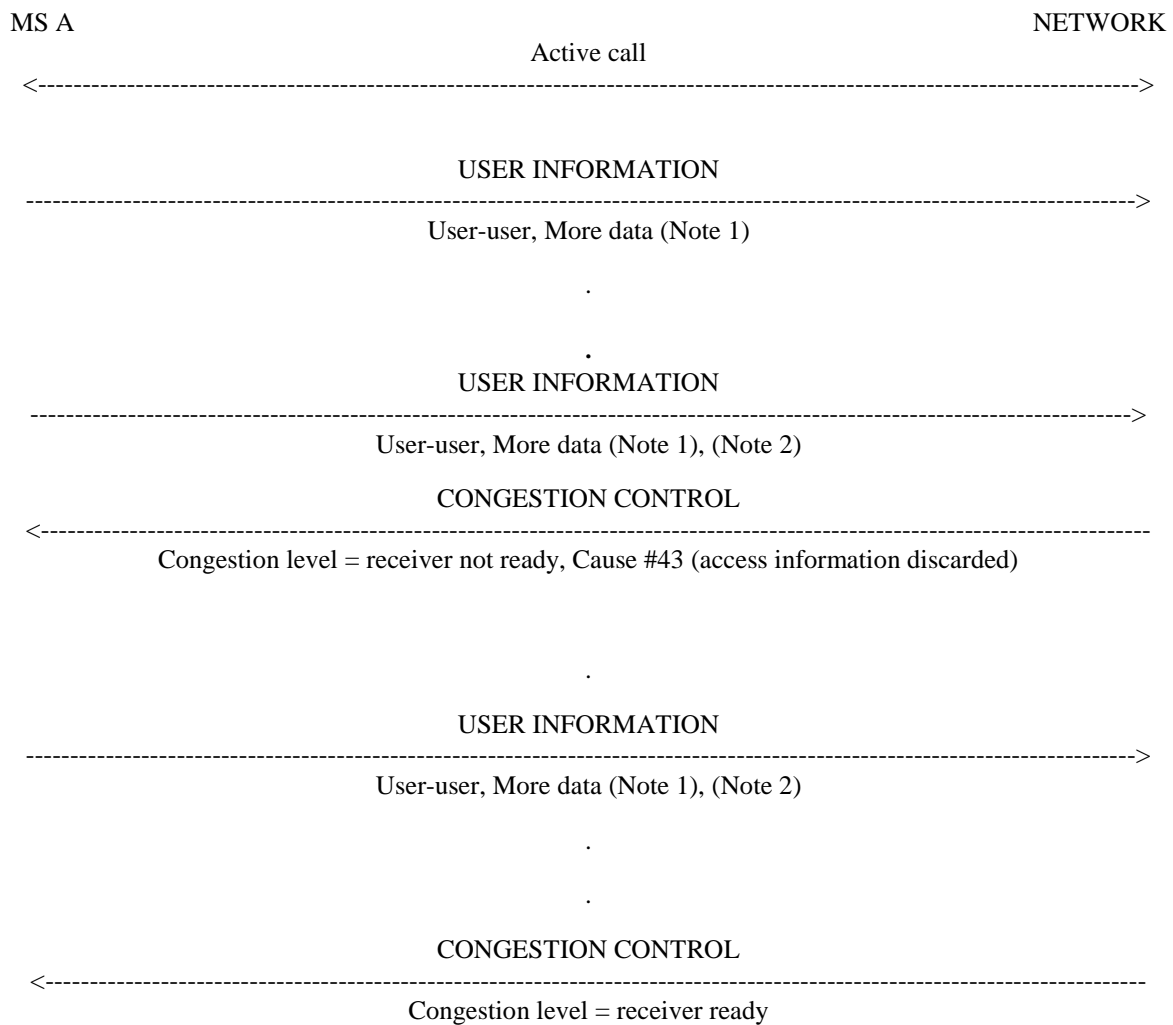
Figure 10: UUS3, Flow control

NOTE 1: User-user information element is mandatory and More data information element is optional in USER
INFORMATION message.

NOTE 2: Due to the flow control the USER INFORMATION message is discarded.

A more detailed presentation of flow control mechanisms is given in UUS Stage 2.

4.4 Combination of UUS Services

Depending on the served subscriber"s subscription to the UUS supplementary service and the provision of the UUS
services by the service provider, UUS1 implicit or explicit, UUS2 and UUS3 can be activated individually or in
combination.

The following figure is an example of the situation, when UUS1, UUS2 and UUS3 are simultaneously activated as
"UUS required".

MS A   NETWORK

SETUP

--->

Facility (Invoke=UserUserService (UUS1, UUS required), Invoke=UserUserService (UUS2, UUS required),
Invoke=UserUserService (UUS3, UUS required)), User-user (Note 1)

.

.

ALERTING

<--

Facility (Return Result, Return Result), User-user (Note 1), (Note 2)

.

.

.

CONNECT

<--

Facility (Return Result), User-user (Note 1), (Note 2)
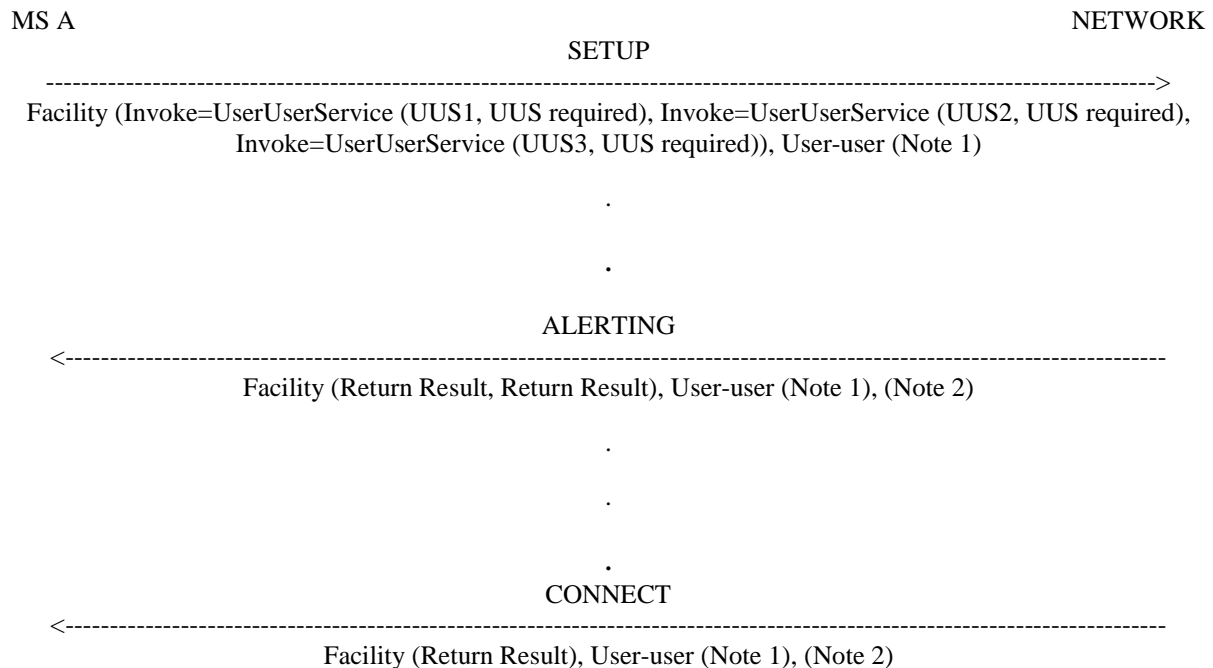
Figure 11: Request for explicit activation of UUS1, UUS2 and UUS3 simultaneously

NOTE 1: The User-user information element is optional.

NOTE 2: For UUS1 the Return Result component in the Facility information element may be sent either in the
ALERTING or in the CONNECT message. For UUS2 the Return Result component in the Facility
information element is sent in the ALERTING message. For UUS3 the Return Result component in the
Facility information element is sent in the CONNECT message.

5   User-to-User Signalling (UUS); remote mobile subscriber side

If the network has received a non-zero SS screening indicator from the remote MS, the description in the subclauses 5.1
to 5.3 applies.

If the network has received a zero SS screening indicator from the remote MS, three cases exist:

If UUS service was requested as „UUS required" during the call establishment, then the SETUP message will not be
sent to the remote MS.

If UUS service was requested as „UUS not required" during the call establishment, then the SETUP message will be
sent to the remote MS without the Facility information element including the UUS service activation request.

If UUS service was requested during an active call, then the Facility information element including the request of UUS
service activation will not be sent to the remote MS.

5.1 UUS1

5.1.1 Operation when explicitly activated, UUS required

In this subclause the operation of UUS1, explicitly activated and with the indication "UUS required", is described at the remote mobile subscriber side.

```
MS B                                                                              NETWORK
                                        SETUP
     <----------------------------------------------------------------------------------------
            Facility (Invoke=UserUserService (UUS1, UUS required)), User-user (Note 1)

                                          .


                                          .

                                      ALERTING
     ----------------------------------------------------------------------------------------->
            Facility (Return Result), User-user (Note 1), (Note 2)


                                      ALERTING
     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - >
                                       (Note 3)


                                      CONNECT
     ----------------------------------------------------------------------------------------->
                           User-user (Note 1), (Note 2)


                                      CONNECT
     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - >
                                       (Note 3)

                                          .


                                          .
            DISCONNECT / RELEASE COMPLETE / RELEASE
     <----------------------------------------------------------------------------------------->
                     User-user (Note 1), (Note 3), (Note 4)
```
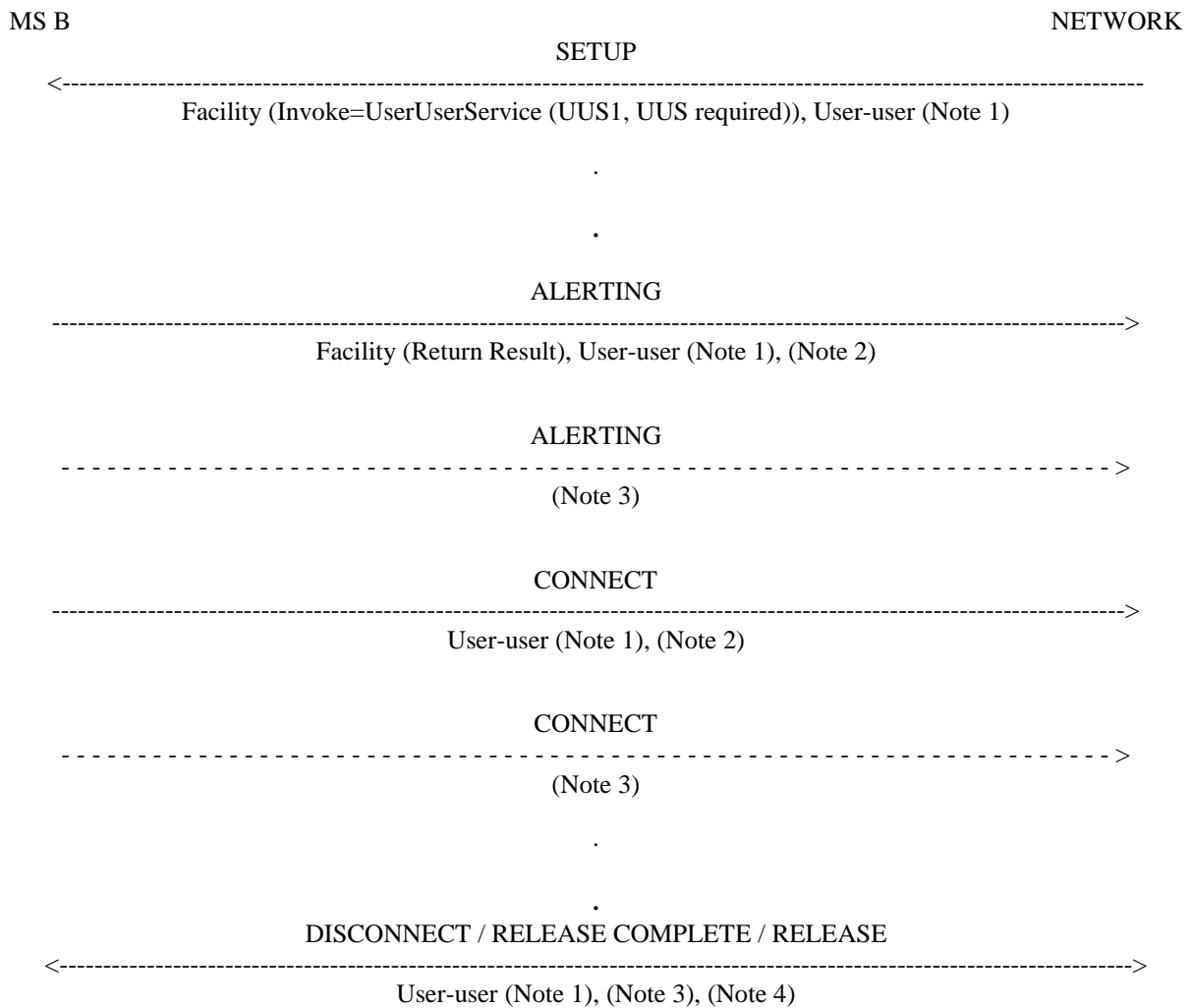
Figure 12: Request for explicit activation of UUS1, UUS required

NOTE 1: The User-user information element is optional.

NOTE 2: The Return Result component in the Facility information element may be sent either in the ALERTING or in the CONNECT message.

NOTE 3: If the MS B does not respond with an explicit service 1 acceptance or rejection, ALERTING or CONNECT message does not include a Return Result component. The following DISCONNECT message clears the call. See information on Cause values in Annex A.

NOTE 4: Under normal conditions DISCONNECT message is used for clearing the call, but also RELEASE or RELEASE COMPLETE message may be used as the first call clearing message.

5.1.2 Operation when explicitly activated, UUS not required

In this subclause the operation of UUS1, explicitly activated and with the indication "UUS not required", is described at the remote mobile subscriber side.

MS B   NETWORK
<div style="text-align:center">SETUP</div>

<--
Facility (Invoke=UserUserService (UUS1, UUS not required)), User-user (Note 1)

.

.

<div style="text-align:center">ALERTING</div>

-->
Facility (Return Result), User-user (Note 1), (Note 2)

<div style="text-align:center">ALERTING / CONNECT</div>

- >
Facility (Return Error)

<div style="text-align:center">CONNECT</div>

-->
User-user (Note 1), (Note 2)

.

.

<div style="text-align:center">DISCONNECT / RELEASE COMPLETE / RELEASE</div>

<-->
User-user (Note 1), (Note 3)

Figure 13: Request for explicit activation of UUS1, UUS not required
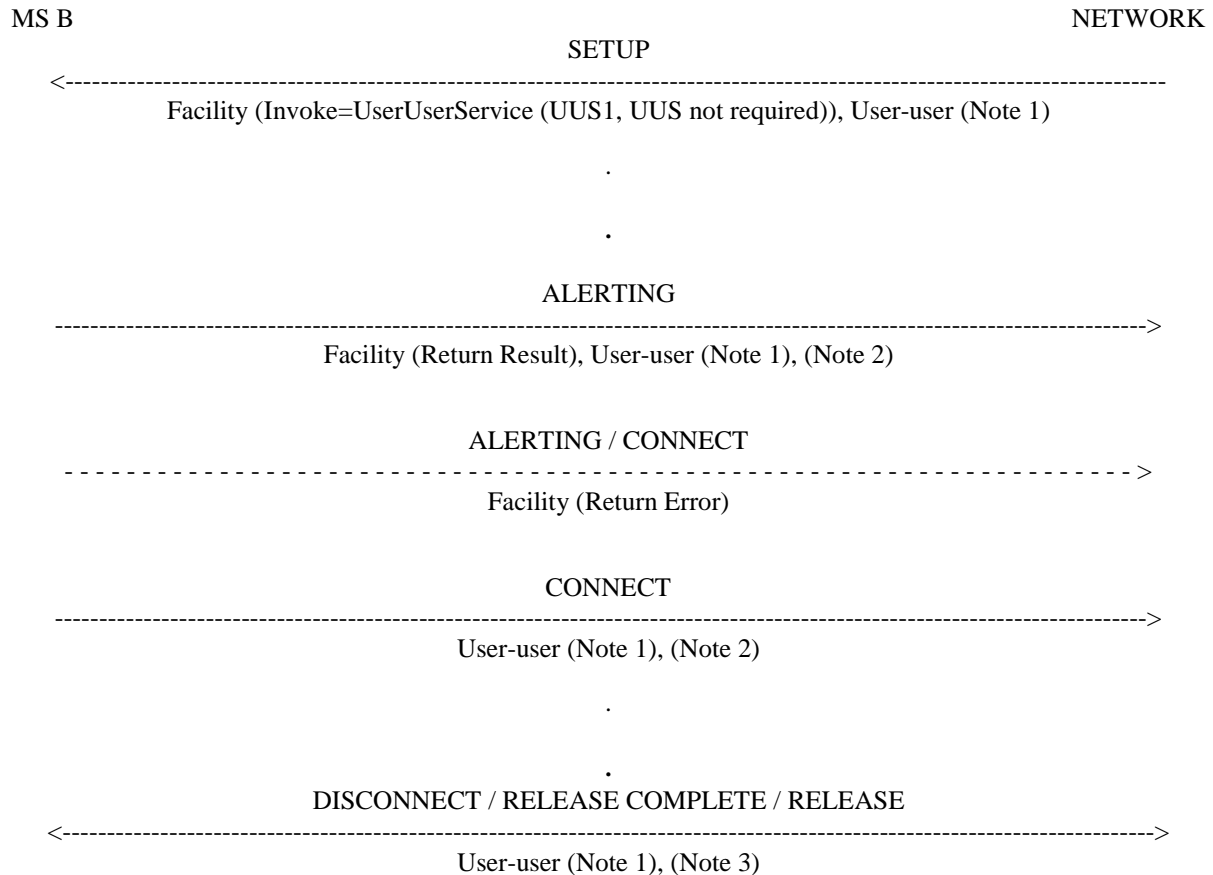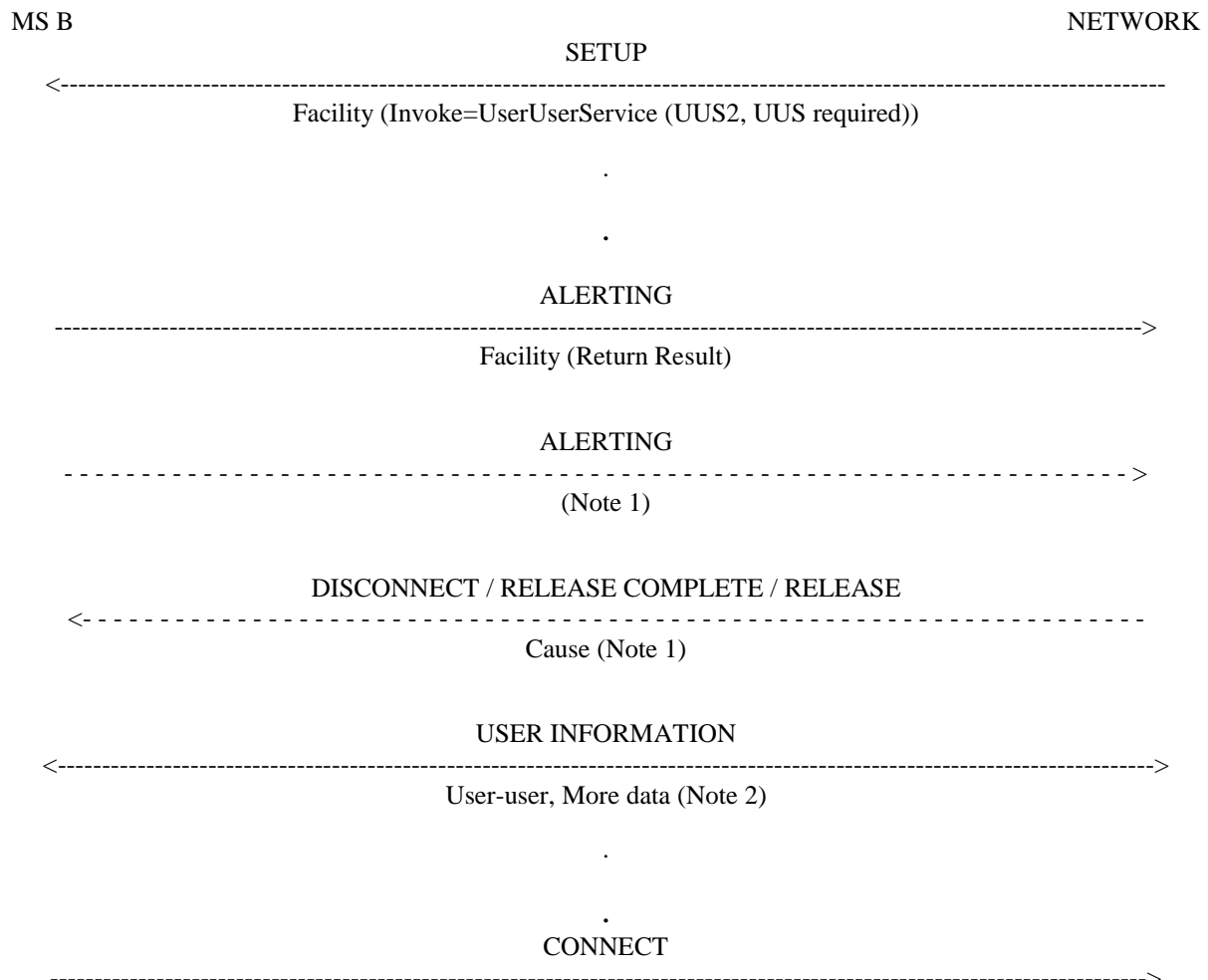
NOTE 1: The User-user information element is optional.

NOTE 2: The Return Result component in the Facility information element may be sent either in the ALERTING or in the CONNECT message.

NOTE 3: Under normal conditions DISCONNECT message is used for clearing the call, but also RELEASE or RELEASE COMPLETE message may be used as the first call clearing message.

5.2 UUS2

5.2.1 Operation, UUS required

In this subclause the operation of UUS2, with the indication "UUS required", is described at the remote mobile subscriber side.

```
MS B                                                                              NETWORK
                                        SETUP
    <--------------------------------------------------------------------------------------------
                    Facility (Invoke=UserUserService (UUS2, UUS required))

                                          .

                                          .

                                      ALERTING
    -------------------------------------------------------------------------------------------->
                                Facility (Return Result)

                                      ALERTING
    - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - >
                                      (Note 1)

                    DISCONNECT / RELEASE COMPLETE / RELEASE
    <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                Cause (Note 1)

                                  USER INFORMATION
    <------------------------------------------------------------------------------------------>
                            User-user, More data (Note 2)

                                          .

                                          .
                                      CONNECT
    -------------------------------------------------------------------------------------------->
```

Figure 14: Request for explicit activation of UUS2, UUS required

NOTE 1: If the MS B does not respond with an explicit service 2 acceptance or rejection, ALERTING message does not include a Return Result component. The following DISCONNECT message clears the call. See information on Cause values in Annex A.

NOTE 2: User-user information element is mandatory and More data information element is optional in USER INFORMATION message.

5.2.2   Operation, UUS not required

In this subclause the operation of UUS2, with the indication "UUS not required", is described at the remote mobile subscriber side.

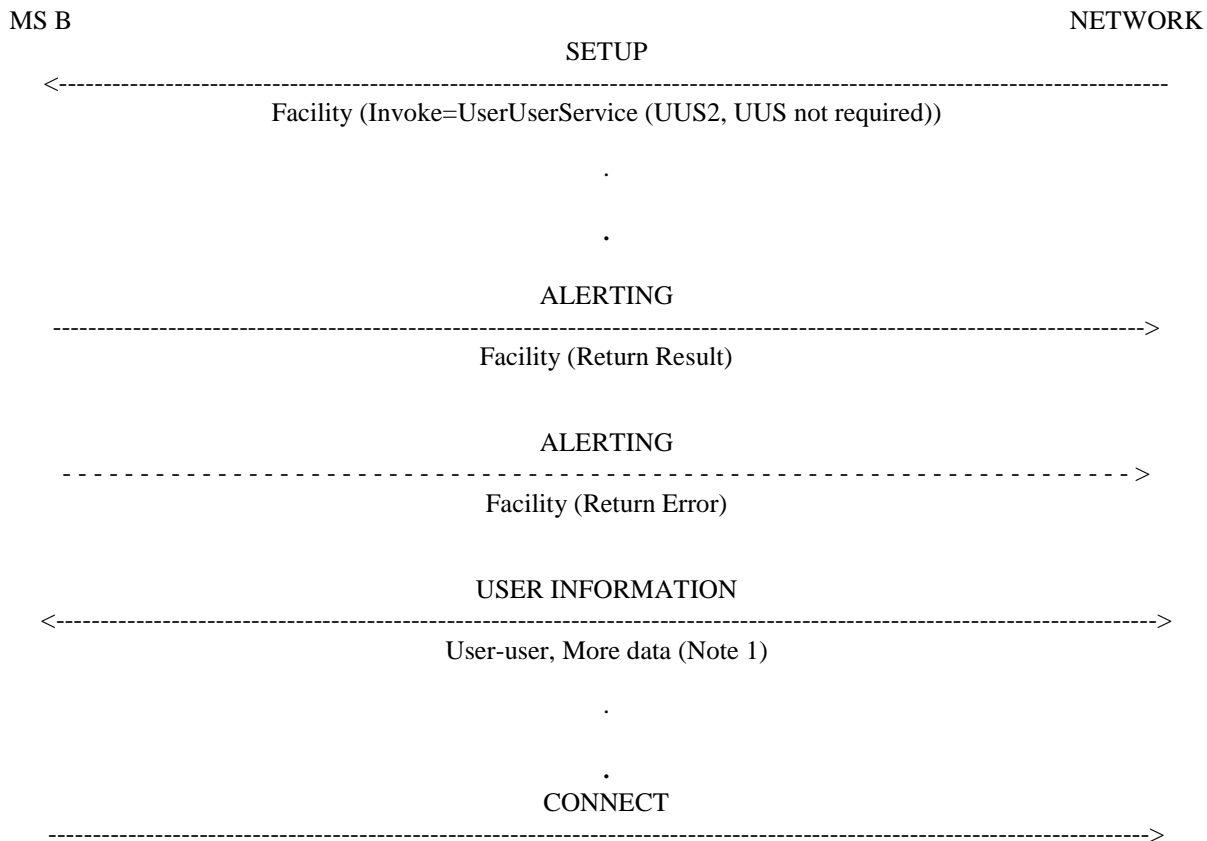MS B   NETWORK

SETUP

<--

Facility (Invoke=UserUserService (UUS2, UUS not required))

.

.

ALERTING

-->

Facility (Return Result)

ALERTING

- >

Facility (Return Error)

USER INFORMATION

<--->

User-user, More data (Note 1)

.

.

CONNECT

--->

Figure 15: Request for explicit activation of UUS2, UUS not required
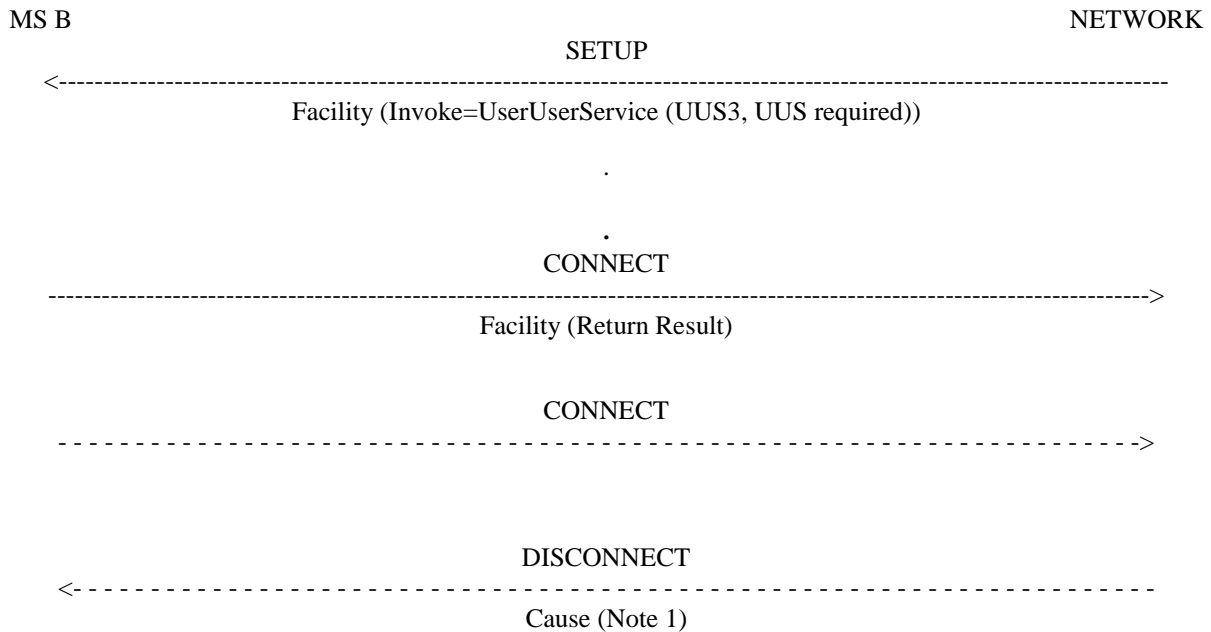
NOTE 1: User-user information element is mandatory and More data information element is optional in USER
INFORMATION message.

5.3 UUS3

5.3.1 Activation when originating a call

5.3.1.1 UUS required

In this subclause the activation of UUS3 when originating a call, with the indication "UUS required", is described at the remote mobile subscriber side.

```
MS B                                                                          NETWORK
                                        SETUP
   <-------------------------------------------------------------------------------
                    Facility (Invoke=UserUserService (UUS3, UUS required))

                                          .

                                          .
                                      CONNECT
   ------------------------------------------------------------------------------->
                              Facility (Return Result)


                                      CONNECT
   - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - ->



                                    DISCONNECT
   <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                  Cause (Note 1)
```
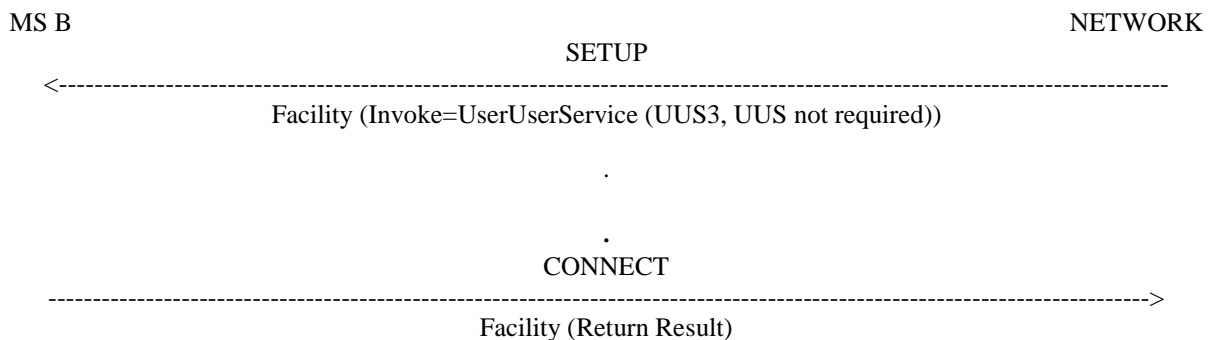
Figure 16: Request for explicit activation of UUS3 when originating a call, UUS required
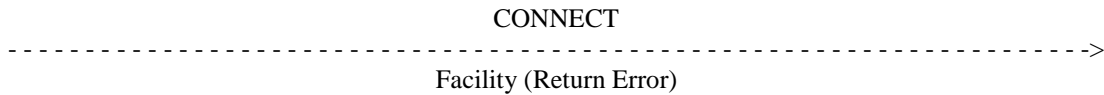
NOTE 1: If the MS B does not respond with an explicit service 3 acceptance or rejection, DISCONNECT message is sent to the MS B to clear the call. See information on Cause values in Annex A.

5.3.1.2 UUS not required

In this subclause the activation of UUS3 when originating a call, with the indication "UUS not required", is described at the remote mobile subscriber side.
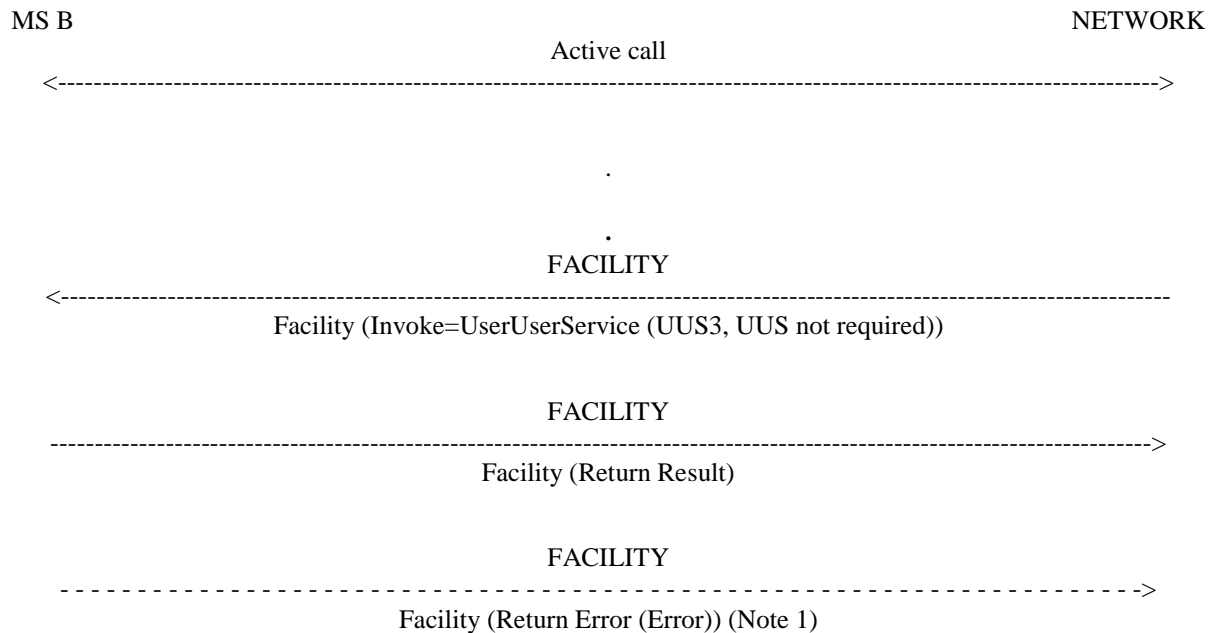
```
MS B                                                                          NETWORK
                                        SETUP
   <-------------------------------------------------------------------------------
                  Facility (Invoke=UserUserService (UUS3, UUS not required))

                                          .

                                          .
                                      CONNECT
   ------------------------------------------------------------------------------->
                              Facility (Return Result)
```

CONNECT

`- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - ->`

Facility (Return Error)

Figure 17: Request for explicit activation of UUS3 when originating a call, UUS not required

5.3.2 Activation during an active call

In this subclause the activation of UUS3 during an active call is described at the remote mobile subscriber side.

MS B NETWORK

Active call

`<------------------------------------------------------------------------------------------------------------->`

.

.

.

FACILITY

`<--------------------------------------------------------------------------------------------------------------`

Facility (Invoke=UserUserService (UUS3, UUS not required))

FACILITY

`-------------------------------------------------------------------------------------------------------------->`

Facility (Return Result)

FACILITY

`- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - ->`

Facility (Return Error (Error)) (Note 1)

Figure 18: Request for explicit activation of UUS3 during an active call

NOTE 1: If the remote party rejects the service request or does not respond with an explicit service 3 acceptance of rejection, the FACILITY message includes Facility information element with Return Error component indicating error "rejectedByUser". If the network rejects the request, the error value shall be "rejectedByNetwork".

6 Identification of parallel transactions in UUS

If more than one parallel CC transaction is active, UUS operations are directed to the desired transaction identified by the pertaining transaction identifier.

Annex A (normative):
Cause values used in UUS supplementary service

Cause value	Situation	Information on usage
#29 facility rejected	To served mobile subscriber side, call clearing	If the remote party rejects the activation request of a UUS service, the Cause value #29 is sent to the served subscriber.
#47 resource unavailable, unspecified	To served mobile subscriber side, call clearing	If the network rejects the activation request of a UUS service, the Cause value #47 or #50 is sent to the served subscriber.
#50 requested facility not subscribed	To served mobile subscriber side, call clearing	If the network rejects the activation request of a UUS service, the Cause value #47 or #50 is sent to the served subscriber.
#69 requested facility not implemented	To served mobile subscriber side, call clearing	If the remote party does not respond with an explicit UUS service acceptance or rejection to the activation request, the Cause value #69 is sent to the served subscriber.
#31 normal, unspecified	To remote mobile subscriber side, call clearing	If the remote party does not respond with an explicit UUS service acceptance or rejection, the Cause value #31 is sent to him.
#43 access information discarded	To served mobile subscriber side, flow control	The Cause value #43 is sent within CONGESTION CONTROL message to the served subscriber.

Annex B (informative): Change history

Change history						
TSG CN#	Spec	Version	CR	<Phase>	New Version	Subject/Comment
Apr 1999	GSM 04.87	7.0.0				Transferred to 3GPP CN1
CN#03	24.087			R99	3.0.0	Approved at CN#03
CN#11	24.087	3.0.0		Rel-4	4.0.0	Approved at CN#11
CN#16	24.087	4.0.0		Rel-4	4.0.1	References updated
CN#16	24.087	4.0.1		Rel-5	5.0.0	Rel-5 created after CN#16
CN#26	24.087	5.0.0		Rel-6	6.0.0	Rel-6 created after CN#26
CT#36	24.087	6.0.0		Rel-7	7.0.0	Upgraded unchanged from Rel-6
CT#42	24.087	7.0.0		Rel-8	8.0.0	Upgraded unchanged from Rel-7
2009-12	24.087	8.0.0	-	Rel-9	9.0.0	Update to Rel-9 version (MCC)
2011-03	24.087	9.0.0	-	Rel-10	10.0.0	Update to Rel-10 version (MCC)
2012-09	24.087	10.0.0	-	Rel-11	11.0.0	Update to Rel-11 version (MCC)
2014-09	24.087	11.0.0	-	Rel-12	12.0.0	Update to Rel-12 version (MCC)
2015-12	24.087	12.0.0	-	Rel-13	13.0.0	Update to Rel-13 version (MCC)

History

Document history		
V13.0.0	January 2016	Publication