3GPP TSG-CN Meeting #23 **NP-040096**

10th - 12th March 2004, Phoenix, USA

Source: **3GPP TSG CN2**

Title: **CRs for Rel-5 WI CAMEL4**

Agenda item: **6.2.1**

Document for: **APPROVAL**

This document contains following CRs for Rel-5 WI CAMEL4 that are approved by CN2 and are forwarded to TSG CN#23 for approval:

TDoc #	Title	Type	Spec	CR	C	R	Rel	Versi	WI
N2-040168	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface	CR	29.078	355	F	3	Rel-5	5.6.1	CAMEL4
N2-040169	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface	CR	29.078	356	A	1	Rel-6	6.0.0	CAMEL4
N2-040172	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface	CR	23.078	692	F	4	Rel-5	5.6.0	CAMEL4
N2-040173	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface	CR	23.078	693	A	1	Rel-6	6.0.0	CAMEL4

3GPP TSG CN WG2 Meeting #32 **N2-040168**
Atlanta, USA, 16th – 21st February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.078** **CR** **355** ⌘ **rev** **3** ⌘ Current version: **5.6.1** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title: ⌘	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface	
Source: ⌘	NTT DoCoMo, NEC	
Work item code: ⌘	CAMEL4	***Date:*** ⌘ 17/02/2004
Category: ⌘	**F** (**Essential Correction**)	***Release:*** ⌘ Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘

In the current specification the gsmSSF does not send the LLC in the initialDP to the gsmSCF, therefore the gsmSCF may not be able to deduce the bearer service precisely (e.g. in the case of interworking through internatinal carriers).This problem has been raised in GSM-A regarding videotelephony call issue. This problem also occurs in other data services.

The gsmSCF determines the bearer service from the Bearer Capability (BC) in the initialDP which is mapped from USI in IAM. But when the USI is not transferred transparently through the national or international carrier, the gsmSCF may not be able to determine the bearer service from the BC.

To overcome this problem, there is a need to specify the LLC parameters (one is LLC and another is LLC2 for a SCUDIF call) in the initialDP.

It needs to be added the High Layer Compatibility2 IE in line with definition of the LLC.

Summary of change: ⌘

-Add lowLayerCompatibility, lowLayerCompatibility2 and highLayerCompatibility2 in the InitialDPArgExtension
-Add lowLayerCompatibility, lowLayerCompatibility2 and highLayerCompatibility2 descriptions to InitialDP procedure's parameter description
-Add the mapping rule from AT in ISUP_IAM to lowLayerCompatibility, lowLayerCompatibility2 and highLayerCompatibility2 in CAP_initialDP in table A.1.

Consequences if not approved:	⌘	A gsmSCF may not be able to deduce the bearer service in the case of interworking through some national or international carriers. As a result, on line charging for the video telephony call. As a further result, the call may fail because the gsmSCF applies warning tones or announcements.

Clauses affected:	⌘	2, 5.1, 5.5, 6.1.1, 11.20.1, A1			
Other specs affected:	⌘	**Y** / **N** **X** / ☐	Other core specifications	⌘	TS23.078 CR692
		☐ / **X**	Test specifications		
		☐ / **X**	O&M Specifications		
Other comments:	⌘	GSM-A IREG requests to standarize the solution of video telephony issue from the earliest CAMEL phase possible.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

*** For Information ***

Extracts from 3GPP TS 24.008 V5.10.0

10.5.4.18 Low layer compatibility

The purpose of the low layer compatibility information element is to provide a means which should be used for compatibility checking by an addressed entity (e.g., a remote user or an interworking unit or a high layer function network node addressed by the calling user). The low layer compatibility information element is transferred transparently by a PLMN between the call originating entity (e.g. the calling user) and the addressed entity.

Except for the information element identifier, the low layer compatibility information element is coded as in ITU recommendation Q.931.

For backward compatibility reasons coding of the modem type field according to ETS 300 102-1 (12-90) shall also be supported.

The low layer compatibility is a type 4 information element with a minimum length of 2 octets and a maximum length of 18 octets.

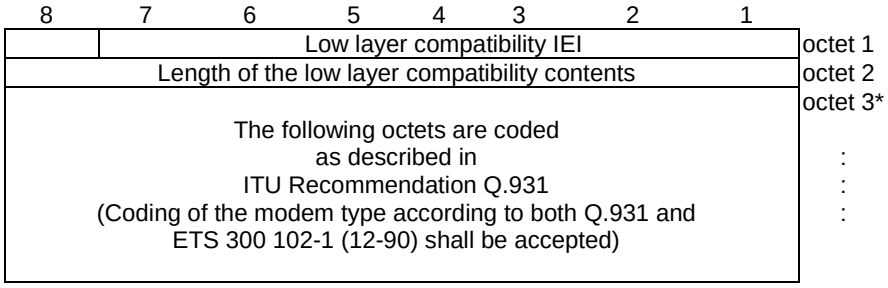

Figure 10.5.104/3GPP TS 24.008 Low layer compatibility information element

If the value part of the IE is empty, the IE indicates "not applicable".

*** For Information ***

Extracts from ITU-T Q.931 199805

4.5.19 Low layer compatibility

The purpose of the Low layer compatibility information element is to provide a means which should be used for capability checking by an addressed entity (e.g. a remote user or an interworking unit or a high layer function network node addressed by the calling user). The Low layer compatibility information element is transferred transparently by an ISDN between the call originating entity (e.g. the calling user) and the addressed entity. See Annexes B and I.

If low layer compatibility negotiation is allowed by the network (see Annex J), the Low layer compatibility information element is also passed transparently from the addressed entity to originating entity.

The Low layer compatibility information element is coded as shown in Figure 4-25 and Table 4-16. The maximum length of this information element is 18 octets.

NOTE – Some networks conforming to Recommendation Q.931 (1988) may support a maximum information element length of only 16 octets.

8	7	6	5	4	3	2	1	Octet
	Low layer compatibility information element identifier							
0	1	1	1	1	1	0	0	1
Length of the low layer compatibility contents								2
ext. 0/1	Coding standard		Information transfer capability					3
ext. 1	Negot. indic.	Spare 0	0	0	0	0	0	3a*
ext. 1	Transfer mode		Information transfer rate					4
ext. 1	Rate multiplier							4.1* (Note 1)
ext. 0/1	Layer 1 ident. 0	1	User information layer 1 protocol					5*
ext. 0/1	Synch./ asynch.	Negot.	User rate					5a* (Note 2)
ext. 0/ 1	Intermediate rate		NIC on Tx	NIC on Rx	Flow control on Tx	Flow control on Rx	Spare 0	5b* (Note 3)
ext. 0/1	Hdr/no Hdr	Multifra me	Mode	Negot. LLI	Assignor/ Assignor ee	In-band negot.	Spare 0	5b* (Note 4)
ext. 0/1	Number of stop bits		Number of data bits		Parity			5c* (Note 2)
ext. 1	Duplex mode	Modem type						5d* (Note 2)
ext. 0/1	layer 2 ident. 1	0	User information layer 2 protocol					6*
ext. 0/1	Mode		Spare 0	0	0	Q.933 use		6a* (Note 5)
ext. 1	User specified layer 2 protocol information							6a* (Note 6)
ext. 1	Window size (k)							6b* (Note 5)
ext. 0/1	layer 3 ident. 1	1	User information layer 3 protocol					7
ext. 1	Optional layer 3 protocol information							7a* (Note 8)
ext. 0/1	Mode		Spare 0	0	0	0	0	7a* (Note 7)
ext. 0/1	Spare 0	0	0	Default packet size				7b* (Note 7)
ext. 1	Packet window size							7c* (Note 7)
ext. 0	Spare 0	0	0	Additional layer 3 protocol information (most significant bits)				7a* (Note 9)
ext. 1	Spare 0	0	0	Additional layer 3 protocol information (least significant bits)				7b* (Note 9)

Figure 4-25/Q.931 – Low layer compatibility information element

****** First Modified Section ********

5 Common CAP Types

5.1 Data types

```
LocationNumber {PARAMETERS-BOUND : bound} ::= OCTET STRING (SIZE (
    bound.&minLocationNumberLength .. bound.&maxLocationNumberLength))
-- Indicates the Location Number for the calling party.
-- Refer to ETSI EN 300 356-1 [23] for encoding.

LowLayerCompatibility {PARAMETERS-BOUND : bound} ::= OCTET STRING (SIZE (
    bound.&minLowLayerCompatibilityLength .. bound.&maxLowLayerCompatibilityLength))
-- indicates the LowLayerCompatibility for the calling party.
-- Refer to 3GPP TS 24.008 [9] for encoding.
-- It shall be coded as in the value part defined in 3GPP TS 24.008.
-- i.e. the 3GPP TS 24.008 IEI and 3GPP TS 24.008 octet length indicator
-- shall not be included.

MessageID {PARAMETERS-BOUND : bound} ::= CHOICE {
    elementaryMessageID                 [0] Integer4,
    text                                [1] SEQUENCE {
        messageContent                      [0] IA5String (SIZE(
            bound.&minMessageContentLength .. bound.&maxMessageContentLength)),
        attributes                          [1] OCTET STRING (SIZE(
            bound.&minAttributesLength .. bound.&maxAttributesLength))           OPTIONAL
    },
    elementaryMessageIDs                [29] SEQUENCE SIZE (1.. bound.&numOfMessageIDs) OF Integer4,
    variableMessage                     [30] SEQUENCE {
        elementaryMessageID                 [0] Integer4,
        variableParts                       [1] SEQUENCE SIZE (1..5) OF VariablePart {bound}
        }
    }
-- Use of the text parameter is network operator/equipment vendor specific.
```

****** Next Modified Section ******

5.5 Classes

```
PARAMETERS-BOUND ::= CLASS {
    &minAccessPointNameLength                   INTEGER,
    &maxAccessPointNameLength                   INTEGER,
    &minAChBillingChargingLength                INTEGER,
    &maxAChBillingChargingLength                INTEGER,
    &minAttributesLength                        INTEGER,
    &maxAttributesLength                        INTEGER,
    &maxBearerCapabilityLength                  INTEGER,
    &minCalledPartyBCDNumberLength              INTEGER,
    &maxCalledPartyBCDNumberLength              INTEGER,
    &minCalledPartyNumberLength                 INTEGER,
    &maxCalledPartyNumberLength                 INTEGER,
    &minCallingPartyNumberLength                INTEGER,
    &maxCallingPartyNumberLength                INTEGER,
    &minCallResultLength                        INTEGER,
    &maxCallResultLength                        INTEGER,
    &minCarrierLength                           INTEGER,
    &maxCarrierLength                           INTEGER,
    &minCauseLength                             INTEGER,
    &maxCauseLength                             INTEGER,
    &minDigitsLength                            INTEGER,
    &maxDigitsLength                            INTEGER,
    &minFCIBillingChargingDataLength            INTEGER,
```

```
    &maxFCIBillingChargingDataLength          INTEGER,
    &minFCIBillingChargingLength              INTEGER,
    &maxFCIBillingChargingLength              INTEGER,
    &minGenericNumberLength                   INTEGER,
    &maxGenericNumberLength                   INTEGER,
    &minGPRSCauseLength                       INTEGER,
    &maxGPRSCauseLength                       INTEGER,
    &minIPSSPCapabilitiesLength               INTEGER,
    &maxIPSSPCapabilitiesLength               INTEGER,
    &minLocationNumberLength                  INTEGER,
    &maxLocationNumberLength                  INTEGER,
    &minLowLayerCompatibilityLength           INTEGER,
    &maxLowLayerCompatibilityLength           INTEGER,
    &minMessageContentLength                  INTEGER,
    &maxMessageContentLength                  INTEGER,
    &minOriginalCalledPartyIDLength           INTEGER,
    &maxOriginalCalledPartyIDLength           INTEGER,
    &minPDPAddressLength                      INTEGER,
    &maxPDPAddressLength                      INTEGER,
    &minRedirectingPartyIDLength              INTEGER,
    &maxRedirectingPartyIDLength              INTEGER,
    &minScfIDLength                           INTEGER,
    &maxScfIDLength                           INTEGER,
    &minSCIBillingChargingLength              INTEGER,
    &maxSCIBillingChargingLength              INTEGER,
    &minTimeAndTimezoneLength                 INTEGER,
    &maxTimeAndTimezoneLength                 INTEGER,
    &numOfBCSMEvents                          INTEGER,
    &numOfCSs                                 INTEGER,
    &numOfSMSEvents                           INTEGER,
    &numOfGPRSEvents                          INTEGER,
    &numOfExtensions                          INTEGER,
    &numOfGenericNumbers                      INTEGER,
    &numOfMessageIDs                          INTEGER}

WITH SYNTAX {
    MINIMUM-FOR-ACCESS-POINT-NAME             &minAccessPointNameLength
    MAXIMUM-FOR-ACCESS-POINT-NAME             &maxAccessPointNameLength
    MINIMUM-FOR-ACH-BILLING-CHARGING          &minAChBillingChargingLength
    MAXIMUM-FOR-ACH-BILLING-CHARGING          &maxAChBillingChargingLength
    MINIMUM-FOR-ATTRIBUTES                    &minAttributesLength
    MAXIMUM-FOR-ATTRIBUTES                    &maxAttributesLength
    MAXIMUM-FOR-BEARER-CAPABILITY             &maxBearerCapabilityLength
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER       &minCalledPartyBCDNumberLength
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER       &maxCalledPartyBCDNumberLength
    MINIMUM-FOR-CALLED-PARTY-NUMBER           &minCalledPartyNumberLength
    MAXIMUM-FOR-CALLED-PARTY-NUMBER           &maxCalledPartyNumberLength
    MINIMUM-FOR-CALLING-PARTY-NUMBER          &minCallingPartyNumberLength
    MAXIMUM-FOR-CALLING-PARTY-NUMBER          &maxCallingPartyNumberLength
    MINIMUM-FOR-CALL-RESULT                   &minCallResultLength
    MAXIMUM-FOR-CALL-RESULT                   &maxCallResultLength
    MINIMUM-FOR-CARRIER                       &minCarrierLength
    MAXIMUM-FOR-CARRIER                       &maxCarrierLength
    MINIMUM-FOR-CAUSE                         &minCauseLength
    MAXIMUM-FOR-CAUSE                         &maxCauseLength
    MINIMUM-FOR-DIGITS                        &minDigitsLength
    MAXIMUM-FOR-DIGITS                        &maxDigitsLength
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA     &minFCIBillingChargingDataLength
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA     &maxFCIBillingChargingDataLength
    MINIMUM-FOR-FCI-BILLING-CHARGING          &minFCIBillingChargingLength
    MAXIMUM-FOR-FCI-BILLING-CHARGING          &maxFCIBillingChargingLength
    MINIMUM-FOR-GENERIC-NUMBER                &minGenericNumberLength
    MAXIMUM-FOR-GENERIC-NUMBER                &maxGenericNumberLength
    MINIMUM-FOR-GPRS-CAUSE-LENGTH             &minGPRSCauseLength
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH             &maxGPRSCauseLength
    MINIMUM-FOR-IP-SSP-CAPABILITIES           &minIPSSPCapabilitiesLength
    MAXIMUM-FOR-IP-SSP-CAPABILITIES           &maxIPSSPCapabilitiesLength
    MINIMUM-FOR-LOCATION-NUMBER               &minLocationNumberLength
    MAXIMUM-FOR-LOCATION-NUMBER               &maxLocationNumberLength
    MINIMUM-FOR-LOW-LAYER-COMPATIBILITY       &minLowLayerCompatibilityLength
    MAXIMUM-FOR-LOW-LAYER-COMPATIBILITY       &maxLowLayerCompatibilityLength
    MINIMUM-FOR-MESSAGE-CONTENT               &minMessageContentLength
    MAXIMUM-FOR-MESSAGE-CONTENT               &maxMessageContentLength
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID      &minOriginalCalledPartyIDLength
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID      &maxOriginalCalledPartyIDLength
    MINIMUM-FOR-PDP-ADDRESS-LENGTH            &minPDPAddressLength
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH            &maxPDPAddressLength
    MINIMUM-FOR-REDIRECTING-ID                &minRedirectingPartyIDLength
```

```
    MAXIMUM-FOR-REDIRECTING-ID                  &maxRedirectingPartyIDLength
    MINIMUM-FOR-GSMSCF-ID                       &minScfIDLength
    MAXIMUM-FOR-GSMSCF-ID                       &maxScfIDLength
    MINIMUM-FOR-SCI-BILLING-CHARGING            &minSCIBillingChargingLength
    MAXIMUM-FOR-SCI-BILLING-CHARGING            &maxSCIBillingChargingLength
    MINIMUM-FOR-TIME-AND-TIMEZONE               &minTimeAndTimezoneLength
    MAXIMUM-FOR-TIME-AND-TIMEZONE               &maxTimeAndTimezoneLength
    NUM-OF-BCSM-EVENT                           &numOfBCSMEvents
    NUM-OF-CSS                                  &numOfCSs
    NUM-OF-SMS-EVENTS                           &numOfSMSEvents
    NUM-OF-GPRS-EVENTS                          &numOfGPRSEvents
    NUM-OF-EXTENSIONS                           &numOfExtensions
    NUM-OF-GENERIC-NUMBERS                      &numOfGenericNumbers
    NUM-OF-MESSAGE-IDS                          &numOfMessageIDs}

cAPSpecificBoundSet PARAMETERS-BOUND ::= {
    MINIMUM-FOR-ACCESS-POINT-NAME               1
    MAXIMUM-FOR-ACCESS-POINT-NAME               100
    MINIMUM-FOR-ACH-BILLING-CHARGING            5
    MAXIMUM-FOR-ACH-BILLING-CHARGING            177
    MINIMUM-FOR-ATTRIBUTES                      2
    MAXIMUM-FOR-ATTRIBUTES                      10
    MAXIMUM-FOR-BEARER-CAPABILITY               11
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER         1
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER         41
    MINIMUM-FOR-CALLED-PARTY-NUMBER             2
    MAXIMUM-FOR-CALLED-PARTY-NUMBER             18
    MINIMUM-FOR-CALLING-PARTY-NUMBER            2
    MAXIMUM-FOR-CALLING-PARTY-NUMBER            10
    MINIMUM-FOR-CALL-RESULT                     12
    MAXIMUM-FOR-CALL-RESULT                     193
    MINIMUM-FOR-CARRIER                         4
    MAXIMUM-FOR-CARRIER                         4
    MINIMUM-FOR-CAUSE                           2
    MAXIMUM-FOR-CAUSE                           32
    MINIMUM-FOR-DIGITS                          2
    MAXIMUM-FOR-DIGITS                          16
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA       1
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA       160
    MINIMUM-FOR-FCI-BILLING-CHARGING            5
    MAXIMUM-FOR-FCI-BILLING-CHARGING            225
    MINIMUM-FOR-GENERIC-NUMBER                  3
    MAXIMUM-FOR-GENERIC-NUMBER                  11
    MINIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MINIMUM-FOR-IP-SSP-CAPABILITIES             1
    MAXIMUM-FOR-IP-SSP-CAPABILITIES             4
    MINIMUM-FOR-LOCATION-NUMBER                 2
    MAXIMUM-FOR-LOCATION-NUMBER                 10
    MINIMUM-FOR-LOW-LAYER-COMPATIBILITY         1
    MAXIMUM-FOR-LOW-LAYER-COMPATIBILITY         16
    MINIMUM-FOR-MESSAGE-CONTENT                 1
    MAXIMUM-FOR-MESSAGE-CONTENT                 127
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        2
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        10
    MINIMUM-FOR-PDP-ADDRESS-LENGTH              1
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH              63
    MINIMUM-FOR-REDIRECTING-ID                  2
    MAXIMUM-FOR-REDIRECTING-ID                  10
    MINIMUM-FOR-GSMSCF-ID                       2
    MAXIMUM-FOR-GSMSCF-ID                       10
    MINIMUM-FOR-SCI-BILLING-CHARGING            4
    MAXIMUM-FOR-SCI-BILLING-CHARGING            225
    MINIMUM-FOR-TIME-AND-TIMEZONE               8
    MAXIMUM-FOR-TIME-AND-TIMEZONE               8
    NUM-OF-BCSM-EVENT                           30
    NUM-OF-CSS                                  127
    NUM-OF-SMS-EVENTS                           10
    NUM-OF-GPRS-EVENTS                          10
    NUM-OF-EXTENSIONS                           10
    NUM-OF-GENERIC-NUMBERS                      5
    NUM-OF-MESSAGE-IDS                          16}

END
```

****** Next Modified Section ******

6 Circuit Switched Call Control

6.1 gsmSSF/CCF - gsmSCF Interface

6.1.1 Operations and arguments

```
    AChBillingChargingCharacteristics {},
    AdditionalCallingPartyNumber {},
    AlertingPattern,
    AChChargingAddress {},
    AssistingSSPIPRoutingAddress {},
    BCSMEvent {},
    BCSM-Failure,
    BearerCapability {},
    Burst,
    CalledPartyNumber {},
    CalledPartyBCDNumber {},
    CallingPartyNumber {},
    CallResult {},
    CallSegmentID {},
    CallSegmentToCancel {},
    CallSegmentFailure {},
    Carrier,
    Cause {},
    CGEncountered,
    ChargeNumber {},
    ControlType,
    CorrelationID {},
    DestinationRoutingAddress {},
    EventSpecificInformationBCSM {},
    EventTypeBCSM,
    Extensions {},
    FCIBillingChargingCharacteristics {},
    GapCriteria {},
    GapIndicators,
    GapTreatment,
    GenericNumbers {},
    InvokeID,
    IPRoutingAddress {},
    IPSSPCapabilities {},
    leg1,
    leg2,
    LegOrCallSegment {},
    LocationNumber {},
    LowLayerCompatibility {},
    MonitorMode,
    NAOliInfo,
    OCSIApplicable,
    OriginalCalledPartyID {},
    ReceivingSideID,
    RedirectingPartyID {},
    RequestedInformationList {},
    RequestedInformationTypeList,
    ScfID {},
    SCIBillingChargingCharacteristics {},
    SendingSideID,
    ServiceInteractionIndicatorsTwo,
    TimeAndTimezone {},
    TimerID,
    TimerValue
FROM CAP-datatypes datatypes
```

```
InitialDPArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    serviceKey                          [0] ServiceKey  ,
    calledPartyNumber                   [2] CalledPartyNumber {bound}               OPTIONAL,
    callingPartyNumber                  [3] CallingPartyNumber {bound}              OPTIONAL,
    callingPartysCategory               [5] CallingPartysCategory                   OPTIONAL,
    cGEncountered                       [7] CGEncountered                           OPTIONAL,
    iPSSPCapabilities                   [8] IPSSPCapabilities {bound}               OPTIONAL,
    locationNumber                      [10] LocationNumber {bound}                 OPTIONAL,
    originalCalledPartyID               [12] OriginalCalledPartyID {bound}          OPTIONAL,
    extensions                          [15] Extensions {bound}                     OPTIONAL,
    highLayerCompatibility              [23] HighLayerCompatibility                 OPTIONAL,
    additionalCallingPartyNumber        [25] AdditionalCallingPartyNumber {bound}   OPTIONAL,
    bearerCapability                    [27] BearerCapability {bound}               OPTIONAL,
    eventTypeBCSM                       [28] EventTypeBCSM                          OPTIONAL,
    redirectingPartyID                  [29] RedirectingPartyID {bound}             OPTIONAL,
    redirectionInformation              [30] RedirectionInformation                 OPTIONAL,
    cause                               [17] Cause {bound}                          OPTIONAL,
    serviceInteractionIndicatorsTwo     [32] ServiceInteractionIndicatorsTwo        OPTIONAL,
    carrier                             [37] Carrier {bound}                        OPTIONAL,
    cug-Index                           [45] CUG-Index                              OPTIONAL,
    cug-Interlock                       [46] CUG-Interlock                          OPTIONAL,
    cug-OutgoingAccess                  [47] NULL                                   OPTIONAL,
    iMSI                                [50] IMSI                                   OPTIONAL,
    subscriberState                     [51] SubscriberState                        OPTIONAL,
    locationInformation                 [52] LocationInformation                    OPTIONAL,
    ext-basicServiceCode                [53] Ext-BasicServiceCode                   OPTIONAL,
    callReferenceNumber                 [54] CallReferenceNumber                    OPTIONAL,
    mscAddress                          [55] ISDN-AddressString                     OPTIONAL,
    calledPartyBCDNumber                [56] CalledPartyBCDNumber {bound}           OPTIONAL,
    timeAndTimezone                     [57] TimeAndTimezone {bound}                OPTIONAL,
    callForwardingSS-Pending            [58] NULL                                   OPTIONAL,
    initialDPArgExtension               [59] InitialDPArgExtension {bound}          OPTIONAL,
    ...
    }

InitialDPArgExtension {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    gmscAddress                         [0] ISDN-AddressString                      OPTIONAL,
    forwardingDestinationNumber         [1] CalledPartyNumber {bound}               OPTIONAL,
    ms-Classmark2                       [2] MS-Classmark2                           OPTIONAL,
    iMEI                                [3] IMEI                                    OPTIONAL,
    supportedCamelPhases                [4] SupportedCamelPhases                    OPTIONAL,
    offeredCamel4Functionalities        [5] OfferedCamel4Functionalities            OPTIONAL,
    bearerCapability2                   [6] BearerCapability {bound}                OPTIONAL,
    ext-basicServiceCode2               [7] Ext-BasicServiceCode                    OPTIONAL,
    highLayerCompatibility2             [8] HighLayerCompatibility                  OPTIONAL,
    lowLayerCompatibility               [9] LowLayerCompatibility {bound}           OPTIONAL,
    lowLayerCompatibility2              [10] LowLayerCompatibility {bound}          OPTIONAL,
    ...
}
-- If iPSSPCapabilities is not present then this denotes that a colocated gsmSRF is not
-- supported by the gsmSSF. If present, then the gsmSSF supports a colocated gsmSRF capable
-- of playing announcements via elementaryMessageIDs and variableMessages, the playing of
-- tones and the collection of DTMF digits. Other supported capabilities are explicitly
-- detailed in the IPSSPCapabilities parameter itself.
-- Carrier is included at the discretion of the gsmSSF operator.
```

****** Next Modified Section ******

11.20 InitialDP procedure

11.20.1 General description

The gsmSSF uses this operation after detection of a TDP-R in the BCSM, to request the gsmSCF for instructions to complete the call.

11.20.1.1 Parameters

- serviceKey:
  This parameter indicates to the gsmSCF the requested IN service. It is used to address the required application/SLP within the gsmSCF; this parameter is not for SCP addressing.

- calledPartyNumber:
  This parameter contains the number used to identify the called party in the forward direction, i.e. see ETSI EN 300 356-1 [23]. This parameter shall be sent only in the Mobile Terminating, Mobile Forwarding and mobile originating on unsuccessful TDP cases.

- callingPartyNumber:
  This parameter carries the calling party number to identify the calling party or the origin of the call. See ETSI EN 300 356-1 [23] Calling Party Number signalling information.

- callingPartysCategory:
  Indicates the type of calling party (e.g. operator, pay phone, ordinary subscriber). See ETSI EN 300 356-1 [23] Calling Party Category signalling information.

- locationNumber:
  This parameter is used to convey the geographical area address for mobility services, see ITU-T Recommendation Q.762 [44]. It is used when "callingPartyNumber" does not contain any information about the geographical location of the calling party (e.g., origin dependent routeing when the calling party is a mobile subscriber).

- originalCalledPartyID:
  If the call has met call forwarding on the route to the gsmSSF, then this parameter carries the dialled digits. Refer to EN 300 356-1[23] Original Called Number signalling information.

- highL~~l~~ayerCompatibility:
  This parameter indicates the type of the high layer compatibility, which will be used to determine the ISDN - teleservice of a connected ISDN terminal. The highlayerCompatibility can also be transported by ISUP (e.g. within the ATP (see ITU-T Recommendation Q.763 [45]) parameter).

- additionalCallingPartyNumber:
  The calling party number provided by the access signalling system of the calling user, e.g. provided by a PBX.

- bearerCapability:
  This parameter indicates the type of the bearer capability connection or the transmission medium requirements to the user. It is a network option to select which of the two parameters to be used:

  - bearerCap:
    This parameter contains the value of the ISUP User Service Information parameter.

    The parameter "bearerCapability" shall be included in the "InitialDP" operation only in the case the ISUP User Service Information parameter is available at the gsmSSF.

    If User Service Information and User Service Information Prime are available at the gsmSSF, then the "bearerCap" shall contain the value of the User Service Information Prime parameter.

- eventTypeBCSM:
  This parameter indicates the armed BCSM DP event, resulting in the "InitialDP" operation.

- redirectingPartyID:
  This parameter indicates the last directory number the call was redirected from.

- redirectionInformation:
  This parameter contains forwarding related information, such as redirecting counter.
  See ITU-T Recommendation Q.763 [45] Redirection Information signalling information.

- iPSSPCapabilities:
  This parameter indicates which gsmSRF resources supported within the VMSC or GMSC the gsmSSF resides in are attached and available.

- serviceInteractionIndicatorsTwo:
  This parameter contains indicators that are used to resolve interactions between CAMEL based services and network based services.

- iMSI:
  This parameter contains the IMSI of the mobile subscriber for which the service is invoked.

- subscriberState:
  This parameter indicates the the state of the mobile subscriber for which the service is invoked. The possible states are "busy", "idle" and "not reachable".

- locationInformation:
  This parameter indicates the location of the MS and the age of the information defining the location.

- ext-BasicServiceCode:
  This parameter indicates the Basic Service Code.

- callReferenceNumber:
  This parameter contains the call reference number assigned to the call by the CCF.

- mscAddress:
  This parameter contains the mscId assigned to the MSC.

- gmscAddress:
  This parameter contains the gmscId assigned to the GMSC.

- calledPartyBCDNumber:
  This parameter contains the number used to identify the called party in the forward direction. It may also include service selection information, including * and # characters.

- time&Timezone:
  This parameter contains the time that the gsmSSF was triggered, and the time zone that the invoking gsmSSF resides in.

- callForwardingSS-Pending:
  This parameter indicates that a forwarded-to-number was received and that the call will be forwarded due to the Call Forwarding supplementary service in the GMSC or in the VMSC, unless otherwise instructed by the gsmSCF.

- carrier:
  This parameter contains carrier information. It consists of the carrier selection field followed by the Carrier ID information associated with the calling subscriber of a mobile originating call, the called subscriber of a mobile terminating call or the forwarding subscriber of a mobile fowarded call.

  It contains the following embedded parameter:

  - carrierSelectionField:
    This parameter indicates how the selected carrier is provided (e.g. pre-subscribed).

  - carrierID:
    This parameter indicates the carrier to use for the call. It contains the digits of the carrier identification code.

- cug-Index:
  This parameter is used to select a CUG for an outgoing call at the user, or to indicate an incoming CUG call to the user.

- cug-Interlock:
  This parameter uniquely identifies a CUG within a network.

- cug-OutgoingAccess:
  This parameter indicates if the calling user has subscribed to the outgoing access inter-CUG accessibility subscription option.

- cGEncountered:
  This parameter indicates the type of call gapping the related call has been subjected to, if any.

- cause:
  This parameter indicates the release cause which triggered the event:

  For Route_Select_Failure" it shall contain the "FailureCause", if available.

  For T_Busy it may contain the following parameters, if available.

  - If the busy event is triggered by an ISUP release message, then the BusyCause shall a copy of the ISUP release cause, for example: Subscriber absent, 20 or User busy, 17.
  - If the busy event is triggered by a MAP error, for example: Absent subscriber, received from the HLR, then the MAP cause is mapped to the corresponding ISUP release cause.
  - If the busy event is triggered by call forwarding invocation in the GMSC or VMSC, then the BusyCause shall refer to the type of the call forwarding service in accordance with the mapping table in 3GPP TS 23.078 [7].

- forwardingDestinationNumber:
  This parameter contains the forwarding destination.

- ms-Classmark2:
  This parameter contains the MS Classmark 2 of the mobile subscriber for which the service is invoked.

- iMEI:
  This parameter contains the IMEI (with software version) of the mobile subscriber for which the service is invoked.

- supportedCamelPhases:
  This parameter indicates the CAMEL Phases supported in the GMSC or VMSC which sends this operation.

- offeredCamel4Functionalities:
  This parameter contains the offered CAMEL phase 4 functionalities.

- bearerCapability2:
  This parameter indicates the type of the bearer capability connection or the transmission medium requirements to the user.

  - ext-BasicServiceCode2:
    This parameter indicates the Basic Service Code2.

- highLayerCompatibility2:
  This parameter indicates the high layer compatibility2 for a SCUDIF call.

- lowLayerCompatibility:
  This parameter indicates the low layer compatibility.

- lowLayerCompatibility2:
  This parameter indicates the low layer compatibility2 for a SCUDIF call.

****** Next Modified Section ******

Annex A (normative): Mapping between CAP and ISUP

A.1 InitialDP operation

Table A.1

ISUP message IAM (Note 1)	CAP Operation InitialDP
Called party number	CalledPartyNumber
Calling party number	CallingPartyNumber
Calling party's category	CallingPartysCategory
Location number	LocationNumber
Original called number	OriginalCalledPartyID
User teleservice information (1st priority) High layer compatibility IE contained in access transport (2nd priority) (Note 2)	HighLayerCompatibility
High layer compatibility IE contained in access transport (Note 2)	HighLayerCompatibility2
Low Layer compatibility IE contained in access transport (note 4)	LowLayerCompatibility
Low Layer compatibility IE contained in access transport (note 4)	LowLayerCompatibility2
Generic number "additional calling party number"	AdditionalCallingPartyNumber
User service information prime (1st priority) User service information (2nd priority) (Note 3)	BearerCapability
User service information (Note 3)	BearerCapability2
Redirecting number	RedirectingPartyID
Redirection information	RedirectionInformation
Call diversion treatment indicators	ServiceInteractionIndicatorsTwo.Call diversion treatment indicators
Conference treatment indicators	ServiceInteractionIndicatorsTwo.Conference treatment indicators

NOTE 1: Optional parameters may be absent, i.e. they are only mapped only if these parameters are available at the DP.

NOTE 2: If two high layer compatibility information elements are contained in the access transport parameter, then the second information element, carrying the preferred HLC, is mapped to the CAP highLayerCompatibility parameter~~,~~ and the first information element, carrying the less preferred HLC, is mapped to the CAP highLayerCompatibility2 parameter.

NOTE 3: If User service information prime and User service information are present, then one of the following two mapping rules shall be applied. The principles for the choice of mapping rule are specified in 3GPP TS 23.078 [7].

- One of User service information prime or User service information is mapped to Bearer Capability.
- User service information prime is mapped to BearerCapability and User service information is mapped to Bearer Capability2.

NOTE 4: If two low layer compatibility information elements are contained in the access transport parameter, then the first information element, carrying the preferred LLC, is mapped to the CAP lowLayerCompatibility parameter, and the second information element, carrying the less preferred LLC, is mapped to the CAP lowLayerCompatibility2 parameter.

****** End of Modified Section ******

3GPP TSG CN WG2 Meeting #32 **N2-040169**
Atlanta, USA, 16th – 21st February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.078** **CR** **356** ⌘ **rev** **1** ⌘ Current version: **6.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface
Source:	⌘	NTT DoCoMo, NEC
Work item code:	⌘	CAMEL4
Date:	⌘	17/02/2004
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	In the current specification the gsmSSF does not send the LLC in the initialDP to the gsmSCF, therefore the gsmSCF may not be able to deduce the bearer service precisely (e.g. in the case of interworking through internatinal carriers).This problem has been raised in GSM-A regarding videotelephony call issue. This problem also occurs in other data services. The gsmSCF determines the bearer service from the Bearer Capability (BC) in the initialDP which is mapped from USI in IAM. But when the USI is not transferred transparently through the national or international carrier, the gsmSCF may not be able to determine the bearer service from the BC. To overcome this problem, there is a need to specify the LLC parameters (one is LLC and another is LLC2 for a SCUDIF call) in the initialDP. It needs to be added the High Layer Compatibility2 IE in line with definition of the LLC.
Summary of change:	⌘	-Add lowLayerCompatibility, lowLayerCompatibility2 and highLayerCompatibility2 in the InitialDPArgExtension -Add lowLayerCompatibility, lowLayerCompatibility2 and highLayerCompatibility2 descriptions to InitialDP procedure's parameter description -Add the mapping rule from AT in ISUP_IAM to lowLayerCompatibility, lowLayerCompatibility2 and highLayerCompatibility2 in CAP_initialDP in table A.1.
Consequences if	⌘	A gsmSCF may not be able to deduce the bearer service in the case of

not approved:	interworking through some national or international carriers. As a result, on line charging for the video telephony call. As a further result, the call may fail because the gsmSCF applies warning tones or announcements.

Clauses affected:	⌘	2, 5.1, 5.5, 6.1.1, 11.20.1, A1			
Other specs affected:	⌘	**Y** / **N**		⌘	TS23.078 CR693
		X /	Other core specifications		
		/ **X**	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘	GSM-A IREG requests to standarize the solution of video telephony issue from the earliest CAMEL phase possible.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

****** For Information ******

Extracts from 3GPP TS 24.008 V5.10.0

10.5.4.18 Low layer compatibility

The purpose of the low layer compatibility information element is to provide a means which should be used for compatibility checking by an addressed entity (e.g., a remote user or an interworking unit or a high layer function network node addressed by the calling user). The low layer compatibility information element is transferred transparently by a PLMN between the call originating entity (e.g. the calling user) and the addressed entity.

Except for the information element identifier, the low layer compatibility information element is coded as in ITU recommendation Q.931.

For backward compatibility reasons coding of the modem type field according to ETS 300 102-1 (12-90) shall also be supported.

The low layer compatibility is a type 4 information element with a minimum length of 2 octets and a maximum length of 18 octets.

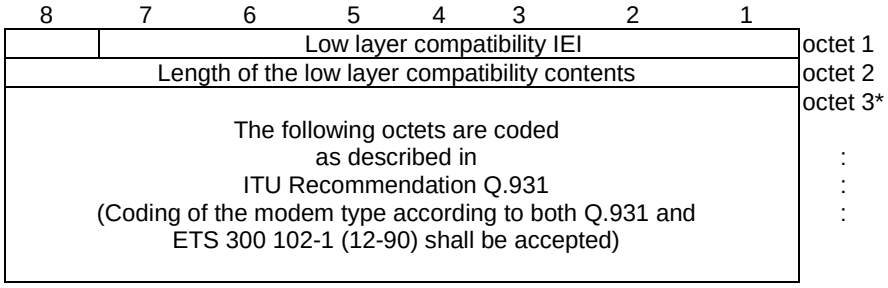

Figure 10.5.104/3GPP TS 24.008 Low layer compatibility information element

If the value part of the IE is empty, the IE indicates "not applicable".

****** For Information ******

Extracts from ITU-T Q.931 199805

4.5.19 Low layer compatibility

The purpose of the Low layer compatibility information element is to provide a means which should be used for capability checking by an addressed entity (e.g. a remote user or an interworking unit or a high layer function network node addressed by the calling user). The Low layer compatibility information element is transferred transparently by an ISDN between the call originating entity (e.g. the calling user) and the addressed entity. See Annexes B and I.

If low layer compatibility negotiation is allowed by the network (see Annex J), the Low layer compatibility information element is also passed transparently from the addressed entity to originating entity.

The Low layer compatibility information element is coded as shown in Figure 4-25 and Table 4-16. The maximum length of this information element is 18 octets.

NOTE – Some networks conforming to Recommendation Q.931 (1988) may support a maximum information element length of only 16 octets.

8	7	6	5	4	3	2	1	Octet
	Low layer compatibility information element identifier							
0	1	1	1	1	1	0	0	1
Length of the low layer compatibility contents								2
ext. 0/1	Coding standard		Information transfer capability					3
ext. 1	Negot. indic.	0	0	0	0	0	0	3a*
ext. 1	Transfer mode		Information transfer rate					4
ext. 1	Rate multiplier							4.1* (Note 1)
ext. 0/1	Layer 1 ident. 0	1	User information layer 1 protocol					5*
ext. 0/1	Synch./ asynch.	Negot.	User rate					5a* (Note 2)
ext. 0/ 1	Intermediate rate		NIC on Tx	NIC on Rx	Flow control on Tx	Flow control on Rx	Spare 0	5b* (Note 3)
ext. 0/1	Hdr/no Hdr	Multifra me	Mode	Negot. LLI	Assignor/ Assignor ee	In-band negot.	Spare 0	5b* (Note 4)
ext. 0/1	Number of stop bits		Number of data bits		Parity			5c* (Note 2)
ext. 1	Duplex mode	Modem type						5d* (Note 2)
ext. 0/1	layer 2 ident. 1	0	User information layer 2 protocol					6*
ext. 0/1	Mode		Spare 0	0	0	Q.933 use		6a* (Note 5)
ext. 1	User specified layer 2 protocol information							6a* (Note 6)
ext. 1	Window size (k)							6b* (Note 5)
ext. 0/1	layer 3 ident. 1	1	User information layer 3 protocol					7
ext. 1	Optional layer 3 protocol information							7a* (Note 8)
ext. 0/1	Mode		Spare 0	0	0	0	0	7a* (Note 7)
ext. 0/1	Spare 0	0	0	Default packet size				7b* (Note 7)
ext. 1	Packet window size							7c* (Note 7)
ext. 0	Spare 0	0	0	Additional layer 3 protocol information (most significant bits)				7a* (Note 9)
ext. 1	Spare 0	0	0	Additional layer 3 protocol information (least significant bits)				7b* (Note 9)

Figure 4-25/Q.931 – Low layer compatibility information element

****** First Modified Section ********

5 Common CAP Types

5.1 Data types

```
LocationNumber {PARAMETERS-BOUND : bound} ::= OCTET STRING (SIZE (
    bound.&minLocationNumberLength .. bound.&maxLocationNumberLength))
-- Indicates the Location Number for the calling party.
-- Refer to ETSI EN 300 356-1 [23] for encoding.

LowLayerCompatibility {PARAMETERS-BOUND : bound} ::= OCTET STRING (SIZE (
    bound.&minLowLayerCompatibilityLength .. bound.&maxLowLayerCompatibilityLength))
-- indicates the LowLayerCompatibility for the calling party.
-- Refer to 3GPP TS 24.008 [9] for encoding.
-- It shall be coded as in the value part defined in 3GPP TS 24.008.
-- i.e. the 3GPP TS 24.008 IEI and 3GPP TS 24.008 octet length indicator
-- shall not be included.

MessageID {PARAMETERS-BOUND : bound} ::= CHOICE {
    elementaryMessageID                 [0] Integer4,
    text                                [1] SEQUENCE {
        messageContent                      [0] IA5String (SIZE(
            bound.&minMessageContentLength .. bound.&maxMessageContentLength)),
        attributes                          [1] OCTET STRING (SIZE(
            bound.&minAttributesLength .. bound.&maxAttributesLength))           OPTIONAL
    },
    elementaryMessageIDs                [29] SEQUENCE SIZE (1.. bound.&numOfMessageIDs) OF Integer4,
    variableMessage                     [30] SEQUENCE {
        elementaryMessageID                 [0] Integer4,
        variableParts                       [1] SEQUENCE SIZE (1..5) OF VariablePart {bound}
        }
    }
-- Use of the text parameter is network operator/equipment vendor specific.
```

****** Next Modified Section ******

5.5 Classes

```
PARAMETERS-BOUND ::= CLASS {
    &minAccessPointNameLength                   INTEGER,
    &maxAccessPointNameLength                   INTEGER,
    &minAChBillingChargingLength                INTEGER,
    &maxAChBillingChargingLength                INTEGER,
    &minAttributesLength                        INTEGER,
    &maxAttributesLength                        INTEGER,
    &maxBearerCapabilityLength                  INTEGER,
    &minCalledPartyBCDNumberLength              INTEGER,
    &maxCalledPartyBCDNumberLength              INTEGER,
    &minCalledPartyNumberLength                 INTEGER,
    &maxCalledPartyNumberLength                 INTEGER,
    &minCallingPartyNumberLength                INTEGER,
    &maxCallingPartyNumberLength                INTEGER,
    &minCallResultLength                        INTEGER,
    &maxCallResultLength                        INTEGER,
    &minCarrierLength                           INTEGER,
    &maxCarrierLength                           INTEGER,
    &minCauseLength                             INTEGER,
    &maxCauseLength                             INTEGER,
    &minDigitsLength                            INTEGER,
    &maxDigitsLength                            INTEGER,
    &minFCIBillingChargingDataLength            INTEGER,
```

```
    &maxFCIBillingChargingDataLength          INTEGER,
    &minFCIBillingChargingLength              INTEGER,
    &maxFCIBillingChargingLength              INTEGER,
    &minGenericNumberLength                   INTEGER,
    &maxGenericNumberLength                   INTEGER,
    &minGPRSCauseLength                       INTEGER,
    &maxGPRSCauseLength                       INTEGER,
    &minIPSSPCapabilitiesLength               INTEGER,
    &maxIPSSPCapabilitiesLength               INTEGER,
    &minLocationNumberLength                  INTEGER,
    &maxLocationNumberLength                  INTEGER,
    &minLowLayerCompatibilityLength           INTEGER,
    &maxLowLayerCompatibilityLength           INTEGER,
    &minMessageContentLength                  INTEGER,
    &maxMessageContentLength                  INTEGER,
    &minOriginalCalledPartyIDLength           INTEGER,
    &maxOriginalCalledPartyIDLength           INTEGER,
    &minPDPAddressLength                      INTEGER,
    &maxPDPAddressLength                      INTEGER,
    &minRedirectingPartyIDLength              INTEGER,
    &maxRedirectingPartyIDLength              INTEGER,
    &minScfIDLength                           INTEGER,
    &maxScfIDLength                           INTEGER,
    &minSCIBillingChargingLength              INTEGER,
    &maxSCIBillingChargingLength              INTEGER,
    &minTimeAndTimezoneLength                 INTEGER,
    &maxTimeAndTimezoneLength                 INTEGER,
    &numOfBCSMEvents                          INTEGER,
    &numOfCSs                                 INTEGER,
    &numOfSMSEvents                           INTEGER,
    &numOfGPRSEvents                          INTEGER,
    &numOfExtensions                          INTEGER,
    &numOfGenericNumbers                      INTEGER,
    &numOfMessageIDs                          INTEGER}

WITH SYNTAX {
    MINIMUM-FOR-ACCESS-POINT-NAME             &minAccessPointNameLength
    MAXIMUM-FOR-ACCESS-POINT-NAME             &maxAccessPointNameLength
    MINIMUM-FOR-ACH-BILLING-CHARGING          &minAChBillingChargingLength
    MAXIMUM-FOR-ACH-BILLING-CHARGING          &maxAChBillingChargingLength
    MINIMUM-FOR-ATTRIBUTES                    &minAttributesLength
    MAXIMUM-FOR-ATTRIBUTES                    &maxAttributesLength
    MAXIMUM-FOR-BEARER-CAPABILITY             &maxBearerCapabilityLength
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER       &minCalledPartyBCDNumberLength
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER       &maxCalledPartyBCDNumberLength
    MINIMUM-FOR-CALLED-PARTY-NUMBER           &minCalledPartyNumberLength
    MAXIMUM-FOR-CALLED-PARTY-NUMBER           &maxCalledPartyNumberLength
    MINIMUM-FOR-CALLING-PARTY-NUMBER          &minCallingPartyNumberLength
    MAXIMUM-FOR-CALLING-PARTY-NUMBER          &maxCallingPartyNumberLength
    MINIMUM-FOR-CALL-RESULT                   &minCallResultLength
    MAXIMUM-FOR-CALL-RESULT                   &maxCallResultLength
    MINIMUM-FOR-CARRIER                       &minCarrierLength
    MAXIMUM-FOR-CARRIER                       &maxCarrierLength
    MINIMUM-FOR-CAUSE                         &minCauseLength
    MAXIMUM-FOR-CAUSE                         &maxCauseLength
    MINIMUM-FOR-DIGITS                        &minDigitsLength
    MAXIMUM-FOR-DIGITS                        &maxDigitsLength
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA     &minFCIBillingChargingDataLength
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA     &maxFCIBillingChargingDataLength
    MINIMUM-FOR-FCI-BILLING-CHARGING          &minFCIBillingChargingLength
    MAXIMUM-FOR-FCI-BILLING-CHARGING          &maxFCIBillingChargingLength
    MINIMUM-FOR-GENERIC-NUMBER                &minGenericNumberLength
    MAXIMUM-FOR-GENERIC-NUMBER                &maxGenericNumberLength
    MINIMUM-FOR-GPRS-CAUSE-LENGTH             &minGPRSCauseLength
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH             &maxGPRSCauseLength
    MINIMUM-FOR-IP-SSP-CAPABILITIES           &minIPSSPCapabilitiesLength
    MAXIMUM-FOR-IP-SSP-CAPABILITIES           &maxIPSSPCapabilitiesLength
    MINIMUM-FOR-LOCATION-NUMBER               &minLocationNumberLength
    MAXIMUM-FOR-LOCATION-NUMBER               &maxLocationNumberLength
    MINIMUM-FOR-LOW-LAYER-COMPATIBILITY       &minLowLayerCompatibilityLength
    MAXIMUM-FOR-LOW-LAYER-COMPATIBILITY       &maxLowLayerCompatibilityLength
    MINIMUM-FOR-MESSAGE-CONTENT               &minMessageContentLength
    MAXIMUM-FOR-MESSAGE-CONTENT               &maxMessageContentLength
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID      &minOriginalCalledPartyIDLength
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID      &maxOriginalCalledPartyIDLength
    MINIMUM-FOR-PDP-ADDRESS-LENGTH            &minPDPAddressLength
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH            &maxPDPAddressLength
    MINIMUM-FOR-REDIRECTING-ID                &minRedirectingPartyIDLength
```

```
    MAXIMUM-FOR-REDIRECTING-ID                  &maxRedirectingPartyIDLength
    MINIMUM-FOR-GSMSCF-ID                       &minScfIDLength
    MAXIMUM-FOR-GSMSCF-ID                       &maxScfIDLength
    MINIMUM-FOR-SCI-BILLING-CHARGING            &minSCIBillingChargingLength
    MAXIMUM-FOR-SCI-BILLING-CHARGING            &maxSCIBillingChargingLength
    MINIMUM-FOR-TIME-AND-TIMEZONE               &minTimeAndTimezoneLength
    MAXIMUM-FOR-TIME-AND-TIMEZONE               &maxTimeAndTimezoneLength
    NUM-OF-BCSM-EVENT                           &numOfBCSMEvents
    NUM-OF-CSS                                  &numOfCSs
    NUM-OF-SMS-EVENTS                           &numOfSMSEvents
    NUM-OF-GPRS-EVENTS                          &numOfGPRSEvents
    NUM-OF-EXTENSIONS                           &numOfExtensions
    NUM-OF-GENERIC-NUMBERS                      &numOfGenericNumbers
    NUM-OF-MESSAGE-IDS                          &numOfMessageIDs}

cAPSpecificBoundSet PARAMETERS-BOUND ::= {
    MINIMUM-FOR-ACCESS-POINT-NAME               1
    MAXIMUM-FOR-ACCESS-POINT-NAME               100
    MINIMUM-FOR-ACH-BILLING-CHARGING            5
    MAXIMUM-FOR-ACH-BILLING-CHARGING            177
    MINIMUM-FOR-ATTRIBUTES                      2
    MAXIMUM-FOR-ATTRIBUTES                      10
    MAXIMUM-FOR-BEARER-CAPABILITY               11
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER         1
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER         41
    MINIMUM-FOR-CALLED-PARTY-NUMBER             2
    MAXIMUM-FOR-CALLED-PARTY-NUMBER             18
    MINIMUM-FOR-CALLING-PARTY-NUMBER            2
    MAXIMUM-FOR-CALLING-PARTY-NUMBER            10
    MINIMUM-FOR-CALL-RESULT                     12
    MAXIMUM-FOR-CALL-RESULT                     193
    MINIMUM-FOR-CARRIER                         4
    MAXIMUM-FOR-CARRIER                         4
    MINIMUM-FOR-CAUSE                           2
    MAXIMUM-FOR-CAUSE                           32
    MINIMUM-FOR-DIGITS                          2
    MAXIMUM-FOR-DIGITS                          16
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA       1
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA       160
    MINIMUM-FOR-FCI-BILLING-CHARGING            5
    MAXIMUM-FOR-FCI-BILLING-CHARGING            225
    MINIMUM-FOR-GENERIC-NUMBER                  3
    MAXIMUM-FOR-GENERIC-NUMBER                  11
    MINIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MINIMUM-FOR-IP-SSP-CAPABILITIES             1
    MAXIMUM-FOR-IP-SSP-CAPABILITIES             4
    MINIMUM-FOR-LOCATION-NUMBER                 2
    MAXIMUM-FOR-LOCATION-NUMBER                 10
    MINIMUM-FOR-LOW-LAYER-COMPATIBILITY         1
    MAXIMUM-FOR-LOW-LAYER-COMPATIBILITY         16
    MINIMUM-FOR-MESSAGE-CONTENT                 1
    MAXIMUM-FOR-MESSAGE-CONTENT                 127
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        2
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        10
    MINIMUM-FOR-PDP-ADDRESS-LENGTH              1
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH              63
    MINIMUM-FOR-REDIRECTING-ID                  2
    MAXIMUM-FOR-REDIRECTING-ID                  10
    MINIMUM-FOR-GSMSCF-ID                       2
    MAXIMUM-FOR-GSMSCF-ID                       10
    MINIMUM-FOR-SCI-BILLING-CHARGING            4
    MAXIMUM-FOR-SCI-BILLING-CHARGING            225
    MINIMUM-FOR-TIME-AND-TIMEZONE               8
    MAXIMUM-FOR-TIME-AND-TIMEZONE               8
    NUM-OF-BCSM-EVENT                           30
    NUM-OF-CSS                                  127
    NUM-OF-SMS-EVENTS                           10
    NUM-OF-GPRS-EVENTS                          10
    NUM-OF-EXTENSIONS                           10
    NUM-OF-GENERIC-NUMBERS                      5
    NUM-OF-MESSAGE-IDS                          16}

END
```

****** Next Modified Section ******

6 Circuit Switched Call Control

6.1 gsmSSF/CCF - gsmSCF Interface

6.1.1 Operations and arguments

```
    AChBillingChargingCharacteristics {},
    AdditionalCallingPartyNumber {},
    AlertingPattern,
    AChChargingAddress {},
    AssistingSSPIPRoutingAddress {},
    BCSMEvent {},
    BCSM-Failure,
    BearerCapability {},
    Burst,
    CalledPartyNumber {},
    CalledPartyBCDNumber {},
    CallingPartyNumber {},
    CallResult {},
    CallSegmentID {},
    CallSegmentToCancel {},
    CallSegmentFailure {},
    Carrier,
    Cause {},
    CGEncountered,
    ChargeNumber {},
    ControlType,
    CorrelationID {},
    DestinationRoutingAddress {},
    EventSpecificInformationBCSM {},
    EventTypeBCSM,
    Extensions {},
    FCIBillingChargingCharacteristics {},
    GapCriteria {},
    GapIndicators,
    GapTreatment,
    GenericNumbers {},
    InvokeID,
    IPRoutingAddress {},
    IPSSPCapabilities {},
    leg1,
    leg2,
    LegOrCallSegment {},
    LocationNumber {},
    LowLayerCompatibility {},
    MonitorMode,
    NAOliInfo,
    OCSIApplicable,
    OriginalCalledPartyID {},
    ReceivingSideID,
    RedirectingPartyID {},
    RequestedInformationList {},
    RequestedInformationTypeList,
    ScfID {},
    SCIBillingChargingCharacteristics {},
    SendingSideID,
    ServiceInteractionIndicatorsTwo,
    TimeAndTimezone {},
    TimerID,
    TimerValue
FROM CAP-datatypes datatypes
```

```
InitialDPArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    serviceKey                          [0] ServiceKey  ,
    calledPartyNumber                   [2] CalledPartyNumber {bound}               OPTIONAL,
    callingPartyNumber                  [3] CallingPartyNumber {bound}              OPTIONAL,
    callingPartysCategory               [5] CallingPartysCategory                   OPTIONAL,
    cGEncountered                       [7] CGEncountered                           OPTIONAL,
    iPSSPCapabilities                   [8] IPSSPCapabilities {bound}               OPTIONAL,
    locationNumber                      [10] LocationNumber {bound}                 OPTIONAL,
    originalCalledPartyID               [12] OriginalCalledPartyID {bound}          OPTIONAL,
    extensions                          [15] Extensions {bound}                     OPTIONAL,
    highLayerCompatibility              [23] HighLayerCompatibility                 OPTIONAL,
    additionalCallingPartyNumber        [25] AdditionalCallingPartyNumber {bound}   OPTIONAL,
    bearerCapability                    [27] BearerCapability {bound}               OPTIONAL,
    eventTypeBCSM                       [28] EventTypeBCSM                          OPTIONAL,
    redirectingPartyID                  [29] RedirectingPartyID {bound}             OPTIONAL,
    redirectionInformation              [30] RedirectionInformation                 OPTIONAL,
    cause                               [17] Cause {bound}                          OPTIONAL,
    serviceInteractionIndicatorsTwo     [32] ServiceInteractionIndicatorsTwo        OPTIONAL,
    carrier                             [37] Carrier {bound}                        OPTIONAL,
    cug-Index                           [45] CUG-Index                              OPTIONAL,
    cug-Interlock                       [46] CUG-Interlock                          OPTIONAL,
    cug-OutgoingAccess                  [47] NULL                                   OPTIONAL,
    iMSI                                [50] IMSI                                   OPTIONAL,
    subscriberState                     [51] SubscriberState                        OPTIONAL,
    locationInformation                 [52] LocationInformation                    OPTIONAL,
    ext-basicServiceCode                [53] Ext-BasicServiceCode                   OPTIONAL,
    callReferenceNumber                 [54] CallReferenceNumber                    OPTIONAL,
    mscAddress                          [55] ISDN-AddressString                     OPTIONAL,
    calledPartyBCDNumber                [56] CalledPartyBCDNumber {bound}           OPTIONAL,
    timeAndTimezone                     [57] TimeAndTimezone {bound}                OPTIONAL,
    callForwardingSS-Pending            [58] NULL                                   OPTIONAL,
    initialDPArgExtension               [59] InitialDPArgExtension {bound}          OPTIONAL,
    ...
    }

InitialDPArgExtension {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    gmscAddress                         [0] ISDN-AddressString                      OPTIONAL,
    forwardingDestinationNumber         [1] CalledPartyNumber {bound}               OPTIONAL,
    ms-Classmark2                       [2] MS-Classmark2                           OPTIONAL,
    iMEI                                [3] IMEI                                    OPTIONAL,
    supportedCamelPhases                [4] SupportedCamelPhases                    OPTIONAL,
    offeredCamel4Functionalities        [5] OfferedCamel4Functionalities            OPTIONAL,
    bearerCapability2                   [6] BearerCapability {bound}                OPTIONAL,
    ext-basicServiceCode2               [7] Ext-BasicServiceCode                    OPTIONAL,
    enhancedDialledServicesAllowed      [8] NULL                                    OPTIONAL,
    highLayerCompatibility2             [9] HighLayerCompatibility                  OPTIONAL,
    lowLayerCompatibility               [10] LowLayerCompatibility {bound}          OPTIONAL,
    lowLayerCompatibility2              [11] LowLayerCompatibility {bound}          OPTIONAL,
    ...
}
-- If iPSSPCapabilities is not present then this denotes that a colocated gsmSRF is not
-- supported by the gsmSSF. If present, then the gsmSSF supports a colocated gsmSRF capable
-- of playing announcements via elementaryMessageIDs and variableMessages, the playing of
-- tones and the collection of DTMF digits. Other supported capabilities are explicitly
-- detailed in the IPSSPCapabilities parameter itself.
-- Carrier is included at the discretion of the gsmSSF operator.
```

****** Next Modified Section ******

11.20 InitialDP procedure

11.20.1 General description

The gsmSSF uses this operation after detection of a TDP-R in the BCSM, to request the gsmSCF for instructions to complete the call.

11.20.1.1 Parameters

- serviceKey:
  This parameter indicates to the gsmSCF the requested IN service. It is used to address the required application/SLP within the gsmSCF; this parameter is not for SCP addressing.

- calledPartyNumber:
  This parameter contains the number used to identify the called party in the forward direction, i.e. see ETSI EN 300 356-1 [23]. This parameter shall be sent only in the Mobile Terminating, Mobile Forwarding and mobile originating on unsuccessful TDP cases.

- callingPartyNumber:
  This parameter carries the calling party number to identify the calling party or the origin of the call. See ETSI EN 300 356-1 [23] Calling Party Number signalling information.

- callingPartysCategory:
  Indicates the type of calling party (e.g. operator, pay phone, ordinary subscriber). See ETSI EN 300 356-1 [23] Calling Party Category signalling information.

- locationNumber:
  This parameter is used to convey the geographical area address for mobility services, see ITU-T Recommendation Q.762 [44]. It is used when "callingPartyNumber" does not contain any information about the geographical location of the calling party (e.g., origin dependent routeing when the calling party is a mobile subscriber).

- originalCalledPartyID:
  If the call has met call forwarding on the route to the gsmSSF, then this parameter carries the dialled digits. Refer to EN 300 356-1[23] Original Called Number signalling information.

- highL~~l~~ayerCompatibility:
  This parameter indicates the type of the high layer compatibility, which will be used to determine the ISDN - teleservice of a connected ISDN terminal. The highlayerCompatibility can also be transported by ISUP (e.g. within the ATP (see ITU-T Recommendation Q.763 [45]) parameter).

- additionalCallingPartyNumber:
  The calling party number provided by the access signalling system of the calling user, e.g. provided by a PBX.

- bearerCapability:
  This parameter indicates the type of the bearer capability connection or the transmission medium requirements to the user. It is a network option to select which of the two parameters to be used:

  - bearerCap:
    This parameter contains the value of the ISUP User Service Information parameter.

    The parameter "bearerCapability" shall be included in the "InitialDP" operation only in the case the ISUP User Service Information parameter is available at the gsmSSF.

    If User Service Information and User Service Information Prime are available at the gsmSSF, then the "bearerCap" shall contain the value of the User Service Information Prime parameter.

- eventTypeBCSM:
  This parameter indicates the armed BCSM DP event, resulting in the "InitialDP" operation.

- redirectingPartyID:
  This parameter indicates the last directory number the call was redirected from.

- redirectionInformation:
  This parameter contains forwarding related information, such as redirecting counter.
  See ITU-T Recommendation Q.763 [45] Redirection Information signalling information.

- iPSSPCapabilities:
  This parameter indicates which gsmSRF resources supported within the VMSC or GMSC the gsmSSF resides in are attached and available.

- serviceInteractionIndicatorsTwo:
  This parameter contains indicators that are used to resolve interactions between CAMEL based services and network based services.

- iMSI:
  This parameter contains the IMSI of the mobile subscriber for which the service is invoked.

- subscriberState:
  This parameter indicates the the state of the mobile subscriber for which the service is invoked. The possible states are "busy", "idle" and "not reachable".

- locationInformation:
  This parameter indicates the location of the MS and the age of the information defining the location.

- ext-BasicServiceCode:
  This parameter indicates the Basic Service Code.

- callReferenceNumber:
  This parameter contains the call reference number assigned to the call by the CCF.

- mscAddress:
  This parameter contains the mscId assigned to the MSC.

- gmscAddress:
  This parameter contains the gmscId assigned to the GMSC.

- calledPartyBCDNumber:
  This parameter contains the number used to identify the called party in the forward direction. It may also include service selection information, including * and # characters.

- time&Timezone:
  This parameter contains the time that the gsmSSF was triggered, and the time zone that the invoking gsmSSF resides in.

- callForwardingSS-Pending:
  This parameter indicates that a forwarded-to-number was received and that the call will be forwarded due to the Call Forwarding supplementary service in the GMSC or in the VMSC, unless otherwise instructed by the gsmSCF.

- carrier:
  This parameter contains carrier information. It consists of the carrier selection field followed by the Carrier ID information associated with the calling subscriber of a mobile originating call, the called subscriber of a mobile terminating call or the forwarding subscriber of a mobile fowarded call.

  It contains the following embedded parameter:

  - carrierSelectionField:
    This parameter indicates how the selected carrier is provided (e.g. pre-subscribed).

  - carrierID:
    This parameter indicates the carrier to use for the call. It contains the digits of the carrier identification code.

- cug-Index:
  This parameter is used to select a CUG for an outgoing call at the user, or to indicate an incoming CUG call to the user.

- cug-Interlock:
  This parameter uniquely identifies a CUG within a network.

- cug-OutgoingAccess:
  This parameter indicates if the calling user has subscribed to the outgoing access inter-CUG accessibility subscription option.

- cGEncountered:
  This parameter indicates the type of call gapping the related call has been subjected to, if any.

- cause:
  This parameter indicates the release cause which triggered the event:

  For Route_Select_Failure" it shall contain the "FailureCause", if available.

  For T_Busy it may contain the following parameters, if available.

  - If the busy event is triggered by an ISUP release message, then the BusyCause shall a copy of the ISUP release cause, for example: Subscriber absent, 20 or User busy, 17.
  - If the busy event is triggered by a MAP error, for example: Absent subscriber, received from the HLR, then the MAP cause is mapped to the corresponding ISUP release cause.
  - If the busy event is triggered by call forwarding invocation in the GMSC or VMSC, then the BusyCause shall refer to the type of the call forwarding service in accordance with the mapping table in 3GPP TS 23.078 [7].

- forwardingDestinationNumber:
  This parameter contains the forwarding destination.

- ms-Classmark2:
  This parameter contains the MS Classmark 2 of the mobile subscriber for which the service is invoked.

- iMEI:
  This parameter contains the IMEI (with software version) of the mobile subscriber for which the service is invoked.

- supportedCamelPhases:
  This parameter indicates the CAMEL Phases supported in the GMSC or VMSC which sends this operation.

- offeredCamel4Functionalities:
  This parameter contains the offered CAMEL phase 4 functionalities.

- bearerCapability2:
  This parameter indicates the type of the bearer capability connection or the transmission medium requirements to the user.

  - ext-BasicServiceCode2:
    This parameter indicates the Basic Service Code2.

- highLayerCompatibility2:
  This parameter indicates the high layer compatibility2 for a SCUDIF call.

- lowLayerCompatibility:
  This parameter indicates the low layer compatibility.

- lowLayerCompatibility2:
  This parameter indicates the low layer compatibility2 for a SCUDIF call.

****** Next Modified Section ******

Annex A (normative): Mapping between CAP and ISUP

A.1 InitialDP operation

Table A.1

ISUP message IAM (Note 1)	CAP Operation InitialDP
Called party number	CalledPartyNumber
Calling party number	CallingPartyNumber
Calling party's category	CallingPartysCategory
Location number	LocationNumber
Original called number	OriginalCalledPartyID
User teleservice information (1st priority) High layer compatibility IE contained in access transport (2nd priority) (Note 2)	HighLayerCompatibility
High layer compatibility IE contained in access transport (Note 2)	HighLayerCompatibility2
Low Layer compatibility IE contained in access transport (note 4)	LowLayerCompatibility
Low Layer compatibility IE contained in access transport (note 4)	LowLayerCompatibility2
Generic number "additional calling party number"	AdditionalCallingPartyNumber
User service information prime (1st priority) User service information (2nd priority) (Note 3)	BearerCapability
User service information (Note 3)	BearerCapability2
Redirecting number	RedirectingPartyID
Redirection information	RedirectionInformation
Call diversion treatment indicators	ServiceInteractionIndicatorsTwo.Call diversion treatment indicators
Conference treatment indicators	ServiceInteractionIndicatorsTwo.Conference treatment indicators

NOTE 1: Optional parameters may be absent, i.e. they are only mapped only if these parameters are available at the DP.

NOTE 2: If two high layer compatibility information elements are contained in the access transport parameter, then the second information element, carrying the preferred HLC, is mapped to the CAP highLayerCompatibility parameter~~,~~ and the first information element, carrying the less preferred HLC, is mapped to the CAP highLayerCompatibility2 parameter.

NOTE 3: If User service information prime and User service information are present, then one of the following two mapping rules shall be applied. The principles for the choice of mapping rule are specified in 3GPP TS 23.078 [7].

- One of User service information prime or User service information is mapped to Bearer Capability.
- User service information prime is mapped to BearerCapability and User service information is mapped to Bearer Capability2.

NOTE 4: If two low layer compatibility information elements are contained in the access transport parameter, then the first information element, carrying the preferred LLC, is mapped to the CAP lowLayerCompatibility parameter, and the second information element, carrying the less preferred LLC, is mapped to the CAP lowLayerCompatibility2 parameter.

****** End of Modified Section ******

3GPP TSG CN WG2 Meeting #32 **N2-040172**
Atlanta, USA, 16th – 21st February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **692** ⌘**rev** **4** ⌘ Current version: **5.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network **X**

Title: ⌘	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface	
Source: ⌘	NTT DoCoMo, NEC	
Work item code: ⌘	CAMEL4	***Date:*** ⌘ 16/02/2004
Category: ⌘	**F** (**Essential Correction**)	***Release:*** ⌘ Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘

In the current specification the gsmSSF does not send the LLC in the initialDP to the gsmSCF, therefore the gsmSCF may not be able to deduce the bearer service precisely (e.g. in the case of interworking through internatinal carriers).This problem has been raised in GSM-A regarding videotelephony call issue. This problem also occurs in other data services.

The gsmSCF determines the bearer service from the Bearer Capability (BC) in the initialDP which is mapped from USI in IAM. But when the USI is not transferred transparently through the national or international carrier, the gsmSCF may not be able to determine the bearer service from the BC.

To overcome this problem, there is a need to specify the LLC parameters (one is LLC and another is LLC2 for a SCUDIF call) in the initialDP.

It needs to be added the High Layer Compatibility2 IE in line with definition of the LLC.

Additionally, it needs to be modified the description related to SCUDIF call in section 4.6.1.8.2, because it might cause misunderstanding.

Summary of change: ⌘

- Add Low Layer Compatibility IE, Low Layer Compatibility2 IE and High Layer Compatibility2 IE in the initialDP.
- Modify the description below IEs;
  Bearer Capability IE, Bearer Capability2 IE, Ext-Basic Service Code IE, Ext- Basic Service2 IE, High Layer Compatibility IE
- Re-organize the table in section 4.6.1.8.2 for a SCUDIF call.

Consequences if not approved:	⌘	A gsmSCF may not be able to deduce the bearer service in the case of interworking through some national or international carriers. As a result, on line charging for the video telephony call. As a further result, the call may fail because the gsmSCF applies warning tones or announcements.

Clauses affected:	⌘	4.6.1.8.2			
Other specs affected:	⌘	**Y** / **N** **X** / ☐ Other core specifications ☐ / **X** Test specifications ☐ / **X** O&M Specifications	⌘	29.078 CR355	
Other comments:	⌘	GSM-A IREG requests to standarize the solution of video telephony issue from the earliest CAMEL phase possible.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

****** First Modified Section ******

4.6.1.8 Initial DP

4.6.1.8.1 Description

This IF is generated by the gsmSSF when a trigger is detected at a DP in the BCSM, to request instructions from the gsmSCF.

4.6.1.8.2 Information Elements

(Note: IEs in the NC columns in this IF may need further study.)

Information element name	MO	MF	MT	VT	NC	NP	Description
Additional Calling Party Number	C	C	C	C	-	C	This IE contains the calling party number provided by the access signalling system of the calling user or received from the gsmSCF due to the previous CAMEL processing.
~~Bearer Capability~~	~~M~~	~~C~~	~~C~~	~~C~~	~~-~~	~~C~~	~~This IE indicates the type of the bearer capability connection to the user. If Bearer Capability 2 is present, then it indicates the preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.~~
Called Party Number	C	M	M	M	-	M	This IE contains the number used to identify the called party in the forward direction. For MO and MF calls this IE is used in the case of TDP Route_Select_Failure (this is the destination number used to route the call) and in the case of TDP Busy and TDP No Reply (this is the MSISDN when the destination number used for the call is an MSRN, or in the case of unsuccessful call establishment received from the HLR via the MAP interface, otherwise it is the number used to route the call). For VT calls when there is no forwarding pending this is the MSISDN received in the Provide Roaming Number; if the MSISDN is not available, the basic MSISDN is used. For the MT and VT call case when there is call forwarding or call deflection pending, this is the MSISDN, i.e. not the forwarded-to or deflected-to number. If the Initial DP IF is sent at TDP Route_Select_Failure or TDP Analysed_Information then the *NatureOfAddress indicator* may contain a national-specific value. For some national-specific *NatureOfAddress indicator* values the length of the digit part of the destination address may be zero.

Information element name	MO	MF	MT	VT	NC	NP	Description
Called Party BCD Number	C	-	-	-	-	-	This IE contains the number used to identify the called party in the forward direction. It is used for an MO call in all cases except in the case of TDP Route_Select_Failure. For the TDP Collected_Information, the number contained in this IE shall be identical to the number received over the access network. It may e.g. include service selection information, such as ∗ and # digits, or carrier selection information dialled by the subscriber. For the TDP Analysed_Information, the number contained in this IE shall be the dialled number received over the network access or received from a gsmSCF in a Connect IF, Service selection information, such as * and # digits may be present (see subclause **Error! Reference source not found.**~~4.2.1.2.2~~); carrier selection information dialled by the subscriber is not present.
Calling Party Number	M	C	C	C	-	C	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Partys Category	M	C	C	C	-	C	This IE indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	-	C	This IE indicates the type of gapping which has been applied to the related call. This IE shall be present only if a call gapping context is applicable to the Initial DP IF.
Call Reference Number	M	M	M	M	-	M	This IE may be used by the gsmSCF for inclusion in a network optional gsmSCF call record. It has to be coupled with the identity of the MSC which allocated it in order to define unambiguously the identity of the call. For MO calls, the call reference number is set by the serving VMSC and included in the MO call record. For MT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For VT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For CF calls, the call reference number is set by the GMSC and included in the CF record in the forwarding MSC.
Cause	C	C	C	C	-	-	This IE indicates the cause specific to the armed BCSM DP event. This IE is applicable to DP Route_Select_Failure and DP T_Busy. The cause may be used by the gsmSCF to decide how to continue the call handling.
Event Type BCSM	M	M	M	M	-	M	This IE indicates the armed BCSM DP event, resulting in the Initial DP IF.
~~Ext-Basic Service Code~~	~~C~~	~~C~~	~~C~~	~~C~~	~~-~~	~~C~~	~~This IE indicates the type of basic service, i.e. teleservice or bearer service. If Bearer Capability 2 is present, then it indicates the basic service which corresponds to the preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.~~

Information element name	MO	MF	MT	VT	NC	NP	Description
~~High Layer Compatibility~~	~~C~~	~~C~~	~~C~~	~~C~~	~~-~~	~~C~~	~~This IE indicates the type of the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal.For a SCUDIF call this IE indicates the high layer compatibility of the preferred service.~~
IMSI	M	M	M	M	-	S	This IE identifies the mobile subscriber. For the NP case, the IMSI is mandatory if the new party is initiated in an MO, MF, MT, or VT call, otherwise it shall be absent.
IP SSP Capabilities	C	C	C	C	-	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, it indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	-	-	This IE is described in a table below.
Location Number	M	C	C	C	-	-	For mobile originated calls this IE represents the location of the calling party. For all other call scenarios this IE contains the location number received in the incoming ISUP signalling.
MSC Address	M	M	M	M	-	M	For MO calls, the MSC Address carries the international E.164 address of the serving VMSC. For MT calls, the MSC Address carries the international E.164 address of the GMSC. For VT calls, the MSC Address carries the international E.164 address of the serving VMSC. For MF calls, the MSC Address carries the international E.164 address of the forwarding MSC. For the NP case, the MSC address carries the international E.164 address of the serving VMSC (the NP case in the GMSC will not cause an Initial DP IF).
GMSC Address	-	M	-	M	-	S	For CF calls, the GMSC Address carries the international E.164 address of the GMSC. For VT calls, the GMSC Address carries the international E.164 address of the GMSC. For NP case, the GMSC Address is mandatory if the new party is initiated in an MF call or in a VT call, otherwise it shall be absent. The GMSC Address carries the international E.164 address of the GMSC.
Carrier	S	S	S	S	-	S	This IE is described in a table below. This IE may be present when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall identify any carrier that was explicitly selected by the calling subscriber. If no carrier was explicitly selected, this IE shall contain the calling subscriber's subscribed carrier. For MT and VT calls, the IE shall contain the carrier subscribed to by the called subscriber. For MF calls, the IE shall contain the carrier subscribed to by the forwarding subscriber.
Original Called Party ID	C	C	C	C	-	-	This IE carries the dialled digits if the call has met call forwarding on the route to the gsmSSF. This IE shall also be sent if it was received from the gsmSCF due to previous CAMEL processing.
Redirecting Party ID	C	C	C	C	-	-	This IE indicates the directory number the call was redirected from. This IE shall also be sent if it was received from the gsmSCF due to previous CAMEL processing.

Information element name	MO	MF	MT	VT	NC	NP	Description
Redirection Information	C	C	C	C	-	-	This IE contains forwarding related information, such as the redirection counter.
Service Key	M	M	M	M	-	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application within the gsmSCF.
Subscriber State	-	-	C	C	-	-	This IE indicates the status of the MS. The states are: - CAMEL Busy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - Network Determined Not Reachable: The network can determine from its internal data that the MS is not reachable. - Assumed Idle: The state of the MS is neither "CAMEL Busy" nor "Network Determined Not Reachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	-	M	This IE contains the time that the gsmSSF was triggered, and the time zone in which gsmSSF resides.
Call Forwarding SS Pending	-	-	C	C	-	-	If the Initial DP IF is sent from the GMSC, then this IE shall be present in the following cases: - The GMSC has received an FTN in the 1st Send Routeing Info ack IF from the HLR. - The GMSC has received an FTN in the 2nd Send Routeing Info ack IF from the HLR and no relationship with the gsmSCF exists at that moment. - The GMSC has received the Resume Call Handling IF from the VMSC and no relationship with the gsmSCF exists at that moment. If the Initial DP IF is sent from the VMSC, then this IE shall be present in the following cases: - Conditional call forwarding is invoked and no relationship with the gsmSCF exists at that moment. - Call Deflection is invoked and no relationship with the gsmSCF exists at that moment.
Forwarding Destination Number	-	-	C	C	-	-	This IE contains the Forwarded-to-Number or the Deflected-to-Number. It shall be present if the Call Forwarding SS Pending IE is present, otherwise it shall be absent.
Service Interaction Indicators Two	C	C	C	C	-	C	The IE is described in a table below. This IE is present if it is received in the ISUP message or due to previous CAMEL processing.
CUG Index	C	-	-	-	-	C	See 3GPP TS 23.085 [**Error! Reference source not found.**~~22~~] for details of this IE.
CUG Interlock Code	C	C	C	C	-	C	This IE shall be set according to 3GPP TS 23.085 [**Error! Reference source not found.**~~22~~] unless modified by the gsmSCF via the Connect or Continue With Argument IFs.
Outgoing Access Indicator	C	C	C	C	-	C	This IE shall be set according to the 3GPP TS 23.085 [**Error! Reference source not found.**~~22~~] unless modified by the gsmSCF via the Connect or Continue With Argument IFs.
MS Classmark 2	C	-	-	-	-	-	This IE contains the MS classmark 2, which is sent by the MS when it requests access to setup the MO call or responds to paging in the CS domain.

Information element name	MO	MF	MT	VT	NC	NP	Description
IMEI (with software version)	C	-	-	-	-	-	This IE contains the IMEISV (as defined in 3GPP TS 23.003 [**Error! Reference source not found.**~~7~~]) of the ME in use by the served subscriber.
Supported CAMEL Phases	M	M	M	M	M	M	This IE indicates the CAMEL Phases supported by the GMSC or the VMSC.
Offered CAMEL4 Functionalities	M	M	M	M	M	M	This IE is described in a table below. This IE indicates the CAMEL phase 4 functionalities offered by the GMSC or the VMSC.
Bearer Capability	M	C	C	C	-	C	This IE indicates the bearer capability connection to the user. For a SCUDIF call (as defined in 3GPP TS 23.172 [**Error! Reference source not found.**~~27~~]) this IE indicates the Bearer Capability of the preferred service.
Bearer Capability 2	C	C	C	C	-	-	This IE indicates ~~the type of~~ the bearer capability of the less preferred service for a SCUDIF call. ~~connection to the user. If Bearer Capability 2 is present, then it indicates the less preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.~~
Ext-Basic Service Code	C	C	C	C	-	C	This IE indicates the basic service, i.e. teleservice or bearer service. For a SCUDIF call this IE indicates the basic service of the preferred service.
Ext-Basic Service Code 2	C	C	C	C	-	-	This IE indicates ~~the type of~~ the basic service of the less preferred service for a SCUDIF call. ~~, i.e. teleservice or bearer service. If bearer Capability 2 is present, then it indicates the basic service which corresponds to the less preferred bearer capability for a SCUDIF call.~~
High Layer Compatibility	C	C	C	C	-	C	This IE indicates the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal. For a SCUDIF call this IE indicates the high layer compatibility of the preferred service.
High Layer Compatibility 2	C	C	C	C	-	C	This IE indicates the high layer compatibility of the less preferred service for a SCUDIF call.
Low Layer Compatibility	C	C	C	C	-	C	This IE indicates the low layer compatibility, which will be used to determine the ISDN bearer capability of a connected ISDN terminal. For a SCUDIF call this IE indicates the Low Layer Compatibility of the preferred service.
Low Layer Compatibility 2	C	C	C	C	-	C	This IE indicates the low layer compatibility of the less preferred service for a SCUDIF call.

Offered CAMEL4 Functionalities contains the following information elements:

Information element name	Status	Description
Initiate Call Attempt	S	This IE indicates that the gsmSCF may send to the gsmSSF the Initiate Call Attempt IF.
Split Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Split Leg IF.
Move Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Move Leg IF.
Disconnect Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Disconnect Leg IF.
Entity Released	S	This IE indicates that the gsmSSF will send to the gsmSCF the Entity Released IF, when appropriate.
DFC With Argument	S	This IE indicates that the gsmSCF may send to the gsmSSF the Disconnect Forward Connection With Argument IF.

Information element name	Status	Description
Play Tone	S	This IE indicates that the gsmSCF may send to the gsmSSF the Play Tone IF.
DTMF Mid Call	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_MidCall or T_MidCall DP. The gsmSCF may instruct the gsmSSF to automatically re-arm the DP, when encountered.
Charging Indicator	S	This IE indicates that the Charge Indicator IE may be present in the Event Report BCSM IF reporting the O_Answer or T_Answer DP.
Alerting DP	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_Term_Seized or Call_Accepted DP.
Location At Alerting	S	This IE indicates that the Location Information IE shall be present (if available) in the Event Report BCSM IF reporting the O_Term_Seized or Call_Accepted DP.
Change Of Position DP	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_Change_Of_Position or T_Change_Of_Position DPs. The gsmSCF may instruct the gsmSSF to automatically re-arm the DP, when encountered.
OR Interactions	S	This IE indicates that the gsmSCF may send to the gsmSSF the Basic OR Interrogation Requested IE in the Connect or Continue With Argument IF. This IE indicates that the Route Not Permitted IE may be present in the Event Report BCSM IF reporting the O_Abandon DP.
Warning Tone Enhancements	S	This IE indicates that the gsmSCF may send to the gsmSSF the Burstlist IE (within the Audible Indicator IE) in an Apply Charging IF.
CF Enhancements	S	This IE indicates that the Forwarding Destination Number IE may be present in the Event Report BCSM IF reporting the T_Busy or T_No_Answer DP.

Location Information is defined in 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~]. The following differences apply:

Information element name	MO	MF	MT	VT	NC	NP	Description
Location Number	-	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Service area ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Cell ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Geographical information	C	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Geodetic information	C	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
VLR number	M	-	C	M	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Age Of location information	M	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Current Location Retrieved	-	-	-	-	-	-	Not applicable
Location area ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.003 [**Error! Reference source not found.**~~7~~].
Selected LSA Identity	S	-	S	S	-	-	This IE indicates the LSA identity associated with the current position of the MS. It shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be present. See 3GPP TS 23.073 [**Error! Reference source not found.**~~18~~]. This IE shall be present if available and SoLSA is supported, otherwise it shall be absent.

Carrier contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Carrier Identification Code	M	M	M	M	-	M	This IE uniquely identifies a North American long distance carrier.
Carrier Selection Information	M	M	M	M	-	M	This IE indicates the way the carrier was selected, i.e.: - dialled - subscribed

Service Interaction Indicators Two contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Forward Service Interaction Indicator	C	C	C	C	-	C	This IE is described in a table below.
HOLD Treatment Indicator	C	-	-	C	-	C	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	C	-	-	C	-	C	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	C	-	-	C	-	C	This IE indicates whether the call leg can become part of an ECT call initiated by the CAMEL subscriber.

Forward Service Interaction Indicator contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Conference Treatment Indicator	C	C	C	C	-	C	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	C	C	C	C	-	C	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection supplementary services.

****** End of Modified Section ******

3GPP TSG CN WG2 Meeting #32 **N2-040173**
Atlanta, USA, 16th – 21st February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **693** ⌘ **rev** **1** ⌘ Current version: **6.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Adding the Layer Compatibility information elements over the gsmSSF – gsmSCF interface
Source:	⌘	NTT DoCoMo, NEC
Work item code:	⌘	CAMEL4
Date:	⌘	16/02/2004
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

In the current specification the gsmSSF does not send the LLC in the initialDP to the gsmSCF, therefore the gsmSCF may not be able to deduce the bearer service precisely (e.g. in the case of interworking through internatinal carriers).This problem has been raised in GSM-A regarding videotelephony call issue. This problem also occurs in other data services.

The gsmSCF determines the bearer service from the Bearer Capability (BC) in the initialDP which is mapped from USI in IAM. But when the USI is not transferred transparently through the national or international carrier, the gsmSCF may not be able to determine the bearer service from the BC.

To overcome this problem, there is a need to specify the LLC parameters (one is LLC and another is LLC2 for a SCUDIF call) in the initialDP.

It needs to be added the High Layer Compatibility2 IE in line with definition of the LLC.

Additionally, it needs to be modified the description related to SCUDIF call in section 4.6.1.8.2, because it might cause misunderstanding.

Summary of change: ⌘

- Add Low Layer Compatibility IE, Low Layer Compatibility2 IE and High Layer Compatibility2 IE in the initialDP.
- Modify the description below IEs;
  Bearer Capability IE, Bearer Capability2 IE, Ext-Basic Service Code IE, Ext- Basic Service2 IE, High Layer Compatibility IE
- Re-organize the table in section 4.6.1.8.2 for a SCUDIF call.

Consequences if not approved:	⌘	A gsmSCF may not be able to deduce the bearer service in the case of interworking through some national or international carriers. As a result, on line charging for the video telephony call. As a further result, the call may fail because the gsmSCF applies warning tones or announcements.

Clauses affected:	⌘	4.6.1.8.2			
Other specs affected:	⌘	**Y** / **N** **X** / ☐ Other core specifications ☐ / **X** Test specifications ☐ / **X** O&M Specifications	⌘	29.078 CR 356	
Other comments:	⌘	GSM-A IREG requests to standarize the solution of video telephony issue from the earliest CAMEL phase possible.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

****** First Modified Section ******

4.6.1.8 Initial DP

4.6.1.8.1 Description

This IF is generated by the gsmSSF when a trigger is detected at a DP in the BCSM, to request instructions from the gsmSCF.

4.6.1.8.2 Information Elements

(Note: IEs in the NC columns in this IF may need further study.)

Information element name	MO	MF	MT	VT	NC	NP	Description
Additional Calling Party Number	C	C	C	C	-	C	This IE contains the calling party number provided by the access signalling system of the calling user or received from the gsmSCF due to the previous CAMEL processing.
~~Bearer Capability~~	~~M~~	~~C~~	~~C~~	~~C~~	~~-~~	~~C~~	~~This IE indicates the type of the bearer capability connection to the user. If Bearer Capability 2 is present, then it indicates the preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.~~
Called Party Number	C	M	M	M	-	M	This IE contains the number used to identify the called party in the forward direction. For MO and MF calls this IE is used in the case of TDP Route_Select_Failure (this is the destination number used to route the call) and in the case of TDP Busy and TDP No Reply (this is the MSISDN when the destination number used for the call is an MSRN, or in the case of unsuccessful call establishment received from the HLR via the MAP interface, otherwise it is the number used to route the call). For VT calls when there is no forwarding pending this is the MSISDN received in the Provide Roaming Number; if the MSISDN is not available, the basic MSISDN is used. For the MT and VT call case when there is call forwarding or call deflection pending, this is the MSISDN, i.e. not the forwarded-to or deflected-to number. If the Initial DP IF is sent at TDP Route_Select_Failure or TDP Analysed_Information then the *NatureOfAddress indicator* may contain a national-specific value. For some national-specific *NatureOfAddress indicator* values the length of the digit part of the destination address may be zero.

Information element name	MO	MF	MT	VT	NC	NP	Description
Called Party BCD Number	C	-	-	-	-	-	This IE contains the number used to identify the called party in the forward direction. It is used for an MO call in all cases except in the case of TDP Route_Select_Failure. For the TDP Collected_Information, the number contained in this IE shall be identical to the number received over the access network. It may e.g. include service selection information, such as * and # digits, or carrier selection information dialled by the subscriber. For the TDP Analysed_Information, the number contained in this IE shall be the dialled number received over the network access or received from a gsmSCF in a Connect IF, Service selection information, such as * and # digits may be present (see subclause **Error! Reference source not found.**~~4.2.1.2.2~~); carrier selection information dialled by the subscriber is not present.
Calling Party Number	M	C	C	C	-	C	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Partys Category	M	C	C	C	-	C	This IE indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	-	C	This IE indicates the type of gapping which has been applied to the related call. This IE shall be present only if a call gapping context is applicable to the Initial DP IF.
Call Reference Number	M	M	M	M	-	M	This IE may be used by the gsmSCF for inclusion in a network optional gsmSCF call record. It has to be coupled with the identity of the MSC which allocated it in order to define unambiguously the identity of the call. For MO calls, the call reference number is set by the serving VMSC and included in the MO call record. For MT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For VT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For CF calls, the call reference number is set by the GMSC and included in the CF record in the forwarding MSC.
Cause	C	C	C	C	-	-	This IE indicates the cause specific to the armed BCSM DP event. This IE is applicable to DP Route_Select_Failure and DP T_Busy. The cause may be used by the gsmSCF to decide how to continue the call handling.
Event Type BCSM	M	M	M	M	-	M	This IE indicates the armed BCSM DP event, resulting in the Initial DP IF.
~~Ext-Basic Service Code~~	~~C~~	~~C~~	~~C~~	~~C~~	~~-~~	~~C~~	~~This IE indicates the type of basic service, i.e. teleservice or bearer service. If Bearer Capability 2 is present, then it indicates the basic service which corresponds to the preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.~~

Information element name	MO	MF	MT	VT	NC	NP	Description
~~High Layer Compatibility~~	~~C~~	~~C~~	~~C~~	~~C~~	~~-~~	~~C~~	~~This IE indicates the type of the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal.For a SCUDIF call this IE indicates the high layer compatibility of the preferred service.~~
IMSI	M	M	M	M	-	S	This IE identifies the mobile subscriber. For the NP case, the IMSI is mandatory if the new party is initiated in an MO, MF, MT, or VT call, otherwise it shall be absent.
IP SSP Capabilities	C	C	C	C	-	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, it indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	-	-	This IE is described in a table below.
Location Number	M	C	C	C	-	-	For mobile originated calls this IE represents the location of the calling party. For all other call scenarios this IE contains the location number received in the incoming ISUP signalling.
MSC Address	M	M	M	M	-	M	For MO calls, the MSC Address carries the international E.164 address of the serving VMSC. For MT calls, the MSC Address carries the international E.164 address of the GMSC. For VT calls, the MSC Address carries the international E.164 address of the serving VMSC. For MF calls, the MSC Address carries the international E.164 address of the forwarding MSC. For the NP case, the MSC address carries the international E.164 address of the serving VMSC (the NP case in the GMSC will not cause an Initial DP IF).
GMSC Address	-	M	-	M	-	S	For CF calls, the GMSC Address carries the international E.164 address of the GMSC. For VT calls, the GMSC Address carries the international E.164 address of the GMSC. For NP case, the GMSC Address is mandatory if the new party is initiated in an MF call or in a VT call, otherwise it shall be absent. The GMSC Address carries the international E.164 address of the GMSC.
Carrier	S	S	S	S	-	S	This IE is described in a table below. This IE may be present when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall identify any carrier that was explicitly selected by the calling subscriber. If no carrier was explicitly selected, this IE shall contain the calling subscriber's subscribed carrier. For MT and VT calls, the IE shall contain the carrier subscribed to by the called subscriber. For MF calls, the IE shall contain the carrier subscribed to by the forwarding subscriber.
Original Called Party ID	C	C	C	C	-	-	This IE carries the dialled digits if the call has met call forwarding on the route to the gsmSSF. This IE shall also be sent if it was received from the gsmSCF due to previous CAMEL processing.
Redirecting Party ID	C	C	C	C	-	-	This IE indicates the directory number the call was redirected from. This IE shall also be sent if it was received from the gsmSCF due to previous CAMEL processing.

Information element name	MO	MF	MT	VT	NC	NP	Description
Redirection Information	C	C	C	C	-	-	This IE contains forwarding related information, such as the redirection counter.
Service Key	M	M	M	M	-	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application within the gsmSCF.
Subscriber State	-	-	C	C	-	-	This IE indicates the status of the MS. The states are: - CAMEL Busy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - Network Determined Not Reachable: The network can determine from its internal data that the MS is not reachable. - Assumed Idle: The state of the MS is neither "CAMEL Busy" nor "Network Determined Not Reachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	-	M	This IE contains the time that the gsmSSF was triggered, and the time zone in which gsmSSF resides.
Call Forwarding SS Pending	-	-	C	C	-	-	If the Initial DP IF is sent from the GMSC, then this IE shall be present in the following cases: - The GMSC has received an FTN in the 1st Send Routeing Info ack IF from the HLR. - The GMSC has received an FTN in the 2nd Send Routeing Info ack IF from the HLR and no relationship with the gsmSCF exists at that moment. - The GMSC has received the Resume Call Handling IF from the VMSC and no relationship with the gsmSCF exists at that moment. If the Initial DP IF is sent from the VMSC, then this IE shall be present in the following cases: - Conditional call forwarding is invoked and no relationship with the gsmSCF exists at that moment. - Call Deflection is invoked and no relationship with the gsmSCF exists at that moment.
Forwarding Destination Number	-	-	C	C	-	-	This IE contains the Forwarded-to-Number or the Deflected-to-Number. It shall be present if the Call Forwarding SS Pending IE is present, otherwise it shall be absent.
Service Interaction Indicators Two	C	C	C	C	-	C	The IE is described in a table below. This IE is present if it is received in the ISUP message or due to previous CAMEL processing.
CUG Index	C	-	-	-	-	C	See 3GPP TS 23.085 [**Error! Reference source not found.**~~22~~] for details of this IE.
CUG Interlock Code	C	C	C	C	-	C	This IE shall be set according to 3GPP TS 23.085 [**Error! Reference source not found.**~~22~~] unless modified by the gsmSCF via the Connect or Continue With Argument IFs.
Outgoing Access Indicator	C	C	C	C	-	C	This IE shall be set according to the 3GPP TS 23.085 [**Error! Reference source not found.**~~22~~] unless modified by the gsmSCF via the Connect or Continue With Argument IFs.
MS Classmark 2	C	-	-	-	-	-	This IE contains the MS classmark 2, which is sent by the MS when it requests access to setup the MO call or responds to paging in the CS domain.

Information element name	MO	MF	MT	VT	NC	NP	Description
IMEI (with software version)	C	-	-	-	-	-	This IE contains the IMEISV (as defined in 3GPP TS 23.003 [**Error! Reference source not found.**~~7~~]) of the ME in use by the served subscriber.
Supported CAMEL Phases	M	M	M	M	M	M	This IE indicates the CAMEL Phases supported by the GMSC or the VMSC.
Offered CAMEL4 Functionalities	M	M	M	M	M	M	This IE is described in a table below. This IE indicates the CAMEL phase 4 functionalities offered by the GMSC or the VMSC.
Bearer Capability	M	C	C	C	-	C	This IE indicates the bearer capability connection to the user. For a SCUDIF call (as defined in 3GPP TS 23.172 [**Error! Reference source not found.**~~27~~]) this IE indicates the Bearer Capability of the preferred service.
Bearer Capability 2	C	C	C	C	-	-	This IE indicates ~~the type of~~ the bearer capability of the less preferred service for a SCUDIF call. ~~connection to the user. If Bearer Capability 2 is present, then it indicates the less preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.~~
Ext-Basic Service Code	C	C	C	C	-	C	This IE indicates the basic service, i.e. teleservice or bearer service. For a SCUDIF call this IE indicates the basic service of the preferred service.
Ext-Basic Service Code 2	C	C	C	C	-	-	This IE indicates ~~the type of~~ the basic service of the less preferred service for a SCUDIF call. ~~, i.e. teleservice or bearer service. If bearer Capability 2 is present, then it indicates the basic service which corresponds to the less preferred bearer capability for a SCUDIF call.~~
High Layer Compatibility	C	C	C	C	-	C	This IE indicates the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal. For a SCUDIF call this IE indicates the high layer compatibility of the preferred service.
High Layer Compatibility 2	C	C	C	C	-	C	This IE indicates the high layer compatibility of the less preferred service for a SCUDIF call.
Low Layer Compatibility	C	C	C	C	-	C	This IE indicates the low layer compatibility, which will be used to determine the ISDN bearer capability of a connected ISDN terminal. For a SCUDIF call this IE indicates the Low Layer Compatibility of the preferred service.
Low Layer Compatibility 2	C	C	C	C	-	C	This IE indicates the low layer compatibility of the less preferred service for a SCUDIF call.

Offered CAMEL4 Functionalities contains the following information elements:

Information element name	Status	Description
Initiate Call Attempt	S	This IE indicates that the gsmSCF may send to the gsmSSF the Initiate Call Attempt IF.
Split Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Split Leg IF.
Move Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Move Leg IF.
Disconnect Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Disconnect Leg IF.
Entity Released	S	This IE indicates that the gsmSSF will send to the gsmSCF the Entity Released IF, when appropriate.
DFC With Argument	S	This IE indicates that the gsmSCF may send to the gsmSSF the Disconnect Forward Connection With Argument IF.

Information element name	Status	Description
Play Tone	S	This IE indicates that the gsmSCF may send to the gsmSSF the Play Tone IF.
DTMF Mid Call	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_MidCall or T_MidCall DP. The gsmSCF may instruct the gsmSSF to automatically re-arm the DP, when encountered.
Charging Indicator	S	This IE indicates that the Charge Indicator IE may be present in the Event Report BCSM IF reporting the O_Answer or T_Answer DP.
Alerting DP	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_Term_Seized or Call_Accepted DP.
Location At Alerting	S	This IE indicates that the Location Information IE shall be present (if available) in the Event Report BCSM IF reporting the O_Term_Seized or Call_Accepted DP.
Change Of Position DP	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_Change_Of_Position or T_Change_Of_Position DPs. The gsmSCF may instruct the gsmSSF to automatically re-arm the DP, when encountered.
OR Interactions	S	This IE indicates that the gsmSCF may send to the gsmSSF the Basic OR Interrogation Requested IE in the Connect or Continue With Argument IF. This IE indicates that the Route Not Permitted IE may be present in the Event Report BCSM IF reporting the O_Abandon DP.
Warning Tone Enhancements	S	This IE indicates that the gsmSCF may send to the gsmSSF the Burstlist IE (within the Audible Indicator IE) in an Apply Charging IF.
CF Enhancements	S	This IE indicates that the Forwarding Destination Number IE may be present in the Event Report BCSM IF reporting the T_Busy or T_No_Answer DP.

Location Information is defined in 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~]. The following differences apply:

Information element name	MO	MF	MT	VT	NC	NP	Description
Location Number	-	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Service area ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Cell ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Geographical information	C	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Geodetic information	C	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
VLR number	M	-	C	M	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Age Of location information	M	-	C	C	-	-	See 3GPP TS 23.018 [**Error! Reference source not found.**~~12~~].
Current Location Retrieved	-	-	-	-	-	-	Not applicable
Location area ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.003 [**Error! Reference source not found.**~~7~~].
Selected LSA Identity	S	-	S	S	-	-	This IE indicates the LSA identity associated with the current position of the MS. It shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be present. See 3GPP TS 23.073 [**Error! Reference source not found.**~~18~~]. This IE shall be present if available and SoLSA is supported, otherwise it shall be absent.

Carrier contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Carrier Identification Code	M	M	M	M	-	M	This IE uniquely identifies a North American long distance carrier.
Carrier Selection Information	M	M	M	M	-	M	This IE indicates the way the carrier was selected, i.e.: - dialled - subscribed

Service Interaction Indicators Two contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Forward Service Interaction Indicator	C	C	C	C	-	C	This IE is described in a table below.
HOLD Treatment Indicator	C	-	-	C	-	C	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	C	-	-	C	-	C	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	C	-	-	C	-	C	This IE indicates whether the call leg can become part of an ECT call initiated by the CAMEL subscriber.

Forward Service Interaction Indicator contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Conference Treatment Indicator	C	C	C	C	-	C	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	C	C	C	C	-	C	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection supplementary services.

****** End of Modified Section ******