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**Source:** SA5 (Telecom Management)  
**Title:** Rel-6 CR 32.611 Bulk CM IRP Enhancements for Security  
**Document for:** Approval  
**Agenda Item:** 7.5.3

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Doc-1 <sup>st</sup> -Level	Doc-2 <sup>nd</sup> -Level	Spec	CR	Rev	Phase	Subject	Cat	Ver-Cur	Wi
SP-040571	S5-046860	32.611	003	--	Rel-6	Enhancements to Bulk CM IRP for Security	B	6.0.0	OAM-NIM

## CHANGE REQUEST

⌘ **32.611 CR 003** ⌘ rev - ⌘ Current version: **6.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** | UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Enhancements to Bulk CM IRP for Security		
<b>Source:</b>	⌘ SA5 (tapinder.pal@t-mobile.de)		
<b>Work item code:</b>	⌘ OAM-NIM	<b>Date:</b>	⌘ 20/08/2004
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The requirements for Bulk CM IRP currently do not include any security features.		
<b>Summary of change:</b>	⌘ This CR contains a proposal for facilitating security features specific to Bulk CM IRP.		
<b>Consequences if not approved:</b>	⌘ Bulk CM IRP will not contain security aspects, thus rendering an operator's network open to potentially damaging unauthorised Bulk CM operations.		

<b>Clauses affected:</b>	⌘ 4.3.										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">⌘</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	⌘	X	⌘	X	X	⌘	⌘	32.612
Y	N										
⌘	X										
⌘	X										
X	⌘										
<b>Other comments:</b>	⌘ Child Rel-6 32.612 CR will be submitted at the next TSG meeting.										

## Change in Clause 4.3

### 4.3 Bulk CM Requirements

Interface-N shall provide efficient mechanisms to upload current CM data from the IRP Agent and download new CM data to the IRP Agent.

It shall be possible to transfer a CM file containing parameters for any specified Network Resource Model (e.g. radio network, Core Network) from the NM to the IRP Agent using a standardised file format and transfer mechanism. The IRP Agent shall also be capable of making the necessary configuration changes in its managed NEs, using the parameters and information contained in the transferred CM file.

The following requirements have been identified regarding the file format and transfer control mechanism over Interface-N.

1. It shall be possible to initiate the upload (IRP Agent to NM) of CM data over Interface-N.
2. It shall be possible to scope the Objects to be uploaded from the IRP Agent, e.g. parameters for a Cell, an RNC, or all the NEs managed by the IRP Agent.
3. It shall be possible to initiate the download (NM to IRP Agent) of CM data over Interface-N.
4. The parameters in the file for downloading to the IRP Agent may relate to creating Managed Objects, deleting Managed Objects or changing some or all modifiable attributes of existing Managed Objects. These parameters may be applicable to some or all the Managed Objects controlled by the IRP Agent, e.g. a Cell, an RNC, or all NEs managed by the IRP Agent.
5. The IRP Agent should check the consistency, syntax and semantic of the downloaded file to ensure that the configuration changes contained in the file can be implemented in the network.
6. It shall be possible to activate a previously downloaded configuration file in the EM/NE via a control facility.
7. Two activation modes may be defined for this IRP, distinguishable by their impact on network services in a live network. In the first activation mode the IRP Agent shall attempt to keep impact on service to a minimum, e.g. by the IRP Agent executing only one command or configuration change at a time in a NE. In the second activation mode all configuration changes contained in the file shall be implemented in the network in the minimum possible time, regardless of impact on service.
8. Activation shall employ a best effort mechanism, i.e. if parts of the activation cannot be successfully completed, the remainder shall still be attempted, where possible. Optionally, other activation strategies may also be supported.
9. The Bulk CM IRP shall specify an optional capability to achieve as near an 'all or none' activation strategy as possible. This strategy may be achieved by the use of a pre-activation operation that provides the maximum possible verification that the subsequent activate operation will succeed.
10. The activation of the new configuration in the NEs shall be logged, the objective being to enable an operator (if necessary) to analyse the log (e.g. analyse failed commands) and to subsequently achieve a full activation. Note that 'activation' means execution of each command in the downloaded file, and the result of each command execution shall be logged, whether successful or unsuccessful.
11. It shall be possible to selectively retrieve the information contained in the log, e.g. only unsuccessful operations.
12. It shall be possible to check the status of a configuration file operation.
13. It shall be possible for the IRP Agent to fallback to a previously known working configuration, initiated by the IRP Manager.
14. Interface-N shall support notifications, e.g. to indicate completion of an operation, error cases.

15. The file format shall be flexible enough to include all possible CM parameter types, i.e. standard parameters as well as vendor specific parameters. The meaning, syntax, units, etc. of standard parameters shall be specified. The representation of vendor specific parameters will be proprietary. A uniform mechanism for handling vendor specific parameters shall be specified.
16. Since the files are transferred via a machine-machine interface, the file format shall be machine readable using industry standard tools, e.g. XML parser.
17. Moreover, the files shall be formatted in a human readable way, e.g.i.e. to allow manual editing of its contents by the IRPManager before downloading.
18. The file format shall be specified by using a standardised language, e.g. the Extensible Mark-up Language (XML), in order to provide the possibility of visualisation in a web browser.
19. The same file format shall be used for the upload and download to the IRP Agent.
20. The file format shall be independent of the data transfer protocol used to carry the file from one system to another.
21. The file transfer facility shall be implemented using a commonly available protocol, e.g. FTP.
22. The Managed Object Class identifiers used in the file shall be the same as those used for Basic CM, Fault Management and Performance Management.
23. Bulk CM IRP shall be sufficient to configure a complete radio network, including vendor specific parameters of the UTRAN.
24. For security considerations, notifications should be generated by the IRPAgent whenever download, activate or fallback operations are initiated during a Bulk CM session. These notifications shall be available to any IRPManager that has subscribed to Bulk CM IRP notifications and shall include the session id, the identity of the IRPManager invoking the operation, and the type of operation.
25. For security considerations, the IRPAgent shall ensure that only the IRPManager that started a Bulk CM session is subsequently allowed to send commands related to that session. This check shall be made for each command issued during the session. If the IRPManager is not the same, the command shall not be performed and the session state shall not be changed, and a security alarm issued.
26. For security considerations, if the IRPAgent has the information that a downloaded file has been changed during a session before pre-activation or activation, the pre-activation or activation command shall not be performed and the session state shall not be changed, and a security alarm shall be issued.
27. For security considerations, the IRPAgent should maintain a log of sessions, i.e. identity of IRPManager initiating a session, session start and end times, Bulk CM operations (e.g. activate, fallback) performed during a session including their start and end times. This requirement may be partially satisfied by Notification Log IRP.

**End of Change in Clause 4.3**

## Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Mar 2004	S_23	SP-040105	--	--	Automatic upgrade to Rel-6 (no CR)	5.1.0	6.0.0