**3GPP TSG-SA4 Meeting #112-e *S4-210174***

**, 1st – 10th Februay 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **0007** | **rev** |  | **Current version:** | 16.1.0 |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | CR on OpenAPI Implementation of m1 interface | | | | | | | | | |
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| ***Source to WG:*** | Qualcomm Inc. | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | | 27th January 2020 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | 16 |
|  | *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 can be 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | This CR is with the accordance with the new 3GPP procedures for documenting OpenAPI interfaces on 3GPP Forge. It contains the implementation of the m1 interface in the branch m1-dev | | | | | | | | |
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| ***Summary of change:*** | | The CR documents the implementation of the m1 interface by providing the corresponding YAML files. | | | | | | | | |
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| ***Consequences if not approved:*** | | The implementation will be incomplete. | | | | | | | | |
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| ***Clauses affected:*** | | C.3 | | | | | | | | |
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|  | | **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's revision history:*** | |  | | | | | | | | |

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| First Change |

# C.3 OpenAPI representation of the M1 APIs

## C.3.1 Common Types

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| openapi: 3.0.0  servers:  # Added by API Auto Mocking Plugin    - description: 3GPP SA4 5G Media Streaming Interfaces      url: https://virtserver.swaggerhub.com/ibouazizi/3gpp-m1d/1.0.0    - url: 'https://www.3gpp.org/3gpp-m1/v1'      description: 5G Media Provisioning Interface      variables: {}  info:    description: Documentation of the 3GPP M1 Provisioning interface.    version: 1.0.0    title: 3GPP M1 interface    contact:      email: bouazizi@qti.qualcomm.com    license:      name: Apache 2.0      url: 'http://www.apache.org/licenses/LICENSE-2.0.html'  tags:    - name: 3GPP TS 26.512      description: 5G Media Streaming Provisioning Interface M1      externalDocs:        description: Find out more        url: 'http://www.3gpp.org'  externalDocs:    description: TS 26.512    url: 'http://www.3gpp.org/DynaReport/26346.htm'  components:    schemas:      PathRewriteRule:        type: object        properties:          originPathPattern:            type: string          distributionPath:            type: string      GeofencingLocators:        type: object        properties:          locatorType:            type: string            enum:              - cell              - city          locators:            type: array            items:              type: string      Pattern:        type: object        properties:          pattern:            type: string      QoSSpecification:        type: object        properties:          marBwUl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'          marBwDl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'          maxPacketLossRateDl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/PacketLossRateRm'          maxPacketLossRateUl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/PacketLossRateRm'          maxSuppBwDl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'          maxSuppBwUl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'          minDesBwDl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'          minDesBwUl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'          mirBwUl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'          mirBwDl:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/BitRate'      ApplicationSessionContext:        type: object        properties:          afAppId:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/AfAppId'          sliceInfo:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/Snssai'          dnn:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/Dnn'          aspId:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/AspId'      ChargingSpecification:        type: object        properties:          sponId:            type: string          sponStatus:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/SponsoringStatus'          gpsi:            type: array            items:              $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29571\_CommonData.yaml#/components/schemas/Gpsi'    securitySchemes:      m1d\_auth:        type: oauth2        flows:          authorizationCode:            authorizationUrl: https://www.3gpp.org/3gpp-m1/v1/authorize            tokenUrl: https://www.3gpp.org/3gpp-m1/v1/token            scopes:              read: Grants read access              write: Grants write access              admin: Grants access to admin operations    links: {}    callbacks: {}  security:  - m1d\_auth: [] |

## C.3.2 Provisioning Sessions API

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| openapi: 3.0.0  servers:  # Added by API Auto Mocking Plugin    - description: 3GPP SA4 5G Media Streaming Interfaces      url: https://virtserver.swaggerhub.com/ibouazizi/3gpp-m1d/1.0.0    - url: 'https://www.3gpp.org/3gpp-m1/v1'      description: 5G Media Provisioning Interface      variables: {}  info:    description: Documentation of the 3GPP M1d Provisioning interface.    version: 1.0.0    title: 3GPP M1 interface Provisioning Sessions API    contact:      email: bouazizi@qti.qualcomm.com    license:      name: Apache 2.0      url: 'http://www.apache.org/licenses/LICENSE-2.0.html'  tags:    - name: 3GPP TS 26.512      description: 5G Media Provisioning Interface M1d Provisioning Sessions      externalDocs:        description: Find out more        url: 'http://www.3gpp.org'  paths:    /provisioning-sessions:      get:        summary: 'List of all Provisioning Sessions'        description: ''        parameters:          - name: provisioningSessionId            in: query            required: false            schema:              type: string            description: A unique identifier of the Provisioning Session        operationId: 'listProvisionings'        responses:          '200':            description: List of Provisioning Sessions            content:              application/json:                schema:                  $ref: '#/components/schemas/ProvisioningSession'      post:        summary: 'Create a new Provisioning Session'        description: ''        requestBody:          description: initial configuration of new Provisioning Session          required: true          content:            application/json:              schema:                $ref: '#/components/schemas/ProvisioningSession'        parameters: []        operationId: 'Create a new Provisioning Session'        responses:          '201':            description: Created      /provisioning-sessions/{provisioningSessionId}:      parameters:          - name: provisioningSessionId            in: path            required: true            schema:              type: string            description: A unique identifier of the Provisioning Session      get:        summary: 'Get Provisioning Session'        description: ''        parameters: []        operationId: 'getProvisioningById'        responses:          '200':            description: List of Provisioning Sessions            content:              application/json:                schema:                  $ref: '#/components/schemas/ProvisioningSession'      put:        summary: 'Update a Provisioning Session'        description: ''        parameters: []        operationId: ''        responses:          default:            description: Default response      delete:        summary: 'Destroy a Provisioning Session'        description: ''        parameters: []        operationId: ''        responses:          default:            description: Default response    externalDocs:    description: TS 26.512    url: 'http://www.3gpp.org/DynaReport/26346.htm'  components:    schemas:      ProvisioningSession:        type: object        required:          - id        properties:          id:            type: integer            format: int64    securitySchemes:      m1d\_auth:        type: oauth2        flows:          authorizationCode:            authorizationUrl: https://www.3gpp.org/3gpp-m1/v1/authorize            tokenUrl: https://www.3gpp.org/3gpp-m1/v1/token            scopes:              read: Grants read access              write: Grants write access              admin: Grants access to admin operations    links: {}    callbacks: {}  security:  - m1d\_auth: [] |

## C.3.3 Server Certificates Provisioning API

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| openapi: 3.0.0  servers:  # Added by API Auto Mocking Plugin    - description: 3GPP SA4 5G Media Streaming Interfaces      url: https://virtserver.swaggerhub.com/ibouazizi/3gpp-m1d/1.0.0    - url: 'https://www.3gpp.org/3gpp-m1/v1'      description: 5G Media Provisioning Interface      variables: {}  info:    description: Documentation of the 3GPP M1d Provisioning interface Certificate    version: 1.0.0    title: 3GPP M1 interface    contact:      email: bouazizi@qti.qualcomm.com    license:      name: Apache 2.0      url: 'http://www.apache.org/licenses/LICENSE-2.0.html'  tags:    - name: 3GPP TS 26.512      description: 5G Media Provisioning Interface M1 Server Certificates      externalDocs:        description: Find out more        url: 'http://www.3gpp.org'  paths:    /provisioning-sessions/{provisioningSessionId}/certificates:      parameters:        - name: provisioningSessionId          in: path          required: true          schema:            type: string          description: 'Unique identifier of the parent Provisioning Session'      post:        summary: 'Create a new server certificate'        description: ''        responses:          '200':            description: 'The generated certificate'            headers:              Location:                description: 'Location of the newly created server certificate'                schema:                  type: string            content:              'application/x-pem-file':                schema:                  type: string      get:        summary: 'retrieve previously uploaded server certificate'        parameters:          - name: certificateId            in: path            required: true            schema:              type: string            description: 'Unique identifier of the server certificate'        responses:          '200':            description: 'The server certificate'            content:              'application/x-pem-file':                schema:                  type: string  externalDocs:    description: TS 26.512    url: 'http://www.3gpp.org/DynaReport/26346.htm'  components:    schemas:    securitySchemes:      m1d\_auth:        type: oauth2        flows:          authorizationCode:            authorizationUrl: https://www.3gpp.org/3gpp-m1/v1/authorize            tokenUrl: https://www.3gpp.org/3gpp-m1/v1/token            scopes:              read: Grants read access              write: Grants write access              admin: Grants access to admin operations    links: {}    callbacks: {}  security:  - m1d\_auth: [] |

## C.3.4 Content Preparation Templates Provisioning API

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## C.3.5 Content Protocols Discovery API

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## C.3.6 Content Hosting Configuration API

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| openapi: 3.0.0  servers:  # Added by API Auto Mocking Plugin    - description: 3GPP SA4 5G Media Streaming Interfaces      url: https://virtserver.swaggerhub.com/ibouazizi/3gpp-m1d/1.0.0    - url: 'https://www.3gpp.org/3gpp-m1/v1'      description: 5G Media Provisioning Interface      variables: {}  info:    description: Documentation of the 3GPP M1d Provisioning interface.    version: 1.0.0    title: 3GPP M1 interface    contact:      email: bouazizi@qti.qualcomm.com    license:      name: Apache 2.0      url: 'http://www.apache.org/licenses/LICENSE-2.0.html'  tags:    - name: 3GPP TS 26.512      description: 5G Media Provisioning Interface M1d Content Hosting Configuration      externalDocs:        description: Find out more        url: 'http://www.3gpp.org'  paths:    /provisioning-sessions/{provisioningSessionId}/content-hosting-configurations:      parameters:          - name: provisioningSessionId            in: path            required: true            schema:              type: string            description: 'Unique identifier of a Provisioning Session'      get:        summary: 'Retrieve an existing Content Hosting Configuration'        description: 'Retrieve an existing Content Hosting Configuration'        parameters:          - name: contentHostingConfigurationId            in: query            required: false            schema:              type: string            description: Unique identifier of the Content Hosting Configuration        responses:          '200':            description: The Content Hosting Configuration            content:              application/json:                schema:                  $ref: '#/components/schemas/ContentHostingConfiguration'      post:        summary: 'Create a Content Hosting Configuration'        description: 'Used to retrieve an existing Content Hosting Configuration'        responses:          '201':            description: Created            headers:              Location:                description: 'Location of the newly created Content Hosting Configuration'                schema:                  type: string              content:              application/json:                schema:                  $ref: '#/components/schemas/ContentHostingConfiguration'      /provisioning-sessions/{provisioningSessionId}/content-hosting-configuration/{contentHostingConfigurationId}:      parameters:          - name: provisioningSessionId            in: path            required: true            schema:              type: string            description: Unique identifier of the parent Provisioning Session          - name: contentHostingConfigurationId            in: path            required: true            schema:              type: string            description: A unique identifier of the Content Hosting Configuration      get:        summary: 'Retrieve an existing Content Hosting Configuration'        description: 'Retrieve an existing Content Hosting Configuration'        responses:          '200':            description: The requested Content Hosting Configuration            content:              application/json:                schema:                  $ref: '#/components/schemas/ContentHostingConfiguration'      put:        summary: ''        description: ''        responses:          default:            description: ''      delete:        summary: 'Destroy a Content Hosting Configuration'        description: ''        responses:          default:            description: Default response        /provisioning-sessions/{provisioningSessionId}/content-hosting-configuration/{contentHostingConfigurationId}/purge:      parameters:          - name: provisioningSessionId            in: path            required: true            schema:              type: string            description: Unique identifier of the Provisioning Session          - name: contentHostingConfigurationId            in: path            required: true            schema:              type: string            description: Unique identifier of the Content Hosting Configuration      post:        summary: 'Purge the content of the cache'        description: ''        requestBody:          description: 'The RegEx pattern for resources to purge from the cache'          required: true          content:            application/json:              schema:                $ref: '#/components/schemas/Pattern'          responses:          '200':            description: 'Content was purged successfully'  externalDocs:    description: TS 26.512    url: 'http://www.3gpp.org/DynaReport/26346.htm'  components:    schemas:      ContentHostingConfiguration:        type: object        required:          - id          - origin        properties:          id:            type: integer            format: int64          ingestConfiguration:            $ref: '#/components/schemas/IngestConfiguration'          distributionConfiguration:            type: array            items:              $ref: '#/components/schemas/DistributionConfiguration'      IngestConfiguration:        type: object        properties:          name:            type: string          path:            type: string          pull:            type: boolean          protocol:            type: string            enum:              - dashifpush          entryPoint:            type: string        xml:          name: IngestConfiguration      DistributionConfiguration:        type: object        properties:          contentPreparationTemplateId:            type: string          targetDomain:            type: string          originDomain:            type: string          pathRewriteRules:            type: array            items:              $ref: '#/components/schemas/PathRewriteRule'          cacheConfiguration:            type: array            items:              $ref: '#/components/schemas/CachingConfiguration'          geoFencing:            type: array            items:              $ref: '#/components/schemas/GeofencingLocators'          urlSignature:            type: object            properties:              urlPattern:                type: string              tokenName:                type: string              passphraseName:                type: string              passphrase:                type: string              tokenExpiryName:                type: string              useIPAddress:                type: boolean              ipAddressName:                type: string          certificateId:            type: integer        xml:          name: DistributionConfiguration      PathRewriteRule:        type: object        properties:          originPathPattern:            type: string          distributionPath:            type: string      CachingConfiguration:        type: object        properties:          urlPatternFilter:            type: string          cachingDirectives:            type: object            properties:              statusCodeFilters:                type: array                items:                  type: integer              noCache:                type: boolean              maxAge:                type: integer                format: int32    securitySchemes:      m1d\_auth:        type: oauth2        flows:          authorizationCode:            authorizationUrl: https://www.3gpp.org/3gpp-m1/v1/authorize            tokenUrl: https://www.3gpp.org/3gpp-m1/v1/token            scopes:              read: Grants read access              write: Grants write access              admin: Grants access to admin operations    links: {}    callbacks: {}  security:  - m1d\_auth: [] |

## C.3.7 Consumption Reporting Provisioning API

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| openapi: 3.0.0  servers:  # Added by API Auto Mocking Plugin    - description: 3GPP SA4 5G Media Streaming Interfaces      url: https://virtserver.swaggerhub.com/ibouazizi/3gpp-m1d/1.0.0    - url: 'https://www.3gpp.org/3gpp-m1/v1'      description: 5G Media Provisioning Interface      variables: {}  info:    description: Documentation of the 3GPP M1d Provisioning interface Consumption Reporting.    version: 1.0.0    title: 3GPP M1 interface    contact:      email: bouazizi@qti.qualcomm.com    license:      name: Apache 2.0      url: 'http://www.apache.org/licenses/LICENSE-2.0.html'  tags:    - name: 3GPP TS 26.512      description: 5G Media Provisioning Interface M1 Consumption Reporting      externalDocs:        description: Find out more        url: 'http://www.3gpp.org'  paths:    /provisioning-sessions/{provisioningSessionId}/consumption-reporting-configuration:      parameters:        - name: provisioningSessionId          in: path          required: true          schema:            type: string          description: 'Unique identifier of the parent Provisioning Session'      post:        summary: 'Activate the consumption reporting procedure'        description: 'Activate the consumption reporting procedure'        responses:          '200':            description: 'Consumption reporting procedure successfully activated'      get:        summary: 'Retrieve the consumption reporting configuration'        description: 'retrieve the consumption reporting configuration'        responses:          '200':            description: 'Description of the current consumption reporting configuration'            content:              application/json:                schema:                  $ref: '#/components/schemas/ConsumptionReportingConfiguration'  externalDocs:    description: TS 26.512    url: 'http://www.3gpp.org/DynaReport/26346.htm'  components:    schemas:      ConsumptionReportingConfiguration:        type: object        properties:          reportingInterval:            $ref: 'https://forge.etsi.org/rep/3GPP/5G\_APIs/blob/master/TS29122\_CommonData.yaml#/components/schemas/DurationSec'          samplePercentage:            type: number            format: float            minimum: 0.0            maximum: 100.0          locationType:            $ref: '#/components/schemas/Geo'    securitySchemes:      m1d\_auth:        type: oauth2        flows:          authorizationCode:            authorizationUrl: https://www.3gpp.org/3gpp-m1/v1/authorize            tokenUrl: https://www.3gpp.org/3gpp-m1/v1/token            scopes:              read: Grants read access              write: Grants write access              admin: Grants access to admin operations    links: {}    callbacks: {}  security:  - m1d\_auth: [] |

## C.3.8 Metrics Reporting Provisioning API

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## C.3.9 Policy Templates Provisioning API

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| openapi: 3.0.0  servers:    - description: 3GPP SA4 5G Media Streaming Interfaces      url: https://virtserver.swaggerhub.com/ibouazizi/3gpp-m1d/1.0.0    - url: 'https://www.3gpp.org/3gpp-m1/v1'      description: 5G Media Provisioning Interface      variables: {}  info:    description: Documentation of the 3GPP M1 Policy Template    version: 1.0.0    title: 3GPP M1 Policy Templates Provisioning interface    contact:      email: bouazizi@qti.qualcomm.com    license:      name: Apache 2.0      url: 'http://www.apache.org/licenses/LICENSE-2.0.html'  tags:    - name: 3GPP TS 26.512      description: 5G Media Provisioning Interface M1 Policy Templates Provisioning Interface      externalDocs:        description: Find out more        url: 'http://www.3gpp.org'  paths:    /provisioning-sessions/{provisioningSessionId}/policy-templates:      parameters:        - name: provisioningSessionId          in: path          required: true          schema:            type: string          description: 'Unique identifier of the parent Provisioning Session'      post:        summary: 'Create a new Policy Template'        description: 'create a new Policy Template'        responses:          '201':            description: 'The newly created Policy Template'            content:              application/json:                schema:                  $ref: '#/components/schemas/PolicyTemplate'    /provisioning-sessions/{provisioningSessionId}/policy-templates/{policyTemplateId}:      parameters:        - name: provisioningSessionId          in: path          required: true          schema:            type: string          description: 'Unique identifier of the parent Provisioning Session'        - name: policyTemplateId          in: path          required: true          schema:            type: string          description: 'Unique identifier of the Policy Template'      get:        summary: 'Retrieve a description of the Policy Template'        description: 'Retrieve a description of the Policy Template'        responses:          '200':            description: 'Description of the Policy Template'            content:              application/json:                schema:                  $ref: '#/components/schemas/PolicyTemplate'      put:        summary: 'Modify the configuration of a Policy Template'        description: ''        requestBody:          content:            application/json:              schema:                $ref: '#/components/schemas/PolicyTemplate'        responses:          '200':            description: 'Policy Template successfully updated'            content:              application/json:                schema:                  $ref: '#/components/schemas/PolicyTemplate'      delete:        summary: 'destroy a Policy Template'        description: 'destroy a Policy Template'        responses:          '200':            description: 'Policy Template successfully destroyed'  externalDocs:    description: TS 26.512    url: 'http://www.3gpp.org/DynaReport/26512.htm'  components:    securitySchemes:      m1d\_auth:        type: oauth2        flows:          authorizationCode:            authorizationUrl: https://www.3gpp.org/3gpp-m1/v1/authorize            tokenUrl: https://www.3gpp.org/3gpp-m1/v1/token            scopes:              read: Grants read access              write: Grants write access              admin: Grants access to admin operations    links: {}    callbacks: {}  security:  - m1d\_auth: [] |