Intelligent Transport Systems (ITS);
Vehicular Communications;
GeoNetworking;
Part 5: Transport Protocols;
Sub-part 1: Basic Transport Protocol
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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Intelligent Transport Systems (ITS).

The present document is part 5, sub-part 1 of a multi-part deliverable. Full details of the entire series can be found in part 1 [2].

<table>
<thead>
<tr>
<th>National transposition dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of adoption of this EN:</td>
</tr>
<tr>
<td>Date of latest announcement of this EN (doa):</td>
</tr>
<tr>
<td>Date of latest publication of new National Standard or endorsement of this EN (dop/e):</td>
</tr>
<tr>
<td>Date of withdrawal of any conflicting National Standard (dow):</td>
</tr>
</tbody>
</table>

Modal verbs terminology

In the present document “shall”, “shall not”, “should”, “should not”, “may”, “need not”, “will”, “will not”, “can” and “cannot” are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

“must” and “must not” are NOT allowed in ETSI deliverables except when used in direct citation.
Introduction

The Basic Transport Protocol (BTP) provides an end-to-end, connection-less transport service in the ITS ad hoc network. Its main purpose is the multiplexing of messages from different processes at the ITS facilities layer, e.g. CAM and DENM from the cooperative awareness basic service and the distributed environmental notification basic service, for the transmission of packets via the GeoNetworking protocol as well as the de-multiplexing at the destination. BTP enables protocol entities at the ITS facilities layer to access services of the GeoNetworking protocol and to pass protocol control information between the ITS facilities layer and the GeoNetworking protocol.

Message multiplexing/demultiplexing is based on ports, an ITS station-internal 16 bit address. A port represents a communication endpoint that identifies the ITS station protocol entity at the source (source port) or the destination (destination port). The usage of ports is similar to the two-stage packet transport in the IP protocol suite, where the IP provides the routing of packets from source to destination and the transport protocol, such as UDP, multiplexes/demultiplexes messages from/to application processes. In the case of BTP, the GeoNetworking protocol transports the packets among the ITS stations and the BTP protocol delivers the packets to the entities at the ITS facilities layer. BTP also adopts the concept of "well-known ports" from the IP protocol suite that assigns fixed ports to specific ITS facilities layer protocols. The definition of the ports, however, is beyond the scope of the present document.

BTP is a lightweight protocol: it has a 4-byte protocol header and requires minimal processing. It provides an unreliable transport of packets, i.e. packets can arrive out-of-order, appear duplicated or can be lost. The design of BTP assumes that entities using the protocol are either tolerant against the unreliable packet transport or provide appropriate mechanisms for reliable communication in their protocols.
1 Scope

The present document specifies the Basic Transport Protocol (BTP) for the transport of packets among ITS stations. It resides on top of the GeoNetworking protocol specified in ETSI EN 302 636-4-1 [5] and below the ITS-S facilities layer. It provides an end-to-end, connection-less and unreliable transport service.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[5] ETSI EN 302 636-4-1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 4: Geographical addressing and forwarding for point-to-point and point-to-multipoint communications; Sub-part 1: Media-Independent Functionality".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] Void.
[i.2] Void.
[i.3] ETSI EN 302 637-2: "Intelligent Transport Systems (ITS); Vehicular Communications; Basic Set of Applications; Part 2: Specification of Cooperative Awareness Basic Service".
3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI EN 302 665 [1], ETSI EN 302 636-3 [4] and the following apply:

**BTP-PDU:** PDU exchanged between BTP peer entities

**destination:** receiving BTP entity in the ITS station

**destination port:** port identifying the destination's protocol entity at the ITS facilities layer

**NOTE:** Facilities layer services that do not expect replies either do not include a source port number in the header, or they set it to a default (usually 0) to indicate no reply port available. For session-based services (client-server or peer-to-peer), the source port is often set to a value from an ephemeral (dynamically assigned) subspace of the space of all port numbers.

**GN-PDU:** PDU exchanged between peer entities of the GeoNetworking protocol

**ITS-FPCI:** control information passed from the ITS Facilities layer to the BTP

**port:** ITS station-internal address that identifies a protocol entity at the ITS facilities layer and represents an endpoint of a logical connection

**source:** originating BTP entity in the ITS station

**source port:** port number to be used by a facilities layer entity as the destination port in a subsequent reply to the originator

**NOTE:** Such an entity may be listening for a reply BTP packet.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI EN 302 665 [1], ETSI EN 302 636-3 [4] and the following apply:

- **BTP** Basic Transport Protocol
- **BTP-PDU** Basic Transport Protocol Protocol Data Unit
- **BTP-SAP** Basic Transport Protocol Service Access Point
- **GN-PDU** GeoNetworking protocol PDU exchanged between peer entities of the GeoNetworking protocol
- **GN-SAP** GeoNetworking Service Access Point
- **ITS-FPCI** ITS Facilities layer Protocol Control Information
- **ITS-FPDU** ITS Facilities layer Protocol Data Unit
- **ITS-FSDU** ITS Facilities layer Service Data Unit
- **LL** Link Layer
- **PCI** Protocol Control Information
- **PDU** Protocol Data Unit
4 Services provided by the Basic Transport Protocol

The Basic Transport Protocol (BTP) provides an end-to-end, connection-less transport service in the ITS ad hoc network (ETSI EN 302 636-3 [4]). Similar to UDP (IETF RFC 768 [5]), it offers a minimal transport service, i.e. the non-guaranteed delivery of BTP-PDUs among BTP entities. It also allows protocol entities at the ITS facilities layer to directly access the services provided by the GeoNetworking protocol.

The BTP shall meet the requirements specified in ETSI EN 302 665 [1] and ETSI EN 302 636-1 [2] and support the use cases defined in ETSI EN 302 636-2 [3].

The BTP provides services to ITS facilities layer protocol entities (figure 1), such as cooperative awareness basic service (ETSI EN 302 637-2 [3.1]) and DEN basic service (ETSI EN 302 637-3 [3.4]). The services are provided via the BTP-SAP using service primitives of different types that carry parameters, i.e. Protocol Control Information (ITS-FPCI), and the PDU of the upper protocol entity, i.e. ITS-FPDU. In order to provide its packet transport services, BTP uses the services of the GeoNetworking protocol (ETSI EN 302 636-4-1 [5]).

The present document specifies the following SAPs:

- BTP-SAP between BTP and the ITS facilities layer; and
- BTP-Mgmt-SAP between the BTP and the ITS Network and Transport Management.
5 Format convention

The basic convention for the specification of packet formats is illustrated in figure 2. The bits are grouped into octets. The bits of an octet are always shown horizontally and are numbered from 0 to 7. Up to 4 octets are shown horizontally; multiple sets of 4 octets are grouped vertically. Octets are numbered from 0 to N-1.

```
0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7
Octet 0 Octet 1 Octet 2 Octet 3 Octet 4 to Octet 7 ...
Octet N-1
```

**Figure 2: Format convention**

When (a part of) an octet represents a numeric quantity, the leftmost bit in the diagram is the most significant bit. Similarly when a numeric value spans multiple octet fields the leftmost field is the most significant (i.e. Big Endian or Network Byte Order).

**EXAMPLE:** The decimal value 199 is represented as shown below:

```
0 1 2 3 4 5 6 7
1 1 0 0 0 1 1 1
```

6 BTP packet structure

As specified in ETSI EN 302 636-3 [4], the BTP is used in the GeoNetworking protocol stack (ETSI EN 302 636-3 [4], clause 7.3.2).

A BTP packet shall be comprised of the protocol headers and the payload as depicted in figure 3. A BTP packet is encapsulated in a frame comprising:

- The access layer header is the header of the specific ITS access layer technology with which the packet is transmitted.
- The GeoNetworking header is the header of the GeoNetworking packet with an optional security header as defined in ETSI EN 302 636-4-1 [5].
- The BTP header is the header of the Basic Transport Protocol as defined in the present document.
- The payload represents the user data that is created by upper protocol entities, i.e. the ITS-FSDU, and passed to the BTP entity for transmission.

**NOTE:** The general packet structure is shown as seen by the MAC protocol of the ITS access technology layer.

```
<table>
<thead>
<tr>
<th>Lower layer headers</th>
<th>GeoNetworking Header with optional Security Header</th>
<th>BTP Header</th>
<th>Payload (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Layer Header</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

**Figure 3: BTP packet structure encapsulated in a lower layer frame**

7 BTP header

7.1 Overview

BTP defines two protocol headers:

- BTP-A for interactive packet transport; and
• BTP-B for non-interactive packet transport.

The headers are distinguished by the Next Header field in the GeoNetworking header (ETSI EN 302 636-4-1 [5]) as illustrated in table 1.

<table>
<thead>
<tr>
<th>Next Header (NH)</th>
<th>Encoding</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTP-A</td>
<td>1</td>
<td>BTP-A header</td>
</tr>
<tr>
<td>BTP-B</td>
<td>2</td>
<td>BTP-B header</td>
</tr>
</tbody>
</table>

NOTE: The encoding of the Next Header field is specified in ETSI EN 302 636-4-1 [5]. In case of conflict in the encoding, ETSI EN 302 636-4-1 [5] takes precedence.

### 7.2 BTP-A header

#### 7.2.1 Structure of the BTP-A header

The BTP-A header carries the source and the destination ports (figure 4). The destination port identifies the protocol entity at the ITS facilities layer in the destination of a BTP-PDU. The source port indicates the port that the ITS facilities layer protocol entity in the source has used to send the ITS-FSDU. The source port represents the port to which a reply to the BTP PDU should be addressed in the absence of other information.

![Figure 4: BTP-A header format](image)

#### 7.2.2 Fields of the BTP-A header

The BTP header shall carry the fields as specified in table 2.

<table>
<thead>
<tr>
<th>Field #</th>
<th>Field name</th>
<th>Octet position</th>
<th>Type</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Destination port</td>
<td>0 1</td>
<td>16 bit integer</td>
<td>It identifies the protocol entity at the destination's ITS facilities layer.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Source port</td>
<td>2 3</td>
<td>16 bit integer</td>
<td>It identifies the protocol entity at the source's ITS facilities layer.</td>
<td></td>
</tr>
</tbody>
</table>

### 7.3 BTP-B header

#### 7.3.1 Structure of the BTP-B header

The BTP-B header carries the destination port, but no source port (figure 5). The destination port identifies the protocol entity at the ITS facilities layer in the destination of a BTP-PDU. For well-known ports, it shall be set to a value corresponding to the identified facilities layer service as specified in ETSI TS 103 248 [6]. The protocol at the source ITS facilities layer provides additional information if Destination port is a well-known port. If specified in ETSI TS 103 248 [6], the Destination port info shall be set to a value corresponding to the identified facilities layer service, as specified in ETSI TS 103 248 [6]. Default setting of the Destination port info is 0.
7.3.2 Fields of the BTP-B header

The BTP-B header shall carry the fields as specified in table 3.

Table 3: Fields of BTP-B header

<table>
<thead>
<tr>
<th>Field #</th>
<th>Field name</th>
<th>Octet position</th>
<th>Type</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Destination port</td>
<td>0 1</td>
<td>16 bit integer</td>
<td>16 bit integer</td>
<td>It identifies the protocol entity at the ITS facilities layer in the destination. For well-known ports it shall be set to a value corresponding to the identified facilities layer service as specified the values in ETSI TS 103 248 [6].</td>
</tr>
<tr>
<td>2</td>
<td>Destination port info</td>
<td>2 3</td>
<td>16 bit integer</td>
<td>16 bit integer</td>
<td>It provides additional information. If Destination port is a well-known port and the field value is specified in ETSI TS 103 248 [6], it shall be set to a value corresponding to the identified facilities layer service as specified in ETSI TS 103 248 [6]. Default setting is 0.</td>
</tr>
</tbody>
</table>

8 Protocol operations

8.1 General

This clause specifies the operations of a BTP entity for sending and receiving a BTP-PDU.

8.2 Source operations

On reception of a BTP-Data.request primitive, the source shall execute the following operations:

1) create a BTP-PDU with the ITS-FSDU as payload and a BTP packet header (clause 7):

a) if the BTP type parameter in the BTP-Data.request primitive is BTP-A, set the BTP header fields as specified in table 4:

Table 4: Field settings for the BTP-A header

<table>
<thead>
<tr>
<th>Field name</th>
<th>Field setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source port</td>
<td>Value of Source port parameter from the BTP-Data.request primitive</td>
<td>It identifies the port of the protocol entity at the source's ITS facilities layer in the source of the BTP PDU.</td>
</tr>
<tr>
<td>Destination port</td>
<td>Value of Destination port parameter from the BTP-Data.request primitive</td>
<td>It identifies the protocol entity at the destination ITS facilities layer.</td>
</tr>
</tbody>
</table>

b) if the BTP type parameter in the BTP-Data.request primitive is BTP-B, set the BTP header fields as specified in table 5;
Table 5: Field settings for the BTP-B header

<table>
<thead>
<tr>
<th>Field name</th>
<th>Field setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination port</td>
<td>Value of Destination port parameter from the BTP-Data.request primitive</td>
<td>It identifies the protocol entity at the destination ITS facilities layer. For well-known ports it shall be set to a value corresponding to the identified facilities layer service as specified in ETSI TS 103 248 [6].</td>
</tr>
<tr>
<td>Destination port info</td>
<td>Value of Destination port info parameter from the BTP-Data.request primitive</td>
<td>It provides additional information. If Destination port is a well-known port and the field value is specified in ETSI TS 103 248 [6], it shall be set to a value corresponding to the identified facilities layer service as specified in ETSI TS 103 248 [6]. Default setting is 0.</td>
</tr>
</tbody>
</table>

2) pass the BTP-PDU to the GeoNetworking protocol entity, as specified in ETSI EN 302 636-4-1 [5] via the GN-SAP by means of a GN-Data.request primitive with the parameter settings in table 6.

Table 6: Parameter settings in the GN-Data.request primitive to request sending a GeoNetworking packet

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Parameter setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper protocol entity</td>
<td>BTP</td>
</tr>
<tr>
<td>Packet transport type</td>
<td>Value of BTP-Data.request parameter GN Packet transport type.</td>
</tr>
<tr>
<td>Destination address</td>
<td>Value of BTP-Data.request parameter GN Destination address.</td>
</tr>
<tr>
<td>Communication profile</td>
<td>Value of BTP-Data.request parameter GN Communication profile.</td>
</tr>
<tr>
<td>Security profile</td>
<td>Value of BTP-Data.request parameter GN Security profile. Omitted if not used in BTP-Data.request.</td>
</tr>
<tr>
<td>Maximum packet lifetime</td>
<td>Value of BTP-Data.request parameter GN Maximum packet lifetime. Omitted if not used in BTP-Data.request.</td>
</tr>
<tr>
<td>Maximum repetition time</td>
<td>Value of BTP-Data.request parameter GN Maximum repetition time. Omitted if not used in BTP-Data.request.</td>
</tr>
<tr>
<td>Repetition interval</td>
<td>Value of BTP-Data.request parameter GN Repetition interval. Omitted if not used in BTP-Data.request.</td>
</tr>
<tr>
<td>Maximum hop limit</td>
<td>Value of BTP-Data.request parameter GN Maximum hop limit. Omitted if not used in BTP-Data.request.</td>
</tr>
<tr>
<td>Traffic class</td>
<td>Value of BTP-Data.request parameter GN Traffic class.</td>
</tr>
<tr>
<td>Length</td>
<td>Length of [ITS-FSDU + 4].</td>
</tr>
<tr>
<td>Data</td>
<td>BTP-SDU payload.</td>
</tr>
</tbody>
</table>

8.3 Destination operations

On reception of a BTP-PDU via the GN-Data.indication primitive, the destination shall pass the payload of the BTP-PDU via the BTP-SAP by means of a BTP-Data.indication with the parameter settings in table 7.
Table 7: Parameter settings in the GN-Data.indication primitive
to indicate the reception of a BTP PDU

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Parameter setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source port</td>
<td>If BTP header type is BTP-A, set to Source port in the BTP-A header. If BTP header type is BTP-B, omit this parameter.</td>
</tr>
<tr>
<td>Destination port info</td>
<td>If BTP header type is BTP-A, omit this parameter. If BTP header type is BTP-B, set to Destination port info in BTP-B header.</td>
</tr>
<tr>
<td>Destination port</td>
<td>Set to Destination port in the BTP-A or BTP-B header.</td>
</tr>
<tr>
<td>GN Packet transport type</td>
<td>Value of GN-Data.indication parameter Packet transport type.</td>
</tr>
<tr>
<td>GN Destination address</td>
<td>Value of GN-Data.indication parameter Destination.</td>
</tr>
<tr>
<td>GN Source position vector</td>
<td>Value of GN-Data.indication parameter Source position vector.</td>
</tr>
<tr>
<td>GN Permissions</td>
<td>Value of GN-Data.indication parameter GN Permissions. Omitted if not used in GN-Data.indication.</td>
</tr>
<tr>
<td>GN Traffic class</td>
<td>Value of GN-Data.indication parameter Traffic class. Omitted if not used in GN-Data.indication.</td>
</tr>
<tr>
<td>Length</td>
<td>Length of [GN-PDU payload - 4].</td>
</tr>
<tr>
<td>Data</td>
<td>BTP-PDU payload.</td>
</tr>
</tbody>
</table>
Annex A (informative): BTP data services

A.1 General

The BTP data service primitives allow entities of ITS Facilities protocols to send and receive PDUs via the BTP-SAP.

A.2 BTP-Data.request

The BTP-Data.request primitive is used by the ITS Facilities protocol entity to request sending a BTP-PDU. Upon reception of the BTP-Data.request primitive, the BTP protocol delivers the BTP-SDU to the GeoNetworking protocol entity via the GN-SAP.

The parameters of the BTP-Data.request are as follows:

```plaintext
BTP-Data.request ( 
    BTP type, 
    Source port, (optional) 
    Destination port, 
    Destination port info, (optional) 
    GN Packet transport type, 
    GN Destination address, 
    GN Communication profile, 
    GN Security profile, (optional) 
    GN Maximum packet lifetime, (optional) 
    GN Repetition interval, (optional) 
    GN Maximum repetition time, (optional) 
    GN Maximum hop limit, (optional) 
    GN Traffic class, 
    Length, 
    Data 
)
```

NOTE: GN in the primitive parameters indicates that this parameter is passed to the GeoNetworking protocol entity via the GN-SAP without being used by BTP.

The BTP type parameter specifies whether the BTP is interactive (BTP-A) or non-interactive (BTP-B).

The Source port parameter specifies the BTP port that is used to send the ITS-FSDU and is the port to which a reply should be sent in the absence of other information. The Source port parameter is optional and is only used for interactive packet transport (BTP-A).

The Destination port parameter specifies protocol entity at the destination ITS facilities layer.

The Destination port info parameter specifies additional information if Destination port is a well-known port and the field value is specified in ETSI TS 103 248 [6]. The parameter is optional.

The GN Packet transport type parameter specifies the packet transport type (GeoUnicast, SHB, TSB, GeoBroadcast, GeoAnycast).

The GN Destination address parameter specifies the destination address for GeoUnicast or the geographical area for GeoBroadcast/GeoAnycast.

The GN Communication profile parameter, as specified in ETSI EN 302 636-4-1 [5], determines the LL protocol entity.

The GN Security profile parameter determines the security service to invoke. The parameter is optional.

The GN Maximum packet lifetime parameter specifies the maximum tolerable time in [s] a GeoNetworking packet can be buffered until it reaches its destination. The parameter is optional.
The **GN Repetition interval** parameter specifies the duration between two consecutive transmissions of the same GeoNetworking packet during maximum repetition time of a packet in [ms]. The parameter is optional.

The **GN Maximum repetition time** parameter specifies the duration in [ms] for which the packet will be repeated if the Repetition interval is set. The parameter is optional.

The **GN Maximum hop limit** specifies the number of hops a packet is allowed to have in the network, i.e. how often the packet is allowed to be forwarded. The parameter is optional.

The **GN Traffic class** parameter specifies the traffic class for the message.

The **Length** parameter indicates the length of the **Data** parameter.

The **Data** parameter represents the payload of the BTP packet to be transmitted, i.e. the ITS-FPDU.

### A.3 BTP-Data.indication

The **BTP-Data.indication** primitive indicates to an ITS facilities layer protocol entity that an ITS-FSDU has been received. The ITS-FSDU is processed as determined by the receiving upper protocol entity.

The parameters of the BTP-Data.indication primitive are as follows:

```
BTP-Data.indication (
    Source port, (optional)  
    Destination port,  
    Destination port info, (optional)  
    GN Packet transport type,  
    GN Destination address,  
    GN Source position vector,  
    GN Security report, (optional)  
    GN Certificate id, (optional)  
    GN Permissions, (optional)  
    GN Traffic class,  
    GN Remaining packet lifetime, (optional)  
    Length,  
    Data
)
```

**NOTE:** **GN** in the primitive parameters indicates that this parameter is passed to the ITS facilities layer protocol entity via the BTP-SAP without being used by BTP.

The **Source port** parameter specifies the BTP port that is used to send the ITS-FSDU and is the port to which a reply should be sent in the absence of other information. The **Source port** parameter is optional and is only used for interactive packet transport (BTP-A).

The **Destination port** parameter specifies protocol entity at the destination ITS facilities layer.

The **Destination port info** parameter specifies additional information if **Destination port** is a well-known port and the field value is specified in ETSI TS 103 248 [6]. The parameter is optional.

The **GN Packet transport type** parameter specifies the packet transport type (GeoUnicast, SHB, TSB, GeoBroadcast, GeoAnycast).

The **GN Destination address** parameter specifies the destination address for GeoUnicast or the geographical area for GeoBroadcast/GeoAnycast, with which the GeoNetworking packet was generated by the source.

The **GN Source position vector** parameter specifies the geographical position for the source of the received GeoNetworking packet.

The **GN Security report** contains result information from the security operations for decryption and verification (parameter **report** in the service primitive **SN-DECAP.confirm**). The parameter is optional.
The **GN Certificate id** contains the identification of source certificate, for example the certificate hash (parameter `certificate_id` in the service primitive `SN-DECAP.confirm`). The parameter is optional.

The **GN Permissions** parameter contains the sender permissions (parameter `permissions` in the service primitive `SN-DECAP.confirm`). The parameter is optional.

The **GN Traffic Class** parameters is the traffic class, with which the GeoNetworking packet was generated by the source.

The **GN Remaining packet lifetime** parameter is the remaining lifetime of the packet. The parameter is optional.

The **Length** parameter indicates the length of the **Data** parameter.

The **Data** parameter represents the payload of the received BTP packet, i.e. the ITS-FPDU.
Annex B (informative):
Bibliography


NOTE: Available at http://www.simtd.de.


NOTE: Available at http://www.drive-c2x.eu/project.
## History

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