



International Civil Aviation Organization

The Sixth Meeting of the Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/6)

Bangkok, Thailand, 15 to 17 March 2011

Agenda Item 7: Latest Developments in AIS Fields

Development of Graphic NOTAM in Thailand

(Presented by Thailand)

SUMMARY

This information paper provides the architecture and the visualization of an initial Graphic NOTAM prototype developed for Bangkok FIR and Suvarnabhumi International Airport (VTBS).

1. INTRODUCTION

1.1 The emerging trend of digital NOTAM and availability of airport data in digital format along with access to GIS tools has made possible the merging of static and dynamic aeronautical data to provide valuable graphical data content for intelligent software and specific applications.

1.2 In 2009, a study on the graphical visualization of the status of the taxiway, runway, and aircraft stand from NOTAM was internally conducted within AEROTHAI, with the goal of developing a prototype system for graphically displaying NOTAMs applicable for Bangkok FIR and Suvarnabhumi International Airport (VTBS).

2. SYSTEM ARCHITECTURE AND VISUALIZATION

2.1 The system architecture is depicted in the figure below. From the existing NOTAM database, the textual NOTAM is retrieved, filtered, and processed to produce digital content (XML and KML) for visualization software at user's terminal.

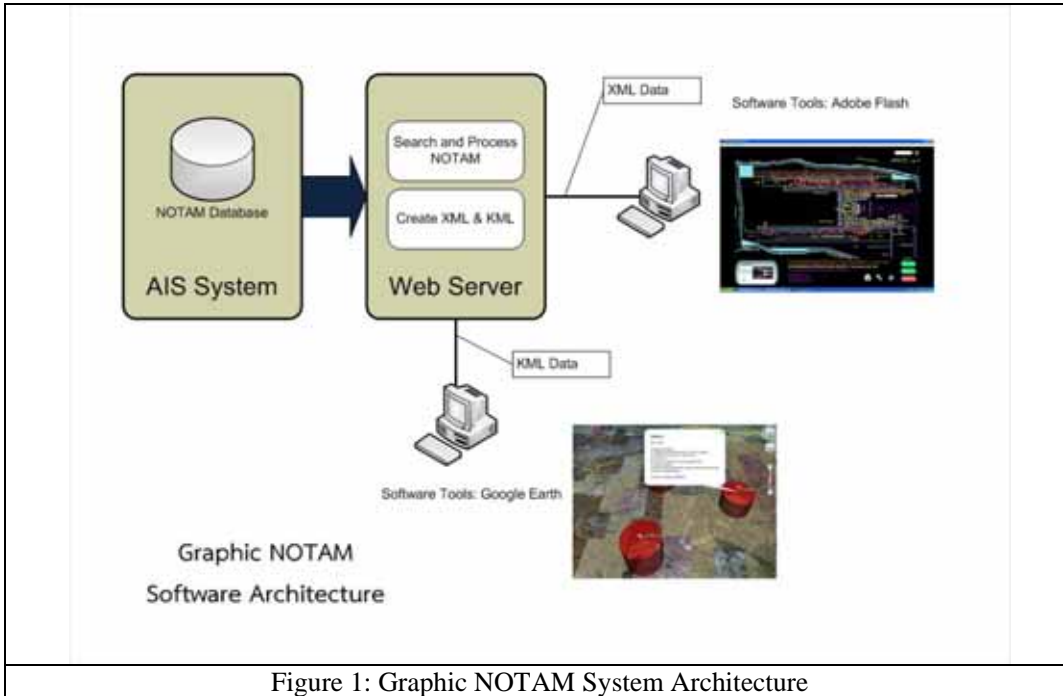


Figure 1: Graphic NOTAM System Architecture

2.2 The aerodrome output is a set of textual NOTAMs filtered for Suvanabhumi (NOTAMs with Location = VTBS and Scope = A or A,W), which is then converted into XML (Extensible markup Language) and displayed on a Visualization tool developed on Adobe Flash, while the aerodrome graphic information is provided in vector graphics (SWF). Aerodrome graphic NOTAM display consists of both graphic plot and corresponding text. Three examples are shown as follows:

```

< NOTAM>
(A0059/11 NOTAMN
Q)VTBB/QMXLC/IV/M/A/000/999/1341N10015E005
A)VTBS B) 1101100300 C) 1102180700
E)TWY B BTN TWY C3 AND TWY C5 CLSD DUE WIP)
    
```

< NOTAM >

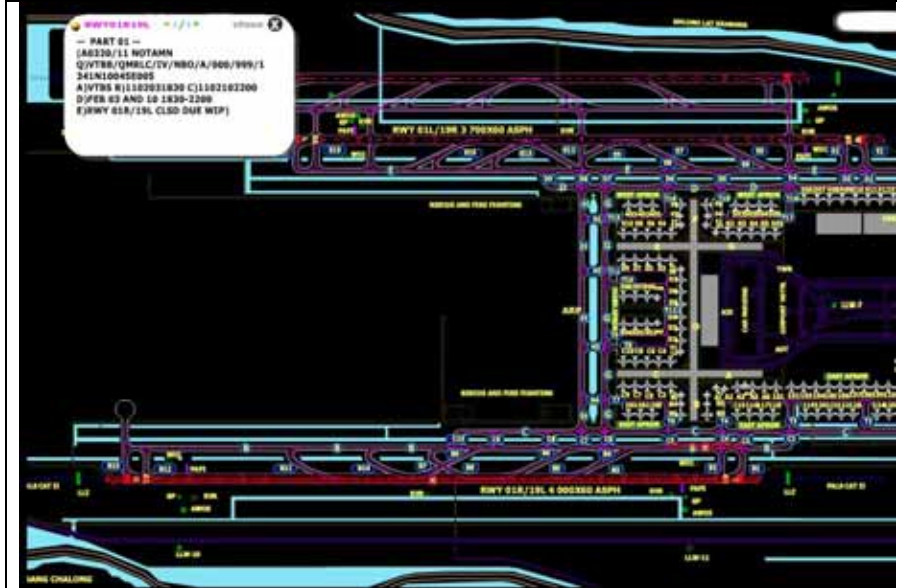
(A0320/11 NOTAMN

Q)VTBB/QMRLC/IV/NBO/A/000/999/1341N10045E005

A)VTBS B)1102031830 C)1102102200

D)FEB 03 AND 10 1830-2200

E)RWY 01R/19L CLSD DUE WIP)



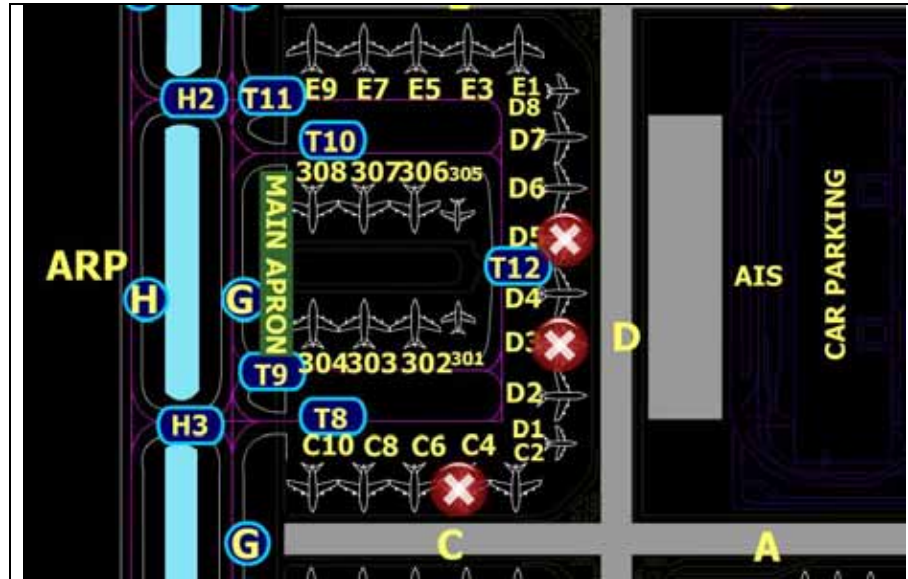
< NOTAM >

(A0485/11 NOTAMN

Q)VTBB/QCACS/IV/NBO/AE/000/999/1341N10044E005

A)VTBS B)0703060310 C)PERM

E)ACFT STAND D5 C4 D3 CLSD)



2.3 For displaying graphic NOTAMS applicable for BKK FIR, the output is a set of filtered textual NOTAMS (FIR = VTBB and Scope = W), converted into KML (Keyhole Markup Language), and displayed on Google Earth, utilizing the already made available base map. Bangkok FIR graphic NOTAM display consists of both graphic plot and corresponding text. Two examples are shown as follows:

```
< NOTAM>
(C0278/11 NOTAMN
Q) VTBB/QWPLW/IV/BO/W/000/130/1254N10056E002
A) VTBB B) 1101160030 C) 1104151000
D) DLY 0030-1000
E) PJE WILL TAKE PLACE WI 2NM RADIUS OF 125410N1005600E
(BANG LAMUNG DISTRICT CHONBURI PROVINCE)
F) GND G) FL130)
```



< NOTAM >

(C0383/10 NOTAMN

Q) VTBB/QWLLW/IV/M/W/000/030/1343N10032E005

A) VTBB B) 1002061530 C) 1002061600

D) DLY 1200-1500

E) ASCENT OF SKY LANTERNS (KHOM LOY) WILL BE RELEASED

AT 1343.4N10032.3E (BANGKOK CITY) DIRECTION UNKNOWN

F) GND G) 3000FT AMSL)



3. DISCUSSION

3.1. While it was valuable to graphically view graphical NOTAMs, the process of conversion was limited to certain information due to the textual nature of the original NOTAM information.

3.2. The concept of digital NOTAMs, which explicitly describes each feature based on AIXM and the temporality concept, would eliminate the limitation of the current prototype and support further development of graphical NOTAM.

4. ACTIONS BY THE MEETING

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