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# Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

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

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

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

z the third digit is incremented when editorial only changes have been incorporated in the document.

# 1 Scope

The present document specifies the Sidelink Positioning Protocol (SLPP) for the interface between UEs and between UE and LMF.

# 2 References

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

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

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

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

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

[2] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[3] 3GPP TS 38.305: "NG Radio Access Network (NG-RAN); Stage 2 functional specification of User Equipment (UE) positioning in NG-RAN".

[4] ITU-T Recommendation X.691 (07/2002) "Information technology - ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)" (Same as the ISO/IEC International Standard 8825-2).

…

[x] <doctype> <#>[ ([up to and including]{yyyy[-mm]|V<a[.b[.c]]>}[onwards])]: "<Title>".

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

**Field:** The individual contents of an information element are referred to as fields.

**Ranging**: Refers to the determination of the distance between two UEs or more UEs and/or the direction of one UE (i.e. Target UE) from another UE via PC5 interface.

**Anchor UE**: A UE, supporting positioning of target UE, e.g. by transmitting and/or receiving reference signals for positioning, providing positioning-related information, etc. over the Sidelink interface.

**Target UE**: A UE whose distance, direction and/or position is measured with the support from one or multiple Anchor UEs using Sidelink in the Ranging based service and Sidelink positioning.

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

LMF Location Management Function

SL Sidelink

SLPP Sidelink Positioning Protocol

UE User Equipment

# 4 Functionality of Protocol

## 4.1 General

### 4.1.1 SLPP Configuration

### 4.1.2 SLPP Sessions and Transactions

Editor’s note FFS on the definition of SLPP Session.

### 4.1.3 SLPP Position Methods

This version of the specification defines SL-TDOA, SL-AoA and SL-RTT positioning methods.

Editor’s note FFS on the supported positioning methods.

### 4.1.4 SLPP Messages

The following message types are defined:

- Request Capabilities;

- Provide Capabilities;

- Request Assistance Data;

- Provide Assistance Data;

- Request Location Information;

- Provide Location Information;

- Abort;

- Error.

## 4.2 Common SLPP Session Procedure

Editor's note FFS on whether SLPP message Segmentation is needed.

## 4.3 SLPP Transport

Editor's note May be updated based on the discussion on session management.

Editor's note FFS on the support of session-less operation.

Editor's note FFS on the support of broadcast/groupcast.

Editor's note FFS With regards to duplicate detection: the applicability of the 10min inactivity rule. With regards to retransmission: the applicability of the timeout period of 250ms.

### 4.3.1 Transport Layer Requirements

SLPP requires reliable, in-sequence delivery of SLPP messages from the underlying transport layers. This clause describes the transport capabilities that are available within SLPP. A UE implementing SLPP shall support SLPP reliable transport (including all three of duplicate detection, acknowledgement, and retransmission).

### 4.3.2 SLPP Duplicate Detection

A sender shall include a sequence number in all SLPP messages sent for a particular location session. The sequence number shall be distinct for different SLPP messages sent by the same endpoint for the same location session (e.g., may start at zero in the first SLPP message and increase monotonically in each succeeding SLPP message). Sequence numbers used in the messages transmitted from different endpoints are independent (e.g., can be the same).

A receiver shall record the most recent received sequence number for each location session. If a message is received carrying the same sequence number as that last received for the associated location session, it shall be discarded. Otherwise (i.e., if the sequence number is different), the message shall be processed.

Sending and receiving sequence numbers shall be deleted in a server when the associated location session is terminated and shall be deleted in a target device when there has been no activity for a particular location session for 10 minutes.

### 4.3.3 SLPP Acknowledgement

#### 4.3.3.1 General

Each SLPP message may carry an acknowledgement request and/or an acknowledgement indicator. A SLPP message including an acknowledgement request (i.e., that include the IE ackRequested set to TRUE) shall also include a sequence number. Upon reception of an SLPP message which includes the IE ackRequested set to TRUE, a receiver returns an SLPP message with an acknowledgement response (i.e., that includes the ackIndicator IE set to the same sequence number of the message being acknowledged). An acknowledgement response may contain no SLPP message body (in which case only the sequence number being acknowledged is significant); alternatively, the acknowledgement may be sent in an SLPP message along with an SLPP message body. An acknowledgement is returned for each received SLPP message that requested an acknowledgement including any duplicate(s). Once a sender receives an acknowledgement for an SLPP message, and provided any included sequence number is matching, it is permitted to send the next SLPP message. No message reordering is needed at the receiver since this stop-and-wait method of sending ensures that messages normally arrive in the correct order.

When an SLPP message is transported via a NAS SL-MO-LR request, the message does not request an acknowledgement.

#### 4.3.3.2 Procedure related to Acknowledgement

Figure 4.3.3.2-1 shows the procedure related to acknowledgement.



Figure 4.3.3.2-1: SLPP Acknowledgement procedure

1. Endpoint A sends an SLPP message *N* to Endpoint B which includes the IE *ackRequested* set to TRUE and a sequence number.

2. If SLPP message *N* is received and Endpoint B is able to decode the *ackRequested* value and sequence number, Endpoint B shall return an acknowledgement for message *N*. The acknowledgement shall contain the IE *ackIndicator* set to the same sequence number as that in message *N*.

3. When the acknowledgement for SLPP message *N* is received and provided the included *ackIndicator* IE matches the sequence number sent in message *N*, Endpoint A sends the next SLPP message *N+1* to Endpoint B when this message is available.

### 4.3.4 SLPP Retransmission

#### 4.3.4.1 General

This capability builds on the acknowledgement and duplicate detection capabilities. When an SLPP message which requires acknowledgement is sent and not acknowledged, it is resent by the sender following a timeout period up to three times. If still unacknowledged after that, the sender aborts all SLPP activity for this Endpoint. The timeout period is determined by the sender implementation but shall not be less than a minimum value of 250 ms.

#### 4.3.4.2 Procedure related to Retransmission

Figure 4.3.4.2-1 shows the procedure related to retransmission when combined with acknowledgement and duplicate detection.



Figure 4.3.4.2-1: SLPP Retransmission procedure

1. Endpoint A sends an SLPP message *N* to Endpoint B for a particular location session and includes a request for acknowledgement along with a sequence number.

2. If SLPP message *N* is received and Endpoint B is able to decode the *ackRequested* value and sequence number (regardless of whether the message body can be correctly decoded), Endpoint B shall return an acknowledgement for message *N*. If the acknowledgement is received by Endpoint A (such that the acknowledged message can be identified and sequence numbers are matching), Endpoint A skips steps 3 and 4.

3. If the acknowledgement in step 2 is not received after a timeout period, Endpoint A shall retransmit SLPP message *N* and shall include the same sequence number as in step 1.

4. If SLPP message *N* in step 3 is received and Endpoint B is able to decode the *ackRequested* value and sequence number (regardless of whether the message body can be correctly decoded and whether or not the message is considered a duplicate), Endpoint B shall return an acknowledgement. Steps 3 may be repeated one or more times if the acknowledgement in step 4 is not received after a timeout period by Endpoint A. If the acknowledgement in step 4 is still not received after sending three retransmissions, Endpoint A shall abort all procedures and activity associated with SLPP support for this Endpoint B.

5. Once an acknowledgement in step 2 or step 4 is received, Endpoint A sends the next SLPP message *N+1* for the location session to Endpoint B when this message is available.

# 5 SLPP Procedures

Editor's note The content of each section will be added in accordance with future agreements, not based on LPP legacy directly.

Editor's note FFS on whether to add procedure description in the field description as LPP.

## 5.1 Procedures related to capability transfer

## 5.2 Procedures related to Assistance Data Transfer

## 5.3 Procedures related to Location Information Transfer

## 5.4 Error Handling Procedures

## 5.5 Abort Procedure

# 6 Protocol data units, formats and parameters (ASN.1)

## 6.1 General

The contents of each SLPP message is specified in clause 6.2 using ASN.1 to specify the message syntax and using tables when needed to provide further detailed information about the fields specified in the message syntax. The syntax of the information elements that are defined as stand-alone abstract types is further specified in a similar manner in clause 6.3.

Editor's note FFS on Need code (e.g. how to support no UL/DL), support of delta signalling, full configuration, import IE from LPP, setup/release.

The ASN.1 in this clause uses the same format and coding conventions as described in Annex A of TS 38.331 [2].

Transfer syntax for SLPP messages is derived from their ASN.1 definitions by use of Basic Packed Encoding Rules (BASIC-PER), Unaligned Variant, as specified in ITU-T Rec. X.691 [4]. The encoded SLPP message always contains a multiple of 8 bits.

Transfer syntax for SLPP IEs is derived from their ASN.1 definitions by use of Basic Packed Encoding Rules (BASIC-PER), Unaligned Variant, as specified in ITU-T Rec. X.691 [4]. The encoded SLPP IE always contains a multiple of 8 bits. This applies when a single SLPP IE is encoded as the basic production, i.e. for other purposes than encoding the SLPP IE within an SLPP message.

When specifying information elements which are to be represented by BIT STRINGs, if not otherwise specifically stated in the field description of the concerned IE or elsewhere, the following principle applies with regards to the ordering of bits:

- The first bit (leftmost bit) contains the most significant bit (MSB);

- the last bit (rightmost bit) contains the least significant bit (LSB).

Editor's note The structure may be updated based on RAN1 agreements/parameter list.

## 6.2 SLPP messages

### 6.2.1 General message structure

#### *– SLPP-PDU-Definitions*

This ASN.1 segment is the start of the SLPP PDU definitions.

-- ASN1START

-- TAG-SLPP-PDU-DEFINITIONS-START

SLPP-PDU-Definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

CommonIEsRequestCapabilities,

CommonIEsProvideCapabilities,

CommonIEsRequestAssistanceData,

CommonIEsProvideAssistanceData,

CommonIEsRequestLocationInformation,

CommonIEsProvideLocationInformation

FROM

SLPP-PDU-Common-Contents

Method-A-RequestCapabilities,

Method-A-ProvideCapabilities,

Method-A-RequestAssistanceData,

Method-A-ProvideAssistanceData,

Method-A-RequestLocationInformation,

Method-A-ProvideLocationInformation

FROM

SLPP-PDU-Method-A-Contents

Method-B-RequestCapabilities,

Method-B-ProvideCapabilities,

Method-B-RequestAssistanceData,

Method-B-ProvideAssistanceData,

Method-B-RequestLocationInformation,

Method-B-ProvideLocationInformation

FROM

SLPP-PDU-Method-B-Contents

Method-C-RequestCapabilities,

Method-C-ProvideCapabilities,

Method-C-RequestAssistanceData,

Method-C-ProvideAssistanceData,

Method-C-RequestLocationInformation,

Method-C-ProvideLocationInformation

FROM

SLPP-PDU-Method-C-Contents;

-- TAG-SLPP-PDU-DEFINITIONS-STOP

-- ASN1STOP

NOTE: An implementation needs to include only the supported "Method" PDUs. Not supported methods do not need to be included, and therefore, do not contribute to the protocol size. For example, if "Method-A" is not supported by an implementation, the *SLPP-PDU-Method-A-Contents* PDU does not need to be included in the protocol.

#### *– SLPP-Message*

The *SLPP-Message* provides the complete set of information for an invocation or response pertaining to an SLPP transaction.

-- ASN1START

-- TAG-SLPP-MESSAGE-START

SLPP-Message ::= SEQUENCE {

transactionID SLPP-TransactionID,

endTransaction BOOLEAN,

sequenceNumber SequenceNumber,

sessionID SessionID,

acknowledgement Acknowledgement OPTIONAL,

slpp-MessageBody SLPP-MessageBody OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

SequenceNumber ::= INTEGER (0..255)

SessionID ::= INTEGER (0..FFS)

Acknowledgement ::= SEQUENCE {

ackRequested BOOLEAN,

ackIndicator SequenceNumber OPTIONAL

}

-- TAG-SLPP-MESSAGE-STOP

-- ASN1STOP

Editor's note FFS on the definition of sessionID.

#### *– SLPP-MessageBody*

The *SLPP-MessageBody* identifies the type of an SLPP message and contains all SLPP information specifically associated with that type.

-- ASN1START

-- TAG-SLPP-MESSAGEBODY-START

SLPP-MessageBody ::= CHOICE {

c1 CHOICE {

requestCapabilities RequestCapabilities,

provideCapabilities ProvideCapabilities,

requestAssistanceData RequestAssistanceData,

provideAssistanceData ProvideAssistanceData,

requestLocationInformation RequestLocationInformation,

provideLocationInformation ProvideLocationInformation,

abort Abort,

error Error,

spare8 NULL, spare7 NULL, spare6 NULL, spare5 NULL, spare4 NULL, spare3 NULL, spare2 NULL, spare1 NULL

},

messageClassExtension SEQUENCE {}

}

-- TAG-SLPP-MESSAGEBODY-STOP

-- ASN1STOP

Editor's note FFS on whether any positioning method specific capability IEs should be grouped by positioning method.

Editor's note FFS on SLPP message header, e.g. cast type, UE ID

#### *– SLPP-TransactionID*

The *SLPP-TransactionID* identifies a particular SLPP transaction.

-- ASN1START

-- TAG-SLPP-TRANSACTIONID-START

SLPP-TransactionID ::= SEQUENCE {

transactionNumber TransactionNumber,

...

}

TransactionNumber ::= INTEGER (0..255)

-- TAG-SLPP-TRANSACTIONID-STOP

-- ASN1STOP

Editor's note FFS the details of initiator in SLPP-TransactionID.

### 6.2.2 Message definitions

#### – *RequestCapabilities*

-- ASN1START

-- TAG-REQUESTCAPABILITIES-START

RequestCapabilities ::= SEQUENCE {

criticalExtensions CHOICE {

c1 CHOICE {

requestCapabilities RequestCapabilities-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

RequestCapabilities-IEs ::= SEQUENCE {

commonIEsRequestCapabilities OCTET STRING OPTIONAL, -- Containing CommonIEsRequestCapabilities

method-A-RequestCapabilities OCTET STRING OPTIONAL, -- Containing Method-A-RequestCapabilities

method-B-RequestCapabilities OCTET STRING OPTIONAL, -- Containing Method-B-RequestCapabilities

method-C-RequestCapabilities OCTET STRING OPTIONAL, -- Containing Method-C-RequestCapabilities

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-REQUESTCAPABILITIES-STOP

-- ASN1STOP

#### – *ProvideCapabilities*

-- ASN1START

-- TAG-PROVIDECAPABILITIES-START

ProvideCapabilities ::= SEQUENCE {

criticalExtensions CHOICE {

c1 CHOICE {

provideCapabilities ProvideCapabilities-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

ProvideCapabilities-IEs ::= SEQUENCE {

commonIEsProvideCapabilities OCTET STRING OPTIONAL, -- Containing CommonIEsProvideCapabilities

method-A-ProvideCapabilities OCTET STRING OPTIONAL, -- Containing Method-A-ProvideCapabilities

method-B-ProvideCapabilities OCTET STRING OPTIONAL, -- Containing Method-B-ProvideCapabilities

method-C-ProvideCapabilities OCTET STRING OPTIONAL, -- Containing Method-C-ProvideCapabilities

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-PROVIDECAPABILITIES-STOP

-- ASN1STOP

#### – *RequestAssistanceData*

-- ASN1START

-- TAG-REQUESTASSISTANCEDATA-START

RequestAssistanceData ::= SEQUENCE {

criticalExtensions CHOICE {

c1 CHOICE {

requestAssistanceData RequestAssistanceData-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

RequestAssistanceData-IEs ::= SEQUENCE {

commonIEsRequestAssistanceData OCTET STRING OPTIONAL, -- Containing CommonIEsRequestAssistanceData

method-A-RequestAssistanceData OCTET STRING OPTIONAL, -- Containing Method-A-RequestAssistanceData

method-B-RequestAssistanceData OCTET STRING OPTIONAL, -- Containing Method-B-RequestAssistanceData

method-C-RequestAssistanceData OCTET STRING OPTIONAL, -- Containing Method-C-RequestAssistanceData

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-REQUESTASSISTANCEDATA-STOP

-- ASN1STOP

#### – *ProvideAssistanceData*

-- ASN1START

-- TAG-PROVIDEASSISTANCEDATA-START

ProvideAssistanceData ::= SEQUENCE {

criticalExtensions CHOICE {

c1 CHOICE {

provideAssistanceData ProvideAssistanceData-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

ProvideAssistanceData-IEs ::= SEQUENCE {

commonIEsProvideAssistanceData OCTET STRING OPTIONAL, -- Containing CommonIEsProvideAssistanceData

method-A-ProvideAssistanceData OCTET STRING OPTIONAL, -- Containing Method-A-ProvideAssistanceData

method-B-ProvideAssistanceData OCTET STRING OPTIONAL, -- Containing Method-B-ProvideAssistanceData

method-C-ProvideAssistanceData OCTET STRING OPTIONAL, -- Containing Method-C-ProvideAssistanceData

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-PROVIDEASSISTANCEDATA-STOP

-- ASN1STOP

#### – *RequestLocationInformation*

-- ASN1START

-- TAG-REQUESTLOCATIONINFORMATION-START

RequestLocationInformation ::= SEQUENCE {

criticalExtensions CHOICE {

c1 CHOICE {

requestLocationInformation RequestLocationInformation-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

RequestLocationInformation-IEs ::= SEQUENCE {

commonIEsRequestLocationInformation OCTET STRING OPTIONAL, -- Containing CommonIEsRequestLocationInformation

method-A-RequestLocationInformation OCTET STRING OPTIONAL, -- Containing Method-A-RequestLocationInformation

method-B-RequestLocationInformation OCTET STRING OPTIONAL, -- Containing Method-B-RequestLocationInformation

method-C-RequestLocationInformation OCTET STRING OPTIONAL, -- Containing Method-C-RequestLocationInformation

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-REQUESTLOCATIONINFORMATION-STOP

-- ASN1STOP

#### – *ProvideLocationInformation*

-- ASN1START

-- TAG-PROVIDELOCATIONINFORMATION-START

ProvideLocationInformation ::= SEQUENCE {

criticalExtensions CHOICE {

c1 CHOICE {

provideLocationInformation ProvideLocationInformation-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

ProvideLocationInformation-IEs ::= SEQUENCE {

commonIEsProvideLocationInformation OCTET STRING OPTIONAL, -- Containing CommonIEsProvideLocationInformation

method-A-ProvideLocationInformation OCTET STRING OPTIONAL, -- Containing Method-A-ProvideLocationInformation

method-B-ProvideLocationInformation OCTET STRING OPTIONAL, -- Containing Method-B-ProvideLocationInformation

method-C-ProvideLocationInformation OCTET STRING OPTIONAL, -- Containing Method-C-ProvideLocationInformation

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-PROVIDELOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– Abort*

-- ASN1START

-- TAG-ABORT-START

Abort ::= SEQUENCE {

criticalExtensions CHOICE {

c1 CHOICE {

abort Abort-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

Abort-IEs ::= SEQUENCE {

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-ABORT-STOP

-- ASN1STOP

#### *– Error*

-- ASN1START

-- TAG-ERROR-START

Error ::= CHOICE {

criticalExtensions CHOICE {

c1 CHOICE {

error Error-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

Error-IEs ::= SEQUENCE {

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-ERROR-STOP

-- ASN1STOP

## 6.3 SLPP information elements

### 6.3.1 Common information elements

### 6.3.2 UE capability information elements

### 6.3.3 Positioning Method information elements

## 6.4 Multiplicity and type constraint values

#### *– End of SLPP-PDU-Definitions*

-- ASN1START

END

-- ASN1STOP

## 6.5 SLPP PDU Common Contents

#### *– SLPP-PDU-Common-Contents*

This ASN.1 segment is the start of the SLPP PDU Common Contents definitions.

-- ASN1START

-- TAG-SLPP-PDU-COMMON-CONTENTS-START

SLPP-PDU-COMMON-CONTENTS DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- TAG-SLPP-PDU-COMMON-CONTENTS-STOP

-- ASN1STOP

#### *– CommonIEsRequestCapabilities*

-- ASN1START

-- TAG-COMMONIESREQUESTCAPABILITIES-START

CommonIEsRequestCapabilities ::= SEQUENCE {

}

-- TAG-COMMONIESREQUESTCAPABILITIES-STOP

-- ASN1STOP

#### *– CommonIEsProvideCapabilities*

-- ASN1START

-- TAG-COMMONIESPROVIDECAPABILITIES-START

CommonIEsProvideCapabilities ::= SEQUENCE {

}

-- TAG-COMMONIESPROVIDECAPABILITIES-STOP

-- ASN1STOP

#### *– CommonIEsRequestAssistanceData*

-- ASN1START

-- TAG-COMMONIESREQUESTASSISTANCEDATA-START

CommonIEsRequestAssistanceData ::= SEQUENCE {

}

-- TAG-COMMONIESREQUESTASSISTANCEDATA-STOP

-- ASN1STOP

#### *– CommonIEsProvideAssistanceData*

-- ASN1START

-- TAG-COMMONIESPROVIDEASSISTANCEDATA-START

CommonIEsProvideAssistanceData ::= SEQUENCE {

}

-- TAG-COMMONIESPROVIDEASSISTANCEDATA-STOP

-- ASN1STOP

#### *– CommonIEsRequestLocationInformation*

-- ASN1START

-- TAG-COMMONIESREQUESTLOCATIONINFORMATION-START

CommonIEsRequestLocationInformation ::= SEQUENCE {

}

-- TAG-COMMONIESREQUESTLOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– CommonIEsProvideLocationInformation*

-- ASN1START

-- TAG-COMMONIESPROVIDELOCATIONINFORMATION-START

CommonIEsProvideLocationInformation ::= SEQUENCE {

}

-- TAG-COMMONIESPROVIDELOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– End of SLPP-PDU-Common-Contents*

-- ASN1START

END

-- ASN1STOP

## 6.6 SLPP PDU Method-A Contents

#### *– SLPP-PDU-Method-A-Contents*

This ASN.1 segment is the start of the SLPP PDU Method A Contents definitions.

-- ASN1START

-- TAG-SLPP-PDU-METHOD-A-CONTENTS-START

SLPP-PDU-METHOD-A-CONTENTS DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- TAG-SLPP-PDU-METHOD-A-CONTENTS-STOP

-- ASN1STOP

#### *– Method-A-RequestCapabilities*

-- ASN1START

-- TAG-METHOD-A-REQUESTCAPABILITIES-START

Method-A-RequestCapabilities ::= SEQUENCE {

}

-- TAG-METHOD-A-REQUESTCAPABILITIES-STOP

-- ASN1STOP

#### *– Method-A-ProvideCapabilities*

-- ASN1START

-- TAG-METHOD-A-PROVIDECAPABILITIES-START

Method-A-ProvideCapabilities ::= SEQUENCE {

}

-- TAG-METHOD-A-PROVIDECAPABILITIES-STOP

-- ASN1STOP

#### *– Method-A-RequestAssistanceData*

-- ASN1START

-- TAG-METHOD-A-REQUESTASSISTANCEDATA-START

Method-A-RequestAssistanceData ::= SEQUENCE {

}

-- TAG-METHOD-A-REQUESTASSISTANCEDATA-STOP

-- ASN1STOP

#### *– Method-A-ProvideAssistanceData*

-- ASN1START

-- TAG-METHOD-A-PROVIDEASSISTANCEDATA-START

Method-A-ProvideAssistanceData ::= SEQUENCE {

}

-- TAG-METHOD-A-PROVIDEASSISTANCEDATA-STOP

-- ASN1STOP

#### *– Method-A-RequestLocationInformation*

-- ASN1START

-- TAG-METHOD-A-REQUESTLOCATIONINFORMATION-START

Method-A-RequestLocationInformation ::= SEQUENCE {

}

-- TAG-METHOD-A-REQUESTLOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– Method-A-ProvideLocationInformation*

-- ASN1START

-- TAG-METHOD-A-PROVIDELOCATIONINFORMATION-START

Method-A-ProvideLocationInformation ::= SEQUENCE {

}

-- TAG-METHOD-A-PROVIDELOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– End of SLPP-PDU-* *Method-A-Contents*

-- ASN1START

END

-- ASN1STOP

## 6.7 SLPP PDU Method-B Contents

#### *– SLPP-PDU-Method-B-Contents*

This ASN.1 segment is the start of the SLPP PDU Method B Contents definitions.

-- ASN1START

-- TAG-SLPP-PDU-METHOD-B-CONTENTS-START

SLPP-PDU-METHOD-B-CONTENTS DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- TAG-SLPP-PDU-METHOD-B-CONTENTS-STOP

-- ASN1STOP

#### *– Method-B-RequestCapabilities*

-- ASN1START

-- TAG-METHOD-B-REQUESTCAPABILITIES-START

Method-B-RequestCapabilities ::= SEQUENCE {

}

-- TAG-METHOD-B-REQUESTCAPABILITIES-STOP

-- ASN1STOP

#### *– Method-B-ProvideCapabilities*

-- ASN1START

-- TAG-METHOD-B-PROVIDECAPABILITIES-START

Method-B-ProvideCapabilities ::= SEQUENCE {

}

-- TAG-METHOD-B-PROVIDECAPABILITIES-STOP

-- ASN1STOP

#### *– Method-B-RequestAssistanceData*

-- ASN1START

-- TAG-METHOD-B-REQUESTASSISTANCEDATA-START

Method-B-RequestAssistanceData ::= SEQUENCE {

}

-- TAG-METHOD-B-REQUESTASSISTANCEDATA-STOP

-- ASN1STOP

#### *– Method-B-ProvideAssistanceData*

-- ASN1START

-- TAG-METHOD-B-PROVIDEASSISTANCEDATA-START

Method-B-ProvideAssistanceData ::= SEQUENCE {

}

-- TAG-METHOD-B-PROVIDEASSISTANCEDATA-STOP

-- ASN1STOP

#### *– Method-B-RequestLocationInformation*

-- ASN1START

-- TAG-METHOD-B-REQUESTLOCATIONINFORMATION-START

Method-B-RequestLocationInformation ::= SEQUENCE {

}

-- TAG-METHOD-B-REQUESTLOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– Method-B-ProvideLocationInformation*

-- ASN1START

-- TAG-METHOD-B-PROVIDELOCATIONINFORMATION-START

Method-B-ProvideLocationInformation ::= SEQUENCE {

}

-- TAG-METHOD-B-PROVIDELOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– End of SLPP-PDU-* *Method-B-Contents*

-- ASN1START

END

-- ASN1STOP

## 6.8 SLPP PDU Method-C Contents

#### *– SLPP-PDU-Method-C-Contents*

This ASN.1 segment is the start of the SLPP PDU Method C Contents definitions.

-- ASN1START

-- TAG-SLPP-PDU-METHOD-C-CONTENTS-START

SLPP-PDU-METHOD-C-CONTENTS DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- TAG-SLPP-PDU-METHOD-C-CONTENTS-STOP

-- ASN1STOP

#### *– Method-C-RequestCapabilities*

-- ASN1START

-- TAG-METHOD-C-REQUESTCAPABILITIES-START

Method-C-RequestCapabilities ::= SEQUENCE {

}

-- TAG-METHOD-C-REQUESTCAPABILITIES-STOP

-- ASN1STOP

#### *– Method-C-ProvideCapabilities*

-- ASN1START

-- TAG-METHOD-C-PROVIDECAPABILITIES-START

Method-C-ProvideCapabilities ::= SEQUENCE {

}

-- TAG-METHOD-C-PROVIDECAPABILITIES-STOP

-- ASN1STOP

#### *– Method-C-RequestAssistanceData*

-- ASN1START

-- TAG-METHOD-C-REQUESTASSISTANCEDATA-START

Method-C-RequestAssistanceData ::= SEQUENCE {

}

-- TAG-METHOD-C-REQUESTASSISTANCEDATA-STOP

-- ASN1STOP

#### *– Method-C-ProvideAssistanceData*

-- ASN1START

-- TAG-METHOD-C-PROVIDEASSISTANCEDATA-START

Method-C-ProvideAssistanceData ::= SEQUENCE {

}

-- TAG-METHOD-C-PROVIDEASSISTANCEDATA-STOP

-- ASN1STOP

#### *– Method-C-RequestLocationInformation*

-- ASN1START

-- TAG-METHOD-C-REQUESTLOCATIONINFORMATION-START

Method-C-RequestLocationInformation ::= SEQUENCE {

}

-- TAG-METHOD-C-REQUESTLOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– Method-C-ProvideLocationInformation*

-- ASN1START

-- TAG-METHOD-C-PROVIDELOCATIONINFORMATION-START

Method-C-ProvideLocationInformation ::= SEQUENCE {

}

-- TAG-METHOD-C-PROVIDELOCATIONINFORMATION-STOP

-- ASN1STOP

#### *– End of SLPP-PDU-* *Method-C-Contents*

-- ASN1START

END

-- ASN1STOP

Annex <X> (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Change history | | | | | | | |
| Date | Meeting | TDoc | CR | Rev | Cat | Subject/Comment | New version |
| 04/2023 | RAN2#121bis-e | R2-2302739 |  |  |  |  | 0.0.1 |
| 04/2023 | RAN2#121bis-e | R2-2304306 |  |  |  |  | 0.0.2 |
| 05/2023 | RAN2#122 | R2-2305439 |  |  |  |  | 0.0.3 |
| 08/2023 | RAN2#123 | R2-2307663 |  |  |  |  | 0.0.4 |
|  |  |  |  |  |  |  |  |