**3GPP TSG-CT3 Meeting #130C3-234xxx**

**Xiamen, China, 9th – 13th October 2023 was C3-234139**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **0098** | **rev** | **1** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Define the OpenAPI description of the VAE\_VRUZoneManagement API |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | V2XAPP\_Ph3 |  | ***Date:*** | 2023-09-29 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | As specified in clauses 9.21 and 10.2 of TS 23.286, in order to enable the "Support for VRU zone configuration and operation" functionality, the VAE\_VRUZoneManagement API was defined.The stage 3 definition of this API in this specification needs hence to be started. |
|  |  |
| ***Summary of change:*** | This CR proposes to:* Start the definition of the API clauses of the new VAE\_VRUZoneManagement Service API.
 |
|  |  |
| ***Consequences if not approved:*** | * The "Support for VRU zone configuration and operation" functionality functionality is not defined in stage 3.
 |
|  |  |
| ***Clauses affected:*** | A.12 (new Annex) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ... |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ... |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ... |
|  |  |
| ***Other comments:*** | This CR introduces a backwards compatible new feature by defining a new OpenAPI description for the VAE\_VRUZoneManagement API defined in this specification. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* Start of changes \* \* \* \*

# A.11 VAE\_VRUZoneManagement API

openapi: 3.0.0

info:

 title: VAE Server VRU Zone Management Service

 version: 1.0.0-alpha.1

 description: |

 VAE Server VRU Zone Management Service.

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externalDocs:

 description: 3GPP TS 29.486 V18.1.0 V2X Application Enabler (VAE) Services

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.486/'

servers:

 - url: '{apiRoot}/vae-vzm/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 5.2.4 of 3GPP TS 29.122

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /subscriptions:

 post:

 summary: Request the creation of a VRU Zone Management Subscription.

 operationId: CreateVRUZoneMngtSubsc

 tags:

 - VRU Zone Management Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/VRUZoneMngtSubsc'

 responses:

 '201':

 description: >

 Created. The VRU Zone Management Subscription is successfully created and a

 representation of the created Individual VRU Zone Management Subscription resource

 shall be returned.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/VRUZoneMngtSubsc'

 headers:

 Location:

 description: >

 Contains the URI of the created Individual VRU Zone Management Subscription

 resource.

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 callbacks:

 EnterLeaveNotif:

 '{$request.body#/notifUri}':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/EnterLeaveNotif'

 responses:

 '204':

 description: >

 No Content. The VRU Zone Management Enter/Leave notification is successfully

 received and acknowledged and no content is returned in the response body.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /subscriptions/{subscriptionId}:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of the Individual VRU Zone Management Subscription

 resource.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve an existing Individual VRU Zone Management Subscription resource.

 operationId: GetIndVRUZoneMngtSubsc

 tags:

 - Individual VRU Zone Management Subscription (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual VRU Zone Management Subscription resource shall be

 returned.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/VRUZoneMngtSubsc'

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 put:

 summary: Request the update of an existing Individual VRU Zone Management Subscription resource.

 operationId: UpdateIndVRUZoneMngtSubsc

 tags:

 - Individual VRU Zone Management Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/VRUZoneMngtSubsc'

 responses:

 '200':

 description: >

 OK. The Individual VRU Zone Management Subscription resource is successfully updated

 and a representation of the updated resource shall be returned in the response body.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/VRUZoneMngtSubsc'

 '204':

 description: >

 No Content. The Individual VRU Zone Management Subscription resource is successfully

 updated and no content is returned in the response body.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 patch:

 summary: Request the modification of an existing Individual VRU Zone Management Subscription resource.

 operationId: ModifyIndVRUZoneMngtSubsc

 tags:

 - Individual VRU Zone Management Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

 $ref: '#/components/schemas/VRUZoneMngtSubscPatch'

 responses:

 '200':

 description: >

 OK. The Individual VRU Zone Management Subscription resource is successfully modified

 and a representation of the updated resource shall be returned in the response body.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/VRUZoneMngtSubsc'

 '204':

 description: >

 No Content. The Individual VRU Zone Management Subscription resource is successfully

 modified and no content is returned in the response body.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Request the deletion of an existing Individual VRU Zone Management Subscription resource.

 operationId: DeleteIndVRUZoneMngtSubsc

 tags:

 - Individual VRU Zone Management Subscription (Document)

 responses:

 '204':

 description: >

 No Content. The Individual VRU Zone Management Subscription resource is successfully

 deleted.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 VRUZoneMngtSubsc:

 description: >

 Represents a VRU Zone Management Subscription.

 type: object

 properties:

 requestorId:

 type: string

 ueIdsList:

 type: array

 items:

 $ref: 'TS29486\_VAE\_MessageDelivery.yaml#/components/schemas/V2xUeId'

 minItems: 1

 vruZoneInfo:

 $ref: '#/components/schemas/VRUZoneInfo'

 vruAppReqs:

 $ref: '#/components/schemas/VRUAppReqs'

 notifUri:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

 vruZoneId:

 type: string

 areaOfInterest:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 timeValidity:

 $ref: '#/components/schemas/TimeValidity'

 suppFeat:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 required:

 - requestorId

 - notifUri

 - vruZoneInfo

 - vruAppReqs

 VRUZoneMngtSubscPatch:

 description: >

 Represents the requested modifications to a VRU Zone Management Subscription.

 type: object

 properties:

 vruZoneInfo:

 $ref: '#/components/schemas/VRUZoneInfo'

 vruAppReqs:

 $ref: '#/components/schemas/VRUAppReqs'

 notifUri:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

 areaOfInterest:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 timeValidity:

 $ref: '#/components/schemas/TimeValidity'

 EnterLeaveNotif:

 description: >

 Represents a VRU Zone Management Enter/LeaveNotification.

 type: object

 properties:

 groupId:

 $ref: 'TS29486\_VAE\_MessageDelivery.yaml#/components/schemas/V2xGroupId'

 ueId:

 $ref: 'TS29486\_VAE\_MessageDelivery.yaml#/components/schemas/V2xUeId'

 vruZoneInfo:

 $ref: '#/components/schemas/VRUZoneInfo'

 vruZoneId:

 type: string

 enterLeaveInfo:

 $ref: '#/components/schemas/EnterLeaveInfo'

 mobilityInfo:

 $ref: '#/components/schemas/MobilityInfo'

 required:

 - vruZoneInfo

 - vruZoneId

 - enterLeaveInfo

 oneOf:

 - required: [groupId]

 - required: [ueId]

 VRUZoneInfo:

 description: >

 Represents VRU zone related information.

 type: object

 properties:

 typeOfUes:

 type: array

 items:

 $ref: '#/components/schemas/TypeOfUes'

 minItems: 1

 vruZoneType:

 $ref: '#/components/schemas/VRUZoneType'

 anyOf:

 - required: [typeOfUes]

 - required: [vruZoneType]

 VRUAppReqs:

 description: >

 Represents VRU application requirements.

 type: object

 properties:

 supportedMsgs:

 type: array

 items:

 $ref: '#/components/schemas/MsgType'

 minItems: 1

 required:

 - supportedMsgs

 TimeValidity:

 description: >

 Represents the time validity information.

 type: object

 properties:

 startTime:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

 endTime:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

 anyOf:

 - required: [startTime]

 - required: [endTime]

 EnterLeaveInfo:

 description: >

 Represents the information related to V2X UE(s) entering/leaving a VRU zone.

 type: object

 properties:

 time:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

 duration:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/DurationSec'

 required:

 - time

 MobilityInfo:

 description: >

 Represents mobility information.

 type: object

 properties:

 speed:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Float'

 direction:

 $ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/Direction'

 anyOf:

 - required: [speed]

 - required: [direction]

 TypeOfUes:

 anyOf:

 - type: string

 enum:

 - V2X

 - PEDESTRIAN

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the type of UE(s) to be considered.

 Possible values are:

 - V2X: Indicates V2X UE(s).

 - PEDESTRIAN: Indicates pedestrian UE(s).

 VRUZoneType:

 anyOf:

 - type: string

 enum:

 - STATIC

 - DYNAMIC

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the VRU zone type.

 Possible values are:

 - STATIC: Indicates that the VRU zone is static.

 - DYNAMIC: Indicates that the VRU zone is dynamic.

 MsgType:

 anyOf:

 - type: string

 enum:

 - VAM

 - CAM

 - DENM

 - BSM

 - CPM

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the message type.

 Possible values are:

 - VAM: Indicates that the type of message is VAM.

 - CAM: Indicates that the type of message is CAM.

 - DENM: Indicates that the type of message is DENM.

 - BSM: Indicates that the type of message is BSM.

 - CPM: Indicates that the type of message is CPM.

\* \* \* \* End of changes \* \* \* \*