**3GPP TSG-CT WG4 Meeting #101eC4-205abc**

**E-Meeting, 03rd – 13th November 2020 *was* C4-205093**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.563** | **CR** | **0010** | **rev** | **1** | **Current version:** | **16.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Config APN for PDN connectivity status | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UDICOM | | | | |  | ***Date:*** | | | 2020-10-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 1. In stage 2 specification clause 5.6.1.10 (Specific Parameters for Monitoring Event: PDN Connectivity Status), it mentions:   *3. The SCEF executes step 3 of clause 5.6.1.1. SCEF includes the APN for which the PDN Connectivity Status is to be monitored in the Monitoring Request to HSS. SCEF may also request PDN Connectivity Status for all PDN Connections regardless of APN (e.g. if APN is unknown in SCEF).*  *NOTE 2: The SCEF uses the SCS/AS Identifier and External Group Identifier, External Identifier or MSISDN that was obtained in step 1 to determine what APN will be used to enable PDN Connectivity between the UE and the SCS/AS. This determination is based on local policies.*  According to the statement above, the NEF+SCEF can indicate the DNN for which the event PDN Connectivity Status is monitored to UDM, and then UDM can map the DNN to APN and indicate this APN to HSS in Common Network Exposure Scenarios for PDN connectivity Status event. The indication of APN is missing in exsiting definition . | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Added the APN for which the event PDN Connectivity Status in Monitoring Configuration data of subscribe service operation of EE service.   1. Added attribute pduSessionStatusCfg in data model MonitoringConfiguration. 2. Defined PduSessionStatusCfg data modle which includes APN information which is used to include APN for which the event PDN Connectivity Status is monitored | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | If the APN for which the event PDN Connectivity Status is monitored is not configured, the stage 2 feature indicated in hilighted part of "***Reason for change:***" won't be implemented. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.4.6.1, 6.4.6.2.4, 6.4.6.2.xx(new), A.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR will introduce backward compatible corrections in the OpenAPI specification file of TS29563\_Nhss\_EE OpenAPI | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1:   1. Corrected ***Other comments:*** on cover sheet. | | | | | | | | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The start of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 6.4.6.1 General

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

Table 6.4.6.1-1 specifies the data types defined for the Nhss\_EE service API.

Table 6.4.6.1-1: Nhss\_EE specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| EeSubscription | 6.4.6.2.2 | A subscription to Notifications |
| CreatedEeSubscription | 6.4.6.2.3 |  |
| MonitoringConfiguration | 6.4.6.2.4 | Monitoring Configuration |
| MonitoringReport | 6.4.6.2.5 | Monitoring Report |
| Report | 6.4.6.2.6 |  |
| ReportingOptions | 6.4.6.2.7 |  |
| LocationReportingConfiguration | 6.4.6.2.8 |  |
| ReachabilityForSmsReport | 6.4.6.2.9 |  |
| LossConnectivityConfiguration | 6.4.6.2.10 |  |
| ReachabilityForDataConfiguration | 6.4.6.2.11 |  |
| PduSessionStatusCfg | 6.4.6.2.xx | Reporting configuration for events related to PDN connectivity Status |
| EventType | 6.4.6.3.12 |  |
| LocationAccuracy | 6.4.6.3.13 |  |

Table 6.4.6.1-2 specifies data types re-used by the Nhss\_EE service API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nhss\_EE service API.

Table 6.4.6.1-2: Nhss\_EE re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| Uri | 3GPP TS 29.571 [7] | Uniform Resource Identifier |
| SupportedFeatures | 3GPP TS 29.571 [7] | See 3GPP TS 29.500 [4] clause 6.6 |
| DateTime | 3GPP TS 29.571 [7] |  |
| PatchResult | 3GPP TS 29.571 [7] |  |
| DurationSec | 3GPP TS 29.571 [7] |  |
| DiameterIdentity | 3GPP TS 29.571 [7] |  |
| Dnn | 3GPP TS 29.571 [7] | Data Network Name with Network Identifier only. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.4.6.2.4 Type: MonitoringConfiguration

Table 6.4.6.2.4-1: Definition of type MonitoringConfiguration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| eventType | EventType | M | 1 | Event type |
| immediateFlag | boolean | O | 0..1 | Indicates if an immediate event report in the subscription response indicating current value / status of the event is required, if available. If the flag is not present, then immediate reporting may be skipped. |
| locationReportingConfiguration | LocationReportingConfiguration | C | 0..1 | Shall be present if eventType is "LOCATION\_REPORTING" |
| lossConnectivityConfiguration | LossConnectivityConfiguration | O | 0..1 | May be present if eventType is "LOSS\_OF\_CONNECTIVITY". |
| reachabilityForDataConfiguration | ReachabilityForDataConfiguration | O | 0..1 | May be present if eventType is " UE\_REACHABILITY\_FOR\_DATA" |
| pduSessionStatusCfg | PduSessionStatusCfg | O | 0..1 | may be present if eventType is "PDN\_CONNECTIVITY\_STATUS" |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.4.6.2.xx Type: PduSessionStatusCfg

Table 6.4.6.2.xx-1: Definition of type PduSessionStatusCfg

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| apn | Dnn | O | 0..1 | When present, it indicates the APN for which the event is monitored. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## A.5 Nhss\_EE API

openapi: 3.0.0

info:

version: '1.0.1'

title: 'Nhss\_EE'

description: |

HSS Event Exposure

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***(… text not shown for clarity …)***

MonitoringConfiguration:

type: object

required:

- eventType

properties:

eventType:

$ref: '#/components/schemas/EventType'

immediateFlag:

type: boolean

locationReportingConfiguration:

$ref: '#/components/schemas/LocationReportingConfiguration'

lossConnectivityConfiguration:

$ref: '#/components/schemas/LossConnectivityConfiguration'

reachabilityForDataConfiguration:

$ref: '#/components/schemas/ReachabilityForDataConfiguration'

pduSessionStatusCfg:

$ref: '#/components/schemas/PduSessionStatusCfg'

MonitoringReport:

type: object

required:

- referenceId

- eventType

- timeStamp

properties:

referenceId:

$ref: '#/components/schemas/ReferenceId'

eventType:

$ref: '#/components/schemas/EventType'

timeStamp:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

report:

$ref: '#/components/schemas/Report'

ReportingOptions:

type: object

properties:

maxNumOfReports:

$ref: '#/components/schemas/MaxNumOfReports'

expiry:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

reportPeriod:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

Report:

type: object

properties:

reachabilityForSmsReport:

$ref: '#/components/schemas/ReachabilityForSmsReport'

ReachabilityForSmsReport:

type: object

required:

- reachabilitySmsStatus

properties:

reachabilitySmsStatus:

type: boolean

maxAvailabilityTime:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

LossConnectivityConfiguration:

type: object

properties:

maxDetectionTime:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

LocationReportingConfiguration:

type: object

required:

- currentLocation

properties:

currentLocation:

type: boolean

accuracy:

$ref: '#/components/schemas/LocationAccuracy'

ReachabilityForDataConfiguration:

type: object

anyOf:

- required: [ maximumLatency ]

- required: [ maximumResponseTime ]

- required: [ suggestedPacketNumDl ]

properties:

maximumLatency:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

maximumResponseTime:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

suggestedPacketNumDl:

type: integer

minimum: 1

PduSessionStatusCfg:

type: object

properties:

apn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

***(… text not shown for clarity …)***

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The end of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*