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Re:	Contribution on comments to IEEE 802.16 g-05/008
Abstract	This contribution mainly describes the version match, especially software and hardware version match in the mobile communication systems.
Purpose	This contribution provides a solution to the reduction of system stability and reliability induced by the manual operation of version match which is controlled by the maintenance person in current technology. This solution can improve the system maintenance performance, system reliability, and backward compatibility.
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Version Match Primitives for Configuration Management

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1. Introduction

With continuous update and spreading scale of the current communication systems, the coupling relationship between software modules and hardware modules becomes more and more complex. So a perfect set of broadband wireless access system is necessary to provide the favorable management for various kinds of hardware versions in order to avoid losing control of the relationship between software versions and hardware versions. This proposal can provide a good solution to the compatibility problem of software and hardware versions. Before downloading some software, the system can carry out version match verification between the software to be downloaded, and the type/version of the hardware, the other software already running in the hardware. Through this procedure, the system can be more stability and reliability.

2. Summary of the Proposed Remedy

The following two primitives are defined to describe the functions above. The table contains the simple explanation of the primitives.

Primitive	Direction	Primitive Contents
VERSION_MATCH_VERIFICATION_REQUEST	NCMS ← BS	The information of Software and hardware version
VERSION_MATCH_VERIFICATION_RESPONSE	NCMS → BS	The match verification result

3. Proposed Text

[*Insert section 14.5.2.5 as follow*]

14.5.2.5 Version Configuration

Version configuration management is a basic and important management function. It can be divided into version information collection, version match, version upload/download, version build and so on.

14.5.2.5.2 Version match

Version match is one part of the version configuration management function which is used to manage the compatibility of software and hardware versions.

14.5.2.5.2.1 Procedure

Figure xxx shows the procedure of version match:

Figure xxx procedure of version match

The procedure of version match includes three important steps:

- Configuration match relationship: the relationship of version match is built in NCMS.
- Request to begin version match verification: before BS downloads software, it shall initiate version match verification procedure through request primitive. When NCMS receives the request, it begins to compare the version information of software and hardware with match data according to the rule, and detect whether they are matched.
- Response with the verification result: when NCMS finishes verification, it shall response the result to BS. Then BS can continue next step.

Through version match procedure, the stability and reliability of the system can be guaranteed before downloading software.

14.5.2.5.2.2 Service primitives

14.5.2.5.2.2.1 VERSION_MATCH_VERIFICATION_REQUEST

14.5.2.5.2.2.1.1 Function

The primitive is issued by BS to initiate the match request before downloading any software.

14.5.2.5.2.2.1.2 Semantics of this primitive

The parameters of this primitive are as follows:

```
VERSION_MATCH_VERIFICATION_REQUEST
{
        HARDWARE_INFORMATION,
        SOFTWARE_INFORMATION,
}
```

HARDWARE_INFORMATION
It is the hardware version information on which the software will be downloaded.

SOFTWARE_INFORMATION
It contains the software information working in the board.

14.5.2.5.2.2.1.3 When generated

Some software needs to be downloaded.

14.5.2.5.2.2.1.4 Effect

When NCMS receives the request, it begins to compare the version information of software and hardware with match data according to the rule, and detect whether they are matched.

14.5.2.5.2.2.2 VERSION_MATCH_VERIFICATION_RESPONSE

14.5.2.5.2.2.2.1 Function

This primitive is issued by NCMS to response the match verification result.

14.5.2.5.2.2.2.2 Semantics of this primitive

The parameters of this primitive are as follows:

```
VERSION_MATCH_VERIFICATION_RESPONSE
{
        VERSION_MATCH_RESULT;
}
```

VERSION_MATCH_RESULT
Contains the result of match verification: success or false.

14.5.2.5.2.2.2.3 When generated

When verification is finished, NCMS issues the primitive to BS.

14.5.2.5.2.2.2.4 Effect

When BS receives the primitive, it will detect the match result. If the result is success, it will continue to next step such as download the software. If the result is false, it will stop and send warning notice.