



International Civil Aviation Organization

**THE THIRTEENTH MEETING OF ASIA/PACIFIC REGIONAL
OPMET BULLETIN EXCHANG WORKING GROUP (ROBEX WG/13)**

Seoul, the Republic of Korea, 16 – 18 March 2015

Agenda Item 4: OPMET exchange

PLAN FOR IMPLEMENTATION OF DIGITAL EXCHANGE OF OPMET USING XML

(Presented by the Republic of Korea)

SUMMARY

This paper provides the plans for implementation of digital exchange of OPMET using XML and Testing of weather data exchange with other national institutes through the Internet networks.

1. INTRODUCTION

1.1 International Civil Aviation Organization (ICAO) has adopted a program to improve performance of aviation-related data systems through the ASBU for 20 years from 2013. As part of the program, research and development for integrated management network of aeronautical telecommunication data through SWIM (System Wide Information Management) technology are being progressed in the United States and European countries. SWIM is a key component of the ASBU (Aviation System Block Upgrade) to support the future ATM system, and includes development of compatible integrated operating environment to cope with the complexity of the operational information exchange.

2. WXXM SCHEMA

2.1 IWXXM 1.0 was introduced in 2007, representing METAR, SPECI, TAF, SIGMET and other ICAO information as specified in International Civil Aviation Organization (ICAO) Annex III.

2.2 IWXXM 2.0 was released in 2014 as a major update. IWXXM 2.0 removed data products that are authoritatively represented by ICAO in IWXXM 1.0 (METAR, SPECI, TAF, SIGMET) and incorporated IWXXM 1.0 design approaches.

2.3 The IWXXM XML Schema is an exchange model for weather data. It is an implementation of the Conceptual Model as an XML schema. Therefore, it can be used to send weather information to others in the form of XML encoded data, enabling systems to exchange weather information.

2.4 KAMA (Korea Administration Meteorological Agency) is planning to test in 2015 by applying the IWXXM1.0.

3. ACTION PLAN

3.1 In 2014 KAMA, to develop technology comparable to that in advanced countries, has built technology of aeronautical data services architecture, standardized future data management model for integrated management of aeronautical data, and established integrated infrastructure for interoperating legacy aeronautical data system.

3.2 KAMA, in order to establish data processing system conforming to 2015 international standards, plans to come up with a phased implementation plan, develop content meeting the standard format, and establish business process development plan.

3.3 As part of the plan, KAMA will implement a system with the Ministry of Land, Infrastructure and Transport (MOLIT), which transmits weather information that follows IWXXM model to support ASBU framework among aviation-related domestic institutions. The target is IWXXM1.0 version of METAR, TAF, SPECI, and SIGMET.

4. ACTIVITIES

4.1 The following on-going activities will be performed by November 2015 through the AMIS (Aviation Meteorological Integrated System).

- i) Conversion to XML format (METAR, TAF, SIGMET, SPECI)
- ii) Development of the interface system to exchange message with the MOLIT through REST method

4.2 At the early stage, the test with the MOLIT is expected to be carried out using REST (Representational State Transfer) method through the Internet network.

4.3 REST is a software architecture style consisting of guidelines and best practices to create scalable web services. The strength of a RESTful web service is simplicity and brevity. Well-implemented Restful web service is simple and easy to use without difficulties since it has a consistent interface structure.

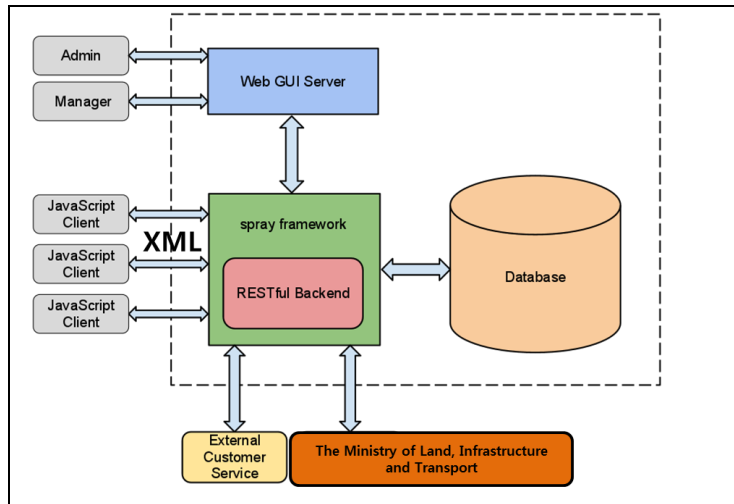


Figure 1. Conceptual diagram



Figure 2. Message exchange scheme (REST method)

4.4 KAMA is planning to exchange all weather data directly through ATN/AMHS, once the Next-generation Aeronautical Telecommunication Network (ATN/AMHS) is set up in the near future.

5. ACTION BY MEETING

5.1 The meeting is invited to note the information provided in the paper.