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| CHANGE REQUEST | |
| Meeting ID:\* | SDS 41 |
| Source:\* | Leila Le Brun, Orange ([leila.lebrun@orange.com](mailto:leila.lebrun@orange.com));  Chrystel Gaber, Orange ([chrystel.gaber@orange.com](mailto:chrystel.gaber@orange.com) ) |
| Date:\* | 2019-07-08 |
| Reason for Change/s:\* | To enhace dynamic authorization by adding nested token |
| CR against: Release\* | Rel-4 |
| CR against: WI\* | Active <Work Item number>  MNT maintenance / < Work Item number(optional)>  Is this a mirror CR? Yes  No  mirror CR number: (Note to Rapporteur - use latest agreed revision)  STE Small Technical Enhancements / < Work Item number (optional)>  Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0004 |
| Clauses \* | TS-0004 clause 6.3.5.42, 7.4.41.1, 8.2.3 (table 8.2.3.5), 8.2.5 (table 8.2.5‑1) |
| Type of change: \* | Editorial change  Bug Fix or Correction  Change to existing feature or functionality  New feature or functionality  Only ONE of the above shall be ticked |
| Other TS/TR(s) impacted | <TS/TR number>, <Version Number>, and <Description on which aspect should be reflected in this TS/TR> |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES  NO  This CR may break backwards compatibility with the last approved version of the TS? YES  NO |
| Template Version: January 2019 (do not modify) | |

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GUIDELINES for Change Requests:

Provide an informative introduction containing the problem(s) being solved, and a summary list of proposals.

Each CR should contain changes related to only one particular issue/problem.

If this is a correction, and the change applies to previous releases, a separate “mirror CR” should be posted at the same time as this CR

Mirror CR: applies only when the text, including clause numbering are exactly the same.

Companion CR: applies when the change means the same but the baselines differ in some way (e.g. clause number).

Follow the principle of completeness, where all changes related to the issue or problem within a deliverable are simultaneously proposed to be made e.g. a change impacting 5 tables should not only include a proposal to change only 3 tables. Include any changes to references, definitions, and abbreviations in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar.

Use change bars for modifications.

The change should include the current and surrounding clauses to clearly show where a change is located and to provide technical context of the proposed change. Additions of complete clauses need not show surrounding clauses as long as the proposed clause number clearly shows where the proposed new clause is located.

Multiple changes in a single CR shall be clearly separated by horizontal lines with embedded text such as, start of change 1, end of change 1, start of new clause, end of new clause.

When subsequent changes are made to the content of a CR, then the accepted version should not show changes over changes. The accepted version of the CR should only show changes relative to the baseline approved text.

## Introduction

This Change intends to introduce nestedToken which in the case of multi-tenancy & virtualized architecture can be used to atuhorise an action on the resources of the Owner.

The contribution is introduced in conjunction with SDS\_2019-0373, this SDS\_2019-0373 document also gives more details on the Use case and the description. See: <http://member.onem2m.org/Application/documentapp/downloadLatestRevision/?docId=30219>

### -----------------------Start of TS-0004 change 1-------------------------------------------

#### 6.3.5.42 m2m:tokenClaimSet

This data type defines how to represent the claim set of oneM2M JSON Web Tokens (JWT) required for generating secured tokens (i.e. signed or encrypted representations of JWTs) as defined in clause 7.3.2.6 of oneM2M TS-0003 [7]. Usage of this datatype is specified in oneM2M TS-0003 [7].

Table 6.3.5.42‑1: Type Definition of m2m:tokenClaimSet

|  |  |  |  |
| --- | --- | --- | --- |
| **Element Path** | **Element Data Type** | **Multiplicity** | **Note** |
| version | xs:string | 1 |  |
| tokenID | m2m:tokenID | 1 |  |
| holder | m2m:ID | 1 |  |
| issuer | m2m:ID | 1 |  |
| notBefore | m2m:timestamp | 1 |  |
| notAfter | m2m:timestamp | 1 |  |
| tokenName | xs:string | 0..1 |  |
| audience | list of m2m:ID | 0..1 |  |
| permissions | m2m:tokenPermissions | 0..1 |  |
| extension | xs:string | 0..1 |  |
| nestedToken | xs:string | 0..1 | tkobj |

### -----------------------End of TS-0004 change 1---------------------------------------------

### -----------------------Start of TS-0004 change 2---------------------------------------------

### 7.4.41 Resource Type <token>

#### 7.4.41.1 Introduction

The <token> resource represents a token that is issued to an AE or CSE.

The detailed description can be found in clause 9.6.39 in oneM2M TS-0001 [6].

Table 7.4.41.1‑1: Data type definition of <token> resource

|  |  |  |
| --- | --- | --- |
| **Data Type ID** | **File Name** | **Note** |
| token | CDT-token-v3\_9\_0.xsd |  |

Table 7.4.41.1‑2: Universal/Common Attributes of <token> resource

|  |  |  |
| --- | --- | --- |
| Attribute Name | Request Optionality | |
| Create | Update |
| *@resourceName* | O | NP |
| *resourceType* | NP | NP |
| *resourceID* | NP | NP |
| *parentID* | NP | NP |
| *accessControlPolicyIDs* | O | O |
| *expirationTime* | O | O |
| *labels* | O | O |
| *creationTime* | NP | NP |
| *lastModifiedTime* | NP | NP |
| *dynamicAuthorizationConsultationIDs* | O | O |

Table 7.4.41.1‑3: Resource Specific Attributes of <token> resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute Name | Request Optionality | | Data Type | Default Value and Constraints |
| Create | Update |
| *tokenID* | M | NP | m2m:tokenID | No default |
| *tokenObject* | M | NP | m2m:dynAuthJWT | No default |
| *version* | O | NP | xs:string | No default |
| *issuer* | O | NP | m2m:ID | No default |
| *holder* | O | NP | m2m:ID | No default |
| *notBefore* | O | NP | m2m:timestamp | No default |
| *notAfter* | O | NP | m2m:timestamp | No default |
| *tokenName* | O | NP | xs:string | No default |
| *audience* | O | NP | list of m2m:ID | No default |
| *permissions* | O | NP | m2m:tokenPermissions | No default |
| *extension* | O | NP | xs:string | No default |
| *nestedToken* | O | NP | xs:string | No default |

Table 7.4.41.1‑4: Child Resources of <token> resource

|  |  |  |  |
| --- | --- | --- | --- |
| **Child Resource Type** | Child Resource Name | **Multiplicity** | **Ref. to in Resource Type Definition** |
| <subscription> | [variable] | 0..n | Clause 7.4.8 |
| <transaction> | [variable] | 0..n | Clause 7.4.61 |

### -----------------------End of TS-0004 change 2---------------------------------------------

### -----------------------Start of TS-0004 change 3---------------------------------------------

### 8.2.3 Resource attributes

In protocol bindings, resource attributes names shall be translated into short names shown in the following tables.

Table 8.2.3‑5: Resource attribute short names (5/6)

| Attribute Name | Occurs in | Short Name |
| --- | --- | --- |
| *minReqVolume* | cmdhNwAccessRule | ***mrv*** |
| *spreadingWaitTime* | cmdhNwAccessRule | ***swt*** |
| *backOffParameters* | cmdhNwAccessRule | ***bop*** |
| *otherConditions* | cmdhNwAccessRule | ***ohc*** |
| *maxBufferSize* | cmdhBuffer | ***mbfs*** |
| *storagePriority* | cmdhBuffer | ***sgp*** |
| *applicableCredIDs* | serviceSubscribedAppRule | ***apci*** |
| *allowedApp-IDs* | serviceSubscribedAppRule | ***aai*** |
| *allowedAEs* | serviceSubscribedAppRule | ***aae*** |
| *allowedRole-IDs* | serviceSubscribedAppRule | ***ari*** |
| *notificationTargetURI* | notificationTargetMgmtPolicyRef | ***ntu*** |
| *notificationPolicyID* | notificationTargetMgmtPolicyRef | ***npi*** |
| *action* | notificationTargetPolicy | ***acn*** |
| *policyLabel* | notificationTargetPolicy | ***plbl*** |
| *rulesRelationship* | notificationTargetPolicy | ***rrs*** |
| *creator* | notificationTargetPolicy | ***cr*** |
| *deletionRules* | policyDeletionRules | ***dr*** |
| *deletionRulesRelation* | policyDeletionRules | ***drr*** |
| *dynamicAuthorizationConsultationIDs* | All resources having an accessControlPolicyID attribute | ***daci*** |
| *dynamicAuthorizationEnabled* | dynamicAuthorizationConsultation | ***dae*** |
| *dynamicAuthorizationPoA* | dynamicAuthorizationConsultation | ***dap*** |
| *dynamicAuthorizationLifetime* | dynamicAuthorizationConsultation | ***dal*** |
| *descriptorRepresentation* | semanticDescriptor | ***dcrp*** |
| *semanticOpExec* | semanticDescriptor | ***soe*** |
| *descriptor* | semanticDescriptor | ***dsp*** |
| *relatedSemantics* | semanticDescriptor | ***rels*** |
| *semanticValidated* | semanticDescriptor | ***svd*** |
| *validationEnable* | semanticDescriptor | ***vlde*** |
| *periodicInterval* | timeSeries | ***pei*** |
| *missingDataDetect* | timeSeries | ***mdd*** |
| *missingDataMaxNr* | timeSeries | ***mdn*** |
| *missingDataList* | timeSeries | ***mdlt*** |
| *missingDataCurrentNr* | timeSeries | ***mdc*** |
| *missingDataDetectTimer* | timeSeries | ***mdt*** |
| *dataGenerationTime* | timeSeriesInstance | ***dgt*** |
| *sequenceNr* | timeSeriesInstance | ***snr*** |
| *roleID* | role | ***rlid*** |
| *roleName* | role | ***rlnm*** |
| *tokenLink* | role | ***rltl*** |
| *tokenID* | token | ***tkid*** |
| *tokenObject* | token | ***tkob*** |
| *issuer* | token, role | ***tkis*** |
| *holder* | token, role | ***tkhd*** |
| *notBefore* | token, role | ***tknb*** |
| *notAfter* | token, role | ***tkna*** |
| *tokenName* | token | ***tknm*** |
| *audience* | token | ***tkau*** |
| *permissions* | token | ***tkps*** |
| *extension* | token | ***tkex*** |
| *nestedToken* | token | ***tkobj*** |
| *e2eSecInfo* | CSEBase, remoteCSE, AE | ***esi*** |
| *supportedReleaseVersions* | CSEBase, remoteCSE, AE | ***srv*** |

### -----------------------Start of TS-0004 change 4-------------------------------------------

### 8.2.5 Complex data types members

In protocol bindings complex data types member names shall be translated into short names of Table 8.2.5-1.

Table 8.2.5‑1: Complex data type member short names

| Member Name | Occurs in | Short Name |
| --- | --- | --- |
| createdBefore | filterCriteria, eventNotificationCriteria | ***crb*** |
| createdAfter | filterCriteria, eventNotificationCriteria | ***cra*** |
| modifiedSince | filterCriteria, eventNotificationCriteria | ***ms*** |
| unmodifiedSince | filterCriteria, eventNotificationCriteria | ***us*** |
| stateTagSmaller | filterCriteria, eventNotificationCriteria | ***sts*** |
| stateTagBigger | filterCriteria, eventNotificationCriteria | ***stb*** |
| expireBefore | filterCriteria, eventNotificationCriteria | ***exb*** |
| expireAfter | filterCriteria, eventNotificationCriteria | ***exa*** |
| labels | filterCriteria, eventNotificationCriteria | ***lbl\**** |
| labelsQuery | filterCriteria | ***lbq*** |
| resourceType | filterCriteria, accessControlObjectDetails | ***ty\**** |
| sizeAbove | filterCriteria, eventNotificationCriteria | ***sza*** |
| sizeBelow | filterCriteria, eventNotificationCriteria | ***szb*** |
| contentType | filterCriteria | ***cty*** |
| limit | filterCriteria | ***lim*** |
| attribute | filterCriteria, eventNotificationCriteria | ***atr*** |
| contentFilterSyntax | filterCriteria | ***cfs*** |
| contentFilterQuery | filterCriteria | ***cfq*** |
| level | filterCriteria | ***lvl*** |
| offset | filterCriteria | ***ofst*** |
| notificationEventType | eventNotificationCriteria, notificationEvent | ***net*** |
| operationMonitor | eventNotificationCriteria, notificationEvent | ***om*** |
| representation | notificationEvent | ***rep*** |
| filterUsage | filterCriteria | ***fu\**** |
| eventCatType | eventCat | ***ect*** |
| eventCatNo | eventCat | ***ecn*** |
| number | batchNotify | ***num*** |
| duration | batchNotify | ***dur*** |
| notification | aggregatedNotification,  Request Primitive Content | ***sgn*** |
| notificationEvent | notification | ***nev*** |
| verificationRequest | notification | ***vrq*** |
| subscriptionDeletion | notification | ***sud*** |
| subscriptionReference | notification | ***sur*** |
| creator | notification | ***cr\**** |
| notificationForwardingURI | notification | ***nfu\**** |
| notificationTarget | notification | ***ntt*** |
| targetRemovalRequest | notification | ***trr*** |
| targetRemovalAllowance | notification | ***tra*** |
| IPEDiscoveryRequest | notification | ***idr*** |
| AERegistrationPointChange | notification | ***aerp*** |
| AEReferenceIDChange | notification | ***aerid*** |
| trackingID1 | notification | ***tid1*** |
| trackingID2 | notification | ***tid2*** |
| filterCriteria | IPEDiscoveryRequest | ***fc\**** |
| operation | operationMonitor, dynAuthDasRequest | ***op\**** |
| operations | operationMonitor | ***ops*** |
| originator | operationMonitor, IPEDiscoveryRequest, dynAuthDasRequest | ***or\**** |
| action | actionStatus | ***acn\**** |
| status | actionStatus | ***sus\**** |
| childResource | All except execInstance, announced resource, management resources from firmware | ***ch*** |
| accessControlRule | privileges, selfPrivileges | ***acr*** |
| accessControlOriginators | accessControlRule | ***acor*** |
| accessControlOperations | accessControlRule | ***acop*** |
| accessControlContexts | accessControlRule | ***acco*** |
| accessControWindow | accessControlContexts | ***actw*** |
| accessControlIpAddresses | accessControlContexts | ***acip*** |
| ipv4Addresses | accessControlIpAddress | ***ipv4*** |
| ipv6Addresses | accessControlIpAddress | ***ipv6*** |
| accessControlLocationRegion | accessControlContexts | ***aclr*** |
| countryCode | accessControlLocationRegion | ***accc*** |
| circRegion | accessControlLocationRegion | ***accr*** |
| name | attribute, anyArgType, mgmtLinkRef, childResourceRef, contentRef | ***nm\**** |
| specializationID | childResourceRef, accessControlObjectDetails | ***spid*** |
| value | attribute | ***val*** |
| type | anyArgType | ***typ*** |
| maxNrOfNotify | rateLimit | ***mnn*** |
| timeWindow | rateLimit | ***tww*** |
| scheduleEntry | scheduleElement | ***sce*** |
| aggregatedNotification | Request Primitive Content | ***agn*** |
| attributeList | Request Primitive Content | ***atrl*** |
| securityInfo | Request Primitive Content, Response Primitive Content | ***seci*** |
| aggregatedResponse | Response Primitive Content | ***agr*** |
| resource | Response Primitive Content | ***rce*** |
| URIList | Response Primitive Content | ***uril*** |
| debugInfo | Response Primitive Content | ***dbg*** |
| queryResult | Response Primitive Content | ***qres*** |
| anyArg | resetArgsType, rebootArgsType, uploadArgsType, downloadArgsType, softwareInstallArgsType softwareUpdateArgsType, softwareUninstallArgsType, execReqArgsListType | ***any*** |
| fileType | downloadArgsType | ***ftyp*** |
| URI | resourceWrapper, dynAuthTokenReqInfo | ***uri*** |
| URL | downloadArgsType | ***url\**** |
| username | uploadArgsType, downloadArgsType, softwareUpdateArgsType, softwareUninstallArgsType | ***unm*** |
| password | uploadArgsType, downloadArgsType, softwareUpdateArgsType, softwareUninstallArgsType | ***pwd*** |
| filesize | downloadArgsType | ***fsi*** |
| targetFile | downloadArgsType | ***tgf*** |
| delaySeconds | downloadArgsType | ***dss*** |
| successURL | downloadArgsType | ***surl*** |
| startTime | downloadArgsType | ***stt*** |
| completeTime | downloadArgsType | ***cpt*** |
| UUID | softwareInstallArgsType softwareUpdateArgsType, softwareUninstallArgsType | ***uuid*** |
| executionEnvRef | softwareInstallArgsType softwareUpdateArgsType, softwareUninstallArgsType | ***eer*** |
| version | softwareUninstallArgsType, tokenClaimSet | ***vr\**** |
| reset | execReqArgsListType | ***rst*** |
| reboot | execReqArgsListType | ***rbo\**** |
| upload | execReqArgsListType | ***uld*** |
| download | execReqArgsListType | ***dld*** |
| softwareInstall | execReqArgsListType | ***swin*** |
| softwareUpdate | execReqArgsListType | ***swup*** |
| softwareUninstall | execReqArgsListType | ***swun*** |
| tracingOption | deliveryMetaData | ***tcop*** |
| tracingInfo | deliveryMetaData | ***tcin*** |
| responseTypeValue | responseTypeInfo | ***rtv*** |
| notificationURI | responseTypeInfo | ***nu*** |
| timeOfDay | deletionContexts | ***tod*** |
| locationRegions | deletionContexts | ***lr*** |
| URIReference | contentRef | ***urir*** |
| semanticsFilter | filterCriteria | ***smf*** |
| missingDataList | timeSeries | ***mdl*** |
| missingData | eventNotificationCriteria | ***md*** |
| tokenID | tokenClaimSet, dynAuthLocalTokenIdAssignments | ***tkid*** |
| holder | tokenClaimSet | ***tkhd\**** |
| issuer | tokenClaimSet | ***tkis\**** |
| notBefore | tokenClaimSet | ***tknb\**** |
| notAfter | tokenClaimSet | ***tkna\**** |
| tokenName | tokenClaimSet | ***tknm\**** |
| audience | tokenClaimSet | ***tkau\**** |
| permissions | tokenClaimSet | ***tkps\**** |
| extension | tokenClaimSet | ***tkex\**** |
| nestedToken | tokenClaimSet | ***tkobj*** |
| permission | tokenPermissions | ***pm*** |
| resourceIDs | tokenPermission | ***ris*** |
| privileges | tokenPermission, setOfPermissions | ***pv\**** |
| roleIDs | tokenPermission | ***rids\**** |
| localTokenIdAssignment | dynAuthLocalTokenIdAssignments | ***ltia*** |
| localTokenID | dynAuthLocalTokenIdAssignment | ***lti*** |
| dasInfo | dynAuthTokenReqInfo | ***dasi*** |
| dasRequest | dynAuthTokenReqInfo | ***daq*** |
| securedDasRequest | dynAuthTokenReqInfo | ***sdr*** |
| filterOperation | filterCriteria | ***fo*** |
| targetedResourceType | dynAuthDasRequest | ***trt*** |
| originatorIP | dynAuthDasRequest | ***oip\**** |
| ipv4Address | dynAuthDasRequest, ipAddress | ***ip4*** |
| ipv6Address | dynAuthDasRequest, ipAddress | ***ip6*** |
| originatorLocation | dynAuthDasRequest | ***olo\**** |
| originatorRoleIDs | dynAuthDasRequest | ***orid*** |
| requestTimestamp | dynAuthDasRequest | ***rts*** |
| targetedResourceID | dynAuthDasRequest | ***trid*** |
| proposedPrivilegesLifetime | dynAuthDasRequest | ***ppl*** |
| roleIDsFromACPs | dynAuthDasRequest | ***rfa*** |
| tokenIDs | dynAuthDasRequest | ***tids*** |
| dynamicACPInfo | dynAuthDasResponse | ***dai*** |
| grantedPrivileges | dynAuthDasResponse | ***gp*** |
| privilegesLifetime | dynAuthDasResponse | ***pl*** |
| tokens | dynAuthDasResponse | ***tkns*** |
| securityInfoType | securityInfo | ***sit*** |
| dasRequest | securityInfo | ***dreq*** |
| dasResponse | securityInfo | ***dres*** |
| dynAuthRelMapRequest | securityInfo | ***darq*** |
| dynAuthRelMapResponse | securityInfo | ***dars*** |
| esprimRandObject | securityInfo | ***ero*** |
| esprimObject | securityInfo | ***epo*** |
| escertkeMessage | securityInfo | ***eckm*** |
| resourceRef | listOfChildResourceRef | ***rrf*** |
| resourceRefList | Response Primitive Content | ***rrl*** |
| esprimRandID | originatorESPrimRandObject, receiverESPrimRandObject | ***esri*** |
| esprimRandValue | originatorESPrimRandObject, receiverESPrimRandObject | ***esrv*** |
| esprimRandExpiry | originatorESPrimRandObject, receiverESPrimRandObject | ***esrx*** |
| esprimKeyGenAlgID | originatorESPrimRandObject | ***esk*** |
| esprimKeyGenAlgIDs | receiverESPrimRandObject | ***esks*** |
| esprimProtocolAndAlgIDs | originatorESPrimRandObject, receiverESPrimRandObject | ***espa*** |
| supportede2ESecFeatures | e2eSecInfo | ***esf*** |
| certificates | e2eSecInfo | ***escert*** |
| sharedReceiverESPrimRandObject | e2eSecInfo | ***esro*** |
| networkAction | backOffParameters | ***nwa*** |
| initialBackoffTime | backOffParameters | ***ibt*** |
| additionalBackoffTime | backOffParameters | ***abt*** |
| maximumBackoffTime | backOffParameters | ***mbt*** |
| optionalRandomBackoffTime | backOffParameters | ***rbt*** |
| backOffParametersSet | backOffParameters | ***bops*** |
| dataLink | listOfDataLinks | ***dali*** |
| attributeName | datalink | ***atn*** |
| dataContainerID | datalink | ***dcid*** |
| accessControlAuthenticationFlag | accessControlRule | ***acaf*** |
| accessControlObjectDetails | accessControlRule | ***acod*** |
| dataLinkEntry | listOfDataLinks | ***dle*** |
| *childResourceType* | accessControlObjectDetails, eventNotificationCriteria, filterCriteria | ***chty*** |
| parentResourceType | filterCriteria | ***pty*** |
| childLabels | filterCriteria | ***clbl*** |
| parentLabels | filterCriteria | ***palb*** |
| childAttribute | filterCriteria | ***catr*** |
| parentAttribute | filterCriteria | ***patr*** |
| applyRelativePath | filterCriteria | ***arp*** |
| sessionDescription | sessionDescriptions | ***sdc*** |
| *activityPattern* | activityPatternElements | ***apt*** |
| *stationaryIndication* | activityPattern | ***sti*** |
| *dataSizeIndicator* | activityPattern | ***dsi*** |
| eventNotificationCriteriaEntry | eventNotificationCriteriaSet | ***encn*** |
| NOTE: \* marked short names have been already assigned in attribute Table 8.2.3-1 to Table 8.2.3-6. | | |

### -----------------------End of TS-0004 change 4-------------------------------------------

CHECK LIST

* Does this Change Request include an informative introduction containing the problem(s) being solved, and a summary list of proposals.?
* Does this CR contain changes related to only one particular issue/problem?
* Have any mirror CRs been posted?
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