**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 --------------------------#

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