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Re:	Contribution on comments to IEEE 802.16 g-05/008
Abstract	This contribution describes the version configuration management procedure and service primitives that could be exchanged between the BS and the NCMS entities.
Purpose	Adoption
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Version Configuration primitives for configuration management

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1. Introduction

Version configuration management in wireless communication systems becomes ever more critical and complex due to increasing system complexity, higher performance requirements, and frequently required feature upgrades. A system wide version configuration management mechanism (applicable to both hardware and software version) will dramatically improve the system maintenance efficiency and system reliability. This contribution proposes the addition of version configuration management primitives that can be used to define version configuration management related procedures.

2. Summary of the Proposed Remedy

The following four primitives are defined to specify different version configuration procedures. The table contains the simple explanation of the primitives.

Primitive	Direction	Primitive Contents
Version_Config.indication	NCMS → BS	Object module identifier, Action type, Action information
Version_Config.confirmation	NCMS ← BS	Object module identifier, Action type, Action result information
Version_Config.request	NCMS ← BS	Object module identifier, Action type, Action information
Version_Config.response	NCMS → BS	Object module identifier, Action type Action result information

3. Proposed Text

[*Insert section 14.5.2.5 as follow*]

14.5.2.5 Version Configuration

Version configuration management is an essential and critical management function. It can be divided into; version information update, version verification, and version upload/download sub-procedures.

14.5.2.5.1 Procedure

There are two sets of primitives for supporting the version configuration procedures between the BS and the NCMS. One is initiated by the NCMS, and is used to query the BS version

information or inform BS to take the corresponding software version update action. The other is initiated by the BS, and is used to report the change of version information or ask the NCMS to download a verified software version when there is no available software version in BS.

Figure xxx and Figure yyy describe the two sets of primitives for version configuration procedures.

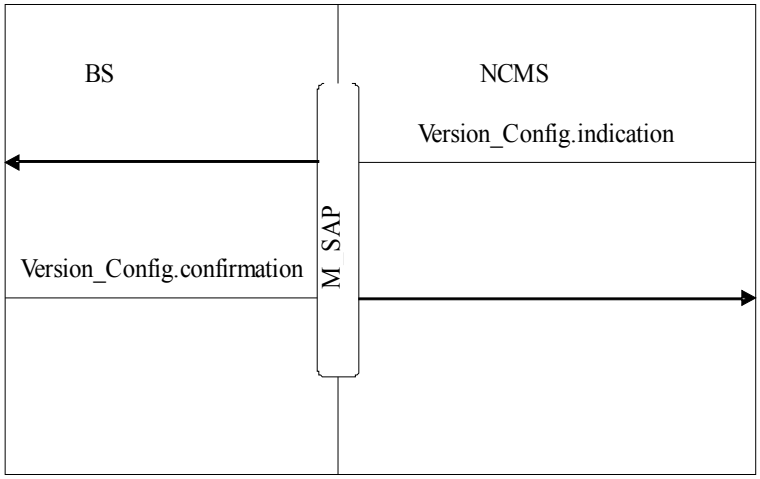

Figure xxx Procedure of version configuration initiated by NCMS

Figure yyy Procedure of version configuration initiated by BS

14.5.2.5.2 Service primitives

14.5.2.5.2.1 Version_Config.indication

14.5.2.5.2.1.1 Function

This primitive is originated by the NCMS to: request the BS to execute the software version update process (DOWNLOAD), to request the BS to ACTIVATE a specific software version, or to QUERY the BS for hardware and/or software version information.

14.5.2.5.2.1.2 Semantics of this primitive

The parameters of this primitive are as follows:

Version_Config.indication

{

Obect Module ID

Action Type

Action Information

}

Object Module ID

Object module identifier.

Action Type

DOWNLOAD, ACTIVATE, QUERY.

Action Information

The action related information is applicable to; software version (DOWNLOAD, ACTIVATE, QUERY), hardware version (QUERY), or both hardware and software version (QUERY).

14.5.2.5. 2.1.3 when generated

This primitive is originated by the NCMS when it needs to inform the BS to take the specified version configuration related action.

14.5.2.5.2.1.4 Effect of receipt

When the BS receives this primitive, it shall reply to the NCMS with a Version_Config.confirmation according to its current status.

14.5.2.5.2.2 Version_Config.confirmation

14.5.2.5.2.2.1 Function

This primitive is originated by the BS in response to the NCMS Version_Config.indication.

14.5.2.5.2.2.2 Semantics of this primitive

b

The parameters of this primitive are as follows:

Version_Config.confirmation

{

Object Module ID

Action Type

Action Result Information

}

Object Module ID
This is the Object module identifier.

Action Type:
DOWNLOAD, ACTIVATE, QUERY.

Action Result Information:
The result information could include both the action requested information and an error code (indicating success or failure reason).

14.5.2.5. 2.2.3 When generated

This primitive is originated by the BS in response to the Version_Config.indication.

14.5.2.5.2.2.4 Effect of receipt

When the NCMS receives this primitive, it will; check the result value in the primitive, update the related information, and take any further action necessitated by the result.

14.5.2.5.2.3 Version_Config.request

14.5.2.5.2.3.1 Function

This primitive is originated by the BS to; request the DOWNLOAD of a new software version(s), or to report hardware/software versions (VERSION_REPORT).

14.5.2.5.2.3.2 Semantics of this primitive

The parameters of this primitive are as follows:

Version_Config.request
{
Object Module ID
Action Type
Action Information
}

Object Module ID
Object module identifier.

Action Type
DOWNLOAD, VERSION_REPORT.

Action Information
The action related information is applicable to; software version(s) (DOWNLOAD), or both hardware and software version (VERSION_REPORT).

14.5.2.5.2.3.3 When generated

When the BS needs to have a new version, verify current version, or detect a different hardware object.

14.5.2.5.2.3.4 Effect of Receipt

When the NCMS receives this primitive, it will initiate a download or verify and/or act based on the version information and reply to the BS with Version_Config.response.

14.5.2.5.2.4 Version_Config.response

14.5.2.5.2.4.1 Function

This primitive is originated by the NCMS in response to Version_Config.request.

14.5.2.5.2.4.2 Semantics of this primitive

The parameters of this primitive are as follows:

Version_Config.response

{
Object Module ID
Action Type
Action Result Information
}

Object Module ID
Object module identifier.

Action Type
DOWNLOAD, VERSION_REPORT.

Action Result Information
Indicate version verification result or the availability of the software version requested The result information shall include both the action requested information and an error code (indicating success or failure reason).

14.5.2.5.2.4.3 When generated

When the NCMS receives Version_Config.request from BS, it will act upon according to the action type, and respond with the action result such as the version verification result, new version information to object module.

14.5.2.5.2.4.4 Effect of Receipt

When BS receives this primitive, depending on the action result information, it will take further action accordingly.