**3GPP TSG-WG SA4 Meeting #126 *S4-231763***

**Chicago, US, Nov 13 – 17, 2023 (revision of S2-231xxxx)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.517** | **CR** | **0012** | **rev** | **-** | **Current version:** | **17.4.0** |  |
|  | | | | | | | | |
| *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:*** | Stage 3 MBS security support | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | SA4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5MBP3 | | | | |  | ***Date:*** | | | 2023-11-07 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The stage 3 MBS security is missing since we already agreed to include the MBS security support in stage 2 TS 26.502. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add support of MBS security in stage 3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The MBS security is not supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 5.2.4, 5.2.X, Annex A 2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* \* 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 23.501: "System architecture for the 5G System (5GS)".

[3] 3GPP TS 23.502: "Procedures for the 5G System (5GS)".

[4] 3GPP TS 23.503: "Policy and charging control framework for the 5G System (5GS); Stage 2".

[5] 3GPP TS 23.247: "Architectural enhancements for 5G multicast-broadcast services; Stage 2".

[6] 3GPP TS 26.502: "5G multicast–broadcast services; User Service architecture".

[7] 3GPP TS 26.346: “MBMS; Protocols and Codecs".

[8] IETF RFC 8866: "Session Description Protocol".

[9] W3C: "XML Schema Part 2: Datatypes".

[10] 3GPP TS 23.003: "Numbering, addressing and identification".

[11] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".

[12] IETF RFC 3926: "FLUTE - File Delivery over Unidirectional Transport".

[13] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".

[14] IETF RFC 3629: "UTF-8, a transformation format of ISO 10646".

[15] IETF RFC 4648: "The Base16, Base32, and Base64 Data Encodings".

[16] IETF RFC 8141: "Uniform Resource Names (URNs)".

[17] ISO 639-2: "Codes for the representation of names of languages – Part 2: Alpha-3 code".

[18] IETF RFC 6381: "The 'Codecs' and 'Profiles' Parameters for "Bucket" Media Types".

[19] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[20] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[21] 3GPP TS 26.512: "5G Media Streaming (5GMS); Protocols".

[X] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[Y] 3GPP TS 33.246: "3G Security; Security of Multimedia Broadcast/Multicast Service (MBMS)".

Second Change

### 5.2.4 MBS Distribution Session Description metadata unit

The Distribution Sessions Description metadata unit describes one *MBS Distribution Session* associated with an MBS User Service and carries the MBS Distribution Session Parameters as defined in clause 4.5.8 TS 26.502 [6]. Table 5.2.4-1 provides the detailed semantics for the DistributionSessionDescription object that encodes this metadata unit.

Table 5.2.4-1: Semantics of DistributionSessionDescription object

| Name | | Use | Type | Description |
| --- | --- | --- | --- | --- |
| Distribution‌Session‌Description | |  | object | MBS Distribution Session Description metadata unit. |
|  | conformance‌Profiles | 1 | string | A list of profiles indicating the set of features that the MBS Distribution Session conforms to and which the MBS Client needs to support in order to fully decode the MBS Distribution Session. The value of this attribute shall be a fully-qualified term identifier URI from the controlled vocabulary defined in annex C.  The values in the controlled vocabulary shall conform to either the pro-simple or pro-fancy productions specified in section 4.5 of IETF RFC 6381 [17], without the enclosing DQUOTE characters, i.e. including only the unencodedv or encodedv elements respectively.  The identifier of a profile shall not contain any comma.  Profile identifiers defined in the present document are URNs and shall conform to IETF RFC 8141 [16]. Externally defined profiles may use profile identifiers that are URNs or URLs. When a URL is used, it should also contain a month-date in the form mmyyyy; the assignment of the URL must have been authorized by the owner of the domain name in that URL on or very close to that date, to avoid problems when domain names change ownership. |
|  | session‌Description‌URI | 1 | Uri | Provides a URL to a Session Description document carrying the *Session Description parameters* as defined in table 4.5.8‑1 of TS 26.502 [6]. |
|  | object‌Repair‌Parameters | 0..1 | Associated‌Procedure‌Description | The parameters to be used by the MBSTF Client at reference point MBS‑4‑UC for the unicast object repair procedure, as defined in table 4.5.8‑2 of TS 26.502 [6]. |
|  | data‌Network‌Name | 0..1 | string | Indicates a Data Network Name (DNN) as defined in TS 23.003 [10]. |
|  | mbs‌App‌Service | 0..1 | Application‌Service | At most one MBS Application Service Description (see clause 5.2.6 for details). |
|  | unicast‌App‌Services | 0..N | array(Application‌Service) | <needs reference> |
|  | securityDescription | 0..1 | *Security‌Description* | Indicates the security parameters for the MBS Distribution Session as defined in table 4.5.8-1 of TS 26.502 [6] (see clause 5.2.X for details).. |

\* \* \* \* Third change \* \* \* \*(all new texts)

### 5.2.X Security Description object

In order to support the transport security for MBS, the DistributionSessionDescription object may contain an object of type SecurityDescription indicating the User Plane security parameters for the MBS Distribution Session as defined in table 4.5.8-1 of TS 26.502 [6]. The User Plane security mechanisms between the MBS client and the MBSSF are defined in W.4.1.3 of TS 33.501[X] and clause 6 of TS 33.246 [Y].

Table 5.2.X-1: Semantics of SecurityDescription object

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | | | Use | Type | Description |
| SecurityDescription | | |  | object |  |
|  | mBSSFAddresses | | 1..1 | array(AbsoluteURL) | A list of key management servers (i.e., MBSSF instances).  At least one endpoint address shall be listed. |
|  | mBSSessionKeyInfo | | 1..1 | object | Information about the MBS Service key. |
|  |  | mBSId | 1..1 | string | Indicates the MBS Service Key as defined in sub-clause 6.3.2.1 of TS 33.246 [Y]. |
|  |  | mBSDomainId | 1..1 | string | Indicates the key domain ID as defined in sub-clause 6.3.2.1 of TS 33.246 [Y]. |
|  | uICCKeyManagement | | 0..1 | boolean | Indicates whether UICC-based key management is required for the parent MBS Distribution Session.  If false or omitted, this is not required. |
|  | 2GGBAallowed | | 0..1 | boolean | Indicates whether the 2G GBA is permitted for the parent MBS Distribution Session.  If false or omitted, this is not permitted. |
|  | backOffMode | | 0..1 | object | The back-off behaviour of the MBS Client when requesting MBS Session Keys from the MBSSF.  If omitted, no backoff mode is used in the MSK requests. |
|  |  | offsetTime | 0..1 | *DurationSec* | Inidicates the time that a MBS client shall wait before sending the MSK requests. |
|  |  | randomTimePeriod | 0..1 | *DurationSec* | Indicates the time window length over which a MBS client shall calculate a random time for the initiation of the MSK requests. |

\* \* \* \* Fourth change \* \* \* \*

## A.2.1 MBS User Service Announcement schema

The following schema shall have the filename "TS26517\_MBSUserServiceAnnouncement.yaml".

|  |
| --- |
| openapi: 3.0.0  info:  title: 'MBS User Service Announcement'  version: 1.2.1  description: |  MBS User Service Announcement Element units.  © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).  All rights reserved.  externalDocs:  description: 3GPP TS 26.517 V17.5.0; 5G Multicast-Broadcast User Services; Protocols and Formats  url: http://www.3gpp.org/ftp/Specs/archive/26\_series/26.517/  paths:  /user-service-descriptions:  get:  operationId: discoverUserServiceDescriptions  summary: 'Discover User Service Descriptions'  description: 'Discover User Service Descriptions that match the supplied query filter(s). At least one filter query parameter must be included in the request URL.'  parameters:  - in: query  name: service-class  schema:  type: string  required: true  description: 'Filter for User Service Descriptions tagged with the supplied service class term identifier expressed as a fully-qualified URI string from a controlled vocabulary'  responses:  '200':  # OK  description: "Success"  content:  application/json:  schema:  $ref: '#/components/schemas/UserServiceDescriptions'  '204':  # No Content (no matching User Service Descriptions)  description: "No Matches Found"  '500':  # Internal Server Error  $ref: 'TS29571\_CommonData.yaml#/components/responses/500'  '503':  # Service Unavailable  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  /user-service-descriptions/{externalServiceId}:  get:  operationId: retrieveUserServiceDescription  summary: 'Retrieve User Service Description'  description: 'Retrieve the User Service Description of a single service by supplying its external service identifier.'  parameters:  - name: externalServiceId  in: path  required: true  schema:  type: string  description: 'The external service identifier of a User Service provisioned in the MBSF.'  responses:  '200':  # OK  description: "Success"  content:  application/json:  schema:  $ref: '#/components/schemas/UserServiceDescription'  '404':  # Not Found  $ref: 'TS29571\_CommonData.yaml#/components/responses/404'  '500':  # Internal Server Error  $ref: 'TS29571\_CommonData.yaml#/components/responses/500'  '503':  # Service Unavailable  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  components:  schemas:  UserServiceDescriptions:  type: array  items:  $ref: '#/components/schemas/UserServiceDescription'  minItems: 1  UserServiceDescription:  type: object  properties:  name:  type: array  items:  type: string  serviceLanguage:  type: array  items:  type: string  serviceId:  type: string  distributionSessionDescription:  $ref: '#/components/schemas/DistributionSessionDescription'  appServiceDescription:  $ref: '#/components/schemas/AppServiceDescription'  scheduleDescription:  $ref: '#/components/schemas/ScheduleDescription'  availabilityInfo:  $ref: '#/components/schemas/AvailabilityInformation'  required:  - serviceId  DistributionSessionDescription:  type: object  properties:  distributionMethod:  $ref: '#/components/schemas/DistributionMethod'  conformanceProfile:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  sessionDescriptionLocator:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  objectRepairParameters:  $ref: '#/components/schemas/AssociatedProcedureDescription'  dataNetworkName:  type: string  mbsAppService:  type: array  items:  $ref: '#/components/schemas/ApplicationService'  unicastAppServices:  type: array  items:  type: object  properties:  unicastAppService:  type: array  items:  $ref: '#/components/schemas/ApplicationService'  securityDescription:  $ref: '#/components/schemas/SecurityDescription'  required:  - distributionMethod  - sessionDescriptionLocator  DistributionMethod:  anyOf:  - type: string  enum: [OBJECT, PACKET]  - type: string  description: >  This string provides forward-compatibility with future  extensions to the enumeration but is not used to encode  content defined in the present version of this API.  SecurityDescription:  type: object  properties:  mBSSFAddresses:  type: array  items:  $ref: 'TS26512\_CommonData.yaml#/components/AbsoluteUrl'  minItems: 1  mBSSessionKeyInfo:  type: object  properties:  mBSId:  type: string  mBSDomainId:  type: string  required:  - mBSId  - mBSDomainId  uICCKeyManagement:  type: boolean  2GGBAallowed:  type: boolean  backOffParameters:  $ref: '#/components/schemas/BackOffParameters'  required:  - mBSSFAddresses  - mBSSessionKeyInfo  BackOffParameters:  type: object  properties:  offsetTime:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'  randomTimePeriod:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'  AppServiceDescription:  type: object  properties:  mediaEntryPointLocator:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  mimeType:  type: string  identicalContents:  type: array  items:  type: object  properties:  unicastAppService:  type: array  items:  $ref: '#/components/schemas/ApplicationService'  minItems: 2  alternativeContents:  type: array  items:  type: array  items:  $ref: '#/components/schemas/ApplicationService'  ApplicationService:  type: object  properties:  basePattern:  type: string  required:  - basePattern  AvailabilityInformation:  type: array  items:  $ref: '#/components/schemas/AvailabilityInformationBinding'  AvailabilityInformationBinding:  type: object  properties:  mbsServiceArea:  type: array  items:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/MbsServiceArea'  mbsFSAId:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/MbsFsaId'  radioFrequency:  type: array  items:  type: integer  minimum: 0  AssociatedProcedureDescription:  type: object  properties:  postObjectRepair:  $ref: '#/components/schemas/PostObjectRepair'  mbsObjectRepair:  $ref: '#/components/schemas/MbsObjectRepair'  PostObjectRepair:  type: object  properties:  serviceLocators:  type: array  items:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  offsetTime:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'  randomTimePeriod:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'  MbsObjectRepair:  type: object  properties:  sessionDescriptionURI:  type: string  ScheduleDescription:  type: array  items:  $ref: '#/components/schemas/ServiceSchedule'  ServiceSchedule:  type: object  properties:  sessionSchedule:  $ref: '#/components/schemas/SessionSchedule'  sessionScheduleOverride:  $ref: '#/components/schemas/SessionScheduleOverride'  objectSchedule:  $ref: '#/components/schemas/ObjectSchedule'  serviceId:  type: string  serviceClass:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  required:  - sessionSchedule  - serviceId  - serviceClass  SessionSchedule:  type: array  items:  type: object  properties:  start:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  stop:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  reoccurencePattern:  type: string  numberOfTimes:  type: integer  minimum: 1  reoccurenceStopTime:  type: string  index:  type: integer  fDTInstanceLocator:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  required:  - start  - stop  SessionScheduleOverride:  type: array  items:  type: object  properties:  start:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  stop:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  index:  type: integer  cancelled:  type: boolean  sessionDescriptionLocator:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  ObjectSchedule:  type: array  items:  type: object  properties:  objectLocator:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  sessionId:  type: string  objectEtag:  type: string  unicastOnly:  type: boolean  deliveryInfo:  type: array  items:  type: object  properties:  start:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  stop:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime' |

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