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| 3GPP TS 24.558 V0.0.0 (2021-03) |
| Technical Specification |
| 3rd Generation Partnership Project;Technical Specification Group Core Network and Terminals;Enabling Edge Applications;Protocol specification; (Release 17) |
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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.

In the present document, modal verbs have the following meanings:

**shall** indicates a mandatory requirement to do something

**shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

**can** indicates that something is possible

**cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

**will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

# Introduction

This clause is optional. If it exists, it shall be the second unnumbered clause.

# 1 Scope

This clause shall start on a new page.

The present document …

# 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".

…

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

It is preferred that the reference to 21.905 be the first in the list.

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP 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 3GPP TR 21.905 [1].

Definition format (Normal)

**<defined term>:** <definition>.

**example:** text used to clarify abstract rules by applying them literally.

## 3.2 Symbols

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

Symbol format (EW)

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

Abbreviation format (EW)

<ABBREVIATION> <Expansion>

# 4 Overview

*This clause will provide the overview of the EDGEAPP services.*

# 5 Services offered by Edge Enabler Server

## 5.1 Introduction

*This clause will provide the list of Edge Enabler Server services with their respective service operations.*

## 5.x <Eees\_xxx> Service

*Add a copy of this clause for a new API, adding the overview of the API, Details of service operations, detailed description of each service operation. Yellow highlighted text needs to be replaced with appropriate clause number and the API, Service operation name.*

### 5.x.1 Service Description

*This clause will provide a general description of the related service, include a description of the functional elements involved in the invocation of the service.*

### 5.x.2 Service Operations

One clause per service operation. This clause will include a description of the different service operations supported by the service.

#### 5.x.2.1 Introduction

The service operation defined for <API Name – Eees\_xxx> API is shown in the table 5.x.2.1-1.

Table 5.x.2.1-1: Operations of the <API Name> API

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
|  |  |  |

#### 5.x.2.2 <Service operation 1>

##### 5.x.2.2.1 General

*Provide the general description of the service operation.*

##### 5.x.2.2.2 <Description> <Service Operation Name> operation

#### 5.x.2.3 <Service operation 2>

*And so on if there are more than 2 service operations to be described for the service.*

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

# 6 Edge Enabler Server API Definitions

*This clause will provide the definitions of all the Edge Enabler Server APIs*

## 6.1 Information applicable to several EES APIs

*This clause will provide the design aspects that are common for several EES APIs.*

## 6.x <API Name – Eees\_xxx> API

*Add a copy of this clause for a new API definition, adding all the clauses below. All the clauses are mandatory for each API. Yellow highlighted text needs to be replaced with appropriate clause number and the API, Service operation name.*

### 6.x.1 API URI

### 6.x.2 Resources

#### 6.x.2.1 Overview



Figure 6.x.2.1-1: Resource URI structure of the <API Name> API

Table 6.x.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 6.x.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
|  |  |  |  |

#### 6.x.2.2 Resource: <Resource name>

##### 6.x.2.2.1 Description

##### 6.x.2.2.2 Resource Definition

##### 6.x.2.2.3 Resource Standard Methods

###### 6.x.2.2.3.1 <Method Name>

Table 6.x.2.2.3.1-1: URI query parameters supported by the <Method Name> method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| <name> or n/a | <type> or <leave empty> | <M, C or O> | 0..1 or 1 or 0..N or 1..N or <leave empty> | <only if applicable> |

This method shall support the request data structures specified in table 6.x.2.2.3.1-2 and the response data structures and response codes specified in table 6.x.2.2.3.1-3.

Table 6.x.2.2.3.1-2: Data structures supported by the <Method Name> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "<type>" or "array*(<type>*)" or "map*(<type>*)" or n/a | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table 6.x.2.2.3.1-3: Data structures supported by the <Method Name> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" or n/a | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |
| NOTE: The manadatory HTTP error status code for the <method 1> method listed in <Table X of 3GPP TS 29.xxx [x]> also apply. |

Table 6.x.2.2.3.1-4: Headers supported by the <e.g. GET> method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| <header name>  | <data type>e.g. string | "M", "C" or "O" | "0..1", "1", "1..N", "1..N", or <leave empty> | <description> |

Table 6.x.2.2.3.1-5: Headers supported by the <e.g. 200> response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| <header name>  | <data type>e.g. string | "M", "C" or "O" | "0..1", "1", "1..N", "1..N", or <leave empty> | <description> |

Table 6.x.2.2.3.1-6: Links supported by the 200 Response Code on this endpoint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Resource name | HTTP method or custom operation | Link parameter(s) | Description |
| <link name>e.g. search | <resource 1>e.g. Stored Search (Document) | <method 1>e.g. GET | <parameter>e.g. searchId | <description of the link> |

##### 6.x.2.2.4 Resource Custom Operations

The following clauses will specify the custom operations supported by the resource.

It will describe, for each custom operation, the use and the URI of the operation, the HTTP method on which it is mapped, request and response data structures and response codes, and if applicable, HTTP headers specific to the operation.

###### 6.x.2.2.4.1 Overview

Table 6.x.2.2.4.1-1: Custom operations

|  |  |  |  |
| --- | --- | --- | --- |
| Operation name | Custom operaration URI | Mapped HTTP method | Description |
| <custom operation name> | <custom operation URI> | e.g.POST | <Operation executed by Custom operation> |
|  |  |  |  |

###### 6.x.2.2.4.2 Operation: < operation 1 >

This clause will specify the meaning of the operation applied on the resource.

6.x.2.2.4.2.1 Description

This sublause will describe the custom operation and what it is used for, and the custom operation's URI.

6.x.2.2.4.2.2 Operation Definition

This clause will specify the custom operation and the HTTP method on which it is mapped.

This operation shall support the request data structures specified in table 6.x.2.2.4.2.2-1 and the response data structure and response codes specified in table 6.x.2.2.4.2.2-2.

Table 6.x.2.2.4.2.2-1: Data structures supported by the <e.g. POST> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table 6.x.2.2.4.2.2-2: Data structures supported by the <e.g. POST> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |
| NOTE: The manadatory HTTP error status code for the <e.g. POST> method listed in <Table X of 3GPP TS 29.xxx [x]> also apply. |

### 6.x.3 Custom Operations without associated resources

#### 6.x.3.1 Overview

This clause will specify custom operations without any associated resource supported by this API.

Table 6.x.3.1-1: Custom operations without associated resources

|  |  |  |
| --- | --- | --- |
| Custom operation URI | Mapped HTTP method | Description |
| <custom operation URI> | e.g.POST | <Operation executed by Custom operation> |
|  |  |  |

#### 6.x.3.2 Operation: <operation 1>

Where <operation 1> is to be replaced by the name of the custom operation, e.g. Authentication\_Information\_Request.

It will describe, for each custom operation, the use and the URI of the operation, the HTTP method on which it is mapped, request and response data structures and response codes, and if applicable, HTTP headers specific to the operation.

##### 6.x.3.2.1 Description

This subclause will describe the custom operation and what it is used for, and the custom operation's URI.

##### 6.x.3.2.2 Operation Definition

This clause will specify the custom operation and the HTTP method on which it is mapped.

This operation shall support the response data structures and response codes specified in tables 6.x.3.2.2-1 and 6.x.3.2.2-2.

Table 6.x.3.2.2-1: Data structures supported by the <e.g. POST> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table 6.x.3.2.2-2: Data structures supported by the <e.g. POST> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |
| NOTE: The manadatory HTTP error status code for the <e.g. POST> method listed in <Table X of 3GPP TS 29.xxx [x]> also apply. |

#### 6.x.3.3 Operation: < operation 2>

*And so on if there are more than one custom operations supported by the service. Same structure as in clause 6.x.3.2*

### 6.x.4 Notifications

#### 6.x.4.1 General

Table 6.x.4.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| <notification 1>e.g. Status Change Notification | < Callback URI >e.g. {StatusCallbackUri} | e.g POST | e.g. Notify Event  |
|  |  |  |  |

#### 6.x.4.2 <notification 1>

##### 6.x.4.2.1 Description

##### 6.x.4.2.2 Notification definition

Callback URI: <Notification resource URI>

This method shall support the URI query parameters specified in table 6.x.4.2.2-1.

Table 6.x.4.2.2-1: URI query parameters supported by the <Method Name> method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
|  |  |  |  |  |

This method shall support the request data structures specified in table 6.x.4.2.2-2 and the response data structures and response codes specified in table 6.x.4.2.2-3.

Table 6.x.4.2.2-2: Data structures supported by the <Method Name> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table 6.x.4.2.2-3: Data structures supported by the <Method Name> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |

### 6.x.5 Data Model

#### 6.x.5.1 General

This clause specifies the application data model supported by the API. Data types listed in clause <6.1 related to EdgeApp design aspects common for several EES APIs> apply to this API

Table 6.x.5.1-1 specifies the data types defined specifically for the <API Name> API service.

Table 6.x.5.1-1: <API Name> API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
|  |  |  |  |

Table 6.x.5.1-2 specifies data types re-used by the <API Name> API service.

Table 6.x.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
|  |  |  |  |

#### 6.x.5.2 Structured data types

##### 6.x.5.2.1 Introduction

##### 6.x.5.2.2 Type: <Data type name>

Table 6.x.5.2.2-1: Definition of type <Data Type name>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| <*attribute name*> | "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N" | <only if applicable> |  |
|  |  |  |  |  |  |

#### 6.x.5.3 Simple data types and enumerations

This clause will define simple data types and enumerations that can be referenced from data structures defined in the previous clauses.

##### 6.x.5.3.1 Introduction

This clause defines simple data types and enumerations that can be referenced from data structures defined in the previous clauses.

##### 6.x.5.3.2 Simple data types

The simple data types defined in table 6.x.5.3.2-1 shall be supported.

Table 6.x.5.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
|  | <one simple data type, i.e. boolean, integer, number, or string> |  |  |

##### 6.x.5.3.3 Enumeration: <EnumType1>

The enumeration <EnumType1> represents <something>. It shall comply with the provisions defined in table 6.x.5.3.3-1.

Table 6.x.5.3.3-1: Enumeration < EnumType1>

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
|  |  |  |

### 6.x.6 Error Handling

### 6.x.7 Feature negotiation

General feature negotiation procedures are defined in clause <6.1>. Table 6.x.7-1 lists the supported features for <API name> API.

Table 6.x.7-1: Supported Features

|  |  |  |
| --- | --- | --- |
| **Feature number** | **Feature Name** | **Description** |
|  |  |  |

# 7 Security

*This clause will provide the security aspects.*

Editor’s note: Security related issues on the use of the concept of APIs are being studied by SA3 in TR 33.839. This clause needs to incorporate necessary security requirements based on normative requirements from SA3 work.

Annex A (normative):
Edge Enabler Server OpenAPI specification

This is a normative annex clause to specify the Open API representation of the EES APIs defined in this specification.

## A.1 General

*This clause provides the introduction of the Open API specification files and their location.*

Annex B (informative):
Protocol options considered for EDGE-4 reference point

This clause describes protocol options for EDGE-4 reference point in detail.

Editor’s note: Based on solutions feasibility and evaluation and conclusion, solution(s) will be moved to the main body of the TS, i.e. Annex B will be marked as void before TS is sent for approval.

## B.1 API Option

### B.1.1 Introduction

*This clause will provide a general description on the use of APIs for EDGE-4..*

### B.1.2 <Eecs\_xxx> Service

*Add a copy of this clause for a new API, adding the overview of the API, Details of service operations, detailed description of each service operation. Yellow highlighted text needs to be replaced with appropriate clause number and the API, Service operation name.*

#### B.1.2.1 Service Description

*This clause will provide a general description of the related service, include a description of the functional elements involved in the invocation of the service.*

#### B.1.2.2 Service Operations

*One clause per service operation. This clause will include a description of the different service operations supported by the service.*

##### B.1.2.2.1 Introduction

The service operation defined for <API Name> API is shown in the table B.1.2.2.1-1.

Table B.1.2.2.1-1: Operations of the <API Name> API

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
|  |  |  |

##### B.1.2.2.2 <Service operation 1>

###### B.1.2.2.2.1 General

*This clause will provide the general description of the service operation 1.*

###### B.1.2.2.2.2 <Description> <Service Operation Name> operation

##### B.1.2.2.3 <Service operation 2>

*And so on if there are more than 2 service operations to be described for the service.*

### B.1.3 <API Name – Eecs\_xxx> API

*Add a copy of this clause for a new API definition, adding all the clauses below. All the clauses are mandatory for each API. Yellow highlighted text needs to be replaced with appropriate clause number and the API, Service operation name.*

#### B.1.3.1 API URI

#### B.1.3.2 Resources

##### B.1.3.2.1 Overview



Figure B.1.3.2.1-1: Resource URI structure of the <API Name> API

Table B.1.3.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table B.1.3.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
|  |  |  |  |

##### B.1.3.2.2 Resource: <Resource name>

###### B.1.3.2.2.1 Description

###### B.1.3.2.2.2 Resource Definition

###### B.1.3.2.2.3 Resource Standard Methods

###### B.1.3.2.2.3.1 <Method Name>

Table B.1.3.2.2.3.1-1: URI query parameters supported by the <Method Name> method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| <name> or n/a | <type> or <leave empty> | <M, C or O> | 0..1 or 1 or 0..N or 1..N or <leave empty> | <only if applicable> |

This method shall support the request data structures specified in table B.1.3.2.2.3.1-2 and the response data structures and response codes specified in table B.1.3.2.2.3.1-3.

Table B.1.3.2.2.3.1-2: Data structures supported by the <Method Name> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "<type>" or "array*(<type>*)" or "map*(<type>*)" or n/a | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table B.1.3.2.2.3.1-3: Data structures supported by the <Method Name> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" or n/a | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |
| NOTE: The manadatory HTTP error status code for the <method 1> method listed in <Table X of 3GPP TS 29.xxx [x]> also apply. |

Table B.1.3.2.2.3.1-4: Headers supported by the <e.g. GET> method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| <header name>  | <data type>e.g. string | "M", "C" or "O" | "0..1", "1", "1..N", "1..N", or <leave empty> | <description> |

Table B.1.3.2.2.3.1-5: Headers supported by the <e.g. 200> response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| <header name>  | <data type>e.g. string | "M", "C" or "O" | "0..1", "1", "1..N", "1..N", or <leave empty> | <description> |

Table B.1.3.2.2.3.1-6: Links supported by the 200 Response Code on this endpoint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Resource name | HTTP method or custom operation | Link parameter(s) | Description |
| <link name>e.g. search | <resource 1>e.g. Stored Search (Document) | <method 1>e.g. GET | <parameter>e.g. searchId | <description of the link> |

###### B.1.3.2.2.4 Resource Custom Operations

The following clauses will specify the custom operations supported by the resource.

It will describe, for each custom operation, the use and the URI of the operation, the HTTP method on which it is mapped, request and response data structures and response codes, and if applicable, HTTP headers specific to the operation.

###### B.1.3.2.2.4.1 Overview

Table B.1.3.2.2.4.1-1: Custom operations

|  |  |  |  |
| --- | --- | --- | --- |
| Operation name | Custom operaration URI | Mapped HTTP method | Description |
| <custom operation name> | <custom operation URI> | e.g.POST | <Operation executed by Custom operation> |
|  |  |  |  |

B.1.3.2.2.4.2 Operation: < operation 1 >

This clause will specify the meaning of the operation applied on the resource.

B.1.3.2.2.4.2.1 Description

This subclause will describe the custom operation and what it is used for, and the custom operation's URI.

B.1.3.2.2.4.2.2 Operation Definition

This clause will specify the custom operation and the HTTP method on which it is mapped.

This operation shall support the request data structures specified in table B.1.3.2.2.4.2.2-1 and the response data structure and response codes specified in table B.1.3.2.2.4.2.2-2.

Table B.1.3.2.2.4.2.2-1: Data structures supported by the <e.g. POST> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table B.1.3.2.2.4.2.2-2: Data structures supported by the <e.g. POST> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |
| NOTE: The manadatory HTTP error status code for the <e.g. POST> method listed in <Table X of 3GPP TS 29.xxx [x]> also apply. |

#### B.1.3.3 Custom Operations without associated resources

##### B.1.3.3.1 Overview

This clause will specify custom operations without any associated resource supported by this API.

Table B.1.3.3.1-1: Custom operations without associated resources

|  |  |  |
| --- | --- | --- |
| Custom operation URI | Mapped HTTP method | Description |
| <custom operation URI> | e.g.POST | <Operation executed by Custom operation> |
|  |  |  |

##### B.1.3.3.2 Operation: <operation 1>

Where <operation 1> is to be replaced by the name of the custom operation, e.g. Authentication\_Information\_Request.

It will describe, for each custom operation, the use and the URI of the operation, the HTTP method on which it is mapped, request and response data structures and response codes, and if applicable, HTTP headers specific to the operation.

###### B.1.3.3.2.1 Description

This subclause will describe the custom operation and what it is used for, and the custom operation's URI.

###### B.1.3.3.2.2 Operation Definition

This clause will specify the custom operation and the HTTP method on which it is mapped.

This operation shall support the response data structures and response codes specified in tables B.1.3.3.2.2-1 and B.1.3.3.2.2-2.

Table B.1.3.3.2.2-1: Data structures supported by the <e.g. POST> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table B.1.3.3.2.2-2: Data structures supported by the <e.g. POST> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |
| NOTE: The manadatory HTTP error status code for the <e.g. POST> method listed in <Table X of 3GPP TS 29.xxx [x]> also apply. |

##### B.1.3.3.3 Operation: < operation 2>

*And so on if there are more than one custom operations supported by the service. Same structure as in clause* B.1.4*.3.2*

#### B.1.3.4 Notifications

##### B.1.3.4.1 General

Table B.1.3.4.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| <notification 1>e.g. Status Change Notification | < Callback URI >e.g. {StatusCallbackUri} | e.g POST | e.g. Notify Event  |
|  |  |  |  |

###### B.1.3.4.2 <notification 1>

###### B.1.3.4.2.1 Description

###### B.1.3.4.2.2 Notification definition

Callback URI: <Notification resource URI>

This method shall support the URI query parameters specified in table B.1.3.4.2.2-1.

Table B.1.3.4.2.2-1: URI query parameters supported by the <Method Name> method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
|  |  |  |  |  |

This method shall support the request data structures specified in table B.1.3.4.2.2-2 and the response data structures and response codes specified in table B.1.3.4.2.2-3.

Table B.1.3.4.2.2-2: Data structures supported by the <Method Name> Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1", or "M..N", or <leave empty> | <only if applicable> |

Table B.1.3.4.2.2-3: Data structures supported by the <Method Name> Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N", or <leave empty> | <list applicable codes with name from the applicable RFCs> | <Meaning of the success case>or<Meaning of the error case with additional statement regarding error handling> |

#### B.1.3.5 Data Model

##### B.1.3.5.1 General

This clause specifies the application data model supported by the API.

Table B.1.3.5.1-1 specifies the data types defined specifically for the <API Name> API service.

Table B.1.3.5.1-1: <API Name> API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
|  |  |  |  |

Table B.1.3.5.1-2 specifies data types re-used by the <API Name> API service.

Table B.1.3.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
|  |  |  |  |

##### B.1.3.5.2 Structured data types

###### B.1.3.5.2.1 Introduction

###### B.1.3.5.2.2 Type: <Data type name>

Table B.1.3.5.2.2-1: Definition of type <Data Type name>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| <*attribute name*> | "*<type>*" or "array*(<type>*)" or "map*(<type>*)" | "M", "C" or "O" | "0..1", "1" or "M..N" | <only if applicable> |  |
|  |  |  |  |  |  |

##### B.1.3.5.3 Simple data types and enumerations

This clause will define simple data types and enumerations that can be referenced from data structures defined in the previous clauses.

###### B.1.3.5.3.1 Introduction

This clause defines simple data types and enumerations that can be referenced from data structures defined in the previous clauses.

###### B.1.3.5.3.2 Simple data types

The simple data types defined in table B.1.3.5.3.2-1 shall be supported.

Table B.1.3.5.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
|  | <one simple data type, i.e. boolean, integer, number, or string> |  |  |

###### B.1.3.5.3.3 Enumeration: <EnumType1>

The enumeration <EnumType1> represents <something>. It shall comply with the provisions defined in table B.1.3.5.3.3-1.

Table B.1.3.5.3.3-1: Enumeration < EnumType1>

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
|  |  |  |

#### B.1.3.6 Error Handling

#### B.1.3.7 Feature negotiation

Table B.1.3.7-1 lists the supported features for <API name> API.

Table B.1.3.7-1: Supported Features

|  |  |  |
| --- | --- | --- |
| **Feature number** | **Feature Name** | **Description** |
|  |  |  |

### B.1.4 Conclusions

This clause provides the conclusions.

## B.2 NAS Option

### B.2.1 General

*This clause will provide the general description on the use of the NAS for EDGE-4.*

### B.2.2 Elementary procedures between ECS and EEC

#### B.2.2.1 General

*This clause will provide general description of the service provisioning procedures between ECS and EEC.*

#### B.2.2.2 Procedures

##### B.2.2.2.1 Service provisioning procedure based on Request-Response model

*This clause will provide a general description of the related provisioning procedure, include a description of the functional elements involved procedure.*

##### B.2.2.2.2 Service provisioning procedure based on Subscribe-Notify model

*This clause will provide a general description of the related provisioning procedure, include a description of the functional elements involved procedure.*

### B.2.3 Handling of unknown, unforeseen, and erroneous service data

#### B.2.3.1 General

*This clause will specify "error handling procedures" for the handling of unknown, unforeseen, and erroneous service data by the receiving entity (ECS and EEC).*

#### B.2.3.2 Message too short or too long

*This clause will specify handling when a received message is too short or too long.*

#### B.2.3.3 Unknown or unforeseen message type

*This clause will specify handling when receiving a message with message type not defined.*

#### B.2.3.4 Non-semantical mandatory information element

*This clause will specify handling of non-semantical mandatory information element.*

#### B.2.3.5 Unknown and unforeseen IEs in the non-imperative message part

*This clause will specify handling of unknown and unforeseen IEs in the non-imperative message part.*

#### B.2.3.6 Non-imperative message part errors

*This clause will specify handling of* non-imperative message part errors*.*

#### B.2.3.7 Messages with semantically incorrect contents

*This clause will specify handling of messages with semantically incorrect contents.*

### B.2.4 Message functional definition and contents

*This clause will provide the definitions of all the message specified in clause B.2.2.*

#### B.2.4.1 Service provisioning request

*This clause will describe the content of service provisioning request from the EEC to the ECS.*

#### B.2.4.2 Service provisioning response

*This clause will describe the content of service provisioning response from the ECS to the EEC.*

#### B.2.4.3 Service provisioning subscription request

*This clause will describe the content of service provisioning subscription request from the EEC to the ECS.*

#### B.2.4.4 Service provisioning subscription response

*This clause will describe the content of service provisioning subscription response from the ECS to the EEC.*

#### B.2.4.5 Service provisioning notification

*This clause will describe the content of service provisioning notfication from the ECS to the EEC.*

#### B.2.4.6 Service provisioning subscription update request

*This clause will describe the content of service provisioning subscription update request from the EEC to the ECS.*

#### B.2.4.7 Service provisioning subscription update response

*This clause will describe the content of service provisioning subscription update response from the ECS to the EEC.*

#### B.2.4.8 Service provisioning unsubscribe request

*This clause will describe the content of service provisioning unsubscribed request from the EEC to the ECS.*

#### B.2.4.9 Service provisioning unsubscribe response

*This clause will describe the content of service provisioning unsubscribe response from the ECS to the EEC.*

### B.2.5 Information elements coding

#### B.2.5.1 General

#### B.2.5.1 Service provisioning service message type

*This clause will define the type of service provisioning service messages used.*

#### B.2.5.2 New information element

*This clause will define the content and coding of the information element.*

### B.2.6 Timers

*This clause will define potential timers.*

### B.2.7 Conclusions

This clause provides the conclusions.

Annex C (informative):
Change history

|  |
| --- |
| **Change history** |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
|  |  |  |  |  |  |  |  |