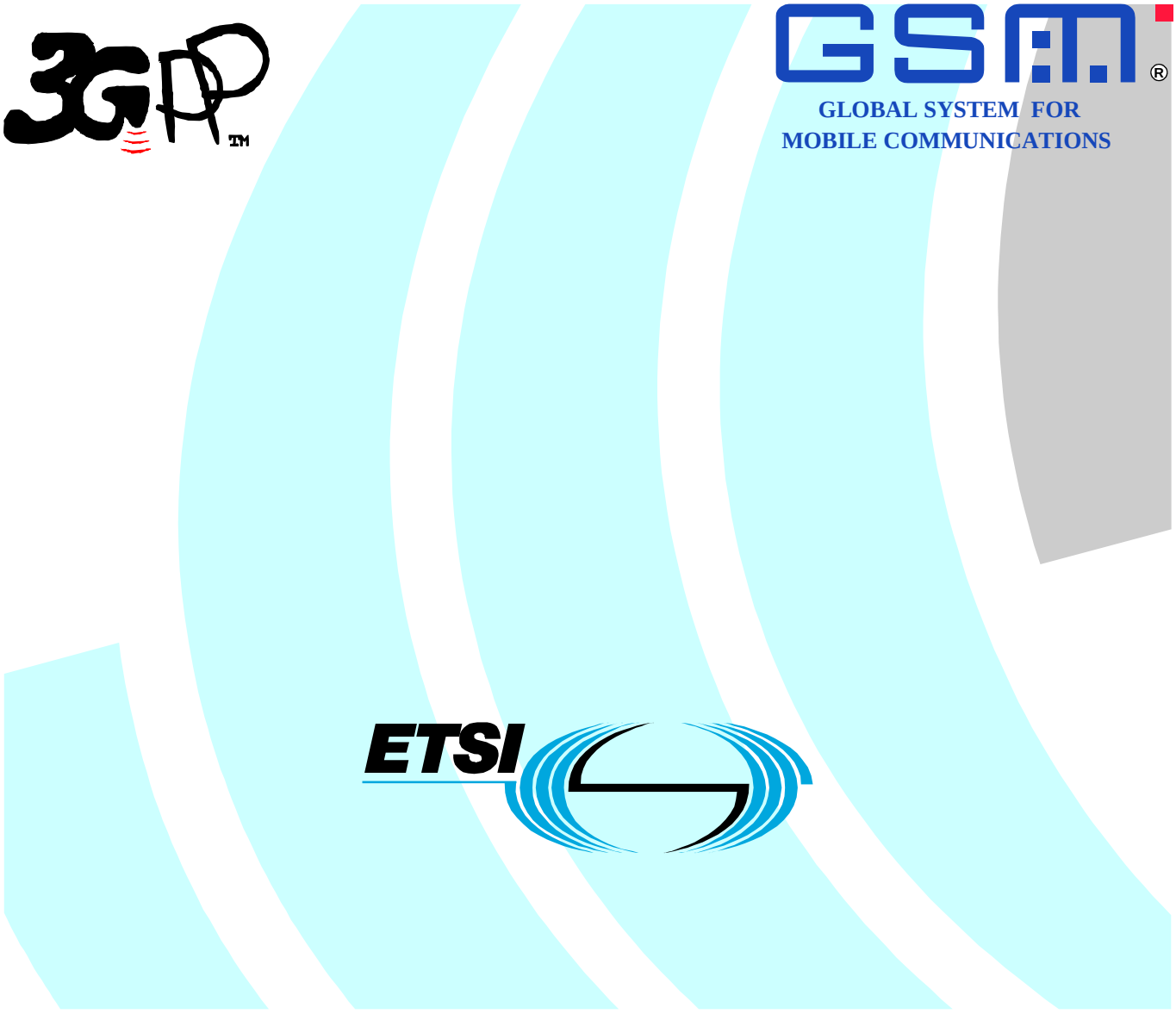
ETSI TS 132 614 V6.1.0 (2005-03)

Technical Specification

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Configuration Management (CM);
Bulk CM Integration Reference Point (IRP):
Common Management Information Protocol (CMIP)
Solution Set (SS)
(3GPP TS 32.614 version 6.1.0 Release 6)



Reference
RTS/TSGS-0532614v610

Keywords
GSM, UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp .

Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

32.611: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Requirements".

32.612: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Information Service (IS)".

32.613: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)".

32.614: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".

32.615: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP): eXtensible Markup Language (XML) file format definition".

Configuration Management (CM), in general, provides the operator with the ability to assure correct and effective operation of the 3G network as it evolves. CM actions have the objective to control and monitor the actual configuration on the Network Element (NEs) and Network Resources (NRs), and they may be initiated by the operator or functions in the Operations Systems (OSs) or NEs.

CM actions may be requested as part of an implementation programme (e.g. additions and deletions), as part of an optimisation programme (e.g. modifications), and to maintain the overall Quality of Service (QoS). The CM actions are initiated either as a single action on a NE of the 3G network or as part of a complex procedure involving actions on many NEs.

1 Scope

The present document specifies the Common Management Information Protocol (CMIP) Solution Set (SS) for the Bulk CM Integration Reference Point (IRP): Information Service defined in TS 32.612 [4]. In detail:

- Clause 4 contains an introduction to some concepts that are the base for some specific aspects of the CMIP interfaces.
- Clause 5 contains the GDMO definitions for the Alarm Management over the CMIP interfaces

Clause 6 contains the ASN.1 definitions supporting the GDMO definitions provided in clause 5.

This Solution Set specification is related to 3GPP TS 32.612 V6.2.X.

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 32.101: "Telecommunication management; Principles and high level requirements".

[2] 3GPP TS 32.102: "Telecommunication management; Architecture".

[3] 3GPP TS 32.304: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".

[4] 3GPP TS 32.612: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Information Service (IS)".

[5] ITU-T Recommendation X.710 (1991): "Common Management Information Service Definition for CCITT Applications".

[6] ITU-T Recommendation X.721 (02/92): "Information Technology - Open Systems Interconnection – Structure of Management Information: Definition of Management Information".

[7] ITU-T Recommendation X.730 (01/92): "Information Technology - Open Systems Interconnection – Systems Management: Object Management Function".

[8] ITU-T Recommendation X.733 (02/92): "Information Technology - Open Systems Interconnection - Alarm Reporting Function".

[9] ITU-T Recommendation M.3100 (07/95): "Maintenance Telecommunications Management Network – Generic Network Information Model".

[10] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[11] 3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic CM Integration Reference Point (IRP): Information Service (SS)".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 32.600 [10] and TS 32.602 [11] apply.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CMIP	Common Management Information Protocol
DN	Distinguished Name
GDMO	Guidelines for the Definition of Managed Objects
IDL	Interface Definition Language
IEC	International Electro-technical Commission
ISO	International Standards Organization
ITU-T	International Telecommunication Union, Telecommunication Sector
MIB	Management Information Base
MIM	Management Information Model
MIT	Management Information Tree (or Naming Tree)
MOC	Managed Object Class
MOI	Managed Object Instance
NE	Network Element
NR	Network Resource
NRM	Network Resource Model
TMN	Telecommunications Management Network

4 Basic aspects

4.1 Explanation

A technology-independent IRP Information Service is specified in the TS 32.612 [4] for the configuration management of 3G networks by using bulk data transfer, i.e. Bulk CM IRP IS. This technical specification provides a CMIP solution set of the Bulk CM IRP.

Within a CMIP TMN a network manager may use the operations and notifications defined in this TS to upload files containing managed information about the current configuration status of a concerned 3G network from the related element manager or to download files containing management commands to change the configuration of a concerned 3G network to the corresponding element manager. The concepts and the procedures of uploading and downloading are specified in the TS 32.612 [4]. The syntax and the semantic of files to upload or to download are defined in the TS 32.615.

4.2 Mapping

The sub-clauses below provide mapping tables between the technology-independent operations and notifications defined in TS 32.612 [4] and the CMIP actions and notifications specified in this document.

4.2.1 Mapping of Operations

The table below shows the mapping relation between the technology-independent operations defined in TS 32.612 [4] and the CMIP actions specified in this document.

Table 1: Mapping of operations

technology-independent operations defined in TS 32.612 [4]	CMIP actions specified in this document	Qualifiers of the CMIP actions specified in this document
startSession	startSession	M
endSession	endSession	M
upload	upload	M
download	download	M
validate	validate	O
preactivate	preactivate	O
activate	activate	M
fallback	fallback	M
abortSessionOperation	abortSessionOperation	M
getSessionIds	getSessionIds	M
getSessionStatus	getSessionStatus	M
getSessionLog	getSessionLog	M
getBulkCMIRPVersion	getBulkCMIRPVersion	M

4.2.2 Mapping of Operation Parameters

The following sub-clauses map the parameters of each technology-independent operations defined in the TS 32.612 [4] to the parameters of the corresponding CMIP actions specified in this document.

4.2.2.1 Mapping of Parameters of the Operation startSession

Table 2: Mapping of parameters of the operation startSession

parameters of the technology-independent operation 'startSession' defined in the TS 32.612 [4]	parameters of the CMIP action 'startSession' specified in this document	Qualifier of the parameters of the CMIP action 'startSession' specified in this document
sessionId	sessionId	Action information, M
status	status	Action response, M

4.2.2.2 Mapping of Parameters of the Operation endSession

Table 3: Mapping of parameters of the operation endSession

parameters of the technology-independent operation 'endSession' defined in the TS 32.612 [4]	parameters of the CMIP action 'endSession' specified in this document	Qualifier of the parameters of the CMIP action 'endSession' specified in this document
sessionId	sessionId	Action information, M
status	status	Action response, M

4.2.2.3 Mapping of Parameters of the Operation upload

Table 4: Mapping of parameters of the operation upload

parameters of the technology-independent operation 'upload' defined in the TS 32.612 [4]	parameters of the CMIP action 'upload' specified in this document	Qualifier of the parameters of the CMIP action 'upload' specified in this document
sessionId	sessionId	Action information, M
uploadDataFile	uploadDataFile	Action information, M
baseObjectInstance	baseObjectInstance	Action information, M
scope	scope	Action information, M
filter	filter	Action information, M
status	status	Action response, M

4.2.2.4 Mapping of Parameters of the Operation download

Table 5: Mapping of parameters of the operation download#

parameters of the technology-independent operation 'download' defined in the TS 32.612 [4]	parameters of the CMIP action 'download' specified in this document	Qualifier of the parameters of the CMIP action 'download' specified in this document
sessionId	sessionId	Action information, M
downloadDataFile	downloadDataFile	Action information, M
status	status	Action response, M

4.2.2.5 Mapping of Parameters of the Operation activate

Table 6: Mapping of parameters of the operation activate

parameters of the technology-independent operation 'activate' defined in the TS 32.612 [4]	parameters of the CMIP action 'activate' specified in this document	Qualifier of the parameters of the CMIP action 'activate' specified in this document
sessionId	sessionId	Action information, M
activationMode	activationMode	Action information, O
fallbackEnabled	saveFallback	Action information, M
status	status	Action response, M

4.2.2.6 Mapping of Parameters of the Operation fallback

Table 7: Mapping of parameters of the operation fallback

parameters of the technology-independent operation 'fallback' defined in the TS 32.612 [4]	parameters of the CMIP action 'fallback' specified in this document	Qualifier of the parameters of the CMIP action 'fallback' specified in this document
sessionId	sessionId	Action information, M
status	status	Action response, M

4.2.2.7 Mapping of Parameters of the Operation abortSessionOperation

Table 8: Mapping of parameters of the operation abortSessionOperation

parameters of the technology-independent operation 'abortSessionOperation' defined in the TS 32.612 [4]	parameters of the CMIP action 'abortSessionOperation' specified in this document	Qualifier of the parameters of the CMIP action 'abortSessionOperation' specified in this document
sessionId	sessionId	Action information, M
status	status	Action response, M

4.2.2.8 Mapping of Parameters of the Operation getSessionIds

Table 9: Mapping of parameters of the operation getSessionIds

parameters of the technology-independent operation 'getSessionIds' defined in the TS 32.612 [4]	parameters of the CMIP action 'getSessionIds' specified in this document	Qualifier of the parameters of the CMIP action 'getSessionIds' specified in this document
sessionIdList	sessionIdList	Action response, M
status	status	Action response, M

4.2.2.9 Mapping of Parameters of the Operation getSessionStatus

Table 10: Mapping of parameters of the operation getSessionStatus

parameters of the technology-independent operation 'getSessionStatus' defined in the TS 32.612 [4]	parameters of the CMIP action 'getSessionStatuss' specified in this document	Qualifier of the parameters of the CMIP action 'getSessionStatus' specified in this document
sessionIdList	sessionIdList	Action information, M
sessionState	sessionState	Action response, M
status	status	Action response, M

4.2.2.10 Mapping of Parameters of the Operation getSessionLog

Table 11: Mapping of parameters of the operation getSessionLog

parameters of the technology-independent operation 'getSessionLog' defined in the TS 32.612 [4]	parameters of the CMIP action 'getSessionLog' specified in this document	Qualifier of the parameters of the CMIP action 'getSessionLog' specified in this document
sessionIdList	sessionIdList	Action information, M
logFileReference	logFileReference	Action information, M
contentType	contentType	Action information, M
status	status	Action response, M

4.2.2.11 Mapping of Parameters of the Operation getBulkCmIRPVersion

Table 12: Mapping of parameters of the operation getBulkCmIRPVersion

parameters of the technology-independent operation 'getBulkCmIRPVersion' defined in the TS 32.612 [4]	parameters of the CMIP action 'getBulkCmIRPVersion' specified in this document	Qualifier of the parameters of the CMIP action 'getBulkCmIRPVersion' specified in this document
sessionIdList	sessionIdList	Action information, M
status	status	Action response, M

4.2.2.12 Mapping of Parameters of the Operation validate

Table 13: Mapping of parameters of the operation validate

parameters of the technology-independent operation 'validate' defined in the TS 32.612 [4]	parameters of the CMIP action 'validate' specified in this document	Qualifier of the parameters of the CMIP action 'validate' specified in this document
sessionId	sessionId	Action information, M
activationMode	activationMode	Action information, O
status	status	Action response, M

4.2.2.13 Mapping of Parameters of the Operation preactivate

Table 14: Mapping of parameters of the operation preactivate

parameters of the technology-independent operation 'preactivate' defined in the TS 32.612 [4]	parameters of the CMIP action 'preactivate' specified in this document	Qualifier of the parameters of the CMIP action 'preactivate' specified in this document
sessionId	sessionId	Action information, M
verificationMode	verificationMode	Action information, O
activationMode	activationMode	Action information, O
fallbackEnabled	saveFallback	Action information, M
status	status	Action response, M

4.2.3 Mapping of Notifications

The table below shows the mapping relation between the technology-independent notifications defined in TS 32.612 [4] and the CMIP notifications specified in this document.

Table 13: Mapping of Notifications

technology-independent notifications defined in TS 32.612 [4]	CMIP notifications specified in this document	Qualifiers of the CMIP notifications specified in this document
notifySessionStateChanged	sessionStateChanged	M
notifyGetSessionLogEnded	getSessionLogEnded	M

4.2.4 Mapping of Notification Parameters/Attributes

The following sub-clauses map the parameters/attributes of each technology-independent notifications defined in the TS 32.612 [4] to the parameters/attributes of the corresponding CMIP notifications specified in this document.

4.2.4.1 Mapping of Parameters/Attributes of the Notification sessionStateChanged

Table 14: Mapping of parameters/attributes of the notification sessionStateChanged

technology-independent Parameters/Attributes of the notification 'notifySessionStateChanged' defined in TS 32.612 [4]	Parameters/Attributes of the CMIP notification 'sessionStateChanged' specified in this document	Qualifiers of the Parameters/Attributes of the CMIP notification 'sessionStateChanged' specified in this document
managedObjectClass	managedObjectClass	O
managedObjectInstance	managedObjectInstance	O
notificationId	notificationIdentifier (Rec. X.721 1992E)	O
eventTime	eventTime	M
systemDN	Not used in this CMIP SS	
eventType	eventType	M
sessionId	sessionId	M
sourceIndicator	sourceIndicator	O
sessionState	sessionState	M

4.2.4.2 Mapping of Parameters/Attributes of the Notification getSessionLogEnded

Table 15: Mapping of Parameters/Attributes of the Notification getSessionLogEnded

technology-independent Parameters/Attributes of the notification 'notifySessionStateChanged' defined in TS 32.612 [4]	Parameters/Attributes of the CMIP notification 'sessionStateChanged' specified in this document	Qualifiers of the Parameters/Attributes of the CMIP notification 'sessionStateChanged' specified in this document
managedObjectClass	managedObjectClass	O
managedObjectInstance	managedObjectInstance	O
notificationId	notificationIdentifier (Rec. X.721 1992E)	O
eventTime	eventTime	M
systemDN	Not used in this CMIP SS	
eventType	eventType	M
sessionId	sessionId	M
sourceIndicator	sourceIndicator	O
sessionLogStatus	sessionLogStatus	M

5 GDMO Definitions

--Please do not remove the '—' in front of the headline numbering, as it is the CMIP code

--for a comment. This way the whole chapter can be put directly into a compiler.

5.1 Actions

5.1.1 startSession (M)

startSession **ACTION**
BEHAVIOUR
startSessionBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Common;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 1};

startSessionBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to start a session state machine as defined in TS 32.612 [4] and initialise temporary entities to be related with bulk data configuration sessionId in an Agent.

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies the new session and process to be associated with a bulk data operation e.g. upload or download.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.2 endSession (M)

endSession **ACTION**
BEHAVIOUR
endSessionBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Common;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 2};

endSessionBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to end a session state machine as defined in TS32.612 [4] and delete all temporary entities and their related bulk data configuration for a specified sessionId in an Agent. The deletion will be rejected if the configuration state is in a working state: e.g. uploading (including getting a log), downloading or activating.

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.3 upload (M)

upload **ACTION**
BEHAVIOUR
uploadBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Upload;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 3};

uploadBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to create a file containing bulk configuration data (as defined in 3GPP TS 32.615 and in Claus 8 of the TS 32.612 [4]) and transfer the file to the indicated globally unique data file reference.

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with the requested bulk data upload.

- *uploadDataFileReference*

  This mandatory parameter specifies a globally unique file reference to where the specified scope of bulk data is to be uploaded and stored.

- *baseObjectInstance*

  This mandatory parameter specifies a MO where the search starts. This is a full Distinguished Name.

- *scope*

  This mandatory parameter defines how many levels of the containment hierarchy to search (i.e. apply the filter defined below). The search starts from the MO given by the baseObjectInstance parameter. The levels of search that may be performed are:

  1. the base object alone (default);

  2. the n-th level subordinates of the base object;

3. the base object and all of its subordinates down to and including the n-th level;

4. the base object and all of its subordinates.

- *filter*

  This mandatory parameter defines a filter test to be applied to the scoped Managed Object(s). If the filter is empty, all of the managed objects included by the scope are selected.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.4 download (M)

download **ACTION**
BEHAVIOUR
downloadBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Download;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 4};

downloadBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to activate previously downloaded bulk configuration data (as defined in 3GPP TS 32.615 and in Claus 8 of the TS 32.612 [4]). Activate means that operations specified in a previously downloaded configuration file, for example create, delete and modify of managed objects are carried out on the live network i.e. mobile subscribers are affected by the downloaded configuration.

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with the requested bulk data download.

- *downloadDataFileReference*

  This mandatory parameter identifies specifies a globally unique file reference from where the data to be fetched and download from.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.5 activate (M)

activate **ACTION**
BEHAVIOUR
activateBehaviour;
MODE
CONFIRMED;

WITH INFORMATION SYNTAX
TS32-614TypeModule.Activate;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 5};

activateBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to activate previously downloaded bulk configuration data (as defined in 3GPP TS 32.615 and in Claus 8 of the TS 32.612 [4]). Activate means that operations specified in a previously downloaded configuration file, for example create, delete and modify of managed objects are carried out on the live network i.e. mobile subscribers are affected by the downloaded configuration.

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with an earlier bulk data download that is required to be activated.

- *saveFallback*

  This mandatory parameter indicates whether or not it is required to initialise and enable fallback option prior to the activation.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.6 fallback (M)

fallback **ACTION**
BEHAVIOUR
fallbackBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Common;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 6};

fallbackBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to activate a fallback area if a previously ordered activation has failed.

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the current log is required.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.7 abortSessionOperation (M)

abortSessionOperation **ACTION**
BEHAVIOUR
abortSessionOperationBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Common;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 7};

abortSessionOperationBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to abort a currently activate asynchronous operation. The abort will cause the session state machine to exit the current state and enter a new state, see clause 9 of TS 32.612 [4].

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the abort is required.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.8 getSessionIds (M)

getSessionId **ACTION**
BEHAVIOUR
getSessionIdBehaviour;
MODE
CONFIRMED;
WITH REPLY SYNTAX
TS32-614TypeModule.GetSessionIdsReply;
REGISTERED AS {ts32-614Action 8};

getSessionIdBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to return a list of all its currently open sessionIds.

The 'Action response' is composed of the following data:

- *sessionIdList*

  This mandatory parameter is a list of all the sessionID an Agent currently has open i.e. started with startSession and not ended with endSession operations.

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.9 getSessionStatus (M)

getSessionStatus **ACTION**
BEHAVIOUR
getSessionStatusBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Common;
WITH REPLY SYNTAX
TS32-614TypeModule.GetSessionStatusReply;
REGISTERED AS {ts32-614Action 9};

getSessionStatusBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to send the current state of the bulk data configuration file operation. The IRPAgent returns the current state. See clause 9 of TS 32.612 [4].

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the current status is required.

The 'Action response' is composed of the following data:

- *sessionState*

  This mandatory parameter indicates current state of the configuration file operation. See clause 7.3.5 of TS 32.612 [4].

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.10 getSessionLog (M)

getSessionLog **ACTION**
BEHAVIOUR
getSessionLogBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.GetSessionLog;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 10};

getSessionLogBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation to request an Agent to provide a log of the results from activities associated with bulk data configuration file sessionId operations.

The 'Action information' contains the following data:

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the current log is required.

- *logFileReference*

  This mandatory parameter specifies the address and file name where the result is to be placed in the Manager.

- *contentType*

  This mandatory parameter identifies if retrieved file should include (1) complete log including errors, (2) only errors.

The 'Action response' is composed of the following data:

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.11 getBulkCmIRPVersion (M)

getBulkCmIRPVersion **ACTION**
BEHAVIOUR
getBulkCmIRPVersionBehaviour;
MODE
CONFIRMED;
WITH REPLY SYNTAX
TS32-614TypeModule.GetBulkCmIRPVersionReply;
REGISTERED AS {ts32-614Action 11};

getBulkCmIRPVersionBehaviour **BEHAVIOUR**

DEFINED AS

"A Manager invokes this operation when it wishes to find out the Bulk CM IRP SS versions supported by an Agent. The Agent shall respond with a list of supported Bulk CM IRP SS versions.

- *sessionIdList*

  This mandatory parameter is a list of all the sessionID an Agent currently has open i.e. started with startSession and not ended with endSession operations.

- *status*

  It contains the results of this action. Possible values: noError (0), error (the value indicates the reason of the error).";

5.1.12 validate (M)

validate **ACTION**
BEHAVIOUR
validateBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Validate;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 12};

validateBehaviour **BEHAVIOUR**

DEFINED AS

"An IRPManager invokes this operation to request an IRPAgent to validate previously downloaded bulk configuration data. Use of this optional operation enables an IRPManager to detect errors with regard to the previously downloaded bulk configuration data before requesting preactivation or activation.

- *sessionId*

  Identifies this specific session and process associated with the requested bulk data download.

- *activationMode*

  Identifies whether a specific activation mode is required.

- *status*

  indicates (a) start of operation is successful or (b) operation failed because of specified or unspecified reasons.";

5.1.13 preactivate (M)

preactivate **ACTION**
BEHAVIOUR
preactivateBehaviour;
MODE
CONFIRMED;
WITH INFORMATION SYNTAX
TS32-614TypeModule.Preactivate;
WITH REPLY SYNTAX
TS32-614TypeModule.CommonReply;
REGISTERED AS {ts32-614Action 13};

preactivateBehaviour **BEHAVIOUR**

DEFINED AS

"An IRPManager invokes this operation to request an IRPAgent to preactivate previously downloaded bulk configuration data that may have optionally been validated. The principal functions of the preactivate operation is to validate the configuration data changes in the context of current operational data and to pre-process the configuration data changes. Use of this operation enables the IRPManager to prepare the activation of the downloaded bulk configuration data at the EM or NE level before requesting its effective activation. The actions shall fall short of executing the bulk configuration data changes in the network and impacting service. (The actions may for example be to validate the configuration data changes in the context of current operational data or to pre-process the configuration data changes). Performing such actions prior to activate may help identify any potential problems prior to executing the changes on a live a network and may minimise activation elapse time.

- *sessionId*

  Identifies this specific session and process associated with an earlier bulk data download that is required to be activated.

- *verificationMode*

  Selects the mode of checking (full or limited).

- *activationMode*

  Identifies which specific activation mode is required: leastServiceImpact or leastElapseTime

- saveFallback

Indicates whether or not it is required to initialise and enable fallback option prior to the preactivation. This option is only open for the first preactivate operation of a session. For any subsequent preactivate operation retries within a session the fallbackEnabled parameter must be set to indicate it is not required to initialise fallback otherwise the pre-activate operation retry shall fail

- *status*

  Indicates (a) start of operation is successful or (b) operation failed because of specified or unspecified reasons.";

5.2 Notifications

5.2.1 sessionStateChanged (M)

sessionStateChanged **NOTIFICATION**
BEHAVIOUR
sessionStateChangedBehaviour;
WITH INFORMATION SYNTAX
TS32-614TypeModule.SessionStateChangedInfo
AND ATTRIBUTE IDS
notificationIdentifier "Recommendation X.721 1992E" : notificationIdentifier,
sessionId sessionId,
sourceIndicator "Recommendation X.721 1992E" : sourceIndicator,
sessionState sessionState;
REGISTERED AS {ts32-614Notification 1};

sessionStateChangedBehaviour **BEHAVIOUR**
DEFINED AS

"An Agent notifies a Manager that a state change has occurred on a bulk data configuration file sessionID operation subscribed to by the IRPManager.

The 'Event Information' field contains the following data:

- *notificationIdentifier*

  This ITU-T X.721 standardised parameter, together with MOI (Managed Object Instance), unambiguously identifies this notification.

- *sessionId*

  This mandatory parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the current status is required.

- *sourceIndicator*

  This optional when present, indicates the source of the operation that led to the generation of this notification. It can have one of the following values:
  1 resource operation: The notification was generated in response to an internal operation of the resource;
  2 management operation: The notification was generated in response to a management operation applied across the managed object boundary external to the managed object;
  3 unknown: It is not possible to determine the source of the operation. parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the current status is required.

- *sessionState*

  This mandatory parameter indicates state transition that caused the Notification. See subclause 8.1 of TS 32.612 [4].";

5.2.2 getSessionLogEnded (M)

getSessionLogEnded **NOTIFICATION**
BEHAVIOUR
getSessionLogEndedBehaviour;
WITH INFORMATION SYNTAX
TS32-614TypeModule.GetSessionLogEndedInfo
AND ATTRIBUTE IDS
notificationIdentifier "Recommendation X.721 1992E" : notificationIdentifier,
sessionId sessionId,
sourceIndicator "Recommendation X.721 1992E" : sourceIndicator,
sessionState sessionState;
REGISTERED AS {ts32-614Notification 2};

getSessionLogEndedBehaviour **BEHAVIOUR**
DEFINED AS

" An Agent notifies a Manager that a requested GetSessionLog for a bulk data configuration file sessionId operation subscribed to by the Manager has ended successfully or unsuccessfully.

The 'Event Information' field contains the following data:

- *notificationIdentifier*

This ITU-T X.721 standardised parameter, together with MOI (Managed Object Instance), unambiguously identifies this notification.

- *sessionId*

This mandatory parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the current status is required.

- *sourceIndicator*

This optional when present, indicates the source of the operation that led to the generation of this notification. It can have one of the following values:

1 resource operation: The notification was generated in response to an internal operation of the resource;
2 management operation: The notification was generated in response to a management operation applied across the managed object boundary external to the managed object;
3 unknown: It is not possible to determine the source of the operation. parameter identifies this specific session and process associated with an earlier bulk data operation e.g. upload or download for which the current status is required.

- sessionLogStatus

This mandatory parameter indicates event that caused the Notification i.e. Get log completed, Get Log Failed.";

5.3 Attributes

5.3.1 sessionId

sessionId ATTRIBUTE
WITH ATTRIBUTE SYNTAX TS32-614TypeModule.SessionId;
MATCHES FOR EQUALITY;
BEHAVIOUR
sessionIdBehaviour BEHAVIOUR DEFINED AS
" This attribute identifies a specific session.";;

REGISTERED AS {ts32-614Attribute 1};

5.3.2 sessionState

sessionState ATTRIBUTE
  WITH ATTRIBUTE SYNTAX TS32-614TypeModule.SessionState;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    sessionStateBehaviour BEHAVIOUR DEFINED AS
    " This attribute indicates the current state of the configuration data file operation . See Subclause 7.3.5 of 3GPP TS 32.612.";;

REGISTERED AS {ts32-614Attribute 2};

5.3.3 sessionLogStatus

sessionLogStatus ATTRIBUTE
  WITH ATTRIBUTE SYNTAX TS32-614TypeModule.SessionLogStatus;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    sessionLogStatusBehaviour BEHAVIOUR DEFINED AS
    "This attribute indicates event that caused a getSessionLogEnded Notification, i.e. Get log completed, Get Log Failed.";;

REGISTERED AS {ts32-614Attribute 3};

6 ASN.1 definitions

```
TS32-614TypeModule { ccitt (0) identified-organization (4) etsi (0)
        mobileDomain (0) umts-Operation-Maintenance (3) ts-32-614 (614)
          informationModel (0) asn1Module (2) version2 (2)}

   DEFINITIONS IMPLICIT TAGS ::=
   BEGIN

   --EXPORTS everything
   IMPORTS

   NotificationIdentifier, SourceIndicator
   FROM Attribute-ASN1Module {joint-iso-ccitt ms(9) smi(3) part2(2) asn1Module(2) 1}
   CMISFilter, ObjectInstance, Scope
   FROM CMIP-1 {joint-iso-ccitt ms(9) cmip(1) modules(0) protocol(3)};

   -- 3GPP TS 32.614 related Object Identifiers


   baseNodeUMTS  OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
                    umts-Operation-Maintenance(3)}
   ts32-614   OBJECT IDENTIFIER ::= { baseNodeUMTS ts32-614(614)}
   ts32-614InfoModel   OBJECT IDENTIFIER ::= { ts32-614 informationModel(0)}



   ts32-614ObjectClass     OBJECT IDENTIFIER ::= { ts32-614InfoModel managedObjectClass(3)}
   ts32-614Package      OBJECT IDENTIFIER ::= { ts32-614InfoModel package(4)}
   ts32-614Parameter       OBJECT IDENTIFIER ::= { ts32-614InfoModel parameter(5)}
   ts32-614NameBinding   OBJECT IDENTIFIER ::= { ts32-614InfoModel nameBinding(6)}
   ts32-614Attribute       OBJECT IDENTIFIER ::= { ts32-614InfoModel attribute(7)}
   ts32-614Action                OBJECT IDENTIFIER ::= {ts32-614InfoModel action (9)}
   ts32-614Notification                  OBJECT IDENTIFIER ::= {ts32-614InfoModel notification (10)}

   -- Start of 3GPP SA5 own definitions

   ErrorCauses ::= ENUMERATED
       {
       noError (0),                    -- operation / notification successfully performed
       wrongSessionId (1),             -- the value of the parameter SessionId is not known for the Agent
       unspecifiedErrorReason (255)    -- operation failed, specific error unknown
       }

   SaveFallback ::= ENUMERATED
       {
       enable (0),                     -- enable the fallback option
       disable (1)                     -- disable the fallback option
       }

    SessionId ::= GraphicString

   Version ::= GraphicString
   SessionState ::= ENUMERATED
       {
       idle(0),
       uploadInProgress            (1),
       uploadCompleted             (2),
```

```
    uploadFailed                (3),
    downloadInProgress          (4),
    downloadCompleted           (5),
    downloadFailed              (6),
    activationInProgress        (7),
    activationCompleted         (8),
    activationFailed            (9),
    activationPartlyRealised    (10),
    fallbackInProgress           (11),
    fallbackCompleted           (12),
    fallbackFailed              (13),
    fallbackPartlyRealised      (14),
    validationInProgress        (15),
    validationFailed            (16),
    validationCompleted         (17),
    preactivationInProgress     (18),
    preactivationFailed         (19),
    preactivationPartlyRealised (20),
    preactivationCompleted (21)}

SessionLogStatus ::= ENUMERATED
    {
    getLogFailed        (0),
    getLogCompleted     (1)
    }


ContentType ::= ENUMERATED
    {
    completeLog (0),                -- complete log including errors
    errorLog (1)                    -- only error log
}

FileReference ::= GraphicString

ActivationMode ::= ENUMERATED
    {
    notSupported (0),               -- the optional parameter is not supported
    leastServiceImpact (1),         -- the IRPAgent shall optimise the execution of the activation in a way that
                                       minimises disruption to network services. Elapse time to complete the
                                       activation is of secondary importance
    leastElapseTime (2)             -- the IRPAgent shall optimise the execution of the activation in a way that
                                       minimises the elapse time for completing the execution of the activation.
                                       During the execution, disruption of network services is of secondary
                                       importance
    }

VerificationMode ::= ENUMERATED
    {
    notSupported (0),               -- the optional parameter is not supported
    fullChecking (1),               -- the checking should be as complete as possible with the intent of achieving
                                       the greatest assurance that the subsequent activation operation will be
                                       successful
    limitedChecking (2)             -- checking that can be performed by the IRPAgent rapidly is still performed,
                                       but further checking that may cause significant delays to execute should be
                                       omitted
    }

Common ::= SEQUENCE
    {
    sessionId           SessionId
    }
```

```
CommonReply ::= SEQUENCE
    {
    status              ErrorCauses
    }

Download ::= SEQUENCE
    {
    sessionId                       SessionId,
    downloadDataFileReference       FileReference
    }


Upload ::= SEQUENCE
    {
    sessionId                       SessionId,
    uploadDataFileReference         FileReference,
    baseObjectInstance              ObjectInstance,  -- ITU-T X.711
    scope                           Scope,     -- ITU-T X.711
    filter                          CMISFilter    -- ITU-T X.711
    }

Validate ::= SEQUENCE
    {
    sessionId           SessionId,
    activationMode      ActivationMode
    }


Preactivate ::= SEQUENCE
    {
    sessionId           SessionId,
    verificationMode    VerificationMode,
    activationMode      ActivationMode,
    saveFallback        SaveFallback
    }


Activate ::= SEQUENCE
    {
    sessionId           SessionId,
    saveFallback        SaveFallback,
    activationMode      ActivationMode
    }


GetSessionIdsReply ::= SEQUENCE
    {
    sessionIdList       SEQUENCE OF sessionId SessionId,

    status              ErrorCauses
    }

GetSessionStatusReply ::= SEQUENCE
    {
    sessionState    SessionState,
    status          ErrorCauses
    }


GetSessionLog ::= SEQUENCE
    {
    sessionId           SessionId,
```

```
    logFileReference    FileReference,
    contentType         ContentType,
    status              ErrorCauses
    }

GetBulkCmIRPVersionReply ::= SEQUENCE
    {
    versionList             SEQUENCE OF Version ,
    status                  ErrorCauses
    }

SessionStateChangedInfo ::= SEQUENCE
    {
    notificationIdentifier          NotificationIdentifier OPTIONAL,   --ITU-T X.721
    sessionId               SessionId,
    sourceIndicator         SourceIndicator,   -- ITU-T X.721
    sessionState            SessionState
    }

GetSessionLogEndedInfo ::= SEQUENCE
    {
    notificationIdentifier          NotificationIdentifier OPTIONAL,   --ITU-T X.721
    sessionId               SessionId,
    sourceIndicator         SourceIndicator,   -- ITU-T X.721
    sessionLogStatus            SessionLogStatus
    }


END -- of module TS32-614TypeModule
```

Annex A (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-010478	001	--	Correction due to TS renumbering	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
Dec 2002	S_18	SP-020746	003	--	Correction of ASN.1/GDMO sources	4.2.0	4.3.0
Dec 2002	S_18	SP-020746	004	--	Alignment with the Rel-5 version of the Information Service in 32.612	4.3.0	5.0.0
Mar 2004	S_23	SP-040105	--	--	Automatic upgrade to Rel-6 (no CR)	5.0.0	6.0.0
Dec 2004	--	--	--	--	Word XP "Open and Repair" & added the TS-family to Introduction. Reference updates. Editorial cosmetics	6.0.0	6.0.1
Mar 2005	S_27	SP-050045	005	--	Generic System Context, update of reference to IS specification	6.0.1	6.1.0

History

Document history		
V6.0.1	December 2004	Publication
V6.1.0	March 2005	Publication