**3GPP TSG-SA5 Meeting #142-e *S5-222361***

**e-meeting, 4 - 12 April 2022**

**Source: Nokia**

**Title: Multiplicity change for “Affected Objects” IE in “Service experience analysis” Usecase**

**Document for: Approval**

**Agenda Item: 6.6.5**

# 1 Decision/action requested

This contribution is for approval.

# 2 Rationale

The current multiplicity of the IE “Affected Objects” in the output of “Service experience analysis” usecase indicates “1”. This IE is optional and likely will be reported only when is atleast one affected object.

But the affected objects need not be just one but atleast one, indicating it could be one or more. This is not reflected in the multiplicity of the IE “Affected Objects”.

The multiplicity shall be changed from “1” to “1..\*”.

Also, the service experience issue could be found in RAN or core or both. There is no option to indicate that the issue is present in both RAN and core via the IE “ServiceExperienceIssueType” in the analytics output. So the value of “both” need to be added in the enumeration.

# 3 Detailed proposal

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| **1st Modified Section** |

8.4.2 SLS analysis

8.4.2.1 Service experience analysis

8.4.2.1.1 MDA type

The MDA type for Capability-Service experience analysis is: SLSAnalysis.ServiceExperienceAnalysis.

8.4.2.1.2 Enabling data

The enabling data for service experience analysis are provided in table 8.4.2.1.2-1.

**Table 8.4.2.1.2-1: Enabling data for service experience analysis**

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| --- | --- | --- |
| **Data category** | **Description** | **References** |
| Performance measurements | Average e2e uplink/downlink delay for a network slice | Average e2e uplink/downlink delay for a network slice (in 6.3.1.8 in TS 28.554 [5]); |
| Integrated uplink/downlink delay in RAN | Integrated downlink delay in RAN (6.3.1.2 in TS 28.554 [5]); Integrated uplink delay in RAN (6.3.1.7 in TS 28.554 [5]); |
| Round-trip packet delay | Round-trip packet delay between PSA UPF and NG-RAN (5.4.8 in TS 28.552 [4]) |
| UL/DL throughput for network and Network Slice Instance | 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]) |
| RAN UE Throughput | RAN UE Throughput (6.3.6 in TS28.554 [5]) |
| Throughput at N3 interface | Upstream Throughput at N3 interface (6.3.4 in TS28.554 [5]); Downstream Throughput at N3 interface (6.3.5 in TS28.554 [5]); |
| QoE Data | The QoE data of the different services | QoE data (TS 26.247 [22] and TS 26.114 [23] can be acquired through the procedures defined in TS 28.405 [8]). |

8.4.2.1.3 Analytics output

The specific information elements of the analytics output for service experience analysis, in addition to the common information elements of the analytics outputs (see clause 8.3), are provided in table 8.4.2.1.3-1.

**Table 8.4.2.1.3-1: Analytics output for Service experience analysis**

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| --- | --- | --- | --- |
| **Information element** | **Definition** | **Support qualifier** | **Properties** |
| ServiceExperienceId | The identifier indicates the analytics report is related with service experience analysis. | M | type: string  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ServiceExperienceIssueType | Indication of the service experience issue type.  The allowed value is one of the enumerated values: RAN issue, CN issue, both | M | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| AffectedObjects | The managed object instances where the service experience is applicable, e.g., SubNetwork Instance, NetworkSlice Instance, S-NSSAI. | O | type: DN  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ServiceExperienceStatistics | The statistics of the level of service experience for a service in a certain time period, e.g. there are five levels which are represented by 1, 2, 3, 4, 5 where level 1 represents the users are enduring bad experience while level 5 represents the users’ requirements are perfectly satisfied. | O | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ServiceExperiencePredictions | The predictions of the level of service experience for a service in a certain time period. | O | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |

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| **End of Modified Sections** |