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Sophia Antipolis, France 23rd - 27h August 1999

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1 Modifications

The following document contains the modifications of 25.415 agreed at the Iu SWG#5 meeting in Helsinki. It consists of document 25.415 as proposed and agreed in R3-99718 [1] (with no revision marks), agreed comments to R3-99718 (with revision marks) and agreed modifications from [2-4]. It also includes accepted changes documented in the meeting minute [5].

2 References

[1] TSGR3#5(99)718, Introduction of mode concept in TS 25.415

[2] TSGR3#5(99)717, Concept Proposal of Mode of Operation of the Iu User Plane protocol

[3] TSGR3#5(99)719, Modelling of primitives for the Iu UP Protocol Layer

[4] TSGR3#5(99)724, Principles related to Radio Access Bearer Sub-Flows

[5] TSGR3#5(99)786, Summary of Iu SWG

TS RAN 25.415 V0.2.1~~.4~~ (1999-07~~6~~)

Technical Specification

3rd Generation Partnership Project (3GPP); Technical Specification Group (TSG) RAN Iu Interface CN-UTRAN User Plane Protocols

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Contents

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Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project, Technical Specification Group RAN WG3.

The contents of this TS may be subject to continuing work within the 3GPP and may change following formal TSG approval. Should the TSG modify the contents of this TS, it will be re-released with an identifying change of release date and an increase in version number as follows:

Version m.t.e

where:

- m indicates [major version number]
- x the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- y the third digit is incremented when editorial only changes have been incorporated into the specification.

1 Scope

This Technical Specification defines the protocols being used to transport and control over the Iu interface, the Iu User Data Streams.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] UTRAN Architecture

[2] UMTS 25.413 RANAP protocol

[3] UMTS 25.414, 3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; Iu Interface Data Transport and Transport Signalling

[4] UMTS 23.10, UMTS Access Stratum, services and functions

[5] ITU-T Recommendation I.363.2 (1997) - B-ISDN ATM Adaptation Layer type 2 specification

[6] ITU-T Recommendation I.366.1 (1998) - Segmentation and reassembly service specific convergence sublayer for the AAL type 2

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

Non Access Stratum Data Streams:

Non Access Stratum Data Streams is a generic term to identify in the CN and the Terminal domains, these data streams exchanged at the Dedicated Service Access Points between the Non Access Stratum and the Access Stratum.

Transparent mode:

Transparent mode is a mode for the Iu UP. In this mode the Iu UP passes the PDUs to and from the Transport Network Layer without adding new information.

Support mode:

Support mode is a mode for the Iu UP. In this mode the Iu UP adds frame control information to the PDUs before transferring them to and from the Transport Network Layer .

3.2 Symbols

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

3.3 Abbreviations

AS: Access Stratum
CN: Core Network
NAS: Non Access Stratum
PDU: Protocol Data Unit
PCE: Procedure Control Extension
PME: Procedure Control Bitmap Extension
RAB: Radio Access Bearer
RANAP: Radio Access Network Application Part
RFC: RAB sub Flow Combination
RFCI: RFC Indicator
SM: Support Mode
TM: Transparent Mode
UP: User Plane

3.4 Concepts

4 General

Architectural aspects

The following figure illustrates the logical placement of the Iu UP protocol layer and the placement of the Data Streams sources outside of the Access Stratum.

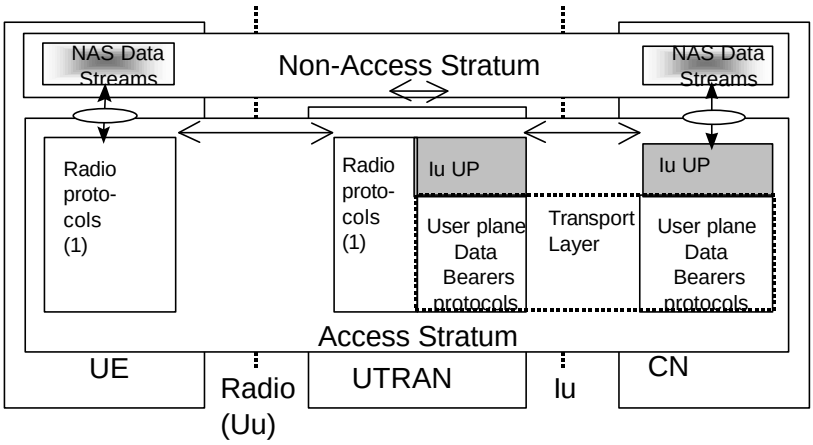


Figure 1: Iu UP protocol layer occurrence in UTRAN overall architecture

Operational and Functional aspects

The following principles apply to the Iu UP protocol when operated in the support mode for predefined size SDUs.

Principles related to RAB sub-flow numbering:

1) RAB sub-flows are numbered from 1 to N (N is the number of sub-flows)

2) RAB sub-flow number 1 corresponds to the highest reliability class and the RAB sub-flow number N corresponds to the lowest reliability class.

   Note: It is FFS whether numbering of subflows can be based on something else than reliability classes.

3) RAB sub-flows order inside the Iu frame is predefined so that RAB sub-flow number one comes first and the RAB sub-flow number N comes last.

Principles related to RFCI allocation and initialization procedure:

1) In the Initialization procedure in Iu UP, the size of every RAB sub-flow SDU for each RFCI is signalled

2) RFCI value is present in every Iu user frame

5Support mode

5.1General

The Iu UP protocol layer in Support mode is present for data streams that need frame handling in the UP.

5.1.1Operation of the Iu UP in Support mode

The Iu UP protocol layer in Support mode is present for data streams that need frame handling in the UP.

The two strata communicate through a Service Access Point for Non Access Stratum (NAS) Data Streams. There can be one or several data streams towards one Iu UP protocol instance. These non-access stratum data streams need to be co-ordinated in the Non-Access Stratum.

5.1.2Interfaces of the Iu UP protocol layer in Support mode

As part of the Access Stratum responsibility, the Iu UP protocol layer in Support mode (SM) provides the services and functions that are necessary to handle non access stratum data streams. The Iu UP protocol layer in SM is providing these services to the UP upper layers through a Dedicated Service Access Point used for Information Transfer as specified in [4].

The Iu UP protocol layer in SM is using services of the Transport layers in order to transfer the Iu UP PDUs over the Iu interface.

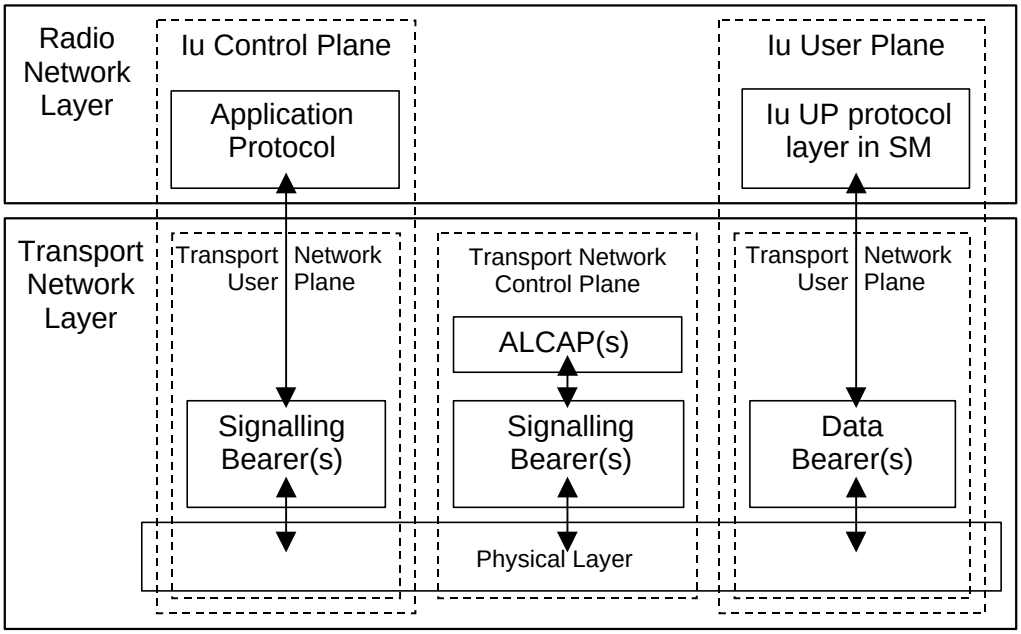


Figure 2: Iu UP protocol layer interfaces in Support Mode

5.2 Iu UP Protocol layer Services in Support mode

5.3 Services Expected from the UP Data Transport layer

5.4 Functions of the Iu UP Protocol Layer in Support mode

The Iu UP protocol layer in Support mode is made of a number of functions such as Procedure Control functions, Frame Handler function and Non Access Stratum specific functions.

Frame Handler function: This function is responsible for framing and de-framing the different parts of an Iu UP protocol frame. This function takes the different part of the Iu UP protocol frame and set the control part field to the correct values. It also ensures that the frame control part is semantically correct. This function is responsible for interacting with the Transport layers. This function is also responsible for the CRC check of the Iu UP frame header.

Procedure Control functions: This set of functions offers the control of a number of procedures handled at the Iu UP protocol level. These functions are responsible for the procedure control part of the Iu UP frames.

Namely, these procedures are:

- **RAB Format selection (FFS)**: is the procedure which controls over Iu UP the maximum rate among the RAB Formats negotiated for the established RAB service. The function controlling this procedure interacts with functions outside of the Iu UP protocol layer.
- **Initialisation:** is the procedure which controls the exchange of initialisation information that may be required for certain RAB such as Speech. Such information can contain the RAB Format Set to be used until termination of the connection or until the next initialisation procedure.
- **Time Alignment (FFS)**: is the procedure that controls the information exchanged over the Iu related to the sending time of Iu UP frames. The function controlling this procedure interacts with functions outside of the Iu UP protocol layer.
- **Handling of Abnormal Event:** is the procedure that controls the information exchanged over the Iu related to detection of a fault situation. The function controlling this procedure interacts with functions outside of the Iu UP protocol layer.

Non Access Stratum Data Streams specific function(s): These functions are responsible for a “limited” manipulation” of the payload and the consistency check of the frame number. If a frame loss is detected due

a gap in the sequence of the received frame numbers, this shall be reported to the procedure control function. These functions are responsible for the CRC check and calculation of the Iu UP frame payload part.

These functions interact with the upper layers through a SAP by exchanging Iu data stream blocks of Iu UP frame payload.

Note: The following paragraph is FFS

These functions interact with the procedure control function for handling the RAB format selection procedure data (RFN, Iu Data Stream Block size, etc.).

These functions may provide service access to the upper layers for the procedure control functions.

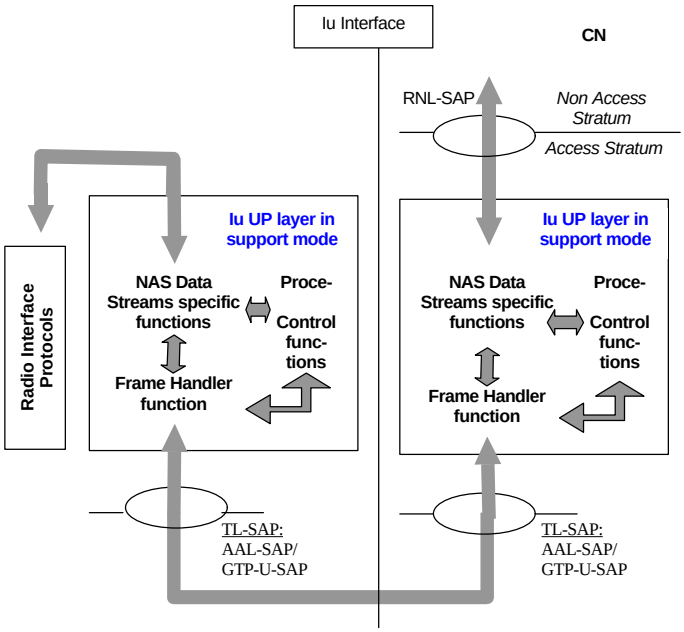


Figure 3: Functional model of the Iu UP protocol layer in Support mode

5.5 Elementary procedures

5.5.1 Initialisation procedure

Note: It is FFS whether this procedure is to be merged with a procedure used in the communication phase.

The initialisation procedure is always controlled by the entity in charge of establishing the Radio Network Layer User Plane i.e. SRNS.

The initialisation procedure is invoked whenever indicated by the Iu UP Procedure Control function e.g. as a result of a relocation or at RAB establishment over Iu.

This procedure is mandatory for a speech RAB.

Note: Whether this procedure can also be used for Data is FFS.

The Iu UP procedure control function allocates an indicator to each RAB sub-Flow Combination. The association of indicators to RAB Flow Combinations is valid until a new initialisation procedure is performed or the connection is terminated.

The procedure control function may also generate additional Iu UP protocol parameters necessary for the RAB service to operate properly over Iu.

To each RAB sub-Flow combination is associated the RAB sub-Flow Combination SDU size. The list of RAB Flow Combination Indicators and their respective SDU sizes constitutes the RAB sub-Flow Combination set passed over the Iu UP.

Note: It is FFS whether the SDU size of the RAB sub Flow Combination is sent during this procedure or instead the SDU size of every RAB sub Flow of a each RAB sub Flow Combination.

The first RAB sub-Flow Combination proposed in the list of RAB sub-Flow Combination indicates the initial RAB sub-Flow Combination i.e. the first RAB sub-Flow Combination to be used when starting the communication phase.

The complete set of information is framed by the Iu UP Frame Handler function and transferred in an Iu UP Control (FFS) frame.

Upon reception of a control (FFS) frame indicating that an initialisation control procedure is active in the peer Iu UP entity, the Iu UP protocol layer stores the RAB sub-Flow Combination set to be used by the Control procedure function. It also relays to the upper layer through its RNL-SAP, the indication of the initial RAB sub-Flow Combination.

Consequently, when in the communication phase (as indicated by internal functions in the Radio Network layer), the frame transmission starts in uplink and downlink in the initial RAB Flow Combination.

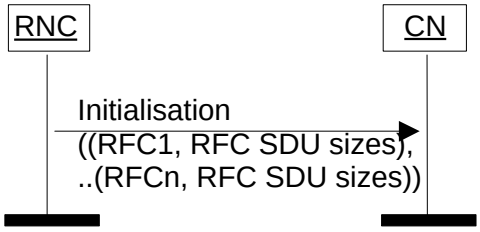


Figure x. Initialisation of Iu ~~CS~~ UP for n RFCs

Note of the editor: The need for an acknowledgement frame (and time supervision) and a repetition mechanism is FFS.

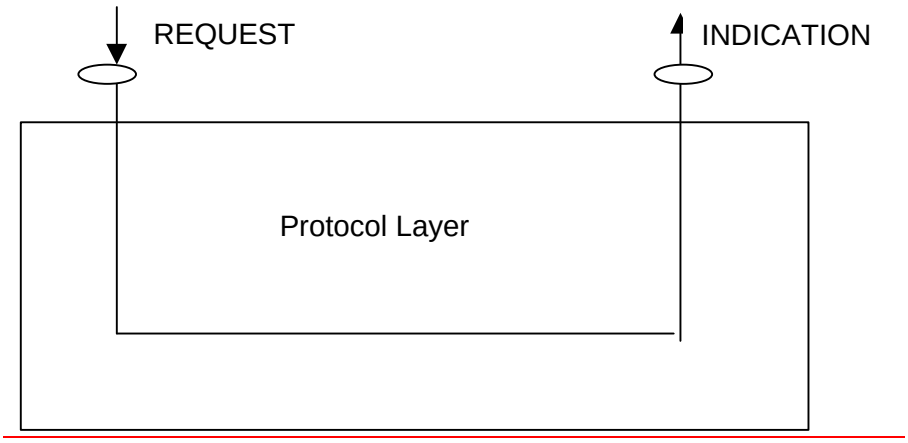
Note of the editor: The case where an SRNS receives an Iu control (FFS) frame indicating that an initialisation procedure is active at the other end of the Iu ~~CS~~ UP could be related to a TFO negotiation. How TFO protocol and codec negotiation is performed is FFS.

5.6 Primitives for the Support Mode

5.6.1 Primitives for the Support Mode for predefined size SDUs

Principle

The principle illustrated by the figure below is used for modelling the primitives towards the protocol layer:



Primitives towards the upper layers at the RNL SAP

The Iu UP protocol layer interacts with other layers as illustrated in *figure 3 of [1]*. The interactions with the upper layers are shown in terms of primitives where the primitives represent the logical exchange of information and control between the upper layer and the Iu ~~CS~~ UP protocol layer. They do not specify or constraint implementations.

For the Iu UP protocol layer, the following primitives are defined:

- Iu-UP-DATA
- Iu-UP-STATUS

Iu NAS Data Stream DU is a generic term referring to either speech or data stream data units.

Table 1. Iu UP protocol layer service primitives

Primitive	Type	Parameters	Comments
Iu-UP-DATA	Request	Iu-UP-payload	
		Iu-UP-control	Abnormal Event
			RFC request (FFS. Note 1)
	Indication	Iu-UP-payload	
		Iu-UP-control	*RFC Request (FFS. Note 2)*
			RFC Indication
			Abnormal Event
			Time Alignment (FFS Note 3)
Iu-UP-Status	Indication	Iu-UP-Control	Abnormal Event
			Initialisation
	Request	Iu-UP-Control	Abnormal Event

Iu-UP-DATA-REQUEST

This primitive is used as a request from the upper layer Iu NAS Data Stream entity to send a RAB SDU on the established transport connection.

When an abnormal condition like a corrupted is detected, then this primitive includes Control Information. This primitive may also include abnormal event control information related to frame(s) sent earlier by the Iu ~~CS~~ DS peer entity.

Note 1: This information is related to maximum rate control. It is therefore FFS.

The Iu ~~CS~~ UP Frame protocol layer forms the Iu UP data frame, the Iu Data Stream DU being the payload of the Iu UP frame, and transfers the frame by means of the lower layer services.

Iu-UP-DATA-INDICATION

This primitive is used as an indication to the upper layer entity to pass the Iu NAS Data Stream User Plane information of a received Iu ~~CS~~ UP frame.

This primitive normally includes also the RFCI of the payload information included in the primitive. If it does not include the RFCI, this shall be interpreted as if no RAB sub-flow combination change occurred since the last received RFCI.

This primitive may also include a request for a RFC change. This corresponds to the case where a change of RFC needs to be applied to the frames sent in the opposite direction.

Note 2: This information is related to maximum rate control. It is therefore FFS.

This primitive may also include an abnormal event information aiming at informing the upper layers of a faulty situation that may relate to the payload included in the primitive or to frame(s) sent earlier by the Iu ~~CS~~ DS receiving entity.

Note 3: Time Alignment is FFS.

Iu-UP-STATUS

This primitive is used to report to the upper layer entity that a fault has been detected. The information concerning that fault is characterised by the Abnormal event information passed to the upper layer.

This primitive is also used in the context of the initialisation control procedure to pass to the upper Iu CS DS layer e.g. the initial RFC to be used in the communication phase.

Note: It is assumed here that no payload is transferred with the initialisation frame. Whether an acknowledgement frame is necessary is FFS.

Primitives towards the transport layers at the AAL-SAP

ATM/AAL2 Transport layer

When the Iu CS UP protocol layer uses the services of an ATM/AAL2 transport, it uses an established AAL2 connection for transferring frames between the peer CS TL-SAPs at both end of the Iu User plane access points. The Transport Network Control Plane over Iu handles the signalling to establish and release the AAL2 call connections.

AAL2 Service Primitives used by the Iu UP protocol

AAL2 services and primitives used at the Service Access Point from the AAL2 layer are shown in the following table:

Table 2. AAL2 primitives and parameters

Primitive	Type	Parameters	Comments
AAL-UNITDATA	Request	AAL-INFO	1-45 Octets of Iu CS UP protocol data
		AAL-UUI	Not used (Note 1)
AAL-UNITDATA	Indication	AAL-INFO	1-45 Octets of Iu U-CS P protocol data
		AAL-UUI	Not used (Note 1)

Note 1 The setting of this field must be defined. It is left FFS.

The primitives of Table 2 are the standard primitives of [5]. These primitives are intended to be used in the Iu UP.

For the purpose of the Iu CS UP protocol, the AAL2 layer is limited to the Commom Part Sublayer i.e. no Service Specific Convergence Sublayer is required.

Note of the editor: The SSCS SAAR has not been proposed so far because it is not necessary for low bandwidth speech such as AMR. This proposal will be revisited when CS Data will be introduced in the Iu CS User Plane.

Primitives towards the transport layers at the GTP-U-SAP

Note: The GTP-SAP has not been defined yet. The standardisation of this SAP and related primitives should be on the responsibility of TSG N2. A LS asking for standardisation of GTP-SAP should be send from R3 to N2.

GTP Transport Layer

When the Iu UP protocol layer uses the services of a GTP transport, it uses an established GTP-U tunnel for transferring frames between the peer GTP-SAPs at both end of the Iu User plane access points. The RANAP Control Plane signalling over Iu handles the signalling to establish and release the GTP-U tunnels.

5.6.21.1.1 Primitives for the Support Mode for variable size SDUs

5.71.2 Elements for Iu UP communication in Support mode

5.7.11.2.1 Frames Format for predefined size SDUsand content definition

The following shows the Iu frame structure for PDU type 1 of the Iu UP protocol at the SAP towards the

transport layers (TL-SAP):

5.7.1.11.2.1.1 PDU Type 01

The following shows the Iu frame structure for PDU type 0 of the Iu UP protocol at the SAP towards the transport layers (TL-SAP):

Bits											
7	6	5	4	3	2	1	0				
PDU Type				Frame Number				M	1	Bytes	Frame Control Part
PME	Procedure Control Bitmap							M	2		Frame Procedure Control Part
PCE	**This field is FFS** RAB Format Selection Control Field							O	3		
PCE	**This field is FFS** Time Alignment Control Field							O	4		
PCE	Abnormal Event Control Field							O	5		
PCE	Initialization Control Field							O	6		
Frame Payload Check Sum					Frame Header Check Sum			M	7		Frame Check Sum Part
Payload Fields								C	8-n		Frame Payload part

Figure 4: Iu UP PDU Type 01 Format

C: Conditional
M: Mandatory
O: Optional

The Iu UP protocol frames are made of four parts:

1) Iu UP Frame Control part

2) Iu UP Frame Procedure Control part

3) Iu UP Frame Check Sum

4) Iu UP Frame Payload part

The Iu UP Frame Control Part, the Iu UP Frame Procedure Control Part and the Iu UP Frame Check Sum constitute the Iu UP Frame Header.

5.7.2 1.2.2 Frames Format for variable size SDUs

5.7.2 1.2.3 Frames content definition

1.2.4 Frames coding

5.7.3 1.2.5 Timers

5.8 1.3 Handling of unknown, unforeseen and erroneous protocol data

6 2 Transparent mode

6.1 2.1 General

The Iu UP layer in Transparent mode is present in the Iu User plane for transferring data transparently over the Iu interface.

6.1.1 2.1.1 Operation of the Iu UP in Transparent mode

The Iu UP layer in Transparent mode is present in the Iu User plane for transferring data transparently over the Iu interface.

The following figure illustrates the logical placement of the Iu UP protocol layer in Transpåarent mode and the placement of the Data Streams sources outside of the Access Stratum.

The two strata communicate through a Service Access Point for Non Access Stratum (NAS) Data Streams transfer.

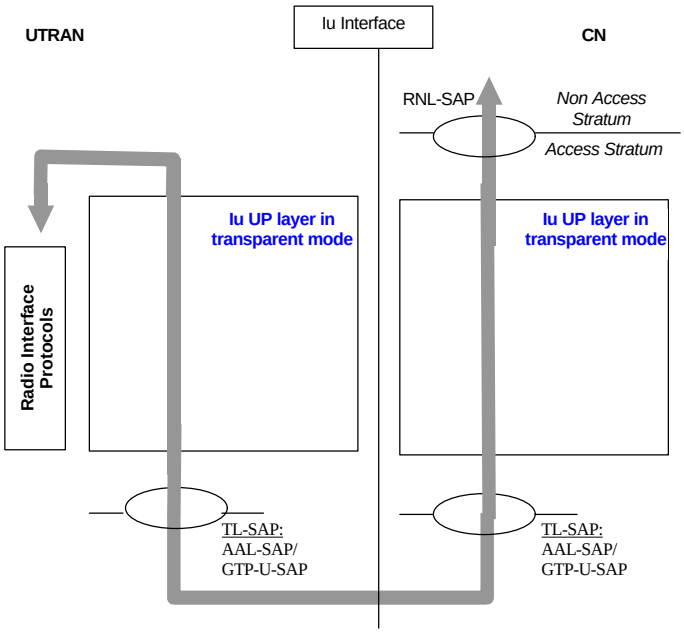
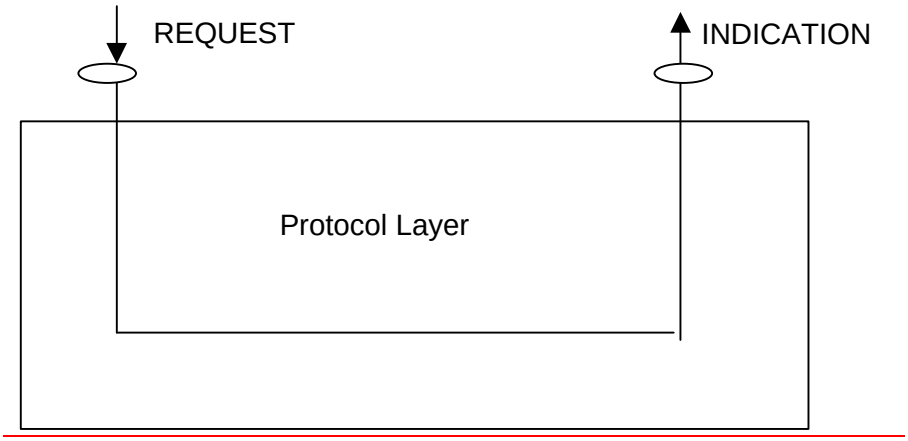


Figure 5: Iu UP protocol layer in transparentSM occurrence in UTRAN overall architecture

6.22.2 Primitives for the Transparent Mode

2.2.1 Principle

The principle illustrated by the figure below is used for modelling the primitives towards the protocol layer:



6.2.22.2.2 Primitives towards the upper layers at the RNL SAP

The Iu UP protocol layer interacts with other layers as illustrated in *figure 3 of [1]*. The interactions with the upper layers are shown in terms of primitives where the primitives represent the logical exchange of information and control between the upper layer and the Iu UP protocol layer. They do not specify or constraint implementations.

For the transparent mode of the Iu UP protocol layer, the following primitive is defined:

- Iu-UP-DATA

Table 2. Iu UP protocol layer service primitives

Primitive	Type	Parameters	Comments
Iu-UP-UNIT-DATA	Request	Iu-UP-PDU	
	Indication	Iu-UP-PDU	

1.1.1.12.2.2.1 Iu-UP-UNIT-DATA-REQUEST

This primitive is used as a request from the upper layer to send an Iu UP PDU on the established transport connection in the transparent mode of operation.

The Iu UP protocol layer transfers the Iu Data Stream DU by means of the lower layer services without adding any protocol header overhead.

1.1.1.22.2.2.2 Iu-UP-UNIT-DATA-INDICATION

This primitive is used as an indication to the upper layer entity to pass the Iu UP PDU of a received Iu UP frame in the transparent mode of operation.

1.1.32.2.3 Primitives towards the transport layers at the AAL-SAP

6.2.3.12.2.3.1 ATM/AAL2 Transport layer

When the Iu UP protocol layer uses the services of an ATM/AAL2 transport, it uses an established AAL2 connection for transferring frames between the peer TNL-SAPs at both end of the Iu User plane access points. The Transport Network Control Plane over Iu handles the signalling to establish and release the AAL2 call connections.

1.1.1.22.2.3.2 AAL2 Service Primitives used by the Iu UP protocol

AAL2 services and primitives used at the Service Access Point from the AAL2 layer are shown in the following table:

Table 2. AAL2 primitives and parameters

Primitive	Type	Parameters	Comments
AAL-UNITDATA	Request	AAL-INFO	1-45 Octets of Iu UP protocol data
		AAL-UUI	Not used (Note 1)
AAL-UNITDATA	Indication	AAL-INFO	1-45 Octets of Iu UP protocol data
		AAL-UUI	Not used (Note 1)

Note 1 The setting of this field must be defined. It is left FFS.

The primitives of Table 2 are the standard primitives of [5]. These primitives are intended to be used in the Iu UP.

For the purpose of the Iu UP protocol, the AAL2 layer is limited to the Commom Part Sublayer i.e. no Service Specific Convergence Sublayer is required.

Note of the editor: The SSCS SAAR has not been proposed so far because it is not necessary for low bandwidth speech such as AMR. This proposal will be revisited when CS Data will be introduced in the Iu User Plane.

1.1.42.2.4 Primitives towards the transport layers at the GTP-SAP

Note: The GTP-SAP has not been defined yet. The standardisation of this SAP and related primitives should be on the responsibility of TSG N2. A LS asking for standardisation of GTP-SAP should be send from R3 to N2.

1.1.1.12.2.4.1 GTP Transport Layer

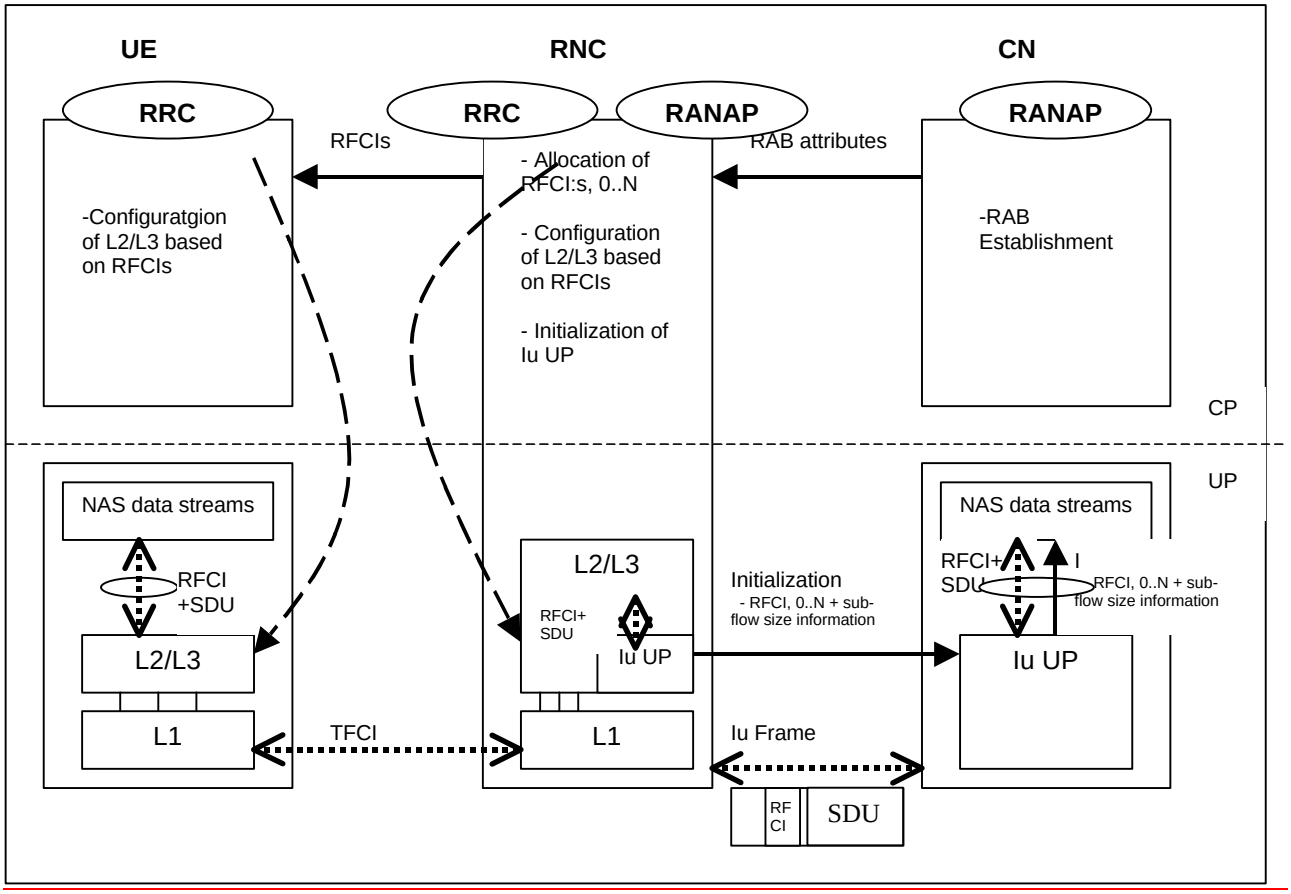
When the Iu UP protocol layer uses the services of a GTP transport, it uses an established GTP-U tunnel for transferring frames between the peer GTP-SAPs at both end of the Iu User plane access points. The RANAP Control Plane signalling over Iu handles the signalling to establish and release the GTP-U tunnels.

73 Annex A (Normative)

84 Annex B (Informative): Illustration of usage of RFCI for AMR speech RAB.

This annex contains inflormation related to usage of RFCIs in the context of AMR speech RAB.

The following figure illustrates the RFCI allocation and flow throughout the UTRAN.



The following table shows RAB sub-flow SDU sizes for a RAB with variable source rate as they are signalled in RAB assignment request in RANAP.

Table 1: Example of SDU sizes for AMR with DTX

RAB sub-flows			Total size of bits/RAB sub-flows combi-nation	Source rate
RAB sub-flow 1	RAB sub-Flow 2	RAB sub-Flow 3		
39	56	0	95	Source rate 1
49	54	0	103	Source rate 2
55	63	0	118	Source rate 3
55	79	0	134	Source rate 4
61	87	0	148	Source rate 5
75	84	0	159	Source rate 6
65	99	40	204	Source rate 7
81	103	60	244	Source rate 8
39	0	0	39	Source rate 9
⋮	⋮	⋮	⋮	⋮
0	0	0	0	Source rate M

NOTE 1: In the table above the grayed area shows what is signalled in RANAP RAB establishment request.

NOTE 2: In the table above the number of sub-flows is informative only.

SRNC allocates one or more possible/available RAB sub-flow combination(s) and generates RAB sub-flow combination set. RAB sub-flow combination number is dynamically generated by SRNC. This RAB sub-flow combination set is signalled towards CN with user plane signalling as described in [1]. The signalling towards UE is to be defined by TSG-RAN WG2.

RAB sub-flow combination set

A RAB sub-flow combination indicator, RFCI, indicates which RAB sub flow combination will be used for the Iu user frames. In the communication phase the RFCI is included in the user frame, and the RFCI state the structure of the user frame.

Table 2 below exemplifies the allocation of 4 different RAB sub-flows combinations for 3 sub-flows and generating of RAB sub-flows combination set.

Table 2: Example of Allocation of RAB sub-flows combination indicator

	RFCI (RAB sub-Flow Combination Indicator)	RAB sub-flow 1	RAB sub-flow 2	RAB sub-flow 3	Total	Source rate
RAB sub-flows combination set	0	0	0	0	0	Source rate 1
	1	39	0	0	39	Source rate 2
	2	39	56	0	95	Source rate 3
	3	81	103	60	244	Source rate 4

NOTE: In the table above the grayed area shows the part that is sent in the initialization procedure in Iu UP. This is what constitutes the RAB subflow combination set.

~~8~~5 Annex C~~B~~ (Informative) Document Stability Assessment Table

Section	Content missing	Incomplete	Restructuring needed	Checking needed	Editorial work required	Finalisation needed	Almost stable	Stable
1		√						
2		√						
3		√						
4	~~√~~	√	√		√			
5		√	√		√			
6		~~√~~	~~√~~	√	√			
7								

8				√				

96 History

Document history		
Edition x		Publication
0.0.1	Feb 1999	First draft
0.0.2	March 1999	Revised following RAN WG3#2 meeting: - TSG SA S2-99080: Iu UP instances - TSG RAN WG3#2 R3-99195
0.1.0	April 1999	Prepared for the RAN WG#3 meeting. - Document noted TSG SA S2-99080: Iu UP instances
0.1.1	May 1999	Revised following RAN WG3#3 meeting - Editorial additions: abbreviations, corrected references - TSG R3 (99) 281: incorporation of the proposals, inclusion of the frame format, RAB Format Selection and Time Alignment FFS - TSG R3 (99) 368: alignment of the 281 proposals with the co ordinated data streams concepts of 368. - Inclusion of detailed comments of the Iu SWG on TSG R3 (99) 281 - Note: - *TSG R3 (99) 257: provisions for load sharing on Iu between RNC and CN PS, moved to 25.414* - *TSG R3 (99) 276: incorporation of the two parts of proposal 1 (i.e. resulting in creation of appendix A): moved to 25.414*
0.1.2	May 1999	Revised by editor according to WG3#3 closing plenary meeting recommendations -Include Appendix A -Include Section 3.4.: Specification status
0.1.3	June 1999	Revised following RAN WG3#4 meeting. - Removal of the temporary appendix containing the GTP-U agreed proposal *TSG R3 (99) 276. Proposed in Liaison TSGR3#4 (99) 569* - Move the specifcation status atble to Annex B. Align layout with 25.401 editors proposal - Include TSGR3-99458, TSG R3-99459 - Add reference to AAL2 ITU specifications
0.1.4	June 1999	- Transparent/ Support mode

0.2.0	July 1999	- Approved version with comments proposed in R3-99593
0.2.1	July 1999	- Introduction of Mode concept: R3-99717 - R3-99718: Changes to 25.415 due to mode concept - R3-99719: Modelling of primitives for the Iu UP layer - R3-99724: Principles related to RAB sub flows - R3-99786, Summary of Iu SWG

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