**3GPP TSG-SA5 Meeting #140-e S5-221153**

**e-meeting, January 17 – 26 2022**

**Source: Huawei,**

**Title: Add stage3 for intent NRM**

**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

Add stage3 for intent NRM

# 4 Detailed proposal

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

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| **1st Change** |

# 7 Stage 3 definition for Intent Driven Management

### 7.1 Solution Set (SS) for YAML

### 7.1.1 OpenAPI document "intentNrm.yaml"

openapi: 3.0.2

info:

 title: Intent NRM

 description: OAS 3.0.1 specification of the Intent NRM

 version: 17.0.0

paths: {}

components:

 schemas:

 Intent-Single:

 allOf:

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

 - type: object

 properties:

 userLabel:

 type: string

 intentExpectations:

 type: array

 items:

 $ref: "#/components/schemas/IntentExpectation"

 intentContexts:

 type: array

 items:

 $ref: "#/components/schemas/IntentContext"

 intentFulfilStatus:

 $ref: "#/components/schemas/IntentFulfilStatus"

 IntentExpectation:

 type: object

 properties:

 expectationId:

 type: string

 expectationObjects:

 type: array

 items:

 $ref: "#/components/schemas/ExpectationObject"

 expectationTargets:

 type: array

 items:

 $ref: "#/components/schemas/ExpectationTarget"

 expectationContexts:

 type: array

 items:

 $ref: "#/components/schemas/ExpectationContext"

 ExpectationObject:

 type: object

 properties:

 objectType:

 type: string

 enum:

 - RAN\_SubNetwrok #value for Radio Network Expectation--#

 - TBD #-This will be added based on defined scenario specfic intent expectation-#

 objectInstance:

 $ref: "comDefs.yaml#/components/schemas/Dn"

 objectContexts:

 type: array

 items:

 $ref: "#/components/schemas/ObjectContext"

 ExpectationTarget:

 oneOf:

 #--ExpectationTargets defind for Radio Network Expectation (ObjectType is RAN\_SubNetwork)- #

 - $ref: "#/components/schemas/WeakRSRPRatioTarget"

 - $ref: "#/components/schemas/LowSINRRatioTarget"

 - $ref: "#/components/schemas/AveULRANUEThptTarget"

 - $ref: "#/components/schemas/AveDLRANUEThptTarget"

 - $ref: "#/components/schemas/LowULRANUEThptRatioTarget"

 - $ref: "#/components/schemas/LowDLRANUEThptRatioTarget"

 #--ExpectationTargets defind for Radio Network Expectation (ObjectType is RAN\_SubNetwork)- #

 #--ExpectationTargets defind for other Expectation------------TBD--------------------------#

 #--ExpectationTargets defind for other Expectation------------TBD--------------------------#

 ObjectContext:

 oneOf:

 #--ObjectContext defind for Radio Network Expectation (ObjectType is RAN\_SubNetwork)-------#

 - $ref: "#/components/schemas/CoverageAreaPolygonContext"

 - $ref: "#/components/schemas/CoverageTACContext"

 - $ref: "#/components/schemas/PLMNContext"

 - $ref: "#/components/schemas/NRFqBandContext"

 - $ref: "#/components/schemas/RATContext"

 #--ObjectContext defind for other Expectation ----------------TBD-------------------------#

 #--ObjectContext defind for Radio Network Expectation (ObjectType is RAN\_SubNetwork)-------#

 #--ObjectContext defind for Radio Network Expectation (ObjectType is RAN\_SubNetwork)-------#

 ExpectationContext:

 type: object

 properties:

 contextAttribute:

 type: string

 contextCondition:

 $ref: "#/components/schemas/Condition"

 contextValueRange:

 type: array

 items:

 type: number

 IntentContext:

 type: object

 properties:

 contextAttribute:

 type: string

 contextCondition:

 $ref: "#/components/schemas/Condition"

 contextValueRange:

 type: array

 items:

 type: number

 Condition:

 type: string

 enum:

 - Is\_equal\_to

 - Is\_less\_than

 - Is\_greater\_than

 - Is\_within\_the\_range

 IntentFulfilStatus:

 type: string

 enum:

 - FULFILLED

 - NOT\_FULFILLED

 #-------Definition of the concrete ExpectationTarget dataType----------#

 WeakRSRPRatioTarget:

 type: object

 properties:

 targetName:

 type: string

 enum:

 - WeakRSRPRatio

 targetCondition:

 type: string

 enum:

 - Is\_less\_than

 targetValueRange:

 type: integer

 minimum: 0

 maximum: 100

 targetContexts:

 $ref: "#/components/schemas/WeakRSRPContext"

 WeakRSRPContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - WeakRSRPThreshold

 contextCondition:

 type: string

 enum:

 - Is\_less\_than

 contextValueRange:

 type: number

 LowSINRRatioTarget:

 type: object

 properties:

 targetName:

 type: string

 enum:

 - LowSINRRatio

 targetCondition:

 type: string

 enum:

 - Is\_less\_than

 targetValueRange:

 type: integer

 minimum: 0

 maximum: 100

 targetContexts:

 $ref: "#/components/schemas/LowSINRContext"

 LowSINRContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - LowSINRThreshold

 contextCondition:

 type: string

 enum:

 - Is\_less\_than

 contextValueRange:

 type: integer

 AveULRANUEThptTarget:

 type: object

 properties:

 targetName:

 type: string

 enum:

 - AveULRANUEThpt

 targetCondition:

 type: string

 enum:

 - Is\_greater\_than

 targetValueRange:

 type: integer

 AveDLRANUEThptTarget:

 type: object

 properties:

 targetName:

 type: string

 enum:

 - AveDLRANUEThpt

 targetCondition:

 type: string

 enum:

 - Is\_greater\_than

 targetValueRange:

 type: integer

 LowULRANUEThptRatioTarget:

 type: object

 properties:

 targetName:

 type: string

 enum:

 - LowULRANUEThptRatio

 targetCondition:

 type: string

 enum:

 - Is\_less\_than

 targetValueRange:

 type: integer

 minimum: 0

 maximum: 100

 targetContexts:

 $ref: "#/components/schemas/LowULRANUEThptContext"

 LowULRANUEThptContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - LowULRANUEThptThreshold

 contextCondition:

 type: string

 enum:

 - Is\_less\_than

 contextValueRange:

 type: number

 LowDLRANUEThptRatioTarget:

 type: object

 properties:

 targetName:

 type: string

 enum:

 - LowDLRANUEThptRatio

 targetCondition:

 type: string

 enum:

 - Is\_less\_than

 targetValueRange:

 type: integer

 minimum: 0

 maximum: 100

 targetContexts:

 $ref: "#/components/schemas/LowDLRANUEThptContext"

 LowDLRANUEThptContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - LowDLRANUEThptThreshold

 contextCondition:

 type: string

 enum:

 - Is\_less\_than

 contextValueRange:

 type: number

 #-------Definition of the concrete ExpectationTarget dataType----------#

 #-------Definition of the concrete ObjectTarget dataType----------------#

 CoverageAreaPolygonContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - CoverageAreaPolygon

 contextCondition:

 type: string

 enum:

 - Is\_within\_the\_range

 contextValueRange:

 type: array

 items:

 $ref: "#/components/schemas/PolygonLocation"

 PolygonLocation:

 type: object

 properties:

 latitude:

 type: number

 longitude:

 type: number

 CoverageTACContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - CoverageAreaTac

 contextCondition:

 type: string

 enum:

 - Is\_within\_the\_range

 contextValueRange:

 type: array

 items:

 $ref: "nrNrm.yaml#/components/schemas/NrTac"

 PLMNContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - PLMN

 contextCondition:

 type: string

 enum:

 - Is\_within\_the\_range

 contextValueRange:

 type: array

 items:

 $ref: "nrNrm.yaml#/components/schemas/PlmnId"

 NRFqBandContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - NRFqBand

 contextCondition:

 type: string

 enum:

 - Is\_within\_the\_range

 contextValueRange:

 type: array

 items:

 type: string

 RATContext:

 type: object

 properties:

 contextAttribute:

 type: string

 enum:

 - RAT

 contextCondition:

 type: string

 enum:

 - Is\_within\_the\_range

 contextValueRange:

 type: array

 items:

 type: string

 enum:

 - UTRAN

 - EUTRAN

 - NR

 #-------Definition of the concrete ObjectTarget dataType----------------#

 #------Definition of JSON arrays for name-contained IOCs ---------------#

 Intent-Multiple:

 type: array

 items:

 $ref: '#/components/schemas/Intent-Single'

 #------Definition of JSON arrays for name-contained IOCs ---------------#

 #----- Definitions in TS 28.312 for TS 28.532 --------------------------#

 resources-intentNrm:

 oneOf:

 - $ref: '#/components/schemas/Intent-Single'

 #----- Definitions in TS 28.312 for TS 28.532 --------------------------#

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| --- |
| **End of changes** |