**3GPP TSG-CT WG3 Meeting #108-eC3-201200**

**E-Meeting, 19th – 28th February 2020 *(revision of C3-200xyz)***

**Source: Ericsson**

**Title: Pseudo-CR on Add security text**

**Spec: 3GPP TS 29.486 v0.3.0**

**Agenda item: 16.25**

**Document for: Decision**

**1. Introduction**

<Introduction part (optional)>

**2. Reason for Change**

The security text for VAE server is missing. In openAPI file, '{nrfApiRoot}/oauth2/token' is mentioned as tokenURI but VAE server provide northbound APIs consumed by the V2X application specific server,for such external V2X application specific server, NRF is not used as authorization server.

Even SA3 doesn’t yet define the security requirement for the VAE server, the VAE server can be considered similarly to SCEF/NEF with regard to offering the API to consumer outside the operator’s domain, so to use OAuth2 without specifying the scope as minimum security to be supported.

**3. Conclusions**

<Conclusion part (optional)>

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.486 v0.3.0.

\* \* \* First Change \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.185: "Service requirements for V2X services; Stage 1".

[3] 3GPP TS 22.186: "Enhancement of 3GPP support for V2X scenarios; Stage 1".

[4] 3GPP TS 23.280: "Common functional architecture to support mission critical services".

[5] 3GPP TS 23.285: "Architecture enhancements for V2X services".

[6] 3GPP TS 23.434: "Service enabler architecture layer for verticals; Functional architecture and information flows; Stage 2".

[7] 3GPP TS 23.468: "Group Communication System Enablers for LTE (GCSE\_LTE); Stage 2".

[8] 3GPP TS 23.682: "Architecture enhancements to facilitate communications with packet data networks and applications".

[9] 3GPP TR 23.795: "Study on application layer support for V2X services".

[10] 3GPP TS 26.346: "Multimedia Broadcast/Multicast Service (MBMS); Protocols and codecs".

[11] 3GPP TS 26.348: "Northbound Application Programming Interface (API) for Multimedia Broadcast/Multicast Service (MBMS) at the xMB reference point".

[12] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[13] 3GPP TS 29.468: "Group Communication System Enablers for LTE (GCSE\_LTE); MB2 Reference Point; Stage 3".

[14] 3GPP TS 36.300: " Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[15] ETSI EN 302 637-3 (V1.3.1): "Intelligent Transport Systems (ITS); Vehicular Communications; Basic Set of Applications; Part 3: Specifications of Decentralized Environmental Notification Basic Service".

[16] ETSI TS 102 894-2 (V1.2.1): "Intelligent Transport Systems (ITS); Users and applications requirements; Part 2: Applications and facilities layer common data dictionaryMultimedia Broadcast/Multicast Service (MBMS); Protocols and codecs".

[17] ETSI TS 102 965 (V1.4.1): "Intelligent Transport Systems (ITS); Application Object Identifier (ITS-AID); Registration".

[18] ISO TS 17419: "Intelligent Transport Systems - Cooperative systems - Classification and management of ITS applications in a global context".

[RFC6749] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[RFC5246] IETF RFC 5246, "The Transport Layer Security (TLS) Protocol Version 1.2".

\* \* \* Next Change \* \* \* \*

# X Security

TLS (IETF RFC 5246 [RFC5246]) shall be used to support the security communication between the VAE server and the V2X application specific server over Vs interface. The access to the VAE service APIs shall be authorized by means of OAuth2 protocol (see IETF RFC 6749 [RFC6749]), based on local configuration, using the "Client Credentials" authorization grant. If OAuth2 is used, a client, prior to consuming services offered by the VAE service APIs, shall obtain a "token" from the authorization server.

\* \* \* Next Change \* \* \* \*

## A.1 General

This Annex is based on the OpenAPI 3.0.0 specification [6] and provides corresponding representations of all APIs defined in the present specification.

NOTE 1: An OpenAPIs representation embeds JSON Schema representations of HTTP message bodies.

This Annex shall take precedence when being discrepant to other parts of the specification with respect to the encoding of information elements and methods within the API(s).

NOTE 2: The semantics and procedures, as well as conditions, e.g. for the applicability and allowed combinations of attributes or values, not expressed in the OpenAPI definitions but defined in other parts of the specification also apply.

Informative copies of the OpenAPI specification files contained in this 3GPP Technical Specification are available on the public 3GPP file server in the following locations (see clause 5B of the 3GPP TS 21.900 [8] for further information):

- [https://www.3gpp.org/ftp/Specs/archive/OpenAPI/<Release>/](https://www.3gpp.org/ftp/Specs/archive/OpenAPI/%3cRelease%3e/), and

- [https://www.3gpp.org/ftp/Specs/<Plenary>/<Release>/OpenAPI/](https://www.3gpp.org/ftp/Specs/%3cPlenary%3e/%3cRelease%3e/OpenAPI/).

NOTE 3: To fetch the OpenAPI specification file after CT#86 plenary meeting for Release 16 in the above links <Plenary> must be replaced with the date the CT Plenary occurs, in the form of year-month (yyyy-mm), e.g. for CT#86 meeting <Plenary> must be replaced with value "2019-12" and <Release> must be replaced with value "Rel-16".

\* \* \* Next Change \* \* \* \*

## A.2 VAE\_V2X\_Message\_Delivery API

openapi: 3.0.0

info:

version: 1.0.0.alpha-3

title: VAE\_V2X\_Message\_Delivery

description: VAE V2X Message Delivery Service

externalDocs:

description: 3GPP TS 29.486 V0.3.0 V2X Application Enabler (VAE) Services

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/vae-v2x-message-delivery/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

paths:

/message-deliveries:

post:

summary: VAE V2X Message delivery resource create service Operation

tags:

- message deliveries collection (Document)

operationId: CreateMessageDelivery

requestBody:

content:

application/json:

schema:

$ref: '#/components/schemas/V2xMessageDeliveryData'

required: true

responses:

'201':

description: Message Delivery Resource Created

headers:

Location:

description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/vae-v2x-message-delivery/v1/message-deliveries/{deliveryId}'

required: true

schema:

type: string

content:

application/json:

schema:

$ref: '#/components/schemas/V2xMessageDeliveryData'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

description: Unexpected error

/message-deliveries/{deliveryId}:

get:

parameters:

- name: deliveryId

in: path

description: Identifier of a messge delivery resource

required: true

schema:

type: string

responses:

'200':

description: OK. Resource representation is returned

content:

application/json:

schema:

$ref: '#/components/schemas/V2xMessageDeliveryData'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

summary: VAE V2X Message delivery resource delete service Operation

tags:

- Individual message delivery (Document)

operationId: DeleteMessageDelivery

parameters:

- name: deliveryId

in: path

required: true

description: Unique ID of the message delivery to be deleted

schema:

type: string

responses:

'200':

description: message delivery resource deleted successfully

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

description: Unexpected error

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

V2xMessageDeliveryData:

type: object

properties:

ueId:

$ref: '#/components/schemas/V2xUeId'

groupId:

$ref: '#/components/schemas/V2xGroupId'

duration:

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

serviceId:

$ref: '#/components/schemas/V2xServiceId'

geoId:

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

payload:

$ref: '#/components/schemas/V2xMessagePayload'

suppFeat:

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

V2xUeId:

type: string

V2xGroupId:

type: string

V2xServiceId:

type: string

GeoId:

type: string

V2xMessagePayload:

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

\* \* \* Next Change \* \* \* \*

## A.3 VAE\_File\_Distribution API

openapi: 3.0.0

info:

version: 1.0.0.alpha-2

title: VAE\_V2X\_File\_Distribution

description: VAE V2X File Distribution Service

externalDocs:

description: 3GPP TS 29.486 V0.3.0 V2X Application Enabler (VAE) Services

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/vae-v2x-file-distribution/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

paths:

/file-distributions:

post:

summary: VAE V2X File Distributions resource create service Operation

tags:

- file distributions collection (Document)

operationId: CreateFileDistributions

requestBody:

content:

application/json:

schema:

$ref: '#/components/schemas/V2xFileDistributionData'

required: true

responses:

'201':

description: File Distribution Resource Created

headers:

Location:

description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/vae-v2x-file-distribution/v1/file-distributions/{distributionId}'

required: true

schema:

type: string

content:

application/json:

schema:

$ref: '#/components/schemas/V2xFileDistributionData'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

description: Unexpected error

/file-distributions/{distributionId}:

get:

parameters:

- name: distributionId

in: path

description: Identifier of a file distribution resource

required: true

schema:

type: string

responses:

'200':

description: OK. Resource representation is returned

content:

application/json:

schema:

$ref: '#/components/schemas/V2xFileDistributionData'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

summary: VAE V2X File Distribution resource delete service Operation

tags:

- Individual file distribution (Document)

operationId: DeleteFileDistribution

parameters:

- name: distributionId

in: path

required: true

description: Unique ID of the file distribution to be deleted

schema:

type: string

responses:

'200':

description: file distribution resource deleted successfully

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

description: Unexpected error

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

V2xFileDistributionData:

type: object

properties:

groupId:

$ref: 'TS29486\_VAE\_V2X\_Message\_Delivery.yaml#/components/schemas/V2xGroupId'

fileLists:

type: array

items:

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

minItems: 1

serviceClass:

type: string

geoArea:

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

maxBitrate:

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

maxDelay:

type: integer

qoeRepConfig:

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

suppFeat:

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

required:

- fileLists

- geoArea

- maxBitrate

- maxDelay

- qoeRepConfig

FileList:

type: object

properties:

fileUri:

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

fileDisplayUri:

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

fileEarFetchTime:

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

fileLatFetchTime:

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

fileSize:

type: integer

fileStatus:

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

completionTime:

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

keepUpdateInterval:

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

uniAvailability:

type: boolean

fileRepetition:

type: integer

required:

- fileUri

- fileDisplayUri

- fileEarFetchTime

- fileLatFetchTime

- fileStatus

- completionTime

- keepUpdateInterval

- fileRepetition

QoeReportingConfiguration:

type: object

properties:

metricName:

type: string

metricType:

type: string

reportingInterval:

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

samPercentage:

type: integer

startTime:

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

endTime:

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

required:

- metricName

- metricType

- reportingInterval

- samPercentage

- startTime

- endTime

FileStatus:

anyOf:

- type: string

enum:

- PENDING

- FETCHED

- PREPARED

- TRANSMITTING

- SENT

- type: string

\* \* \* Next Change \* \* \* \*

## A.4 VAE\_V2X\_Application\_Requirement API

openapi: 3.0.0

info:

version: 1.0.0.alpha-1

title: VAE\_V2X\_Application\_Requirement

description: VAE\_V2X\_Application\_Requirement Service

externalDocs:

description: 3GPP TS 29.486 V0.3.0 V2X Application Enabler (VAE) Services

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/vae-v2x-application-requirement/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

paths:

/application-requirements:

post:

summary: VAE\_V2X\_Application\_Requirements resource create service Operation

tags:

- application requirements collection (Document)

operationId: CreateApplicationRequirement

requestBody:

content:

application/json:

schema:

$ref: '#/components/schemas/V2xApplicationRequirementData'

required: true

responses:

'201':

description: Application Requirement Resource Created

headers:

Location:

description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/vae-v2x-application-requirement/v1/application-requirements/{requirementId}'

required: true

schema:

type: string

content:

application/json:

schema:

$ref: '#/components/schemas/V2xApplicationRequirementData'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

NetworkResourceAdaptationNotification:

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

post:

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'204':

description: No Content, Notification was succesfull

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/application-requirement/{requirementId}:

get:

parameters:

- name: requirementId

in: path

description: Identifier of an application requirement resource

required: true

schema:

type: string

responses:

'200':

description: OK. Resource representation is returned

content:

application/json:

schema:

$ref: '#/components/schemas/V2xApplicationRequirementData'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

summary: VAE V2X Application Requirement resource delete service Operation

tags:

- Individual application requirement (Document)

operationId: DeleteApplicationRequirement

parameters:

- name: requirementId

in: path

required: true

description: Unique ID of the application requirement to be deleted

schema:

type: string

responses:

'200':

description: application requirement resource deleted successfully

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

V2xApplicationRequirementData:

type: object

properties:

ueId:

$ref: 'TS29486\_VAE\_V2X\_Message\_Delivery.yaml#/components/schemas/V2xUeId'

groupId:

$ref: 'TS29486\_VAE\_V2X\_Message\_Delivery.yaml#/components/schemas/V2xGroupId'

duration:

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

serviceId:

$ref: 'TS29486\_VAE\_V2X\_Message\_Delivery.yaml#/components/schemas/V2xServiceId'

appRequirement:

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

notifUri:

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

requestTestNotification:

type: boolean

description: Set to true by the NF service consumer to request the VAE server to send a test notification as defined in subclause 6.1.5.3. Set to false or omitted otherwise.

websockNotifConfig:

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

suppFeat:

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

required:

- serviceId

- appRequirement

- notifUri

ApplicationRequirement:

type: object

properties:

ServiceLevel:

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

AppReqNotification:

type: object

properties:

resourceUri:

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

result:

type: string

required:

- resourceUri

- result

\* \* \* End of Changes \* \* \* \*