**3GPP TSG SA WG5 Meeting #142e S5-222091**

**Online, , 04 Apr 2022- 12 Apr 2022**

**Source: Samsung**

**Title: pCR 28.104 Network Slice Traffic Prediction**

**Document for: Approval**

**Agenda Item: 6.6.5**

# 1 Decision/action requested

***The group is asked to discuss and approve the proposals.***

# 2 References

None

# 3 Rationale

This contribution provides solution for network slice traffic prediction capability.

# 4 Detailed proposal

|  |
| --- |
| **First modification** |

#### 8.4.2.x Network slice traffic prediction

##### 8.4.2.x.1 MDA type

The MDA type for Capability- Network slice traffic prediction is: SLSAnalysis.NetworkSliceTrafficAnalysis.

##### 8.4.2.x.2 Enabling data

The enabling data for network slice traffic prediction analysis are provided in table 8.4.2.x.2-1.

**Table 8.4.2.x.2-1: Enabling data for network slice traffic prediction analysis**

|  |  |  |
| --- | --- | --- |
| **Data category** | **Description** | **References** |
| Performance measurements | UL/DL throughput for network slice. | Upstream throughput for network and Network Slice Instance (6.3.3 in TS28.554 [5]); Downstream throughput for Single Network Slice Instance (6.3.4 in TS28.554 [5]) |
| Number of incoming and outgoing octets of GTP packet on N3 | See 5.4.1.4 and 5.4.1.3 in TS 28.541[5]). |
| UL/DL UE throughput for network slice | RAN UE Throughput (6.3.6 in TS28.554 [5]) |
| Number of PDU sessions of network slice | Mean number of PDU sessions of network and network Slice Instance (6.4.1 in TS28.554 [5]) |
| Number of registered subscriber of a network slice instance | Mean registered subscribers of network and network slice through AMF (see 6.2.1 in TS28.554 [5]) |
| Maximum packet size for a network slice | Maximum packet size for a network slice subnet (see 6.3.11 of TS 28.541[5]) |
|  |  |

##### 8.4.2.x.3 Analytics output

The specific information elements of the analytics output for network slice traffic prediction analysis, in addition to the common information elements of the analytics outputs (see clause 8.3), are provided in table 8.4.2.5.3-1.

**Table 8.4.2.x.3-1: Analytics output for network slice load analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| Information element | Definition | Support qualifier | Properties |
|  |  |  |  |
| trafficProjections | This specifies the traffic projections for a slice. | M | type: TrafficProjections  multiplicity: \*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
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| **Second modification** |

## 8.5 Data type definitions

### 8.5.y TrafficProjections<<dataType>>

#### 8.5.y.1 Definition

This data type specifies the traffic projection for a slice.

#### 8.5.y.2 Information elements

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Definition | Support qualifier | Properties |
| ProjectionTime | The time duration for which the projections are made | M | type: ProjectionDuration  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| UPFProjections | This specifies the traffic projection of a UPF in the slice. | M | type: UPFProj  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| gNBProjections | This specifies the traffic projection of a gNB in the slice. | M | type: gNBProj  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| SMFProjections | This specifies the projected number of PDU session of a SMF in the slice. | M | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| AMFProjections | This specifies the projected number of registered subscriber of a AMF in the slice. | M | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |

### 8.5.y UPFProj<<dataType>>

#### 8.5.y.1 Definition

This data type specifies the traffic projection for a UPF.

#### 8.5.y.2 Information elements

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Definition | Support qualifier | Properties |
| ULThroughput | The projected average UL throughput for a single UPF in the slice, over the time duration indicated by projectionTime attribute. The unit is kbit/s.  This is the projection of the Upstream Throughput at N3 interface KPI defined in [5] | M | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| DLThroughput | The projected average DL throughput for a single UPF in the slice, over the time duration indicated by projectionTime attribute. The unit is kbit/s.  This is the projection of the Downstream Throughput at N3 interface KPI defined in [5] | M | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| MaxPktSize | The projected average maximum packet size for a single UPF in the slice, over the time duration indicated by projectionTime attribute. | O | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
|  |  |  |  |

### 8.5.y gNBProj<<dataType>>

#### 8.5.y.1 Definition

This data type specifies the traffic projection for a gNB.

#### 8.5.y.2 Information elements

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Definition | Support qualifier | Properties |
| ULUEThroughput | The projected average UL UE throughput in the slice, over the time duration indicated by projectionTime attribute. The unit is kbit/s.  This is the projection of the UL RAN UE throughput KPI defined in [5] | M | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| DLUEThroughput | The projected average DL throughput in the slice, over the time duration indicated by projectionTime attribute. The unit is kbit/s.  This is the projection of the DL RAN UE throughput KPI defined in [5] | M | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
|  |  |  |  |