Source: SA5 (Telecom Management)

Title: CR 32612-5 Bulk Configuration Management IRP Information Service / Bulk CM XML file format definition

Document for: Approval

Agenda Item: 7.5.3

Doc- 1st-Level	Spec#_	CR#	R	Phase	Subject	Cat	Ver- Cur	Doc-2nd- Level	Workite m
SP-050295	32.612	0016	-	Rel-5	Correction of ambiguous precondition statement related to fallback operation	F	5.3.1	S5-056371	OAM-NIM
SP-050295	32.612	0017	-	Rel-6	Correction of ambiguous precondition statement related to fallback operation	A	6.2.0	S5-056372	OAM-NIM
SP-050295	32.615	0021	-	Rel-5	Bulk CM SessionLog Schema correction for no error scenario	F	5.5.1	S5-058418	OAM-NIM
SP-050295	32.615	0022	-	Rel-6	Bulk CM SessionLog Schema correction for no error scenario	A	6.2.0	S5-058419	OAM-NIM
SP-050295	32.615	0023	-	Rel-6	Add Transport Network interface NRM IRP - Align with 32.612	F	6.2.0	S5-056363	OAM-NIM

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### **Change in Clause 1**

# 1 Scope

The present document provides the main part of the XML file format definition for the Bulk Configuration Management IRP IS in 3GPP TS 32.612 [1].

The other parts of this XML file format definition are NRM-specific parts.

Those NRM-specific parts are provided by 3GPP TS 32.625 [11], 3GPP TS 32.635 [12], 3GPP TS 32.645 [13], 3GPP TS 32.655 [14], 3GPP TS 32.745 [15], and 3GPP TS 32.695 [16] and 3GPP TS 32.715 [9],

Bulk CM XML file formats are based on XML [2], XML Schema [3] [4] [5] and XML Namespace [6] standards.

This File Format Definition specification is related to 3GPP TS 32.612 V6.2.X.

### End of Change in Clause 1

### Change in Clause 2

## 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 TS 32.612: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Information Service (IS)".
- [2] W3C REC-xml-20001006: "Extensible Markup Language (XML) 1.0 (Second Edition)".
- [3] W3C REC-xmlschema-0-20010502: "XML Schema Part 0: Primer".
- [4] W3C REC-xmlschema-1-20010502: "XML Schema Part 1: Structures".
- [5] W3C REC-xmlschema-2-20010502: "XML Schema Part 2: Datatypes".
- [6] W3C REC-xml-names-19990114: "Namespaces in XML".
- [7] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [8] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".
- [9] <u>3GPP TS 32.715: "Telecommunication management; Configuration Management (CM); Transport</u> Network (TN) interface Network Resource Model (NRM) Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition".<del>Void.</del>

[10] Void.

- [11] 3GPP TS 32.625: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition".
- [12] 3GPP TS 32.635: "Telecommunication management; Configuration Management (CM); Core network resources Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition".
- [13] 3GPP TS 32.645: "Telecommunication management; Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition".
- [14] 3GPP TS 32.655: "Telecommunication management; Configuration Management (CM); GERAN network resources Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition".
- [15] 3GPP TS 32.745: "Telecommunication management; Configuration Management (CM);
   Signalling Transport Network (STN) Interface Network Resource Model (NRM) Integration
   Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition".
- [16] 3GPP TS 32.695: "Telecommunication management; Inventory Management (IM) Network Resource Model (NRM); Integration Reference Point (IRP): eXtensible Markup Language (XML) file format definition".

#### End of Change in Clause 2

#### Change in Clause 4.3A.1

### 4.3A.1 NRM-specific XML schemas

NRM-specific XML schemas are defined in the NRM-specific parts (see clause 1) of the XML file format definition for the Bulk Configuration Management IRP IS [1].

NRM-specific XML schemas with definition of corresponding XML namespace prefixes (see subclause 4.1) are listed by the following table:

	Table 2: NRM-specific )	XML schemas,	corresponding 3GPF	P TSs and XML	. namespace	prefixes
--	-------------------------	--------------	--------------------	---------------	-------------	----------

NRM	XML schema	3GPP TS no.	XML namespace prefix
Generic Network Resources	genericNrm.xsd	32.625 [11]	xn
Core Network Resources	coreNrm.xsd	32.635 [12]	cn
UTRAN Network Resources	utranNrm.xsd	32.645 [13]	un
GERAN Network Resources	geranNrm.xsd	32.655 [14]	gn
STN Network Resources	stnNrm.xsd	32.745 [15]	stn
IM Network Resources	inventoryNrm.xsd	32.695 [16]	in
TN Network Resources	transportNrm.xsd	32.715 [9]	tn

Each NRM-specific XML schema explicitly declares NRM-specific XML element types for the related NRM.

Additionally, XML schema genericNrm.xsd (see [11]) also provides global XML declarations and definitions for the support of:

- NRM-specific XML element type declaration;
- vendor-specific XML element type declaration (see subclause 4.5).

#### End of Change in Clause 4.3A.1 End of Document

### Change in Clause Annex A

# Annex A (normative): Configuration data file base XML schema (file name "configData.xsd")

The following XML schema configData.xsd is the base schema for configuration data XML files:

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
 3GPP TS 32.615 Bulk CM IRP
 Configuration data file base XML schema
 configData.xsd
-->
<schema
 targetNamespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.615#configData"
 elementFormDefault="qualified"
 xmlns="http://www.w3.org/2001/XMLSchema"
 xmlns:xn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
 xmlns:cn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.635#coreNrm"
 xmlns:un=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.645#utranNrm"
 xmlns:qn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.655#geranNrm"
 xmlns:stn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.745#stnNrm"
 xmlns:in=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.695#inventoryNrm"
>
 xmlns:tn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.715#transportNrm"
  <import
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
 />
 <import
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.635#coreNrm"
 />
 <import
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.645#utranNrm"
 />
 <import
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.655#geranNrm"
 />
  <import
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.745#stnNrm"
```

```
/>
 <import
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.695#inventoryNrm"
 />
 <import
  namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.715#transportNrm"
 />
 <!-- Configuration data file root XML element -->
 <element name="bulkCmConfigDataFile">
   <complexType>
     <sequence>
       <element name="fileHeader">
          <complexType>
            <attribute name="fileFormatVersion" type="string" use="required"/>
            <attribute name="senderName" type="string" use="optional"/>
            <attribute name="vendorName" type="string" use="optional"/>
          </complexType>
       </element>
        <element name="configData" maxOccurs="unbounded">
          <complexType>
            <choice>
              <element ref="xn:SubNetwork"/>
              <element ref="xn:MeContext"/>
              <element ref="xn:ManagedElement"/>
            </choice>
            <attribute name="dnPrefix" type="string" use="optional"/>
          </complexType>
       </element>
        <element name="fileFooter">
          <complexType>
            <attribute name="dateTime" type="dateTime" use="required"/>
          </complexType>
       </element>
     </sequence>
   </complexType>
 </element>
```

</schema>

### End of Change in Clause Annex A

#### **Change in Clause Annex E**

## Annex E (informative): XML schema electronic files

The electronic files corresponding to the normative XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32\_series/32.615/schema/32615-620630-XMLSchema.zip

#### End of Change in Clause Annex E End of Document

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# Annex F (informative): Change history

	Change history						
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Jun 2001	S_12	SP-010283			Approved at TSG SA #12 and placed under Change Control	2.0.0	4.0.0
Dec 2001	S_14	SP-010645	001		Addition of MCC and MNC attributes to GSM cell related MOCs in Bulk CM XML file format	4.0.0	4.1.0
Mar 2002	S_15	SP-020032	002		lignment of XML file definitions with W3C, and modifications to low use of commercially available XML processing tools		4.2.0
Jun 2002	S_16	SP-020298	003		lew structure of specifications for the definition of Bulk CM IRP (ML file formats		5.0.0
Sep 2002					Cosmetics by Rapporteur/MCC 5		5.0.1
Jun 2003	S_20	SP-030284	006		Correction of Bulk CM session log file XML element "log" declaration	5.0.1	5.1.0
Jun 2003	S_20	SP-030287	007		prrection of Bulk CM configuration data file XML schema		5.1.0
Jun 2003	S_20	SP-030288	800		Generic NRM XML schema dependencies removal	5.0.1	5.1.0
Sep 2003	S_21	SP-030414	009		Add missing Activities to Session Log XML	5.1.0	5.2.0
Sep 2003	S_21	SP-030418	010		Inclusion of External BSS Function in GERAN XML Schema - Alignment with 32.652/655		5.2.0
Oct 2003					Attached to this TS the normative XML schema electronic files corresponding to Sept 2003 TS 32.615	5.2.0	5.2.1
Dec 2003	S_22	SP-030646	012		Correction of the number of possible URAs from 1 to 8	5.2.1	5.3.0
Mar 2004	S_23	SP-040131	013		Add the capability to contain instances of VsDataContainer to some MOs - Align with the IS 32.612	5.3.0	5.4.0
Jun 2004	S_24	SP-040259	014		Removal of XML schema URI dependencies	5.4.0	5.5.0
Jun 2004	S_24	SP-040258	016		Correction of the annex related to XML schema electronic files publication	5.4.0	5.5.0
Jun 2004	S_24	SP-040254	017		The specification does not support all UMTS frequency bands	5.4.0	5.5.0
Sep 2004	S_25	SP-040541			Automatic upgrade to Rel- 6 (no CR) as per request in SP-040541 SA5_presentation_SA_25.ppt (slide 17)	5.5.0	6.0.0
Dec 2004	S_26	SP-040807	018		Add Signalling Transport Network (STN) NRM IRP in BulkCM IRP XML FF	6.0.0	6.1.0
Mar 2005	S_27	SP-050045	019		Generic System Context, update of reference to IS specification	6.1.0	6.2.0
Mar 2005	S_27	SP-050045	020		Add Inventory Management NRM IRP in BulkCM IRP XML FFD	6.1.0	6.2.0

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Other comments: %

### Change in Clause 7.5.5.1

#### 7.5.5.1 Definition

An IRPManager<u>may</u> invokes this operation to request an IRPAgent to recover<u>(best effort)</u> after a previously<u>executed</u> ordered activation or preactivation has failed operation.

If a fallback is requested after a preactivation but before an activation the IRPAgent should as necessary return any internal local resources impacted by the preactivation back to the same state they were in prior to the preactivation being invoked. There is no impact to the operational network resources as the activate operation has not been invoked.

If fallback is requested after an activation the IRPAgent shall instigate activating the fallback area to restore the operational network resources impacted by the configuration changes for the session back to the configuration they were in when the fallback option was selected during the session. If a preactivation was also performed, as necessary the IRPAgent should return any internal local resources impacted by the preactivation back to the same state they were in prior to the preactivation being invoked.

Specifying how fallback operation retries within a session shall be implemented after a fallback fails (e.g. repeat all fallback functions or just the delta of fallback functions that did not previously complete successfully) is beyond the scope of this document. Only the IRPManager can initiate the fallback operation. The IRPAgent shall not initiate fallback or fallback retries autonomously. Within a session the fallback operation shall only be accepted if an initial activate or preactivate operations was performed with fallback option enabled. For further discussion of enabling or not the fallback option see clause 7.5.4.

### End of Change in Clause 7.5.5.1

### Change in Clause 9.1

### 9.1 State Machine Overview

The Bulk CM IRPAgent state machine satisfies the following general requirements and characteristics for Bulk CM IRP:

- 1) Each configuration session is associated with one state machine. The session is identified by the sessionId. If a session is a started (startSession operation) an instance of the state machine is created. If the session is ended (endSession operation) the instance of the state machine is deleted.
- 2) Under normal operation without errors the IRPManager is able to supervise a configuration session by just monitoring the state change notifications (notifySessionStateChanged) triggered by the IRPAgent
- 3) ...

### End of Change in Clause 9.1

### Change in Clause 9.3

## 9.3 State Machine Pre and Post Conditions Tables

For each operation Table 9.1 identifies the state machine pre and post conditions.

Operation	Pre-condition	Post Condition
startSession	No state – input sessionId provided by an IRPManager is not already in use in the IRPAgent by this or any other IRPManager	State = IDLE
endSession	not in a Transition status i.e. state <>. *_IN_PROGRESS	sessionId is released - No state.
upload	State = IDLE or UPLOAD_FAILED	Initially while operation is being performed: State= UPLOAD_IN_PROGRESS Finally when operation has completed: State = UPLOAD_COMPLETED or UPLOAD_FAILED
download	State = IDLE or DOWNLOAD_FAILED	Initially while operation is being performed: State= DOWNLOAD_IN_PROGRESS Finally when operation has completed: State = DOWNLOAD_COMPLETED or DOWNLOAD_FAILED
validate	State = DOWNLOAD_COMPLETED or VALIDATION_FAILED	Initially while operation is being performed: State= VALIDATION_IN_PROGRESS Finally when operation has completed: State = VALIDATION_COMPLETED or VALIDATION_FAILED
preactivate	State = DOWNLOAD_COMPLETED or VALIDATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED	Initially while operation is being performed: State= PREACTIVATION_IN_PROGRESS Finally when operation has completed: State = PREACTIVATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED
activate	State = DOWNLOAD_COMPLETED or VALIDATION_COMPLETED or ACTIVATION_PARTLY_REALISED or ACTIVATION_FAILED or PREACTIVATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED	Initially while operation is being performed: State= ACTIVATION_IN_PROGRESS Finally when operation has completed: State = ACTIVATION_COMPLETED or ACTIVATION_PARTLY_REALISED or ACTIVATION_FAILED
fallback	State = PREACTIVATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or ACTIVATION_COMPLETED or ACTIVATION_PARTLY_REALISED or FALLBACK_PARTLY_REALISED or FALLBACK_FAILED or FALLBACK_PARTLY_REALISED or FALLBACK_FAILED	Initially while operation is being performed: State= FALLBACK_IN_PROGRESS Finally when operation has completed: State = FALLBACK_COMPLETED or FALLBACK_PARTLY_REALISED or FALLBACK_FAILED
abortSessionOp eration	State = UPLOAD_IN_PROGRESS or DOWNLOAD_IN_PROGRESS or VALIDATION_IN_PROGRESS or PREACTIVATION_IN_PROGRESS or ACTIVATION_IN_PROGRESS or FALLBACK_IN_PROGRESS	State = UPLOAD_FAILED or DOWNLOAD_FAILED or VALIDATE_FAILED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED or ACTIVATION_PARTLY_REALISED or ACTIVATION_FAILED or FALLBACK_PARTLY_REALISED or FALLBACK_FAILED
getSessionIds	N/A – State Machine independent	N/A
getSessionStat	None	None
getSessionLog	None	None
getBulkCmIRPv ersion	N/A – State Machine independent	N/A

#### Table 9.1: State Machine Pre and Post Conditions

## End of Change in Clause 9.3

# Annex C (informative): Change history

	Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New	
Jun 2001	S_12	SP-010283			proved at TSG SA #12 and placed under Change Control		4.0.0	
Sep 2001	S_13	SP-010479	001		rrection of State Machine Pre and Post Conditions		4.1.0	
Jun 2002	S_16	SP-020296	002		Correction of behaviour for IS parameter "saveFallback" of IS operation "activate"	4.1.0	4.2.0	
Sep 2002	S_17	SP-020484	003		Correction of pre- and post-conditions for the operations getSessionStatus and getSessionLog	4.2.0	4.3.0	
Sep 2002	S_17	SP-020486	003		dd Bulk CM IRP IS Enhancements for Rel-5		5.0.0	
Dec 2002	S_18	SP-020744	006		ncomplete getSessionStatus		5.1.0	
Mar 2003					Editorial (Clause heading missing: 8 Bulk Configuration Data File)	5.1.0	5.1.1	
Dec 2003	S_22	SP-030630	800		Correction of System Context	5.1.1	5.2.0	
Mar 2004	S_23	SP-040119	010		Correction of System Context	5.2.0	5.3.0	
Dec 2004					Word XP "Open and Repair" & added the TS-family to Introduction. Reference updates. Editorial cosmetics	5.3.0	5.3.1	

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Reason for change	e: #	<ol> <li>Current specification states in chapter 7.5.5.1 that fallback operation can be requested after a previously ordered activation or preactivation operation has failed. In context of state machine description for Bulk CM the failed activation or preactivation operation means that no changes were made. And according to Table 9.1: State Machine Pre and Post Conditions the fallback can not be requested after failed operation.</li> <li>There are duplicated states value in Table 9.1: State Machine Pre and Post conditions</li> <li>Other editorial errors in clause 9.1 and 9.2.7.</li> </ol>												
Summary of chang	<b>je:</b>	<ol> <li>Correct the statement for fallback operation in chapter 7.5.5.1 to be in align with state machine descriptionin chapters 9.2 and the definition inTable 9.1 in chapter 9.3</li> <li>Remove the duplicated pre-conditions for fallback operation</li> <li>Correct some editorial errors in clause 9.1 and 9.2.7.</li> </ol>							n align ble 9.1 in					
Consequences if not approved:	ж	The precondition for fallback operation remains ambiguous												
Clauses affected:	ж	7.5.5	5.1, 9.1,	9.2.7, 9.3	3									

Other specs affected:	Y     N       X     Other core specifications       X     Test specifications       X     O&M Specifications
Other comments:	ж

### Change in Clause 7.5.5.1

#### 7.5.5.1 Definition

An IRPManager<u>may</u> invokes this operation to request an IRPAgent to recover<u>(best effort)</u> after a previously<u>executed</u> ordered activation or preactivation<u>has failed</u> operation.

If a fallback is requested after a preactivation but before an activation the IRPAgent should as necessary return any internal local resources impacted by the preactivation back to the same state they were in prior to the preactivation being invoked. There is no impact to the operational network resources as the activate operation has not been invoked.

If fallback is requested after an activation the IRPAgent shall instigate activating the fallback area to restore the operational network resources impacted by the configuration changes for the session back to the configuration they were in when the fallback option was selected during the session. If a preactivation was also performed, as necessary the IRPAgent should return any internal local resources impacted by the preactivation back to the same state they were in prior to the preactivation being invoked.

Specifying how fallback operation retries within a session shall be implemented after a fallback fails (e.g. repeat all fallback functions or just the delta of fallback functions that did not previously complete successfully) is beyond the scope of the present document. Only the IRPManager can initiate the fallback operation. The IRPAgent shall not initiate fallback or fallback retries autonomously. Within a session the fallback operation shall only be accepted if an initial activate or preactivate operations was performed with fallback option enabled. For further discussion of enabling or not the fallback option see clause 7.5.4.

### End of Change in Clause 7.5.5.1

### Change in Clause 9.1

### 9.1 State Machine Overview

The Bulk CM IRPAgent state machine satisfies the following general requirements and characteristics for Bulk CM IRP:

- 1) Each configuration session is associated with one state machine. The session is identified by the sessionId. If a session is a started (startSession operation) an instance of the state machine is created. If the session is ended (endSession operation) the instance of the state machine is deleted.
- 2) Under normal operation without errors the IRPManager is able to supervise a configuration session by just monitoring the state change notifications (notifySessionStateChanged) triggered by the IRPAgent
- 3) ...

### End of Change in Clause 9.1

### Change in Clause 9.2.7

### 9.2.7 Fallback Phase

If an activate or preactivate operation was requested with the fallback option enabled and was successfully or partially completed then a fallback operation can be requested. If the process of a fallback fully succeeds then the related MIB and subnetwork is reverted back to its former configuration prior to first configuration data file preactivation or activation of a session.

For fallback a best effort strategy shall be employed.

In case that not all MIB changes and corresponding changes in the network elements that were actioned in configuration data file (clause 8) were successfully reverted back the state FALLBACK\_PARTLY\_REALISED is indicated. This state is not an error condition as the fallback to the former configuration follows a best effort strategy. If the fallback fails completely i.e. no MIB changes or corresponding changes in the network elements can be reverted back then the state FALLBACK\_FAILED is indicated. A retry of fallback can be performed in the states FALLBACK\_FAILED and FALLBACK\_FAILED. The FALLBACK\_FAILED state cannot be entered if previously during the session the state had become FALLBACK\_PARTLY\_REALISED. The FALLBACK\_PARTLY\_REALISED state should be re-entered instead. A retry of the fallback is allowed so that it is possible to recover after transient condition that caused a fallback to fail or partly realise are no longer present.

### End of Change in Clause 9.2.7

### Change in Clause 9.3

# 9.3 State Machine Pre and Post Conditions Tables

For each operation Table 9.1 identifies the state machine pre and post conditions.

# Table 9.1: State Machine Pre and Post Conditions (Controlled Upload and Controlled Upload & Provisioning)

Operation	Pre-condition	Post Condition
startSession	No state – input sessionId provided by an IRPManager is not already in use in the IRPAgent by this or any other IRPManager	State = IDLE
endSession	not in a Transition status i.e. state <>. *_IN_PROGRESS	sessionId is released - No state.
upload	State = IDLE or UPLOAD_FAILED	Initially while operation is being performed: State= UPLOAD_IN_PROGRESS Finally when operation has completed: State = UPLOAD_COMPLETED or UPLOAD_FAILED
download	State = IDLE or DOWNLOAD_FAILED	Initially while operation is being performed: State= DOWNLOAD_IN_PROGRESS Finally when operation has completed: State = DOWNLOAD_COMPLETED or DOWNLOAD_FAILED
validate	State = DOWNLOAD_COMPLETED or VALIDATION_FAILED	Initially while operation is being performed: State= VALIDATION_IN_PROGRESS Finally when operation has completed: State = VALIDATION_COMPLETED or VALIDATION_FAILED
preactivate	State = DOWNLOAD_COMPLETED or VALIDATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED	Initially while operation is being performed: State= PREACTIVATION_IN_PROGRESS Finally when operation has completed: State = PREACTIVATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED
activate	State = DOWNLOAD_COMPLETED or VALIDATION_COMPLETED or ACTIVATION_PARTLY_REALISED or ACTIVATION_FAILED or PREACTIVATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED	Initially while operation is being performed: State= ACTIVATION_IN_PROGRESS Finally when operation has completed: State = ACTIVATION_COMPLETED or ACTIVATION_PARTLY_REALISED or ACTIVATION_FAILED
fallback	State = PREACTIVATION_COMPLETED or PREACTIVATION_PARTLY_REALISED or ACTIVATION_COMPLETED or ACTIVATION_PARTLY_REALISED or FALLBACK_PARTLY_REALISED or FALLBACK_PARTLY_REALISED or FALLBACK_PARTLY_REALISED or FALLBACK_FAILED	Initially while operation is being performed: State= FALLBACK_IN_PROGRESS Finally when operation has completed: State = FALLBACK_COMPLETED or FALLBACK_PARTLY_REALISED or FALLBACK_FAILED
abortSessionOp eration	State = UPLOAD_IN_PROGRESS or DOWNLOAD_IN_PROGRESS or VALIDATION_IN_PROGRESS or PREACTIVATION_IN_PROGRESS or ACTIVATION_IN_PROGRESS or FALLBACK_IN_PROGRESS	State = UPLOAD_FAILED or DOWNLOAD_FAILED or VALIDATE_FAILED or PREACTIVATION_PARTLY_REALISED or PREACTIVATION_FAILED or ACTIVATION_PARTLY_REALISED or ACTIVATION_FAILED or FALLBACK_PARTLY_REALISED or FALLBACK_FAILED
getSessionIds	N/A – State Machine independent	N/A
getSessionStat us	None	None
getSessionLog	None	None
getBulkCmIRPv ersion	N/A – State Machine independent	N/A

### Table 9.2: State Machine Pre and Post Conditions (Simple Upload)

Operation	Pre-condition	Post Condition
upload	No state – input sessionId provided by an IRPManager is not already in use in the IRPAgent by this or any other IRPManager	Initially while operation is being performed: State= UPLOAD_IN_PROGRESS When operation has completed: State = UPLOAD_COMPLETED or UPLOAD_FAILED until SessionStateChangeNotification sent then finally sessionId released and State becomes – no state

### End of Change in Clause 9.3 End of Document

# Annex C (informative): Change history

Change history											
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New				
Jun 2001	S_12	SP-010283			Approved at TSG SA #12 and placed under Change Control	2.0.0	4.0.0				
Sep 2001	S_13	SP-010479	001		Correction of State Machine Pre and Post Conditions	4.0.0	4.1.0				
Jun 2002	S_16	SP-020296	002		Correction of behaviour for IS parameter "saveFallback" of IS operation "activate"	4.1.0	4.2.0				
Sep 2002	S_17	SP-020484	003		Correction of pre- and post-conditions for the operations getSessionStatus and getSessionLog	4.2.0	4.3.0				
Sep 2002	S_17	SP-020486	003		Add Bulk CM IRP IS Enhancements for Rel-5	4.3.0	5.0.0				
Dec 2002	S_18	SP-020744	006		Incomplete getSessionStatus	5.0.0	5.1.0				
Mar 2003					Editorial (Clause heading missing: 8 Bulk Configuration Data File)	5.1.0	5.1.1				
Dec 2003	S_22	SP-030630	800		Correction of System Context	5.1.1	5.2.0				
Mar 2004	S_23	SP-040119	010		Correction of System Context	5.2.0	5.3.0				
Mar 2004	S_23	SP-040105			Automatic upgrade to Rel-6 (no CR)	5.3.0	6.0.0				
Dec 2004	S_26	SP-040807	011		Partition Bulk CM IRP capabilities into packages	6.0.0	6.1.0				
Dec 2004	S_26	SP-040807	012		BulkCMIRP should be extended to be applicable to new NRM model, such as Signalling Transport Network (STN) NRM IRP	6.0.0	6.1.0				
Mar 2005	S_27	SP-050045	013		Apply Generic System Context	6.1.0	6.2.0				
Mar 2005	S_27	SP-050045	014		Add missing reference to TS 32.712 Transport Network NRM	6.1.0	6.2.0				
Mar 2005	S_27	SP-050045	015		Correct Annex B text style to comply with drafting rules	6.1.0	6.2.0				

3GPP TSG-SA5 (Telecom Management)
Meeting #42 Montreal CANADA 09 - 13 May 2005

**Tdoc #S5-058418** 

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Clauses affected:	ж	Sec	5.3, An	nex D, An	nex E.							
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Other comments:	ж											

### 5.3 XML element activity

As defined by the following extract of XML schema sessionLog.xsd (see Annex D):

```
<element name="activity" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="log" maxOccurs="unbounded">
[...]
              </element>
            </sequence>
            <attribute name="dateTime" type="dateTime" use="required"/>
            <attribute name="type" use="required">
              <simpleType>
                <restriction base="string">
                  <enumeration value="upload"/>
                  <enumeration value="download"/>
                  <enumeration value="validate"/>
                  <enumeration value="preactivate"/>
                  <enumeration value="activate"/>
                  <enumeration value="fallback"/>
                </restriction>
              </simpleType>
            </attribute>
          </complexType>
        </element>
```

an activity XML element:

- has the following XML attribute specifications:
  - a dateTime XML attribute specification; this attribute specification carries the date and time the Bulk CM activity was started;
  - a type XML attribute specification; this attribute specification carries the type of the Bulk CM activity triggered by the IRPManager, upload, download, validate, preactivate, activate or fallback;
- and its XML content is the succession of one or several log XML elements.

As defined by the following extract of XML schema sessionLog.xsd (see Annex D):

```
<element name="log" maxOccurs="unbounded">
  <complexType>
    <simpleContent>
      <extension base="string">
        <attribute name="time" type="time" use="required"/>
        <attribute name="type" use="required">
          <simpleType>
            <restriction base="string">
              <enumeration value="informative"/>
              <enumeration value="error"/>
            </restriction>
          </simpleType>
        </attribute>
        <attribute name="dn" type="string" use="optional"/>
        <attribute name="modifier" use="optional">
          <simpleType>
            <restriction base="string">
              <enumeration value="create"/>
              <enumeration value="delete"/>
              <enumeration value="update"/>
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </simpleContent>
  </complexType>
</element>
```

a log XML element:

- has the following XML attribute specifications:
  - a time XML attribute specification; this attribute specification carries the time the logged Bulk CM internal event occurred;
  - a type XML attribute specification; this attribute specification carries the type of the logged Bulk CM internal event, being either informative or error;
  - an optional dn XML attribute specification; this attribute specification carries the DN of the NRM instance associated with the logged Bulk CM internal event, if any;
  - an optional modifier XML attribute specification; this attribute specification carries the value of the modifier (see subclause 4.4) associated with the NRM instance, if any;
- and it has an XML content; this XML content carries the description of the logged Bulk CM internal event.

The following is an example of an activity XML element (in **bold**) in a session log XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<br/>bulkCmSessionLogFile
 xmlns=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.615#sessionLog"
[...]
>
[...]
  <activity dateTime="2001-05-07T12:00:00+02:00" type="download">
    <log time="12:00:01+02:00" type="informative">
      Download requested with:
        downloadDataFileReference="ftp://al.companyNN.com/data/upld123.xml"
    </log>
    <log time="12:00:02+02:00" type="error"
      dn="DC=a1.companyNN.com,SubNetwork=1"
      modifier="update"
    >
     No such instance
    </log>
 </activity>
[...]
</bulkCmSessionLogFile>
```

#### End of Change in Clause 5.3

#### Change in Clause Annex D

# Annex D (normative): Session log file XML schema (file name "sessionLog.xsd")

The following XML schema sessionLog.xsd is the schema for session log XML files:

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
    3GPP TS 32.615 Bulk CM IRP
    Session log file XML schema
    sessionLog.xsd
-->
<schema
    targetNamespace=</pre>
```

```
"http://www.3gpp.org/ftp/specs/archive/32_series/32.615#sessionLog"
 elementFormDefault="qualified"
 xmlns="http://www.w3.org/2001/XMLSchema"
>
 <!-- Session log file root XML element -->
 <element name="bulkCmSessionLogFile">
    <complexType>
      <sequence>
        <element name="fileHeader">
          <complexType>
            <attribute name="fileFormatVersion" type="string" use="required"/>
            <attribute name="senderName" type="string" use="optional"/>
            <attribute name="vendorName" type="string" use="optional"/>
          </complexType>
        </element>
        <element name="activity" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="log" maxOccurs="unbounded">
                <complexType>
                   <simpleContent>
                     <extension base="string">
                       <attribute name="time" type="time" use="required"/>
<attribute name="type" use="required">
                         <simpleType>
                           <restriction base="string">
                             <enumeration value="informative"/>
                             <enumeration value="error"/>
                           </restriction>
                         </simpleType>
                       </attribute>
                       <attribute name="dn" type="string" use="optional"/>
                       <attribute name="modifier" use="optional">
                         <simpleType>
                           <restriction base="string">
                             <enumeration value="create"/>
                             <enumeration value="delete"/>
                             <enumeration value="update"/>
                           </restriction>
                         </simpleType>
                       </attribute>
                     </extension>
                  </simpleContent>
                </complexType>
              </element>
            </sequence>
            <attribute name="dateTime" type="dateTime" use="required"/>
            <attribute name="type" use="required">
              <simpleType>
                <restriction base="string">
                  <enumeration value="upload"/>
                  <enumeration value="download"/>
                  <enumeration value="validate"/>
                  <enumeration value="preactivate"/>
                  <enumeration value="activate"/>
                  <enumeration value="fallback"/>
                </restriction>
              </simpleType>
            </attribute>
          </complexType>
        </element>
        <element name="fileFooter">
          <complexType>
            <attribute name="dateTime" type="dateTime" use="required"/>
          </complexType>
        </element>
      </sequence>
    </complexType>
  </element>
```

```
</schema>
```

#### End of Change in Clause Annex D

# Annex E (informative): XML schema electronic files

The electronic files corresponding to the normative XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32\_series/32.615/schema/32615-5560-XMLSchema.zip

### End of Change in Clause Annex E End of Document

# Annex F (informative): Change history

Change history											
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New				
Jun 2004	S_24	SP-040259	014		Removal of XML schema URI dependencies	5.4.0	5.5.0				
Jun 2004	S_24	SP-040258	016		Correction of the annex related to XML schema electronic files publication	5.4.0	5.5.0				
Jun 2004	S_24	SP-040254	017		The specification does not support all UMTS frequency bands	5.4.0	5.5.0				
Dec 2004					Word XP "Open and Repair" & added the TS-family to Introduction. Reference updates. Editorial cosmetics	5.5.0	5.5.1				

3GPP TSG-SA5 (Telecom Management)
Meeting #42, Montreal, CANADA, 09 - 13 May 2005

**Tdoc #S5-058419** 

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Clauses affected:	ដ <mark>Sec</mark>	5.3, Annex D	, Annex E.							
Other specs affected:	¥ N 第 ス ス ス ス	Other core Test specifi O&M Speci	specification ications ifications	is ¥						
Other comments:	Ħ									

### 5.3 XML element activity

As defined by the following extract of XML schema sessionLog.xsd (see Annex D):

```
<element name="activity" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="log" maxOccurs="unbounded">
[...]
              </element>
            </sequence>
            <attribute name="dateTime" type="dateTime" use="required"/>
            <attribute name="type" use="required">
              <simpleType>
                <restriction base="string">
                  <enumeration value="upload"/>
                  <enumeration value="download"/>
                  <enumeration value="validate"/>
                  <enumeration value="preactivate"/>
                  <enumeration value="activate"/>
                  <enumeration value="fallback"/>
                </restriction>
              </simpleType>
            </attribute>
          </complexType>
        </element>
```

an activity XML element:

- has the following XML attribute specifications:
  - a dateTime XML attribute specification; this attribute specification carries the date and time the Bulk CM activity was started;
  - a type XML attribute specification; this attribute specification carries the type of the Bulk CM activity triggered by the IRPManager, upload, download, validate, preactivate, activate or fallback;
- and its XML content is the succession of one or several log XML elements.

As defined by the following extract of XML schema sessionLog.xsd (see Annex D):

```
<element name="log" maxOccurs="unbounded">
  <complexType>
    <simpleContent>
      <extension base="string">
        <attribute name="time" type="time" use="required"/>
        <attribute name="type" use="required">
          <simpleType>
            <restriction base="string">
              <enumeration value="informative"/>
              <enumeration value="error"/>
            </restriction>
          </simpleType>
        </attribute>
        <attribute name="dn" type="string" use="optional"/>
        <attribute name="modifier" use="optional">
          <simpleType>
            <restriction base="string">
              <enumeration value="create"/>
              <enumeration value="delete"/>
              <enumeration value="update"/>
            </restriction>
          </simpleType>
        </attribute>
      </extension>
    </simpleContent>
  </complexType>
</element>
```

a log XML element:

- has the following XML attribute specifications:
  - a time XML attribute specification; this attribute specification carries the time the logged Bulk CM internal event occurred;
  - a type XML attribute specification; this attribute specification carries the type of the logged Bulk CM internal event, being either informative or error;
  - an optional dn XML attribute specification; this attribute specification carries the DN of the NRM instance associated with the logged Bulk CM internal event, if any;
  - an optional modifier XML attribute specification; this attribute specification carries the value of the modifier (see subclause 4.4) associated with the NRM instance, if any;
- and it has an XML content; this XML content carries the description of the logged Bulk CM internal event.

The following is an example of an activity XML element (in **bold**) in a session log XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<br/>bulkCmSessionLogFile
 xmlns=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.615#sessionLog"
[...]
>
[...]
  <activity dateTime="2001-05-07T12:00:00+02:00" type="download">
    <log time="12:00:01+02:00" type="informative">
      Download requested with:
        downloadDataFileReference="ftp://al.companyNN.com/data/upld123.xml"
    </log>
    <log time="12:00:02+02:00" type="error"
      dn="DC=a1.companyNN.com,SubNetwork=1"
      modifier="update"
    >
     No such instance
    </log>
 </activity>
[...]
</bulkCmSessionLogFile>
```

#### End of Change in Clause 5.3

#### Change in Clause Annex D

# Annex D (normative): Session log file XML schema (file name "sessionLog.xsd")

The following XML schema sessionLog.xsd is the schema for session log XML files:

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
    3GPP TS 32.615 Bulk CM IRP
    Session log file XML schema
    sessionLog.xsd
-->
<schema
    targetNamespace=</pre>
```

```
"http://www.3gpp.org/ftp/specs/archive/32_series/32.615#sessionLog"
 elementFormDefault="qualified"
 xmlns="http://www.w3.org/2001/XMLSchema"
>
 <!-- Session log file root XML element -->
 <element name="bulkCmSessionLogFile">
    <complexType>
      <sequence>
        <element name="fileHeader">
          <complexType>
            <attribute name="fileFormatVersion" type="string" use="required"/>
            <attribute name="senderName" type="string" use="optional"/>
            <attribute name="vendorName" type="string" use="optional"/>
          </complexType>
        </element>
        <element name="activity" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element name="log" maxOccurs="unbounded">
                <complexType>
                   <simpleContent>
                     <extension base="string">
                       <attribute name="time" type="time" use="required"/>
<attribute name="type" use="required">
                         <simpleType>
                           <restriction base="string">
                             <enumeration value="informative"/>
                             <enumeration value="error"/>
                           </restriction>
                         </simpleType>
                       </attribute>
                       <attribute name="dn" type="string" use="optional"/>
                       <attribute name="modifier" use="optional">
                         <simpleType>
                           <restriction base="string">
                             <enumeration value="create"/>
                             <enumeration value="delete"/>
                             <enumeration value="update"/>
                           </restriction>
                         </simpleType>
                       </attribute>
                     </extension>
                  </simpleContent>
                </complexType>
              </element>
            </sequence>
            <attribute name="dateTime" type="dateTime" use="required"/>
            <attribute name="type" use="required">
              <simpleType>
                <restriction base="string">
                  <enumeration value="upload"/>
                  <enumeration value="download"/>
                  <enumeration value="validate"/>
                  <enumeration value="preactivate"/>
                  <enumeration value="activate"/>
                  <enumeration value="fallback"/>
                </restriction>
              </simpleType>
            </attribute>
          </complexType>
        </element>
        <element name="fileFooter">
          <complexType>
            <attribute name="dateTime" type="dateTime" use="required"/>
          </complexType>
        </element>
      </sequence>
    </complexType>
  </element>
```

```
</schema>
```

#### End of Change in Clause Annex D

# Annex E (informative): XML schema electronic files

The electronic files corresponding to the normative XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32\_series/32.615/schema/32615-6230-XMLSchema.zip

### End of Change in Clause Annex E End of Document

# Annex F (informative): Change history

Change history											
Date	TSG #	TSG # TSG Doc. CR Rev Subject/Comment					New				
Oct 2003					Attached to this TS the normative XML schema electronic files corresponding to Sept 2003 TS 32.615	5.2.0	5.2.1				
Dec 2003	S_22	SP-030646	012		Correction of the number of possible URAs from 1 to 8	5.2.1	5.3.0				
Mar 2004	S_23	SP-040131	013		Add the capability to contain instances of VsDataContainer to some MOs - Align with the IS 32.612	5.3.0	5.4.0				
Jun 2004	S_24	SP-040259	014		Removal of XML schema URI dependencies	5.4.0	5.5.0				
Jun 2004	S_24	SP-040258	016		Correction of the annex related to XML schema electronic files publication	5.4.0	5.5.0				
Jun 2004	S_24	SP-040254	017		The specification does not support all UMTS frequency bands	5.4.0	5.5.0				
Sep 2004	S_25	SP-040541			Automatic upgrade to Rel- 6 (no CR) as per request in SP-040541 SA5_presentation_SA_25.ppt (slide 17)	5.5.0	6.0.0				
Dec 2004	S_26	SP-040807	018		Add Signalling Transport Network (STN) NRM IRP in BulkCM IRP XML FF	6.0.0	6.1.0				
Mar 2005	S_27	SP-050045	019		Generic System Context, update of reference to IS specification	6.1.0	6.2.0				
Mar 2005	S_27	SP-050045	020		Add Inventory Management NRM IRP in BulkCM IRP XML FFD	6.1.0	6.2.0				