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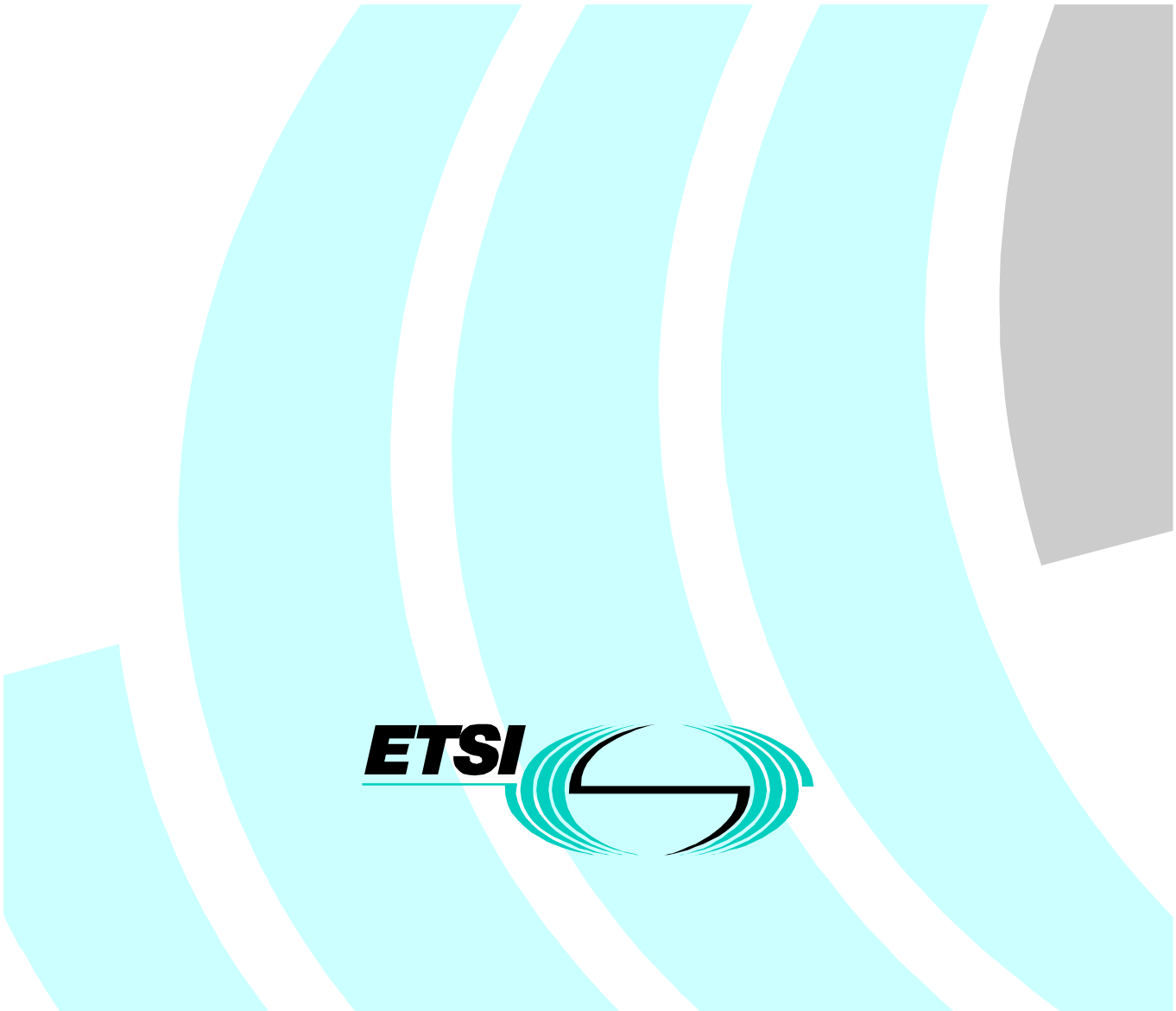
Technical Specification

Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP); Part 4: Supplementary services



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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Project Digital Enhanced Cordless Telecommunications (DECT).

The present document is based on DECT Common Interface (CI) specification EN 300 175, parts 1 [1] to 8 [8] to enable DECT terminals to interwork in the public and private environment with DECT systems which are connected to a UMTS core infrastructure.

In addition, the present document is based on the DECT Generic Access Profile (GAP), EN 300 444 [18] to enable the same DECT/UMTS terminal to interwork with a DECT FP complying to the GAP requirements, irrespective of whether this FP provides residential, business or public access services. General attachment requirements and speech attachment requirements are based on EN 301 406 [19].

The present document is part 4 of a multi-part deliverable covering Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP), as identified below:

Part 1: "General description and overview";

Part 2: "CN-FP interworking";

Part 3: "3,1 KHz speech service";

Part 4: "Supplementary services";

Part 5: "SMS point-to-point and cell broadcast";

Part 6: "Packet switched data".

The present document defines a general purpose, but strict, mobility profile in terms of features, procedures, data structures, information elements and fields within the information elements at the DECT air interface in order to achieve full inter-operability between equipment, i.e. DECT systems and terminals, which fulfil the requirements of the present document. The present document also fulfils the minimum requirements of the GAP enabling backwards compatibility with the respective equipment.

Further details on the DECT system may be found in TR 101 178 [10], ETR 043 [11] and EN 300 176 [9].

1 Scope

The present document specifies the Digital Enhanced Cordless Telecommunications (DECT) access protocols and Fixed Part (FP) and Portable Part (PP) interworking/mappings necessary to ensure that the Universal Mobile Telecommunication System (UMTS) supplementary services can be provided over DECT. To enable DECT terminals to interwork with DECT systems which are connected to the UMTS infrastructure, from the DECT side of the present document is based on EN 300 444 [18] and on the DECT Common Interface specification EN 300 175 parts 1 [1] to 8 [8] (for the cases not covered by Generic Access Profile (GAP)), from UMTS side the present document assumes interworking with UMTS specification release 1999.

An air-interface profile is specified for a particular set of UMTS services so that inter-operability of DECT equipment for these services can be achieved. Interworking functions/mappings are specified for attachment for the DECT FP as the FP is using the Iu-interface towards the UMTS core network in the respect that the FP emulates a UTRAN Radio Network Controller (RNC).

A PP conforming to the present document should be capable of distinguishing a FP conforming to the present document from a FP conforming to the GAP and to access and react upon it accordingly.

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ETSI EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".

[2] ETSI EN 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical Layer (PHL)".

[3] ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".

[4] ETSI EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".

[5] ETSI EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".

[6] ETSI EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".

[7] ETSI EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".

[8] ETSI EN 300 175-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech coding and transmission".

[9] ETSI EN 300 176: "Digital Enhanced Cordless Telecommunications (DECT); Approval test specification".

[10] ETSI TR 101 178: "Digital Enhanced Cordless Telecommunications (DECT); A High Level Guide to the DECT Standardization".

[11] ETSI ETR 043: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Services and facilities requirements specification".

[12] ETSI TS 101 863-1: "Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP); Part 1: General Description and Overview".

[13] ETSI TS 101 863-2: "Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP); Part 2: CN-FP interworking".

[14] ETSI TS 101 863-3: "Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP); Part 3: 3,1 KHz speech service".

[15] Void.

[16] Void.

[17] Void.

[18] ETSI EN 300 444: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP)".

[19] ETSI EN 301 406: "Digital Enhanced Cordless Telecommunications (DECT); Harmonized EN for Digital Enhanced CordlessTelecommunications (DECT) covering essential requirements under article 3.2 of the R&TTE Directive; Generic radio".

[20] ISO/IEC 9646-6: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".

[21] Void.

[22] ETSI TS 121 905: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications".

[23] ETSI TS 122 001: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN)".

[24] ETSI TS 122 004: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General on supplementary services".

[25] ETSI TS 122 024: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Description of Charge Advice Information (CAI)".

[26] ETSI TS 122 030: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Man-Machine Interface (MMI) of the User Equipment (UE)".

[27] ETSI TS 122 067: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Enhanced Multi-Level Precedence and Pre-emption service (eMLPP) - Stage 1".

[28] ETSI TS 122 081: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Line identification Supplementary Services; Stage 1".

[29] ETSI TS 122 082: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Forwarding (CF) supplementary services - Stage 1".

[30] ETSI TS 122 083: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Waiting (CW) and Call Holding (HOLD); Supplementary Services - Stage 1".

[31] ETSI TS 122 084: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); MultiParty (MPTY) Supplementary Services - Stage 1".

[32] ETSI TS 122 085: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Closed User Group (CUG) Supplementary Services - Stage 1".

[33] ETSI TS 122 086: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Advice of Charge (AoC) Supplementary Services - Stage 1".

[34] ETSI TS 122 087: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); User-to-User Signalling (UUS); Service description - Stage 1".

[35] ETSI TS 122 088: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Barring (CB) Supplementary Services - Stage 1".

[36] ETSI TS 122 090: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Unstructured Supplementary Service Data (USSD) - Stage 1".

[37] ETSI TS 122 091: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Explicit Call Transfer (ECT)".

[38] Void.

[39] ETSI TS 122 096: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Name identification supplementary services; Stage 1".

[40] ETSI TS 122 135: "Universal Mobile Telecommunications System (UMTS); Multicall; Service description; Stage 1".

[41] ETSI TS 123 081: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Line identification supplementary services - Stage 2".

[42] ETSI TS 123 082: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Forwarding (CF) Supplementary Services; Stage 2".

[43] ETSI TS 123 083: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Waiting (CW) and Call Hold (HOLD) supplementary services - Stage 2".

[44] ETSI TS 123 084: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Multi Party (MPTY) supplementary services - Stage 2".

[45] ETSI TS 123 085: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Closed User Group (CUG) supplementary service - Stage 2".

[46] ETSI TS 123 086: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Advice of Charge (AoC) supplementary services - Stage 2".

[47] ETSI TS 123 088: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Barring (CB) Supplementary Services - Stage 2".

[48] ETSI TS 123 090: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Unstructured Supplementary Service Data (USSD) - Stage 2".

[49] ETSI TS 124 008: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Mobile Radio Interface Layer 3 specification; Core Network Protocols; Stage 3".

[50] ETSI TS 124 010: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Mobile radio interface layer 3 Supplementary services specification; General aspects".

[51] ETSI TS 124 080: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Mobile radio interface layer 3 supplementary services specification; Formats and coding".

[52] ETSI TS 124 081: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Line identification supplementary services - Stage 3".

[53] ETSI TS 124 082: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Forwarding (CF) supplementary services - Stage 3".

[54] ETSI TS 124 083: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Waiting (CW) and Call Hold (HOLD) supplementary services - Stage 3".

[55] ETSI TS 124 084: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Multi Party (MPTY) supplementary service - Stage 3".

[56] ETSI TS 124 085: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Closed User Group (CUG) supplementary service - Stage 3".

[57] ETSI TS 124 086: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Advice of Charge (AOC) supplementary services - Stage3".

[58] ETSI TS 124 087: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); User-to-User Signalling (UUS) Supplementary Service - Stage3".

[59] ETSI TS 124 088: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Barring (CB) Supplementary Service - Stage 3".

[60] ETSI TS 124 090: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Unstructured Supplementary Service Data (USSD) - Stage 3".

[61] ETSI TS 129 002: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Mobile Application Part (MAP)".

[62] ETSI EN 300 196-1: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[63] ETSI ETS 300 102-1: "Integrated Services Digital Network (ISDN); User-network interface layer 3 Specifications for basic call control".

[64] ETSI TS 124 007: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Mobile radio interface signalling layer 3; General aspects".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 300 175-1 [1] and TS 121 905 [22] apply.

3.2 Symbols

For the purposes of the present document, the symbols given in EN 300 175-1 [1] and TS 121 905 [22] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations defined in EN 300 175-1 [1], TS 121 905[22] and the following apply:

3G CN	3rd Generation Core Network
3GPP	3rd Generation Partnership Project
BCD	Binary Coded Digit
CAI	Charge Advice Information
CC	Call Control
CFB	Call Forwarding on mobile subscriber Busy
CFNRc	Call Forwarding on mobile subscriber Not Reachable
CFNRy	Call Forwarding on No Reply
CFU	Call Forwarding Unconditional
CH	Call Hold
CISS	Call Independent Supplementary Service
CLI	Calling Line Identification
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CRSS	Call Related Supplementary Service
CUG	Closed User Group
CW	Call Waiting
DECT	Digital Enhanced Cordless Telecommunications
DSS1	Digital Subscriber Signalling No. One
F	Flag
FP	Fixed Part
IE	Information Element
ISDN	Integrated Services Digital Network
IWU	InterWorking Unit
MPTY	Multi ParTY
MSC	Mobile Switching Center
SIM	Subscriber Identity Module
SS	Supplementary Services
TV	Transaction Value
UDUB	User Determined User Busy
UE	User Equipment
UMTS	Universal Mobil Telecommunications System
U-Plane	User-Plane
UTRAN	UMTS Terrestrial Radio Access Network

4 General

The present document specifies how UMTS supplementary services shall be provided over the DECT air interface.

One of the main objectives is to describe how the UMTS supplementary services are mapped across the DECT air interface in a formal way, so that inter-operability of different manufacturers equipment can be achieved. This is done by describing the Interworking Unit (IWU) procedures and mappings loosely following ITU-T Recommendations Q.6xx series of Recommendations and by describing an air interface profile following ISO/IEC 9646-6 [20].

The air interface profile enables the subsequent generation of test cases, if required.

The present document is made up of two main clauses.

Clause 5 describes the general approach for the handling of call related and call independent UMTS supplementary services over the DECT air interface. The procedural support is based upon the DECT functional protocol that act as the transport mechanism. The signalling mappings are described in terms of IWU procedures with informative data flow diagrams. The handling of individual services is described when necessary, as well as error handling and recovery procedures.

Clause 6 describes interworking mappings for supplementary services, shows the C-plane mappings for UMTS - DECT and DECT - UMTS in respective order. One IWU is considered, the FP/IWU. Detailed descriptions follow, using tables of what is mapped, what is ignored and what is transferred transparently. The tables are based upon the mapping tables in clause 6 of TS 101 863-2 [13] and specify only the additions necessary for the support of supplementary services. The detailed IE mappings between the functional DECT protocol and the functional UMTS protocol is the responsibility of the IWU and is described merely as guidance for implementation.

4.1 Reference configurations

Reference configurations describe the functional groupings of DECT and UMTS and their relationships via reference points. See TS 101 863-1 [12] for details.

5 Supplementary services support procedures

5.1 General

This clause describes the general approach for the handling of UMTS supplementary services over the DECT common interface.

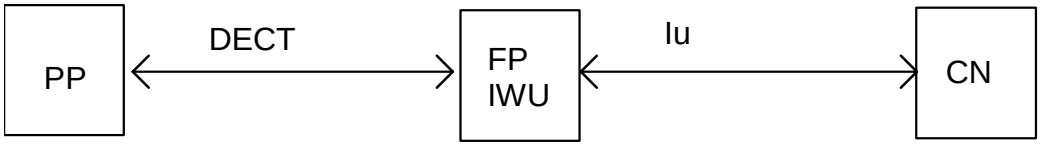


Figure 1: Transport mechanisms between DECT PP, FP/IWU, and 3G CN

The standardized functional protocol as defined in TS 124 010 [50], TS 124 008 [49], TS 124 08x series [51] to [59], TS 124 090 [60] and TS 129 002 [61] shall be used for interworking.

The used transport mechanisms for supplementary services are:

- for hold and retrieve procedures, the separate message approach as defined in TS 124 010 [50] and EN 300 175-5 [5], clause 10.4.1, with the messages {HOLD}, {HOLD-ACK}, {HOLD-REJECT}, {RETRIEVE}, {RETRIEVE-ACK} that shall be used as described in clause 5.2 of the present document;
- the {FACILITY} message TS 124 080 [51] and ETS 300 175-5 [5], clause 6.3.3.1 together with IWU-TO-IWU IEs containing UMTS facility elements shall be used for different Call Independent Supplementary Service (CISS) and Call Related Supplementary Service (CRSS) procedures as described in clauses 5.3 and 5.4 for CRSS and CISS;

- for CISS, the CC-connections with the basic service IE and call class "supplementary service call set-up" (see EN 300 175-5 [5], clause 7.6.4) shall be used as described in clause 5.4 of the present document.

The reason for that procedure is that the DECT external handover procedure is only defined for CC connections.

NOTE: Although functional procedures using the {FACILITY} message and the Facility IE are described in EN 300 175-5 [5], clause 10.4, these procedures are only described for ISDN supplementary services and do not foresee the transparent transport of UMTS supplementary services information. Especially the <<FACILITY>> IE is reserved to be used only for transparent passing through of ISDN services.

5.2 Separate Messages Category

As defined in TS 124 010 [50] and ETS 300 175-5 [5], the following messages utilize the hold and retrieve set of messages:

HOLD	RETRIEVE
HOLD ACKNOWLEDGE	RETRIEVE ACKNOWLEDGE
HOLD REJECT	RETRIEVE REJECT

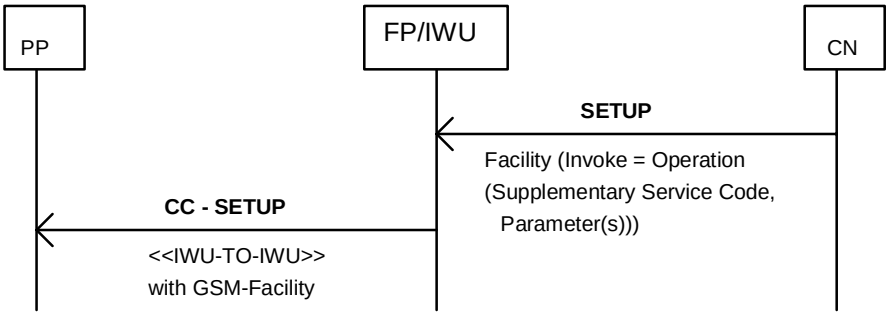
These messages will be used for the call hold and the call retrieval supplementary services.

5.3 Call related supplementary service procedures

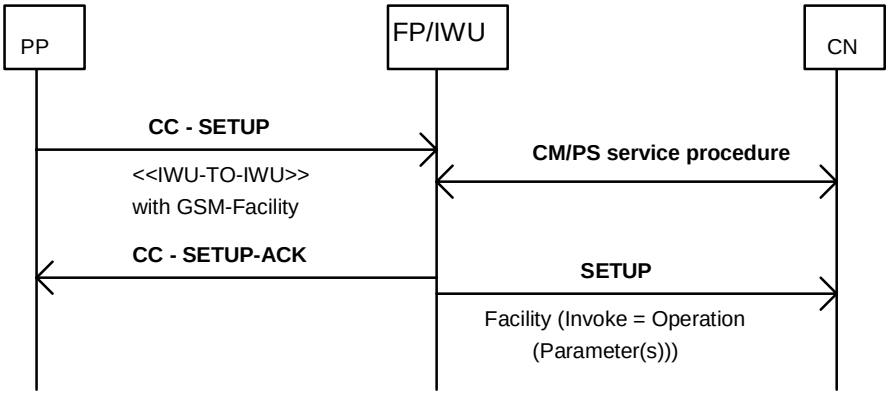
5.3.1 Supplementary service procedures at call establishment or call clearing

Call related supplementary service procedures initiated at call establishment or call clearing shall be realized according to TS 124 010 [50].

The call related procedures shall be handled using the <<IWU-TO-IWU>> IE in different DECT messages (e.g. CC-SETUP, FACILITY, CC-ALERTING, etc.). The protocol discriminator of the <<IWU-TO-IWU>> IE shall be coded "10011"B, "UMTS TS 124 008 [49], element(s)" as described in clause 7.7.21 of EN 300 175-5 [5], to encapsulate the UMTS facility IE.



a) CRSS - Message flow network originated



b) CRSS - Message flow PP originated

Figure 2: CRSS - Message flows PP originated

5.3.2 Supplementary service procedures during the call

Supplementary services procedures during the call shall be implemented according to TS 124 008 [49] and TS 124 010 [50].

A call related supplementary service UMTS FACILITY message including a UMTS Facility IE received from the network shall be mapped into a DECT {FACILITY} message with the <<IWU-TO-IWU>> IE by the FP/IWU. The <<IWU-TO-IWU>> IE contains the UMTS Facility IE as described in clause 5.3.1.

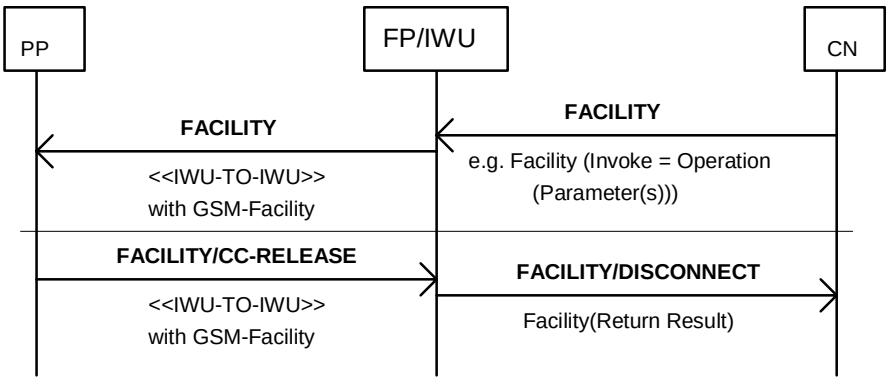


Figure 3: Flow of a network originated supplementary service message during the call

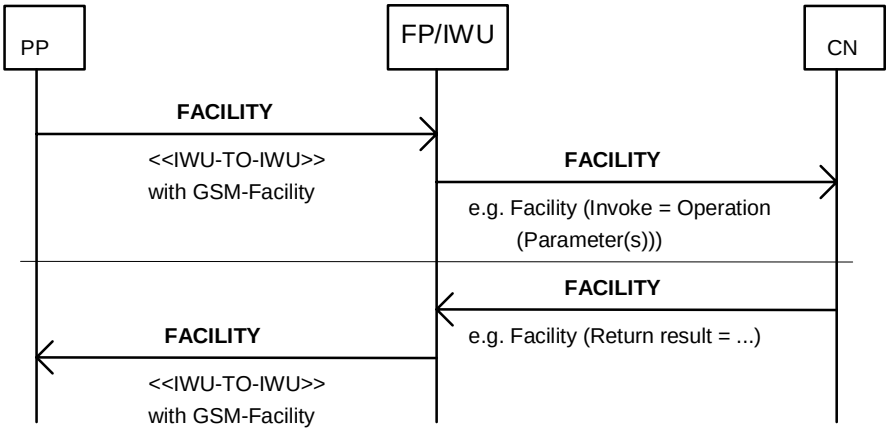


Figure 4: Flow of a PP originated supplementary service message during the call

5.4 Call Independent Supplementary Service procedures

5.4.1 Supplementary service support establishment at the originating side

At the beginning of each call independent supplementary service (CISS) procedure the initiating side shall establish a MM/PS-connection between the network and the FP IWU according to the rules given in TS 124 007 [64] and TS 124 008 [49]. The call independent supplementary service procedures shall apply to both CS and PS domain of UMTS for some specific services. On PS domain, a PS-signalling connection shall be established between the network and the FP IWU instead of a MM-connection. For the establishment of a supplementary service call on the DECT side the call shall be indicated as a "supplementary service call setup" in the <<BASIC-SERVICE>> IE (SS-Call Setup, EN 300 175-5 [5], clause 7.6.4).

Figure 5 shows the general handling for call independent supplementary services procedures like registration, erasure, activation, deactivation and interrogation of supplementary services. As an additional procedure the password management is shown between the dashed lines. The password management shall be handled according to TS 124 010 [50], clause 4.

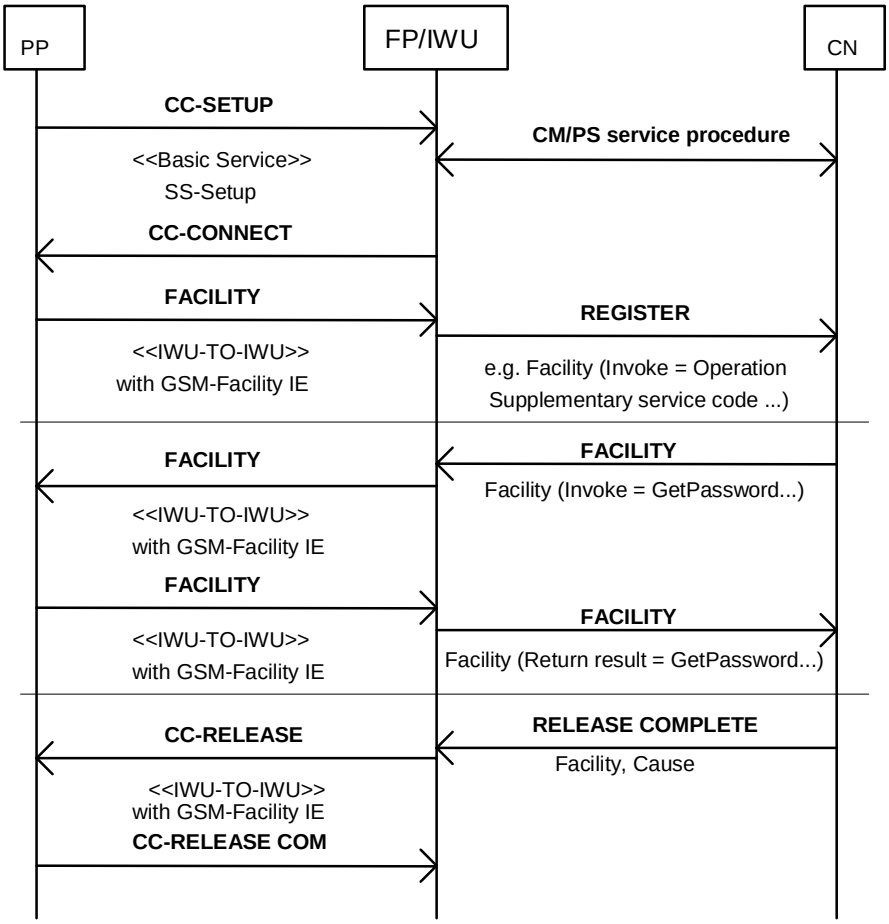
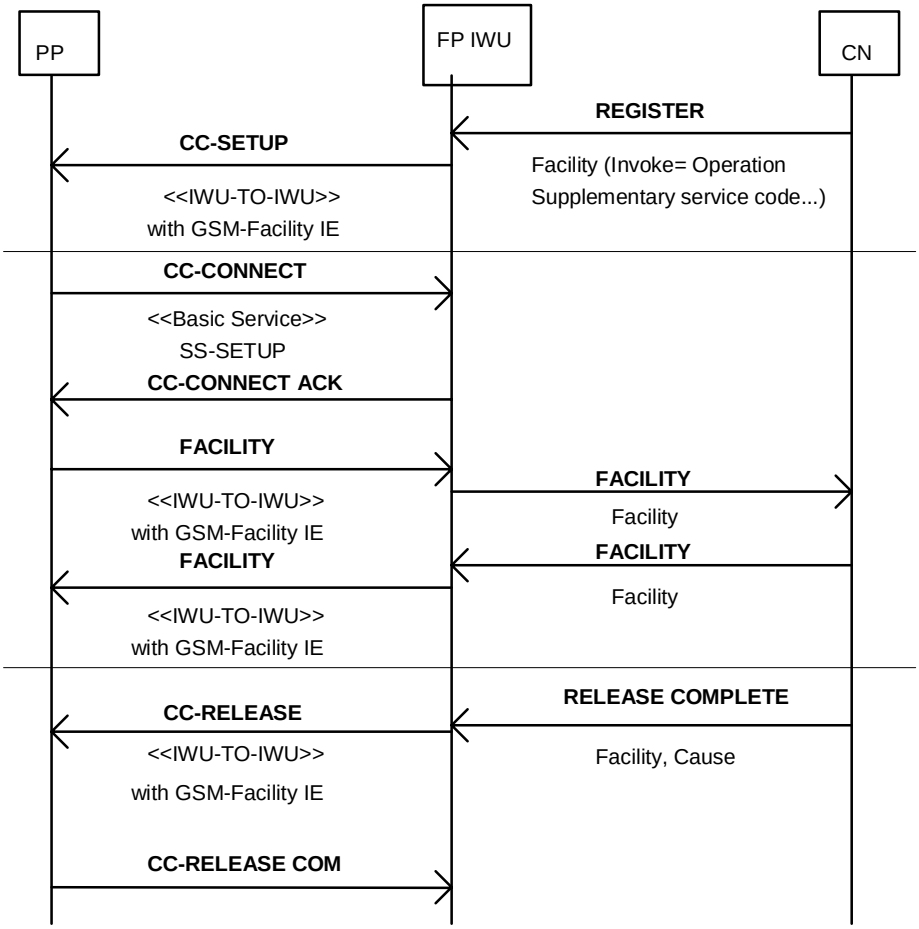


Figure 5: Establishment of a CM/PS connection for supplementary services support (using the coding for SS-transaction establishment)

5.4.2 Supplementary service support establishment at the terminating side

For the support of call independent supplementary services at the terminating side the UMTS REGISTER message, received from the CN, shall be mapped into the DECT message {CC-SETUP} at the DECT side and the call shall be indicated as a "supplementary service call setup" with the <<BASIC-SERVICE>> IE in the {CC-CONNECT} message.



NOTE: The U-Plane connection is established, when sending {CC-CONNECT} and {CC-CONNECT-ACK}. Because this is a silent call, the receive path should be muted when U-Plane is connected due to EN 300 175-5 [5], clause 9.3.2.8.

Figure 6: Establishment of a CISS supplementary services support (terminating side, using the coding for SS-transaction)

5.5 Multiple supplementary services invocations

The handling of multiple and parallel supplementary service invocations shall be according to TS 124 010 [50], clause 2.2.6.

5.6 Handling of transaction identifiers for supplementary service operation

The Transaction Identifier in the DECT CC should correspond to the Transaction Identifier in the UMTS CC according to TS 101 863-3 [14], which mandates that both the Transaction Value (TV) and Flag (F) should be mapped transparently.

For call independent supplementary services however the extended transaction value shall be used and the following applies:

Since DECT CC is used for both call related procedures and call independent supplementary service procedures, the extended transaction identifier, as described in TS 101 863-3 [14], clause 11.7.10, is used for call independent supplementary service procedures with the Function Group Identifier set to "SS Transaction". Additionally transaction identifier descriptions can be found in clause 6.3.3 of the present document.

If the supplementary service procedure is related only to a single call, the {FACILITY} message will use the transaction identifier and protocol discriminator of this call.

If the supplementary service procedure affects more then one call, the {FACILITY} message may use the transaction identifier and protocol discriminator of one of these calls.

If a call related {FACILITY} message is sent using the transaction identifier of a call in progress, and this call is cleared due to call related causes, then the transaction identifier may not be cleared simultaneously in all cases. See also TS 124 010 [50], clause 2.2.4.2.

5.7 Supplementary services operation with unsuccessful outcome

The contents of the cause IE shall be passed transparently into the <<IWU-TO-IWU>> IE as described in clause 6.2.1.6 and be mapped into the appropriate DECT Release Reasons as described in TS 101 863-3 [14], clause 7.1.10.

The UMTS messages DISCONNECT and RELEASE shall be mapped into the DECT {CC-RELEASE} message. The UMTS message RELEASE COMPLETE shall be mapped into the DECT {CC-RELEASE} message or into the {CC-RELEASE-COM} message where appropriate.

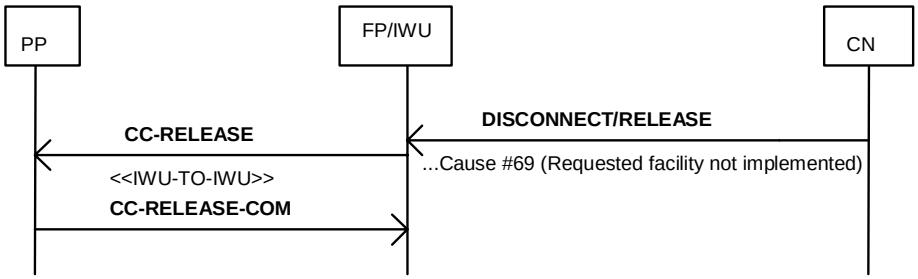


Figure 7: Message flow: Example for a network initiated release due to an unsuccessful operation (e.g. advice of charge (charging) service)

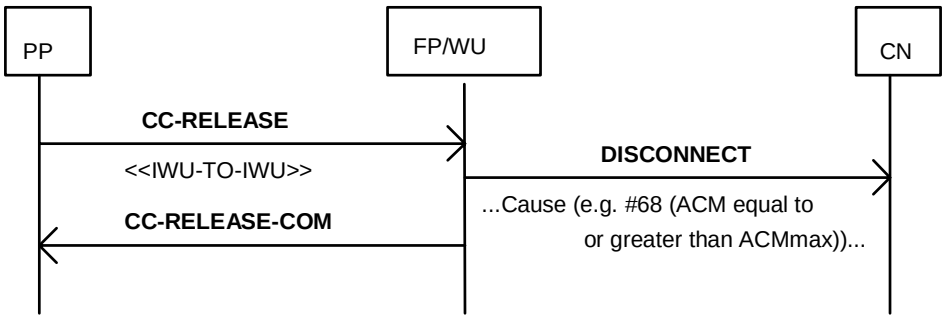


Figure 8: Message flow: Example for a mobile initiated release due to an unsuccessful operation (e.g. advice of charge (charging) service)

5.8 Handling of UMTS supplementary services

5.8.1 Supported UMTS supplementary services

The supplementary services shall be supported as described in TS 101 863-1 [12]. A list of supported UMTS supplementary services can be found in annex A.

5.8.2 Number identification supplementary service

The relevant UMTS standards for the number identification supplementary service are TS 122 081 [28], TS 123 081 [41] and TS 124 081 [52].

5.8.2.1 Calling Line Identification Presentation/Connected Line identification Presentation (CLIP/COLP)

A called subscriber subscribing to the CLIP supplementary service receives the call with corresponding information. The calling party Binary Coded Decimal (BCD) number information consists of information units as indicated in TS 124 008 [49].

The calling party information is transferred to the PP as part of the {CC-SETUP} message. The UMTS IEs "calling party BCD number" and "calling party subaddress" shall be mapped into the DECT <<Calling party number >> and <<IWU-TO-IWU>> IE.

NOTE: If the PP does not support CLIP, the received CLIP information will be ignored.

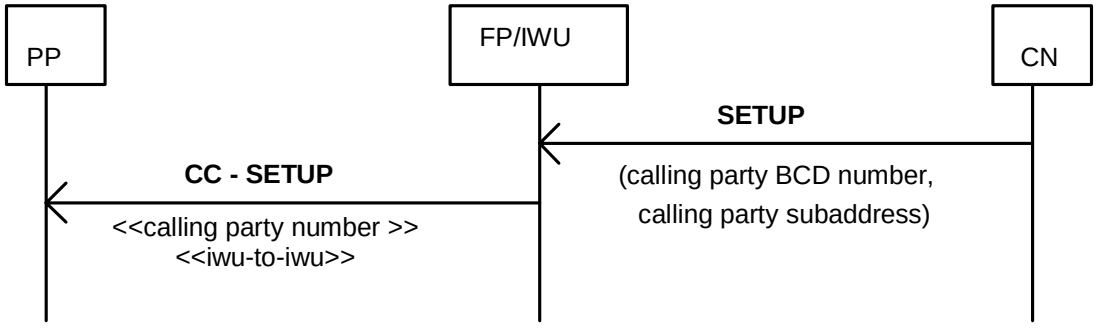


Figure 9: CLIP - Presentation of calling number (PP terminated)

In the call set-up phase the calling subscriber receives the information of the called subscriber (i.e. COLP) as part of the CC-CONNECT message in the <<IWU-TO-IWU>> IE as shown in figure 10. The connected number is made up of a number of information units as indicated TS 124 008 [49].

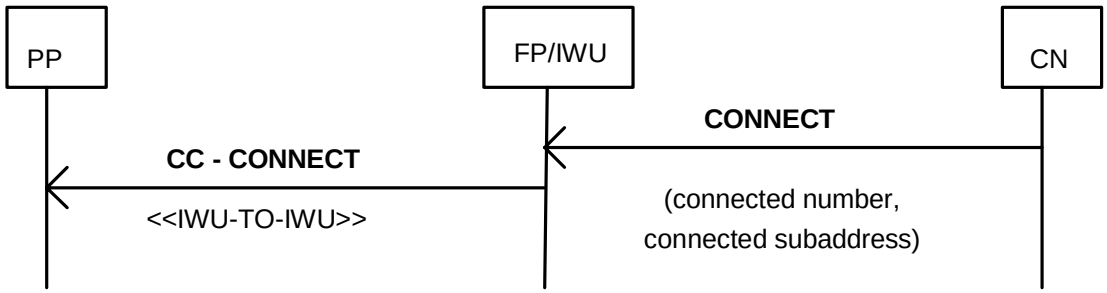


Figure 10: COLP - Presentation of called number (PP originated)

The connected subaddress is passed to the PP if it is received form the terminating network.

Activation, deactivation, registration and erasure of the supplementary services CLIP and COLP are not applicable.

The interrogation of CLIP and COLP shall be handled as described in clause 5.4.1.

5.8.2.2 Invocation/suppression of Calling Line Identification Restriction (CLIR)

If CLIR presentation mode is temporary (set to restricted or allowed), it is possible for the subscriber to present/restrict his Calling Line Identification (CLI) on a per call basis. The CLIR invocation and the CLIR suppression shall be handled by using the UMTS CLIR invocation and CLIR suppression IE as shown in figure 11. The mapping can be found in clauses 6.2.2.6 and 6.2.2.7.

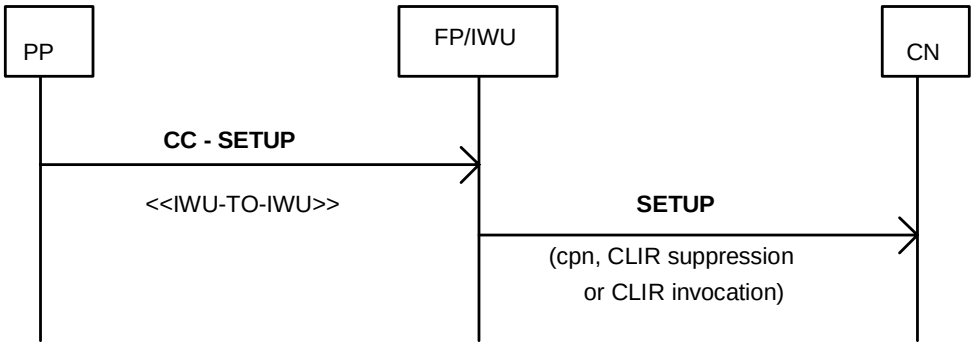


Figure 11: Handling of CLIR invocation/suppression

If the calling mobile user subscribes to Connected Line identification Presentation (COLP) and the connected party has Connected Line identification Restriction (COLR) applied, the calling mobile party shall receive the presentation indicator showing "presentation restricted". In this case, the connected number will not be presented to the calling subscriber.

NOTE: This is an operator controlled input.

Activation, deactivation, registration and erasure of the supplementary services CLIR and COLR are not applicable.

The interrogation of CLIR and COLR shall be handled as described in clause 5.4.1.

5.8.3 Call offering supplementary service

The relevant UMTS standards for the call offering supplementary service are TS 122 082 [29], TS 123 082 [42] and TS 124 082 [53].

The general procedure for the registration, erasure, activation, deactivation and interrogation of the call offering supplementary services (Call Forwarding Unconditional (CFU), Call Forwarding on mobile subscriber Busy (CFB), Call Forwarding on No Reply (CFNRy) and Call Forwarding on mobile subscriber Not Reachable (CFNRc)) is described in clause 5.4.1 of the present document.

5.8.3.1 Call Forwarding Unconditional (CFU)

The general approach for the different types of notifications is described in clause 5.3.1 for CRSS.

When CFU is active, the ability of the served mobile subscriber to originate calls is not affected. However, a NotifySS operation containing the SS-Status indicating that CFU is currently active and operative shall be sent to the served mobile subscriber each time an outgoing call is made. The notification will be mapped into the {CC-ALERTING} message with the <<IWU-TO-IWU>> IE as shown in figure 12.

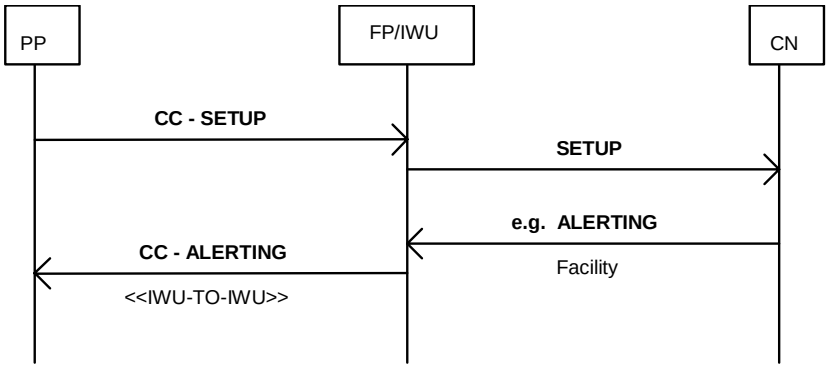


Figure 12: Message flow: Notification to the served mobile subscriber that call forwarding is active

The forwarded-to mobile subscriber shall receive the NotifySS operation included in the UMTS Facility IE mapped transparently into the DECT <<IWU-TO-IWU>> IE containing the SS-Notification indicating that the incoming call is a forwarded call as shown in figure 13. When available, the SS-Code of the invoked forwarding service is also included.

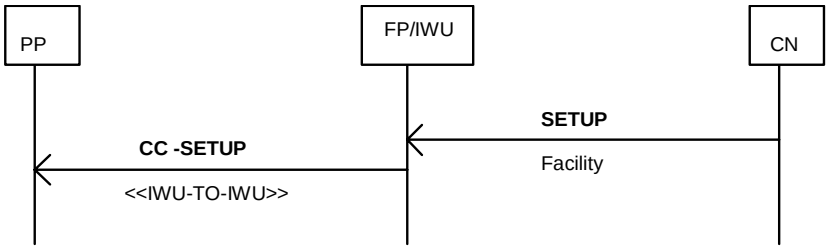


Figure 13: Message flow: Notification to the forwarded-to mobile subscriber that the incoming call is a forwarded call

As a subscription option, the served mobile subscriber can request that the calling mobile subscriber receives a NotifySS operation containing the SS-Notification indicating that the call has been forwarded. When available, the SS-Code of the invoked forwarding service is also included.

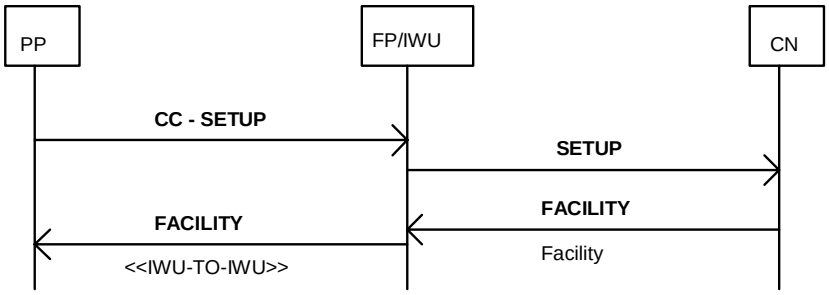


Figure 14: Message flow: Notification to the calling mobile subscriber that the call is forwarded

5.8.3.2 Call Forwarding on mobile subscriber Busy (CFB) and User Determined User Busy (UDUB)

The CFB supplementary service shall be handled in a similar as the CFU supplementary service. All described notifications apply. An additional notification to the served mobile subscriber occurs when an incoming call is forwarded on mobile subscriber busy due to Network Determined User Busy (NDUB).

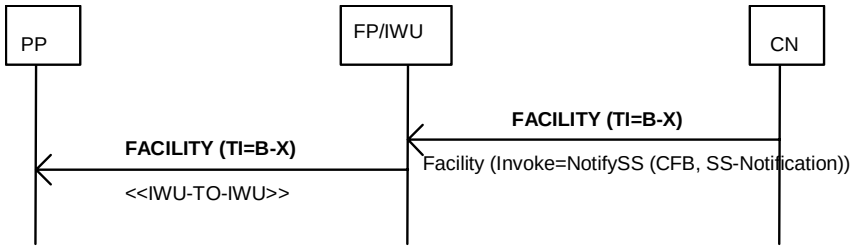


Figure 15: Message flow: Notification to the served mobile subscriber that a call is forwarded on mobile subscriber busy

The DECT release cause #"14"H (user busy) shall be mapped into the UMTS cause #17 (user busy).

For the invocation of the service UDUB the user has to enter "END CALL" via the MMI.

The PP shall treat UDUB towards the FP/IWU according to TS 122 001 [23] and TS 122 030 [26].

5.8.3.3 Call Forwarding on No Reply (CFNRy)

The procedures for the call forwarding supplementary services described in the clauses 5.4.1 and 5.8.3.1 apply.

5.8.3.4 Call Forwarding on mobile subscriber Not Reachable (CFNRc)

The procedures for call forwarding supplementary services described in the clauses 5.4.1 and 5.8.3.1 apply.

5.8.4 Call completion supplementary service

The relevant UMTS standards for the call completion supplementary service are TS 122 083 [30], TS 123 083 [43] and TS 124 083 [54].

5.8.4.1 Call Waiting (CW)

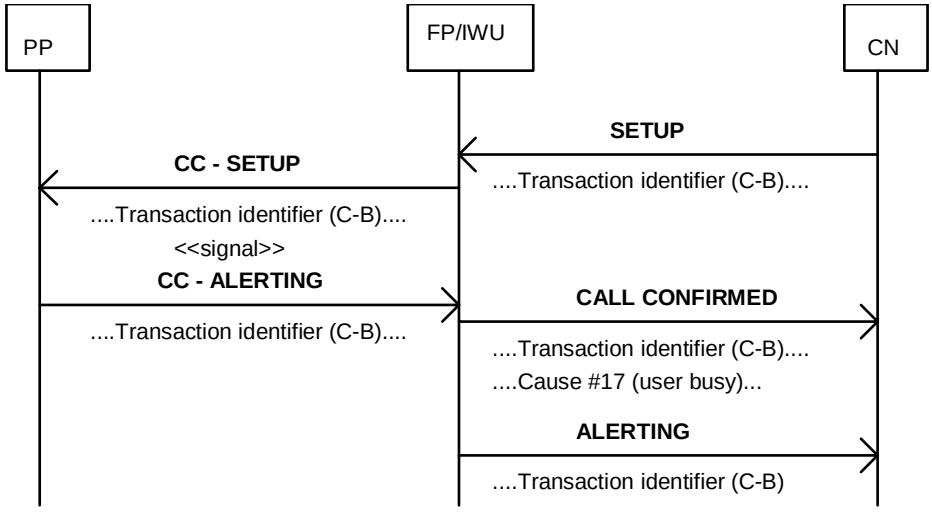


Figure 16: Message flow: Call waiting

The UMTS SETUP message includes a "Signal Information" (SI) element with value #7 (call waiting tone on). This IE shall be mapped into the <<signal>> IE with the coding "call waiting tone on" by the FP/IWU. In the CALL CONFIRMED message sent to the network the Cause IE shall be included with cause #17 "user busy".

The notification to a calling mobile station that a call is in the waiting state is, in UMTS, transported in the Alerting or Facility message including the Facility IE with the "CallsWaiting-Indicator". This information shall be transported as described in clause 5.3.2.

Activation, deactivation and interrogation of the CW supplementary service shall be handled as described in clause 5.4.1.

Registration and erasure of the CW supplementary service are not applicable.

5.8.4.2 Call Hold (CH), call retrieve

The separate messages category approach described in clause 5.2 applies for CH and call retrieve supplementary service.

If the served subscriber requests to set a call on hold, a {HOLD} message shall be sent to the FP/IWU as described in EN 300 175-5 [5], clause 10.4.1. This message shall be mapped into the UMTS HOLD message as described in figure 17 and clause 6.1.2.7.

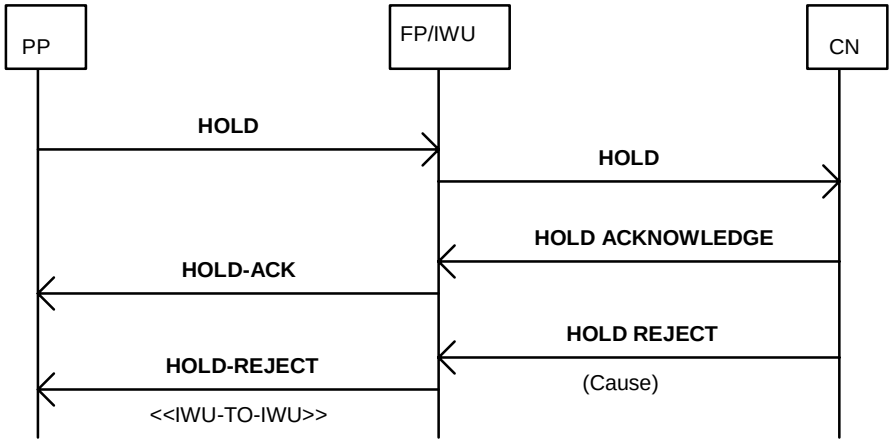


Figure 17: Message flow: invocation of call hold

The notification to the held mobile party that an existing call is being put on hold (CallOnHold-Indicator) shall be transported in an <<IWU-TO-IWU>> IE in a {FACILITY} message.

For the retrieve procedure the DECT messages {RETRIEVE}, {RETRIEVE-ACK} and {RETRIEVE-REJECT} shall be used as described in figure 18:

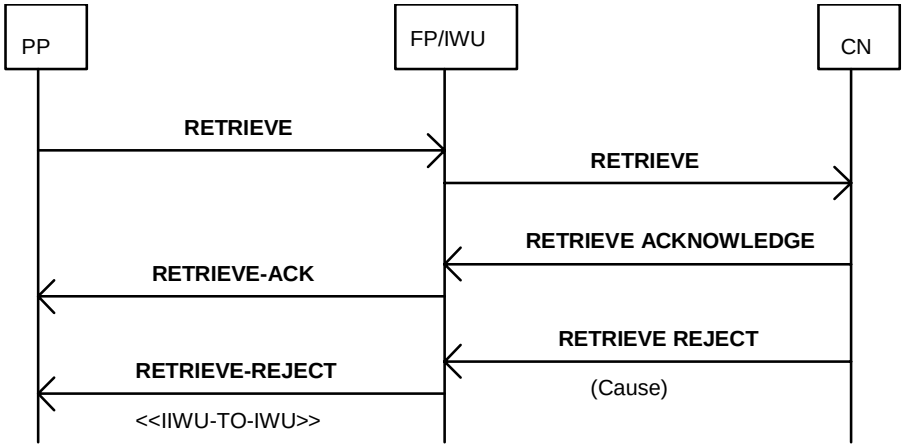


Figure 18: Message flow: call retrieve

The notification to the held mobile party that a held call has been retrieved (CallOnHold-Indicator) shall be transported in an <<IWU-TO-IWU>> IE in a {FACILITY} message.

Registration, erasure and interrogation of the CH supplementary service are not applicable. Activation and deactivation is provided by the provision and the withdrawal by the operator.

5.8.5 MultiParty (MPTY) supplementary service

The relevant UMTS standards for the MPTY supplementary service are the TS 122 084 [31], TS 123 084 [44] and TS 124 084 [55].

5.8.5.1 MPTY

The served mobile subscriber A may initiate an active multi party call from an active call C and a held call B. The invocation of the service shall be handled according to the general approach described in clause 5.3.2.

The mobile station invokes the service by sending a {FACILITY} message to the network containing the BuildMPTY request included in the DECT <<IWU-TO-IWU>> IE. This BuildMPTY request indicates to the network that the mobile subscriber wishes all his calls to be connected together in a multi party call. The network will normally accept the request and connect the mobile subscriber with the other existing connections (active call C and held call B). If the request is not accepted, the network will indicate the error to the served mobile, see figure 19. The network confirms with the same transaction identifier. Error values are specified in TS 124 080 [51].

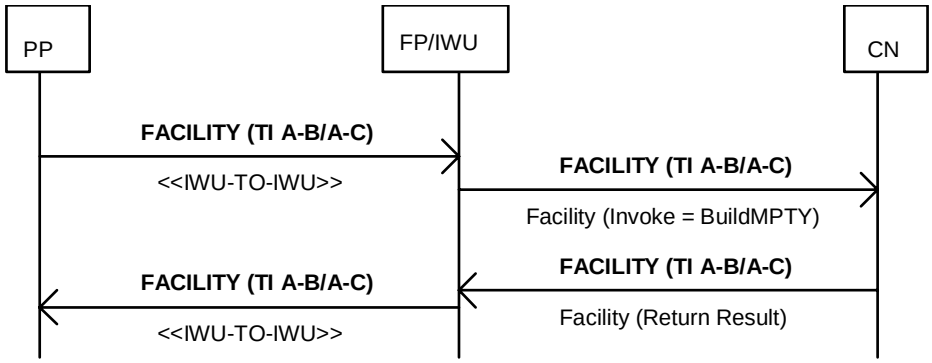
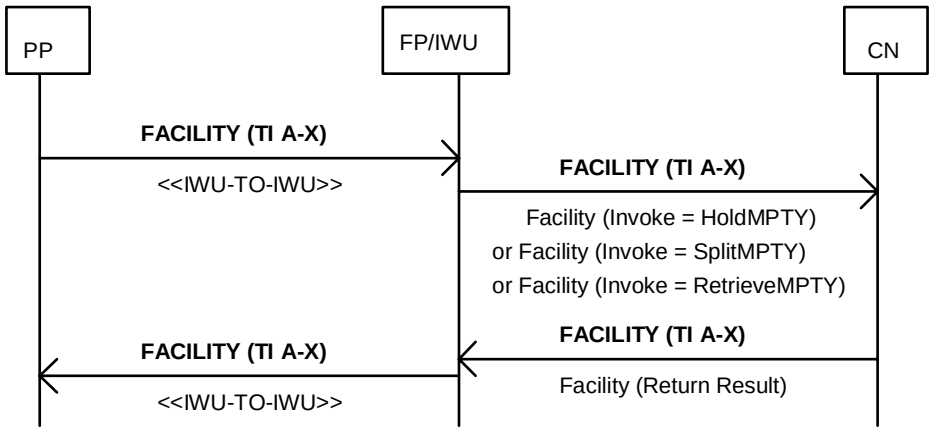


Figure 19: Invocation of a multi party call

The CallOnHold notification described in TS 124 084 [55], shall be mapped accordingly.

The retrieval, split of a MPTY and putting the MPTY on hold is shown in figure 20.



X = Any remote party in a multi party call.

Figure 20: Hold, split or retrieve of a multi party call

The hold, split of retrieve of a multi party call is achieved by sending a {FACILITY} message including the DECT <<IWU-TO-IWU>> IE to the network with any transaction identifier corresponding to a call within the multi party call. This requests the network to place the mobile subscriber's connection to the multi party call on hold. The network confirms with another message containing the same transaction identifier.

Activation, deactivation, registration, erasure and interrogation of the MPTY supplementary service are not applicable.

5.8.6 Community of interest supplementary service

The relevant UMTS standards for the community of interest supplementary service are the TS 122 085 [32], TS 123 085 [45] and TS 124 085 [56].

5.8.6.1 Closed User Group (CUG)

The transfer of CUG information shall be realized during the call set-up as described in clause 5.3.1.

For the indication of CUG invocation to the calling subscriber the UMTS FACILITY message or the CALL PROCEEDING message with the UMTS Facility IE shall be mapped into the corresponding DECT messages {FACILITY} and {CC-CALL-PROC} including the <<IWU-TO-IWU>> IE as described in clause 5.3.2.

Activation, deactivation, registration, erasure and interrogation of the CUG supplementary service are not applicable.

5.8.7 Charging supplementary service

The relevant UMTS standards for the charging supplementary service are the TS 122 086 [33], TS 123 086 [46] and TS 124 086 [57].

Registration, erasure and invocation of the advice of charge supplementary service are not applicable.

Activation and deactivation is provided by the provision and the withdrawal by the operator.

5.8.7.1 Advice of charge (information)

The network sends the Charge Advice Information (CAI) to the FP/IWU and it is sent to the mobile station with the <<IWU-TO-IWU>> IE in the {CC-CONNECT} or the {FACILITY} message. With this information the mobile station is able to calculate the units associated with the requested service in real time. In the case where the served mobile is to be charged for multi party calls, separate processes within the mobile station are used to calculate units appropriate to each call. For unit calculation, each call is treated in the same way as a normal "two-party" call. Any change in the charging rate during a call may be indicated to the mobile station.

For a PP originated call, charging information is transferred to the user equipment (UE) as shown in the next figure. The charging information is acknowledged in a {FACILITY} message only if the PP supports the Advice of Charge Information supplementary service (AoCI) functionality specified in TS 122 024 [25] and TS 123 086 [46].

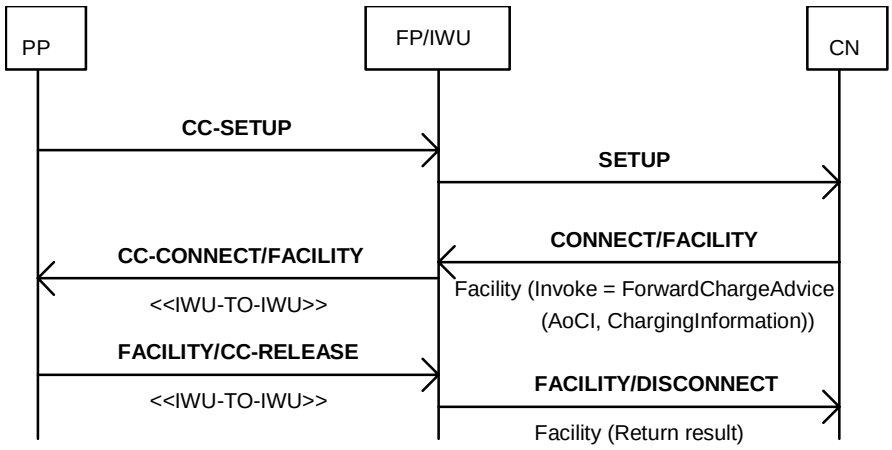


Figure 21: Message flow: Notification to the served mobile subscriber of the charging information in case of an originated call setup

For a PP terminated call, where required, charging information is transferred to the PP as shown in figure 22. The charging information is acknowledged only if the PP supports the AoCI functionality specified in TS 122 024 [25] and TS 122 086 [33].

The UMTS Facility IE with the e-parameters can be sent in either the {CC-CONNECT} or the {FACILITY} message using the <<IWU-TO-IWU>> IE.

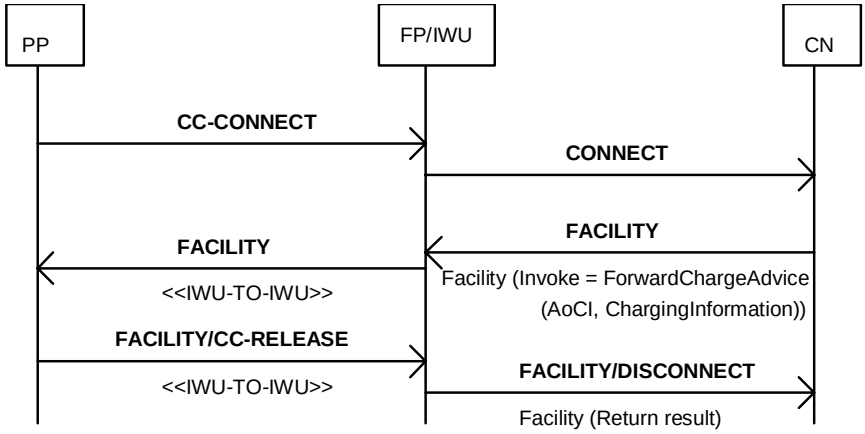


Figure 22: Message flow: Notification to the served mobile subscriber of the charging information in case of a terminated call setup

For the change of charging information clause 5.3.2 applies.

5.8.7.2 Advice of charge (charging)

For advice of charge charging all previously mentioned message flows are applicable. Additionally cases exist where the normal operation with unsuccessful outcome applies. It is described in clause 5.7.

5.8.8 Call restriction supplementary service

The relevant UMTS standards for the call restriction supplementary service are TS 122 088 [35], TS 123 088 [47] and TS 124 088 [59].

Registration, erasure, activation, deactivation and interrogation of call barring supplementary service shall be handled as described in clause 5.4.1.

The password procedure according to TS 124 010 [50] and clause 5.4.1 applies.

5.8.8.1 Barring of All Outgoing International Calls supplementary service (BAOC)

The served subscriber gets a notification that barring of outgoing calls is active.

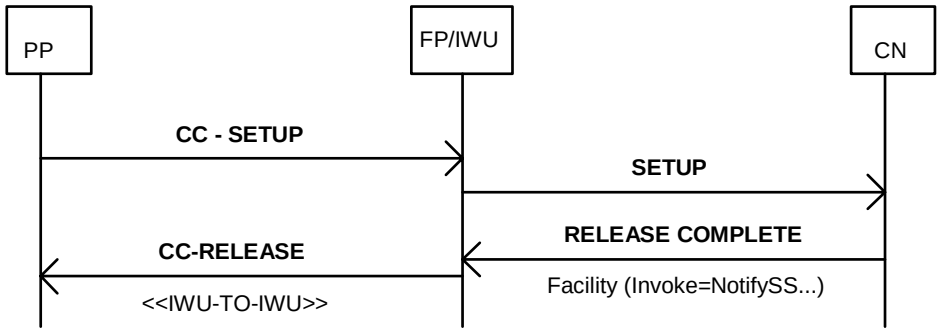


Figure 23: Notification to the served mobile subscriber that barring of outgoing calls is active

The UMTS Facility IE (Invoke = NotifySS...) shall be carried in the DECT <<IWU-TO-IWU>> IE.

5.8.8.2 Barring of Outgoing International Calls supplementary service (BOIC)

The same procedures as for BAOC applies.

5.8.8.3 Barring of Outgoing International Calls except those directed to the Home PLMN Country supplementary service (BOIC-exHC)

The same procedures as for BAOC applies.

5.8.8.4 BAIC

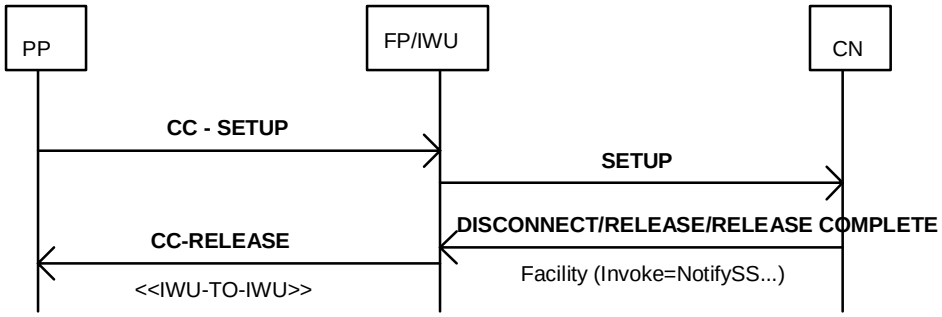


Figure 24: Notification to the calling mobile subscriber that barring is active at the called subscriber side

The calling mobile subscriber gets a notification that at the called subscriber side barring of incoming calls is active.

The UMTS Facility IE (Invoke = NotifySS...) shall be carried in the DECT <<IWU-TO-IWU>> IE.

5.8.8.5 Barring of all Incoming Calls when Roaming outside the home PLMN country supplementary service (BIC-Roam)

The same procedures as for BAIC applies.

5.8.9 Unstructured Supplementary Service Data (USSD)

The DECT FP/IWU shall support PP initiated USSD and network initiated USSD according to TS 122 090 [36], TS 123 090 [48] and TS 124 090 [60].

A mobile initiated unstructured supplementary service data request shall be handled as described in clause 5.4.1. Network initiated unstructured supplementary service data requests shall be handled according to the procedures as described in clause 5.4.2.

5.8.10 Forward check supplementary service indication

Forward check supplementary service indication shall be handled as described in TS 124 010 [50], clause 6 and shall be mapped according to figure 25.

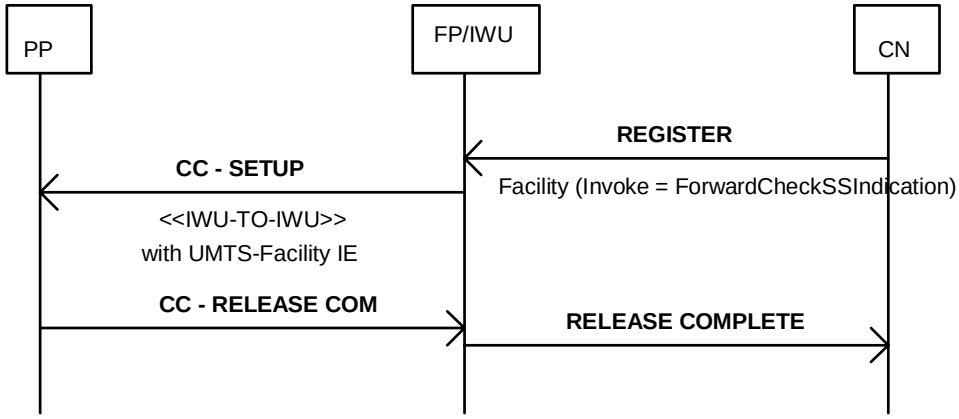


Figure 25: ForwardCheckSSIndication sent on a new transaction

5.9 Error handling

This clause describes the general approach for the error handling of UMTS supplementary services within the DECT/UMTS IWP.

The DECT procedure specified in EN 300 175-5 [5], recommends the use of the ISDN supplementary service procedures of EN 300 196-1 [62]. The ISDN supplementary service procedures of EN 300 196-1 [62] refer to the error handling in ETS 300 102-1 [63]. Also error handling procedures are specified in EN 300 175-5 [5], clause 17. In general the DECT FP/IWU shall perform the appropriate error handling for the supplementary services, i.e. error handling procedures which apply to the UMTS stations shall be supported by the DECT FP/IWU.

The FP IWU shall check the validity of received messages from the network relating to protocol discriminator, message length, transaction identifier, message type, IEs and in error case act as defined in clause 8 of TS 124 008 [49] "Handling of unknown, unforeseen, and erroneous protocol data" for the PP, e.g. ignore the message or the faulty IE, return a MM-STATUS or STATUS message. According to the UMTS supplementary services specifications, the user shall be informed about an erroneous procedure.

5.9.1 Error handling in CRSS procedures

The handling of protocol and other errors in CRSS procedures shall be according to TS 124 010 [50], clause 2.2.4. The error handling for the component part of the supplementary services shall be according to TS 124 010 [50], clause 2.2.8.

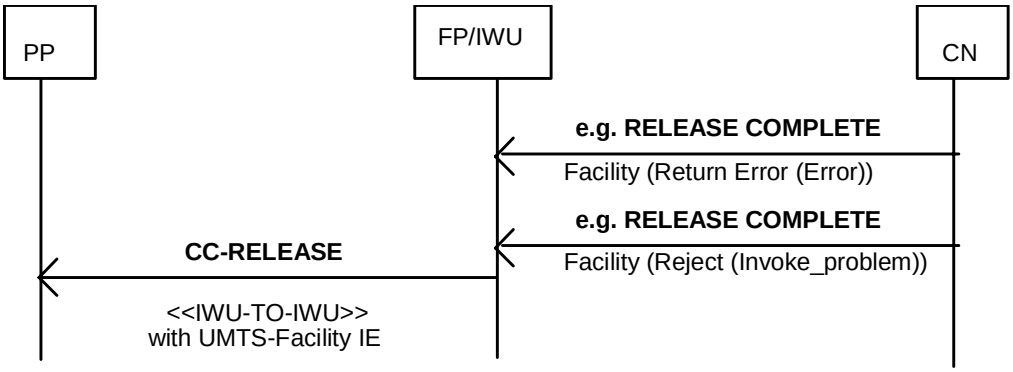


Figure 26: Network initiated error message

5.9.2 Error handling in CISS procedures

The handling of protocol and other errors in CISS procedures shall be according to TS 124 010 [50], clause 2.2.5. The error handling for the component part of the supplementary services shall be according to TS 124 010 [50] clause 2.2.8.

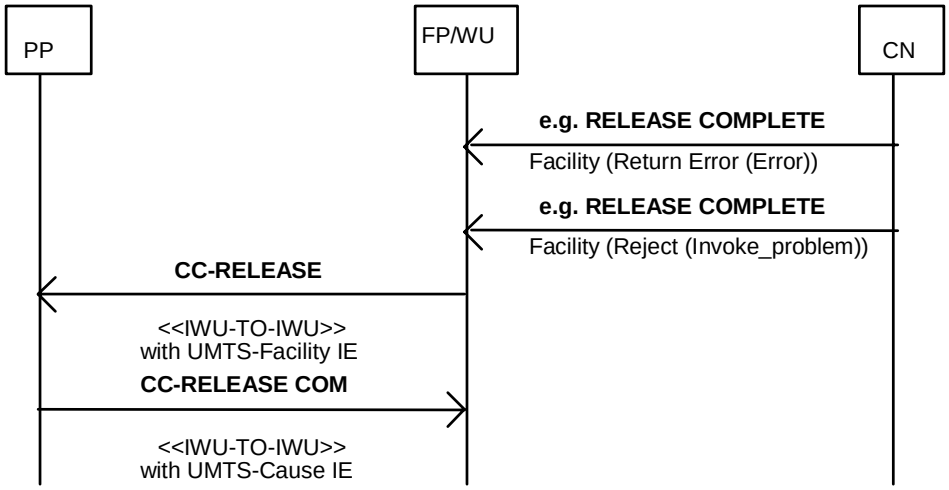


Figure 27: Message flow: Network initiated release

5.10 Handling of unknown, unforeseen and erroneous protocol data for CISS procedures

The handling of unknown, unforeseen and erroneous protocol data by the receiving entity shall be according to TS 124 010 [50], clause 3.7.

5.11 Recovery procedures

5.11.1 CRSS recovery procedures

There are no additional recovery procedures for CRSS signalling on the radio path. Normal call handling as specified in TS 101 863-3 [14] applies.

5.11.2 CISS recovery procedures

In case a transaction is not terminated according to the procedure as described in the present document, the FP shall be responsible that the transaction is terminated, e.g. by a supervision timer. The recovery procedure shall not terminate an ongoing call, i.e. the call shall be maintained.

6 Interworking mappings for supplementary services

6.1 Message mappings

6.1.1 UMTS to DECT

Table 1: List of mapped messages

Item No.	UMTS message	Status in UMTS	DECT message	Reference	Map status
1	SETUP	M	{CC-SETUP}	6.1.1.1	M
2	REGISTER	M	{CC-SETUP}	6.1.1.2	M
3	FACILITY	M	{FACILITY}	6.1.1.3	M
4	RELEASE	M	{CC-RELEASE}	6.1.1.4	M
5	RELEASE-COMPLETE	M	{CC-RELEASE}	6.1.1.5	M
6	RELEASE-COMPLETE	M	{CC-RELEASE-COM}	6.1.1.6	M
7	ALERTING	M	{CC-ALERTING}	6.1.1.7	M
8	DISCONNECT	M	{CC-RELEASE}	6.1.1.8	M
9	CONNECT	M	{CC-CONNECT}	6.1.1.9	M
10	HOLD-ACK	M	{HOLD-ACK}	6.1.1.10	M
11	HOLD-REJECT	M	{HOLD-REJ}	6.1.1.11	M
12	RETRIEVE-ACK	M	{RETRIEVE-ACK}	6.1.1.12	M
13	RETRIEVE-REJECT	M	{RETRIEVE-REJ}	6.1.1.13	M
14	CM SERVICE ACCEPT	M	{CC-CONNECT}	6.1.1.14	M

6.1.1.1 SETUP - {CC-SETUP}

Table 2

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	SETUP	**{CC-SETUP}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Repeat indicator	-		X	
5	Bearer capability 1	basic service	TS 101 863-3 [14], 7.1.8	M	
5a	Bearer capability 2	-		X	
6	Facility	facility		I	
7	Facility	IWU-TO-IWU	6.2.1.1	M	
8	Progress indicator	progress indicator	TS 101 863-3 [14], 7.1.9	M	
9	Signal	signal	TS 101 863-3 [14], 7.1.12	M	
10	Calling party BCD number	Calling party number	6.2.1.2	M	
11	Calling party subaddress	IWU-TO-IWU	6.2.1.3	M	
12	Called party BCD number	Called party number	6.2.1.4	M	
13	Called party subaddress	Called party subaddress	6.2.1.5	M	
14	Repeat indicator	-		X	
15	Low layer compatibility	IWU-TO-IWU		I	
16	Repeat indicator	-		X	
17	High layer compatibility	IWU-TO-IWU		I	
18	User-to-user	IWU-TO-IWU		I	

6.1.1.2 REGISTER - {CC-SETUP}

Table 3

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	REGISTER	**{CC-SETUP}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Facility	IWU-TO-IWU	6.2.1.1	M	

6.1.1.3 FACILITY - {FACILITY}

Table 4

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	FACILITY	**{FACILITY}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Facility	IWU-TO-IWU	6.2.1.1	M	

6.1.1.4 RELEASE - {CC-RELEASE}

Table 5

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	RELEASE	**{CC-RELEASE}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Cause	release reason	TS 101 863-3 [14], 7.1.10	O	
5	Cause	IWU-TO-IWU	6.2.1.6	M	
6	Second cause	-		X	
7	Facility	facility		I	
8	Facility	IWU-TO-IWU	6.2.1.1	M	
9	User-to-user	IWU-TO-IWU		I	

6.1.1.5 RELEASE COMPLETE - {CC-RELEASE}

Table 6

Item No	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	RELEASE COMPLETE	**{CC-RELEASE}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Cause	release reason	TS 101 863-3 [14], 7.1.10	O	
5	Cause	IWU-TO-IWU	6.2.1.6	M	
6	Facility	facility		I	
7	Facility	IWU-TO-IWU	6.2.1.1	M	
8	User-to-user	IWU-TO-IWU		I	

6.1.1.6 RELEASE COMPLETE - {CC-RELEASE-COM}

Table 7

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	RELEASE COMPLETE	**{CC-RELEASE-COM}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Cause	release reason	TS 101 863-3 [14], 7.1.10	O	
5	Cause	IWU-TO-IWU	6.2.1.6	M	
6	Facility	facility		I	
7	Facility	IWU-TO-IWU	6.2.1.1	M	
8	User-to-user	IWU-TO-IWU		I	

6.1.1.7 ALERTING - {CC-ALERTING}

Table 8

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	ALERTING	**{CC-ALERTING}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Facility	facility		I	
5	Facility	IWU-TO-IWU	6.2.1.1	M	
6	Progress indicator	progress indicator	TS 101 863-3 [14], 7.1.9	M	
7	User-to-user	IWU-TO-IWU	-	I	

6.1.1.8 DISCONNECT - {CC-RELEASE}

Table 9

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	DISCONNECT	**{CC-RELEASE}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Cause	IWU-TO-IWU	6.2.1.6	M	
5	Cause	release reason	TS 101 863-3 [14], 7.1.10	M	
6	Facility	facility		I	
7	Facility	IWU-TO-IWU	6.2.1.1	M	
8	Progress indicator	-		X	
9	-	display		X	
10	-	feature indicate		X	
11	User-to-user	IWU-TO-IWU		I	
12	-	IWU-TO-IWU		X	

6.1.1.9 CONNECT - {CC-CONNECT}

Table 10

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	CONNECT	**{CC-CONNECT}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Facility	facility		I	
5	Facility	IWU-TO-IWU	6.2.1.1	M	
6	Progress indicator	progress indicator	TS 101 863-3 [14], 7.1.9	M	
7	Connected number	IWU-TO-IWU	6.2.1.7	M	
8	Connected subaddress	IWU-TO-IWU	6.2.1.8	M	
9	User-to-user	IWU-TO-IWU		I	

6.1.1.10 HOLD-ACK - {HOLD-ACK}

Table 11

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	HOLD-ACK	**{HOLD-ACK}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction Identifier	transaction identifier	6.3.3	M	
3	Message Type	message type	TS 101 863-3 [14], 8.1.3	M	

6.1.1.11 HOLD-REJECT - {HOLD-REJECT}

Table 12

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	HOLD-REJECT	**{HOLD-REJECT}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction Identifier	transaction identifier	6.3.3	M	
3	Message Type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Cause	reject reason		I	
5	Cause	IWU-TO-IWU	6.2.1.6	M	

6.1.1.12 RETRIEVE-ACK - {RETRIEVE-ACK}

Table 13

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	RETRIEVE-ACK	**{RETRIEVE-ACK}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction Identifier	transaction identifier	6.3.3	M	
3	Message Type	message type	TS 101 863-3 [14], 8.1.3	M	

6.1.1.13 RETRIEVE-REJECT - {RETRIEVE-REJECT}

Table 14

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	RETRIEVE-REJECT	**{RETRIEVE-REJECT}**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction Identifier	transaction identifier	6.3.3	M	
3	Message Type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Cause	reject reason		I	
5	Cause	IWU-TO-IWU	6.2.1.6	M	

6.1.1.14 CM SERVICE ACCEPT - {CC-CONNECT}

Table 15

Item No.	Message coding UMTS	Message coding DECT	Reference	Map status	NOTE
	CM SERVICE ACCEPT	**{CC-CONNECT}**			
1	Protocol discriminator	protocol discriminator	TS 101 863-3 [14], 8.1.1	M	MM to CC
2	Skip indicator	transaction identifier	TS 101 863-3 [14], 8.1.17	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	

6.1.2 DECT to UMTS

Table 16: List of mapped messages

Item No.	DECT message	UMTS message	Status in UMTS	Reference	Map Status
1	{CC-SETUP}	CM-SERVICE-REQ	M	6.1.2.1	M
2	{CC-SETUP}	SETUP	M	6.1.2.2	M
3	{FACILITY}	FACILITY	M	6.1.2.3	M
4	{FACILITY}	REGISTER	M	6.1.2.4	M
5	{CC-RELEASE}	DISCONNECT	M	6.1.2.5	M
6	{CC-ALERTING}	CALL CONFIRMED	M	6.1.2.6	M
7	{HOLD}	HOLD	M	6.1.2.7	M
8	{RETRIEVE}	RETRIEVE	M	6.1.2.8	M
9	{CC-RELEASE}	RELEASE COMPLETE	M	6.1.2.9	M

6.1.2.1 {CC-SETUP} - CM SERVICE REQUEST

Table 17

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{CC-SETUP}	**CM SERVICE REQUEST**			
1	Protocol discriminator	Protocol discriminator	6.3.2	M	
2	Transaction identifier	Skip Indicator	6.3.3	M	
3	Message type	Message type	TS 101 863-3 [14], 8.1.3	M	
4	Portable identity	Mobile identity	TS 101 863-3 [14], 7.2.6	C1	
5	Basic service	CM service type	6.2.2.1	M	see note
6	Basic service	Mobile station classmark 2	-	M	see TS 101 863-3 [14], 5.1.3
7	Cipher info	Ciphering key sequence number	TS 101 863-3 [14], 7.2.4	M	
8	Network assigned identity	Mobile identity	TS 101 863-3 [14], 7.2.1	C2	
NOTE: Mapping of call class field. C1: IF <<NWK ASSIGNED IDENTITY>> IE is not valid (see TS 101 863-3 [14], annex B) THEN M ELSE X. C2: IF <<NWK ASSIGNED IDENTITY>> IE is valid (see TS 101 863-3 [14], annex B) THEN M ELSE X.					

6.1.2.2 {CC-SETUP} - SETUP

Table 18

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{CC-SETUP} (EN 300 175-5 [5], clause 6.3.2.1)	**SETUP**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Portable identity	-		I	
5	Fixed identity	-		I	
6	Basic service	bearer capabilities	TS 101 863-3 [14], 7.2.8	M	
7	Iwu attributes	-		I	
8	Repeat indicator	-		I	
9	Call attributes	-		I	
10	Repeat indicator	-		I	
11	Connection attributes	-		I	
12	Cipher info	-		I	Used in CM service procedure
13	Connection identity	-		X	
14	Facility			I	
15	Progress indicator	-		X	Not allowed in this direction in DECT
16	Display	-		X	
17	Multi keypad	-		I	
18	Signal	-		X	
19	Feature activate	-		I	
20	Feature indicate	-		X	
21	Network parameter	-		I	Used external H/O procedure
22	Terminal capability	-		I	
23	End-to-end compatibility	-		I	
24	Rate parameter	-		X	
25	Transit delay	-		X	
26	Window size	-		X	
27	Calling Party Number	calling party BCD number	6.2.2.2	M	
28	Called Party Number	called party BCD number	TS 101 863-3 [14], 7.2.9	M	
29	Iwu-to-iwu	calling party subaddress	6.2.2.4	O	
30	Called Party Subaddr	called party subaddress	TS 101 863-3 [14], 7.2.10	O	
31	Sending complete	-			
32	Iwu to iwu	CLIR suppression	6.2.2.6	M	
33	Iwu to iwu	CLIR invocation	6.2.2.7	M	
34	Iwu to iwu	facility	6.2.2.8	M	
35	Iwu packet	-		X	
36	-	CC capabilities		X	

6.1.2.3 {FACILITY} - FACILITY

Table 19

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{FACILITY}	**FACILITY**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Iwu-to-iwu	facility	6.2.2.8	M	

6.1.2.4 {FACILITY} - REGISTER

Table 20

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{FACILITY}	**REGISTER**		**M**	
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Iwu-to-iwu	facility	6.2.2.8	M	
5	Iwu-to-iwu	supplementary service version indicator	6.2.2.9	M	

6.1.2.5 {CC-RELEASE} - DISCONNECT

Table 21

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{CC-RELEASE}	**DISCONNECT**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Iwu-to-iwu	cause	6.2.2.10	M	
5	Release reason	cause	TS 101 863-3 [14], 7.1.10	M	
6	Facility	facility		I	
7	Iwu-to-iwu	facility	6.2.2.8	M	
8	-	progress indicator		X	
9	Display	-		X	
10	Feature indicate	-		X	
11	Iwu-to-iwu	user-to-user		I	
12	Iwu-to-iwu	-		X	

6.1.2.6 {CC-ALERTING} - CALL CONFIRMED

Table 22

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{CC-ALERTING}	**CALL CONFIRMED**			
1	Protocol discriminator	protocol discriminator	6.3.2	M	
2	Transaction identifier	transaction identifier	6.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Repeat indicator	repeat Indicator	-	O	
5		bearer capability	-	I	
6		bearer capability	-	I	
7	Iwu-to-iwu	cause	6.2.2.10	M	

6.1.2.7 {HOLD} - HOLD

Table 23

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{HOLD}	**HOLD**			
1	Protocol Discriminator	protocol discriminator	6.3.2	M	
2	Transaction Identifier	transaction identifier	6.3.3	M	
3	Message Type	message type	TS 101 863-3 [14], 8.1.3	M	

6.1.2.8 {RETRIEVE} - RETRIEVE

Table 24

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{RETRIEVE}	**RETRIEVE**			
1	Protocol Discriminator	protocol discriminator	6.3.2	M	
2	Transaction Identifier	transaction identifier	6.3.3	M	
3	Message Type	message type	TS 101 863-3 [14], 8.1.3	M	

6.1.2.9 {CC-RELEASE} - RELEASE COMPLETE

Table 25

Item No.	Message coding DECT	Message coding UMTS	Reference	Map status	NOTE
	{CC-RELEASE}	**RELEASE COMPLETE**			
1	Protocol discriminator	protocol discriminator	3.3.2	M	
2	Transaction identifier	transaction identifier	3.3.3	M	
3	Message type	message type	TS 101 863-3 [14], 8.1.3	M	
4	Release reason	cause	TS 101 863-3 [14], 7.1.10	O	
5	Iwu to iwu	cause	6.2.2.10	M	
6	Iwu to iwu	facility	6.2.2.8	M	

6.2 IE mappings

6.2.1 UMTS to DECT

6.2.1.1 Facility - IWU-TO-IWU

Table 26

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
	Facility	**IWU-TO-IWU**			
1	-	ID for IWU-TO-IWU		X	
2	-	Length		X	
3	-	Protocol Discriminator		X	see note 1
4	Facility IEI	IWU-TO-IWU INFORMATION		M	see note 2
5	Length of facility contents	IWU-TO-IWU INFORMATION		M	see note 2
6	Component(s)	IWU-TO-IWU INFORMATION		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the UMTS Facility IE shall be mapped transparently into the DECT <<IWU-TO-IWU>> IE.					

6.2.1.2 Calling party BCD number- Calling party number

Table 27

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
1	Calling party BCD number	calling party number			
2	Calling party BCD number IEI	info element ID		M	see note
3	Length of contents	length of contents		M	see note
4	Type of number	number type		M	see note
5	Numbering plan identification	numbering plan identification		M	see note
6	Presentation indicator	present indicator		M	see note
7	Screening indicator	screening indicator		M	see note
8	Number digits	calling party address (list of DECT characters)		M	IA5 char to DECT char
NOTE: The contents of the UMTS Calling Party BCD number IE shall be mapped transparently.					

6.2.1.3 Calling party subaddress - IWU-TO-IWU

Table 28

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
	Calling party subaddress	**IWU-TO-IWU**			
1	-	ID for IWU-TO-IWU		X	
2	-	length		X	
3	-	protocol discriminator		X	see note 1
4	Calling party subaddress IEI	IWU-TO-IWU INFORMATION		M	see note 2
5	Length of contents	IWU-TO-IWU INFORMATION		M	see note 2
6	Type of subaddress	IWU-TO-IWU INFORMATION		M	see note 2
7	Odd/even indicator	IWU-TO-IWU INFORMATION		M	see note 2
8	Subaddress information	IWU-TO-IWU INFORMATION		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the UMTS Calling party subaddress IE shall be mapped transparently into the DECT <<IWU-TO-IWU>> IE.					

6.2.1.4 Called party BCD number- Called party number

Table 29

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
	Called party BCD number	**Called party number**			
4	Called party BCD number IEI	info element ID			see note
5	Length of called party number contents	length of contents		M	see note
6	Type of number	number type		M	see note
7	Numbering plan identification	numbering plan identification		M	see note
8	Number digits	calling party address (List of DECT characters)		M	see note
NOTE: The contents of the UMTS Calling Party BCD number IE shall be mapped transparently.					

6.2.1.5 Called party subaddress - Called party subaddress

Table 30

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
	Called party subaddress (3G TS 24 008 [49], clause 10.5.4.8)	**Called party subaddress (EN 300 175-5 [5], clause 7.7.8)**			
4	Called party subaddress IEI	ID for called party subaddress		M	
5	Length of called party subaddress contents	length of contents		M	see note
6	Type of subaddress	subaddress type		M	see note
7	Odd/even indicator	O/E ind		M	see note
8	Subaddress information	list of subaddress information		M	see note
NOTE: Field is mapped transparently					

6.2.1.6 Cause - IWU-TO-IWU

Table 31

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
	Cause	**IWU-TO-IWU**			
1	-	ID for IWU-TO-IWU		X	
2	-	length		X	
3	-	protocol discriminator		X	see note 1
4	Cause IEI	IWU-TO-IWU INFORMATION		M	see note 2
5	Length of cause contents	IWU-TO-IWU INFORMATION		M	see note 2
6	Coding standard	IWU-TO-IWU INFORMATION		M	see note 2
7	Location	IWU-TO-IWU INFORMATION		M	see note 2
8	Recommendation	IWU-TO-IWU INFORMATION		M	see note 2
9	Cause value	IWU-TO-IWU INFORMATION		M	see note 2
10	Diagnostic	IWU-TO-IWU INFORMATION		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the UMTS Cause IE shall be mapped transparently into the DECT <<IWU-TO-IWU>> IE.					

6.2.1.7 Connected number - IWU-TO-IWU

Table 32

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
	Connected number	**IWU-TO-IWU**			
1	-	ID for IWU-TO-IWU		X	
2	-	length		X	
3	-	protocol discriminator		X	see note 1
4	Connected number IEI	IWU-TO-IWU INFORMATION		M	see note 2
5	Length of connected number contents	IWU-TO-IWU INFORMATION		M	see note 2
6	Type of number	IWU-TO-IWU INFORMATION		M	see note 2
7	Number plan identification	IWU-TO-IWU INFORMATION		M	see note 2
8	Presentation indicator	IWU-TO-IWU INFORMATION		M	see note 2
9	Screening indicator	IWU-TO-IWU INFORMATION		M	see note 2
10	Number digits	IWU-TO-IWU INFORMATION		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the UMTS Connected number IE shall be mapped transparently into the DECT <<IWU-TO-IWU>> IE.					

6.2.1.8 Connected subaddress - IWU-TO-IWU

Table 33

Item No.	Information element coding UMTS	Information element coding DECT	Reference	Map status	NOTE
	Connected subaddress	**IWU-TO-IWU**			
1	-	ID for IWU-TO-IWU		X	
2	-	length		X	
3	-	protocol discriminator		X	see note 1
4	Connected subaddress IEI	IWU-TO-IWU INFORMATION		M	see note 2
5	Length of connected subaddress contents	IWU-TO-IWU INFORMATION		M	see note 2
6	Type of address	IWU-TO-IWU INFORMATION		M	see note 2
7	Odd/even indicator	IWU-TO-IWU INFORMATION		M	see note 2
8	Subaddress information	IWU-TO-IWU INFORMATION		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the UMTS Connected subaddress IE shall be mapped transparently into the DECT <<IWU-TO-IWU>> IE.					

6.2.2 DECT to UMTS

6.2.2.1 Basic service - CM service type

Table 34

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	Basic service	**CM service type**			
1	ID for basic service	CM service type IEI	TS 101 863-3 [14], 8.2.4	M	
2	Call class	service type	6.3.1	M	

6.2.2.2 Calling Party Number- Calling party BCD number

Table 35

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	Calling party number (EN 300 175-5 [5], clause 7.7.7)	**Calling party BCD number (3G TS 24 008 [49], clause 10.5.4.7)**			
1	ID for calling party number	info element ID	TS 101 863-3 [14], 8.1.4	M	
2	Length of contents	length of calling party number contents	TS 101 863-3 [14], 8.1.5	M	
3	Number type	type of number	TS 101 863-3 [14], 8.2.18	M	
4	Numbering plan identification	numbering plan identification	TS 101 863-3 [14], 8.2.19	M	
5	Calling party address (list of DECT characters)	number digits (IA5 char)		M	DECT char to IA5 char

6.2.2.3 Void

6.2.2.4 IWU-TO-IWU - Calling party subaddress

Table 36

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	IWU-TO-IWU	**Calling party subaddress**			
1	ID for IWU-TO-IWU	-		X	
2	Length	-		X	
3	Protocol discriminator	-		X	see note 1
4	IWU-TO-IWU INFORMATION	calling Party Subaddress IEI		M	see note 2
5	IWU-TO-IWU INFORMATION	length of contents		M	see note 2
6	IWU-TO-IWU INFORMATION	type of subaddress		M	see note 2
7	IWU-TO-IWU INFORMATION	odd/even indicator		M	see note 2
8	IWU-TO-IWU INFORMATION	subaddress information		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the DECT <<IWU-TO-IWU>> IE shall be mapped transparently into the UMTS Calling party subaddress IE.					

6.2.2.5 Void

6.2.2.6 IWU-TO-IWU - CLIR suppression

Table 37

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	IWU-TO-IWU	**CLIR suppression**			
1	ID for IWU-TO-IWU	-		X	
2	Length	-		X	
3	Protocol discriminator	-		X	see note 1
4	IWU-TO-IWU INFORMATION	CLIR suppression IEI		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the DECT <<IWU-TO-IWU>> IE shall be mapped transparently into the UMTS CLIR suppression IE.					

6.2.2.7 IWU-TO-IWU - CLIR invocation

Table 38

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	IWU-TO-IWU	**CLIR invocation**			
1	ID for IWU-TO-IWU	-		X	
2	Length	-		X	
3	Protocol discriminator	-		X	see note 1
4	IWU-TO-IWU INFORMATION	CLIR invocation IEI		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the DECT <<IWU-TO-IWU>> IE shall be mapped transparently into the UMTS CLIR invocation IE.					

6.2.2.8 IWU-TO-IWU - Facility

Table 39

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	IWU-TO-IWU	**Facility**			
1	ID for IWU-TO-IWU	-		X	
2	Length	-		X	
3	Protocol discriminator	-		X	see note 1
4	IWU-TO-IWU INFORMATION	facility IEI		M	see note 2
5	IWU-TO-IWU INFORMATION	length of facility contents		M	see note 2
6	IWU-TO-IWU INFORMATION	component(s)		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the DECT <<IWU-TO-IWU>> IE shall be mapped transparently into the UMTS Facility IE.					

6.2.2.9 IWU-TO-IWU - supplementary service version indicator

Table 40

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	IWU-TO-IWU	**Supplementary service version indicator**			
1	ID for IWU-TO-IWU	-		X	
2	Length	-		X	
3	Protocol discriminator	-		X	see note 1
4	IWU-TO-IWU INFORMATION	supplementary service version		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the DECT <<IWU-TO-IWU>> IE shall be mapped transparently into the UMTS supplementary service version indicator IE.					

6.2.2.10 IWU-TO-IWU - Cause

Table 41

Item No.	Information element coding DECT	Information element coding UMTS	Reference	Map status	NOTE
	IWU-TO-IWU	**Cause**			
1	ID for IWU-TO-IWU	-		X	
2	Length	-		X	
3	Protocol discriminator	-		X	see note 1
4	IWU-TO-IWU INFORMATION	cause IEI		M	see note 2
5	IWU-TO-IWU INFORMATION	length of cause contents		M	see note 2
6	IWU-TO-IWU INFORMATION	coding standard		M	see note 2
7	IWU-TO-IWU INFORMATION	location		M	see note 2
8	IWU-TO-IWU INFORMATION	recommendation		M	see note 2
9	IWU-TO-IWU INFORMATION	cause value		M	see note 2
10	IWU-TO-IWU INFORMATION	diagnostic		M	see note 2
NOTE 1: Set to "UMTS Recommendation TS 124 008 [49] element(s)", "10011"B. NOTE 2: The contents of the DECT <<IWU-TO-IWU>> IE shall be mapped transparently into the UMTS Cause IE.					

6.3 Fields in IE coding

Tables 44 to 46 are used both in UMTS to DECT and DECT to UMTS direction.

6.3.1 Call class, (basic service - CM service type)

Table 42

Item No.	Field(s) coding DECT	Field(s) coding UMTS	Reference	Map status	NOTE
	Call class	**Service type**			
1	"1101"B	"1000"B		M	Supplementary service activation
NOTE: Other field codings may be found in TS 101 863-3 [14], clause 6.1.8.2.16.					

6.3.2 Protocol discriminator mapping

As one DECT value can be mapped into two different UMTS values the FP/IWU has to analyse the contents of other IEs in the same message (e.g. <<Basic Service>> IE with the call class field).

6.3.2.1 Protocol discriminator - Protocol discriminator for CISS

Table 43

Item No.	Field(s) coding UMTS	Field(s) coding DECT	Reference	Map status	NOTE
	Protocol discriminator	**Protocol discriminator**			
1	"1011"B	"0011"B		M	UMTS CISS/DECT CC

6.3.2.2 Protocol discriminator - Protocol discriminator for CC

Table 44

Item No.	Field(s) coding UMTS	Field(s) coding DECT	Reference	Map status	NOTE
	Protocol discriminator	**Protocol discriminator**			
1	"0011"B	"0011"B		M	UMTS CRSS/DECT CC

6.3.3 Transaction identifier mapping

6.3.3.1 Transaction identifier - transaction identifier for CISS

The DECT extended transaction identifier shall always be used, i.e. the DECT transaction value shall have value "111"B. The DECT extended transaction value shall be coded according to TS 101 863-3 [14], clause 11.7.10 with:

- the Function Group Identifier (FGI) shall be set to "SS Transaction", "010";
- the DECT Original transaction flag shall be mapped transparently to the UMTS transaction flag;
- the DECT Original transaction value shall be mapped transparently to the UMTS transaction value.

6.3.3.2 Transaction identifier - transaction identifier for CC

See TS 101 863-3 [14], clause 6.1.8.1.2.

Annex A (informative): Supported supplementary services

For information, the supplementary services in TS 122 004 [24] include those given in table A.1.

Table A.1: UMTS TS 122 004 [24] supplementary services

Supplementary service						
UMTS specification/section	**Reg.**	**Era.**	**Act.**	**Deact.**	**Inv.**	**Int.**
TS 122 067 [27] enhanced Multi-Level Precedence and Pre-emption service (eMLPP) Stage 1						
eMLPP	a/s	w/r/s	-	-	u/n	s/dr
TS 122 081 [28] Number identification supplementary service						
CLIP	-	-	p	w	n	s
CLIR	-	-	p	w	n	dr
COLP	-	-	p	w	n	s
COLR	-	-	p	w	n	s
TS 122 082 [29] Call offering supplementary service						
CFU	a/s	w/r/s	r/s	e/s	n	dr
CFB	a/s	w/r/s	r/s	e/s	n	dr
CFNRy	a/s	w/r/s	r/s	e/s	n	dr
CFNRc	a/s	w/r/s	r/s	e/s	n	dr
TS 122 083 [30] Call completion supplementary service						
CW	-	-	a/s	a/s	n	s
HOLD	-	-	p	w	u	-
TS 122 084 [31] MPTY supplementary service						
MPTY	-	-	-	-	u	-
TS 122 085 [32] Community of interest supplementary service						
CUG	-	-	p	w	u/n	-
TS 122 086 [33] Charging supplementary service						
AoCI	-	-	p	w	n	-
AoCC	-	-	p	w	n	-
TS 122 087 [34] User-to-User SS						
UUS	-	-	s	c	u/n	-
TS 122 088 [35] Call restriction supplementary service						
BAOC	a/s	w/r	a/s	s/a	n	dr
BOIC	a/s	w/r	a/s	s/a	n	dr
BOIC-exHC	a/s	w/r	a/s	s/a	n	dr
BAIC	a/s	w/r	a/s	s/a	n	dr
BIC-Roam	a/s	w/r	a/s	s/a	n	dr
TS 122 091 [28] Call Transfer SS						
ECT	-	-	p	w	u	-
TS 122 093 [28] Completion of Calls to Busy Subscribers						
CCBS	-	-	p	w	n	-
CCBS Requests	-	-	s	s/a/w	-	dr
TS 122 096 [28] Name Identification SS						
CNAP	-	-	p	w	n	s
TS 122 135 [28] Multicall						
MC	a/s	w	p	w	u/n	dr

The following abbreviations are used in table A.1:

Registration:

p = as a result of provision;

a = service provider controlled procedure;

s = subscriber controlled procedure;

- = not applicable.

Erasure:

w = as a result of withdrawal;

s = subscriber controlled procedure;

r = due to new registration;

- = not applicable.

Activation:

p = as a result of provision;

r = as a result of registration;

s = subscriber controlled procedure;

a = service provider controlled procedure;

c = when the conditions in the subscription options are met;

- = not applicable.

Deactivation:

w = as a result of withdrawal;

s = subscriber controlled procedure;

a = service provider controlled procedure;

e = as a result of erasure;

n = when the conditions in the subscription options are not met;

c = at the end of a per call basis activation;

- = not applicable.

Invocation:

n = automatic invocation by the network as a result of a particular condition;

u = user invocation, by means of a control procedure;

- = not applicable.

Interrogation:

s = status check;

dr = data request;

- = not applicable.

Annex B (informative): Bibliography

- ETSI TS 101 863-4: "Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP); Part 4: Supplementary services".
- ETSI TS 101 863-5: "Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP); Part 5: SMS point to point and cell broadcast".
- ETSI TS 101 863-6: "Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP); Part 6: Packet switched data".
- ITU-T Recommendation Q.6xx series: "International Telecommunication Union; Interworking of signalling systems".
- ETSI TS 122 093: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Completion of Calls to Busy Subscriber (CCBS); Service description, Stage 1".

History

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