**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 |  |
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| *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 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-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. |
|  |  |
| ***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 ...  |
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| ***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: 3.0.0servers:# 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: 3.0.0servers:# 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: 3.0.0servers:# 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: stringexternalDocs:  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: 3.0.0servers:# 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: [] 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## C.3.7 Consumption Reporting Provisioning API

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| openapi: 3.0.0servers:# 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: 3.0.0servers:  - 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: [] |