

**AERONAUTICAL TELECOMMUNICATION NETWORK PANEL**

**WORKING GROUP 3 (APPLICATIONS AND UPPER LAYERS)**

Tokyo, Japan, 1st – 3rd December 1999

**Agenda Item 4: Review of Subgroup work, latest meetings and output for WG3 & ATNP/3**

4.2 SG 2 - Air-Ground Applications

**Consolidated CM Version 2 Material**  
**(Draft Validation Report and Version 2 SARPs)**

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**SUMMARY**

This package describes the status of the ATNP WG3/SG2 activities on the version 2 CM Application and contains the following documents produced by WG3/SG2:

- 1 this document describing the CM enhancements introduced in version 2,
- 2 the draft Validation Report for Version 2 CM Application, and
- 3 the draft Version 2 CM Application SARPs.

Guidance Material for Version 2 CM Application will be produced for the ATNP/3 Panel timeframe.

## **1. CM VERSION 2 ENHANCEMENTS**

The three major enhancements introduced in the Version 2 CM Application are:

- ◆ addition of the server facility query service,
- ◆ addition of the server facility update, and
- ◆ security and directory enhancements.

## **2. CM SERVER FACILITY QUERY SERVICE ENHANCEMENTS**

One of the perceived benefits of the ability of a CM application to maintain a dialogue is the ability to receive new application information over the same physical connection. For CM version 1, this ability is not able to be fully realized. CM version 2 introduces a new service, the CM-server-facility-query service, which allows an aircraft to request information for up to eight different facilities. In response, the ground system will reply with the information for the requested facilities, if available. If the information for a specific facility is not available, the ground can indicate that to the aircraft.

This new service also supports security, as application information for a facility might include key and key usage information.

## **3. CM SERVER FACILITY UPDATE SERVICE ENHANCEMENTS**

A result of the CM-server-facility-query service is the capability of a the ground system to perform a modified CM-update service. This version 2 service is called the CM-server-facility-update service, and is identical to a CM-server-facility-query response. This allows an ground system to explicitly identify application information for up to eight facilities and send that information to an aircraft.

This new service also supports security, as application information for a facility might include key and key usage information.

## **4. CM SECURITY AND DIRECTORY ENHANCEMENTS**

Version 2 of the CM Applications has been designed to meet the ATN Security Framework defined in Sub-Volume VIII. The support of the security functionality is now a mandatory feature of version 2. The CM air and ground users using a version 2 CM application now have the capability to perform secure or unsecure services, i.e. to use or not use authentication and integrity checking services on a per dialogue basis.

Version 2 CM protocol was re-engineered to allow initiating CM users to specify the level of security desired on the underlying dialogue and to check that the level of security obtained on a dialogue is compatible with the requested level of security. This has led to changes in chapter 2 (General Requirements), chapter 3 (Service Definition), chapter 5 (Protocol Specification), chapter 6 (Communications Requirements) and chapter 7 (User Requirements) of the CM part.

Additionally, requirements were placed in chapter 7 (User Requirements) which allow CM-ground-users to retrieve application information from a directory. The most natural way to obtain this information is with the ATN Directory service, as specified in Subvolume 7. Additionally, the CM-ground-user can used received CM-logon or CM-server-facility-query data to update the directory.