**3GPP TSG-SA5 Meeting #140-e S5-221134**

**e-meeting, January 17 – 26 2022**

**Source: Huawei, China Mobile, China Unicom, Deutsche Telekom**

**Title: Update RadioNetworkExpectation in clause 6.2.1.2.4**

**Document for: Approval**

**Agenda Item: 6.4.9**

# 1 Decision/action requested

***The group is asked to discuss and approval.***

# 2 References

[1] 3GPP draft TS 28.312: “Management and orchestration; Intent driven management services for mobile networks v0.7.0”.

# 3 Rationale

This contribution proposes to update RadioNetworkExpectation in clause 6.2.1.2.4 to align with the common structure for all domain/scenario specific intent expectations in 6.2.1.2.2.

# 4 Detailed proposal

It proposes to make the following changes to TS 28.312[1].

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| **1st Change** |

|  |
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| **2nd Change** |

# 6.4 Scenario specific IntentExpectation

### 6.4.1 RadioNetworkExpectation

#### 6.4.1.1 Definition

RadioNetworkExpectation is an instance of IntentExpectation which represents MnS consumer's expectations for radio network (RAN SubNetwork) delivering and performance assurance.

The RadioNetworkExpectation is defined utilizing the constructs of the generic IntentExpectation Model as summarized by the table below.

|  |  |
| --- | --- |
| Attribute Name | Value |
| expectationId | RadioNetworkExpectation |
| expectationObject | List (cells) |
| expectationObjectContexts | * coverageAreaPolygon = some polygon * coverageTAC = some list * pLMN = somePLMN\_ID * nRFqBand = somevalue * rAT = somerAT\_ID |
| expectationTargets | * WeakRSRPRatio = * LowSINRRatio = * AveULRANUEThpt = * AveDLRANUEthpt = * LowULRANUEThpt = * LowDLRANUEThpt = |

#### 6.4.1.2 RadioNetworkExpectation.ExpectationObject

##### 6.4.1.2.1 Attribute definition

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute Name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| objectType | CM | T | T | F | F |
| objectInstance | CM | T | T | F | F |
| coverageAreaPolygonContext | CO | T | T | F | F |
| coverageTACContext | CO | T | T | F | F |
| pLMNContext | O | T | T | F | F |
| nRFqBandContext | O | T | T | F | F |
| rATContext | O | T | T | F | F |

##### 6.4.1.2.2 Attribute constraint

|  |  |
| --- | --- |
| Name | Definition |
| ObjectType Support Qualifier | Condition: The intent expectation is not for a specific RAN SubNetwork instance or/and MnS consumer have no knowledge of the DN of this RAN SubNetwork instance. |
| ObjectInstance Support Qualifier | Condition: The intent expectation is for a specific RAN SubNetwork instance and MnS consumer have the knowledge of the DN of this RAN SubNetwork instance. |
| coverageAreaPolygonContext support Qualifier | Condition: MnS consumer expresses the area in CoverageAreaPolygon. |
| tACContext support Qualifier | Condition: MnS consumer expresses the area in TrackingAreaCode. |

#### 6.4.1.3 RadioNetworkExpectation.ExpectationTarget

##### 6.4.1.3.1 Attribute definition

For the Radio Network Expectation, the expectationTargets can include one or multiple of the following targets.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute Name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| WeakRSRPRatioTarget | O | T | T | F | F |
| LowSINRRatioTarget | O | T | T | F | F |
| AveULRANUEThptTarget | O | T | T | F | F |
| AveDLRANUEthptTarget | O | T | T | F | F |
| LowULRANUEThptRatioTarget | O | T | T | F | F |
| LowDLRANUEThptRatioTarget | O | T | T | F | F |

##### 6.4.1.3.2 Attribute definition

None

#### 6.4.1.4 RadioNetworkExpectation.ExpectationContext

There is no RadioNetworkExpectation specific ExpectationContext defined in the present document.

#### 6.4.1.5 Attribute definition

| Attribute Name | Documentation and Allowed Values | Properties |
| --- | --- | --- |
| RadioNetworkExpectation.objectType | It describes the type of expectation object of the IntentExpectation that are required to be applied on  allowedValues: "RAN SubNetwork" | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| RadioNetworkExpectation.objectInstance | It describes the DN of expectation object (RAN SubNetwork) of the IntentExpectation that are required to be applied on  allowedValues: NA | type: DN  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| coverageAreaPolygonContext | It describes the coverage areas for the RAN SubNetwork that the intent expectation is applied in the form of polygon.  CoverageAreaPolygonContext is an Context including:  CoverageAreaPolygonContext.contextAttribute is "CoverageAreaPolygon"  CoverageAreaPolygonContext.contextCondition is "With the range"  CoverageAreaPolygonContext.contextValueRange is a list of PolygonLocation.Each PolygonLocation include two items:   * Latitude, type: Float * Longitude, type: Float | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| coverageTACContext | It describes the coverage areas for the RAN SubNetwork that the intent expectation is applied in the form of TAC.  CoverageTACContext is an Context including:  CoverageAreaPolygonContext.contextAttribute is "CoverageAreaTAC"  CoverageAreaPolygonContext.contextCondition is "With the range"  CoverageAreaPolygonContext.contextValueRange is a list of TAC.The definition of TAC see TS 28.541 | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| plMNContext | It describes the PLMN(s) supported by the RAN SubNetwork that the intent expectation is applied.  PLMNContext is an Context including:  PLMNContext.contextAttribute is "PLMN"  PLMNContext.contextCondition is "With the range"  PLMNContext.contextValueRange is a list of PLMNId.The definition of PLMNId see TS 28.541 | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| nRFqBandContext | It describes the nRFqBands supported by the RAN SubNetwork that the intent expectation is applied.  nRFqBandContext is an Context including:  NRFqBandContext.contextAttribute is "NRFqBand"  NRFqBandContext.contextCondition is "With the range"  NRFqBandContext.contextValueRange is a list of NRFqBand expressed as string. Valid frequency band values are specified in sub-clause 5.4.2 in 3GPP TS 38.104. | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| rATContext | It describes the RAT supported by the RAN SubNetwork that the intent expectation is applied.  RATContext is an Context including:  RATContext.contextAttribute is "RAT"  RATContext.contextCondition is "With the range"  RATContext.contextValueRange is a list of ENUM with allowed value: UTRAN, EUTRAN and NR. | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| WeakRSRPRatioTarget | It describes the downlink weak coverage ratio target for the RAN Subnetwork that the intent expectation applied.  WeakRSRPRatioTarget is an Intent Target including:  WeakRSRPRatioTarget.targetName is "WeakRSRPRatio"  WeakRSRPRatioTarget.targetCondition is "is less than"  WeakRSRPRatioTarget. targetValueRange is integer with allowed value [0,100].  WeakRSRPRatioTarget.targetContext is WeakRSRPContext | type: IntentTarget  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| WeakRSRPRatioTarget.WeakRSRPContext | It describes the threshold for downlink weak RSRP of the RAN Subnetwork that the intent expectation applied.  WeakRSRPContext is a context including:  WeakRSRPContext.contextAttribute is "WeakRSRPThreshold"  WeakRSRPContext.contextCondition is "is less than"  WeakRSRPContext.contextValueRange is Float. | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| LowSINRRatioTarget | It describes the low SINR ratio target for the RAN SubNetwork that the intent expectation is applied.  LowSINRRatioTarget is an Intent Target including:  LowSINRRatioTarget.targetName is "WeakRSRPRatio"  LowSINRRatioTarget.targetCondition is "is less than"  LowSINRRatioTarget.targetValueRange is integer with allowed value [0,100].  LowSINRRatioTarget.targetContext is LowSINRContext | type:IntentTarget  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| LowSINRRatioTarget.LowSINRContext | It describes the threshold for low SINR for RAN SubNetwork that the intent expectation applied.  LowSINRContext is a context including:  LowSINRContext.contextAttribute is "LowSINRThreshold"  LowSINRContext.contextCondition is "is less than"  LowSINRContext.contextValueRange is integer. | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| AveULRANUEThptTarget | It describes the average UL RAN UE throughput target for RAN SubNetwork that the intent expectation is applied.  AveULRANUEThptTarget.targetName is "AveULRANUEThpt"  AveULRANUEThptTarget.targetCondition is "is greater than"  AveULRANUEThpt.targetValueRange is integer | type: IntentTarget  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| AveDLRANUEThptTarget | It describes the average DL RAN UE throughput target for RAN SubNetwork that the intent expectation is applied.  AveDLRANUEThptTarget.targetName is "AveDLRANUEThpt"  AveDLRANUEThptTarget.targetCondition is "is greater than"  AveDLRANUEThpt.targetValueRange is integer | type: IntentTarget  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| LowULRANUEThptRatioTarget | It describes the low UL RAN UE throughput ratio target for the RAN SubNetwork that the intent expectation is applied.  LowULRANUEThptRatioTarget is an Intent Target including:  LowULRANUEThptRatioTarget.targetName is "LowULRANUEThptRatio"  LowULRANUEThptRatioTarget.targetCondition is "is less than"  LowULRANUEThptRatioTarget. targetValueRange is integer with allowed value [0,100].  LowULRANUEThptRatioTarget.targetContext is LowULRANUEThptContext | type: IntentTarget  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| LowULRANUEThptRatioTarget.LowULRANUEThptContext | It describes the threshold for the low UL RAN UE throughput of the RAN SubNetwork that the intent expectation applied  LowULRANUEThptContext is a context including:  LowULRANUEThptContext.contextAttribute is "LowULRANUEThptThreshold"  LowULRANUEThptContext.contextCondition is "is less than"  LowULRANUEThptContext t.contextValueRange is Float. | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| LowDLRANUEThptRatioTarget | It describes the low DL RAN UE throughput ratio target for the RAN SubNetwork that the intent expectation is applied.  LowDLRANUEThptRatioTarget is an Intent Target including:  LowDLRANUEThptRatioTarget.targetName is "LowDLRANUEThptRatio"  LowDLRANUEThptRatioTarget.targetCondition is "is less than"  LowDLRANUEThptRatioTarget. targetValueRange is integer with allowed value [0,100].  LowDLRANUEThptRatioTarget.targetContext is LowDLRANUEThptContext | type: IntentTarget  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| LowDLRANUEThptRatioTarget.LowDLRANUEThptContext | It describes the threshold for the low DL RAN UE throughput of the RAN SubNetwork that the intent expectation applied  LowDLRANUEThptContext is a context including:  LowDLRANUEThptContext.contextAttribute is "LowDLRANUEThptThreshold"  LowDLRANUEThptContext.contextCondition is "is less than"  LowDLRANUEThptContext t.contextValueRange is Float. | type: Context  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |

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| **End of changes** |