**3GPP TSG-SA5 Meeting #131eS5-203255**

**e-meeting, 25 May – 3 June 2020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.541** | **CR** | **0307** | **rev** | **-** | **Current version:** | **16.4.1** |  |
|  | | | | | | | | |
| *For* [***HELP***](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 | **X** | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | add transport information and slice mapping on backhaul endpoints stage 3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2020-05-08 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12) Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | To provide transport network (TN) topology requirements and individual TN QoS attributes requirements to the TN management system for a network slice, 3GPP management system needs to exchange TN related information between 3GPP management systems, as well as between 3GPP and TN management systems. E.g., RAN/CN management system needs to expose RAN/CN transport related information to E2E 3GPP management system, then E2E 3GPP management system could exchange this information with TN management system to enable TN management system configuring TN resources for the network slice. In current Network Resource Model (NRM), only application level endpoints are defined for each RAN/CN network function, neither logic transport interface/endpoint nor mapping between S-NSSAIs and endpoints are defined in the NRM | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add transport level endpoint (EP) definition to represent logical transport interface which is used to build transport network topology | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | 3GPP management systems cannot coordinate with TN management system for end to end network slice management as lack of necessary information exchanging. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | J.4.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

|  |
| --- |
| **Start of 1st modification** |

## J.4.3 OpenAPI document "sliceNrm.yaml"

openapi: 3.0.1

info:

title: Slice NRM

version: 16.4.0

description: >-

OAS 3.0.1 specification of the Slice NRM

@ 2020, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

All rights reserved.

externalDocs:

description: 3GPP TS 28.541 V16.4.0; 5G NRM, Slice NRM

url: http://www.3gpp.org/ftp/Specs/archive/28\_series/28.541/

paths: {}

components:

schemas:

#------------ Type definitions ---------------------------------------------------

Float:

type: number

format: float

MobilityLevel:

type: string

enum:

- STATIONARY

- NOMADIC

- RESTRICTED MOBILITY

- FULLY MOBILITY

SharingLevel:

type: string

enum:

- SHARED

- NON-SHARED

Category:

type: string

enum:

- CHARACTER

- SCALABILITY

Tagging:

type: string

enum:

- PERFORMANCE

- FUNCTION

- OPERATION

Exposure:

type: string

enum:

- API

- KPI

ServAttrCom:

type: object

properties:

category:

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

tagging:

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

exposure:

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

Support:

type: string

enum:

- NOT SUPPORTED

- SUPPORTED

DelayTolerance:

type: object

properties:

servAttrCom:

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

support:

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

DeterministicComm:

type: object

properties:

servAttrCom:

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

availability:

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

periodicityList:

type: string

DLThptPerSlice:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

DLThptPerUE:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

ULThptPerSlice:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

ULThptPerUE:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

MaxPktSize:

type: object

properties:

servAttrCom:

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

maxsize:

type: integer

MaxNumberofConns:

type: object

properties:

servAttrCom:

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

nOofConn:

type: integer

KPIMonitoring:

type: object

properties:

servAttrCom:

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

kPIList:

type: string

SupportedAccessTech:

type: object

properties:

servAttrCom:

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

accTechList:

type: integer

UserMgmtOpen:

type: object

properties:

servAttrCom:

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

support:

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

V2XCommModels:

type: object

properties:

servAttrCom:

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

v2XMode:

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

TermDensity:

type: object

properties:

servAttrCom:

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

density:

type: integer

NsInfo:

type: object

properties:

nsInstanceId:

type: string

nsName:

type: string

ServiceProfileList:

type: object

additionalProperties:

type: object

properties:

snssaiList:

$ref: 'nrNrm.yaml#/components/schemas/SnssaiList'

plmnIdList:

$ref: 'nrNrm.yaml#/components/schemas/PlmnIdList'

maxNumberofUEs:

type: number

latency:

type: number

uEMobilityLevel:

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

sst:

$ref: 'nrNrm.yaml#/components/schemas/Sst'

resourceSharingLevel:

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

availability:

type: number

delayTolerance:

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

deterministicComm:

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

dLThptPerSlice:

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

dLThptPerUE:

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

uLThptPerSlice:

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

uLThptPerUE:

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

maxPktSize:

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

maxNumberofConns:

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

kPIMonitoring:

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

supportedAccessTech:

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

userMgmtOpen:

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

v2XModels:

$ref: '#/components/schemas/V2XCommModels'

coverageArea:

type: string

termDensity:

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

activityFactor:

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

uESpeed:

type: integer

jitter:

type: integer

survivalTime:

type: string

reliability:

type: string

SliceProfileList:

type: object

additionalProperties:

type: object

properties:

snssaiList:

$ref: 'nrNrm.yaml#/components/schemas/SnssaiList'

plmnIdList:

$ref: 'nrNrm.yaml#/components/schemas/PlmnIdList'

maxNumberofUEs:

type: number

coverageAreaTAList:

$ref: '5gcNrm.yaml#/components/schemas/TACList'

latency:

type: number

uEMobilityLevel:

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

resourceSharingLevel:

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

IpAddress:

oneOf:

- $ref: 'genericNrm.yaml#/components/schemas/Ipv4Addr'

- $ref: 'genericNrm.yaml#/components/schemas/Ipv6Addr'

#------------ Definition of concrete IOCs ----------------------------------------

NetworkSlice:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/Top-Attr'

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/SubNetwork-Attr'

- type: object

properties:

networkSliceSubnetRef:

$ref: 'genericNrm.yaml#/components/schemas/Dn'

operationalState:

$ref: 'genericNrm.yaml#/components/schemas/OperationalState'

administrativeState:

$ref: 'genericNrm.yaml#/components/schemas/AdministrativeState'

serviceProfileList:

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

NetworkSliceSubnet:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/Top-Attr'

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/SubNetwork-Attr'

- type: object

properties:

managedFunctionRefList:

$ref: 'genericNrm.yaml#/components/schemas/DnList'

networkSliceSubnetRefList:

$ref: 'genericNrm.yaml#/components/schemas/DnList'

operationalState:

$ref: 'genericNrm.yaml#/components/schemas/OperationalState'

administrativeState:

$ref: 'genericNrm.yaml#/components/schemas/AdministrativeState'

nsInfo:

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

sliceProfileList:

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

EPTransport:

$ref: '#/components/schemas/EP\_Transport-Multiple'

EP\_Transport-Single:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/Top-Attr'

- type: object

properties:

attributes:

type: object

properties:

ipAddress:

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

logicInterfaceId:

type: string

nextHopInfo:

type: string

qosProfile:

type: string

EP\_Transport-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_Transport-Single'

#------------ Definitions in TS 28.541 for TS 28.532 -----------------------------

resources-sliceNrm:

oneOf:

- $ref: '#/components/schemas/NetworkSlice'

- $ref: '#/components/schemas/NetworkSliceSubnet'

|  |
| --- |
| **End of 1st modification** |