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**Agenda Item 3: Implementation of Air Traffic Flow Management (ATFM)**

**Agenda Item 5: Operational implementation of new ATM automated systems and integration of the existing systems**

### **THE TATIC FLOW SYSTEM APPLIED TO THE ATFM – BRAZIL**

(Information Paper presented by Brazil)

#### **SUMMARY**

This paper presents information on the TATIC FLOW system installed in the CGNA Brazil, that allows the monitoring and real time indicators of operational conditions at the aerodromes and the scheduled and ongoing flights, servicing 35 national airports, by means of data provided by the Control Towers EFPS Electronic Flight Progress Strip.

#### **1. Introduction**

1.1 Brazil uses the TATIC FLOW system in the ATFM, allowing the monitoring and the presentation of indicators, in real-time operating conditions of the aerodromes and of the scheduled and ongoing flights, servicing 35 national airports, by means of the data provided by the Control Towers Electronic Flight Progress Strip systems.

#### **1.2 History**

1.3 For the perfect monitoring of the main Brazilian aerodromes, it is necessary that the data source is agile and reliable. Brazil has been modernizing its Control Towers with systems using Electronic Flight Progress Strips (EFPS) since the end of the 90's. The first generation of this system began to be developed in 1997 and it was implemented in the São Paulo - Guarulhos International Airport control tower in 1999. This first generation of the system was also implemented in other 107 aerodromes starting from 2001, reducing the workload and bringing improvements, tools and resources previously not available to the ATCO, where all information and data regarding the flights started to be recorded automatically and stored in databases, however it was a development extremely oriented to the control tower operations. It was suddenly noticed the need of that system to interface with other adjacent systems, such as: statistics, billing, AODB, etc. At that moment, the development of a new, more flexible system began; and besides expanding the benefits and the tools for the ATCO, it was also designed in a CDM concept. From 2008, the first-generation systems started to be, gradually, replaced by the second generation of the EFPS - TATIC TWR.

1.4 There are today in Brazil, 35 aerodromes equipped with EFPs systems, which are capable of providing real-time data concerning arriving and departing flights. With these data available it was possible to develop a monitoring system of these aerodromes presenting not only the evolution of the

flight, but also a wide range of data, historical and real-time, and other interesting indicators for the tactical and pre-tactical levels.



*Figure 1: EFPS Installations in Brazil*

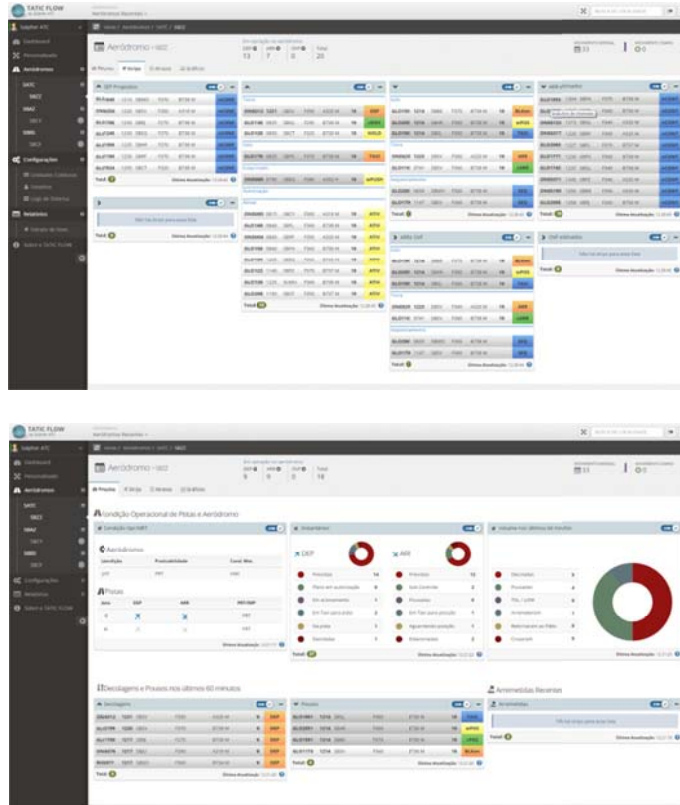
1.5 In 2014, months before the Soccer World Cup started, the TATIC FLOW system was installed in the CGNA - Air Traffic Management Center, having the ability to collect data from 35 aerodromes and to present these data to the operators in charge of tactical operations and other sectors and representatives of the airline companies accompanying the operations in that Center. In the Soccer World Cup and more recently in the Olympic Games, the FLOW system in use allowed detailed monitoring of the movements over the aerodromes, and their alternatives, involved in this operation.



*Figure 2: Generic graphical interface*

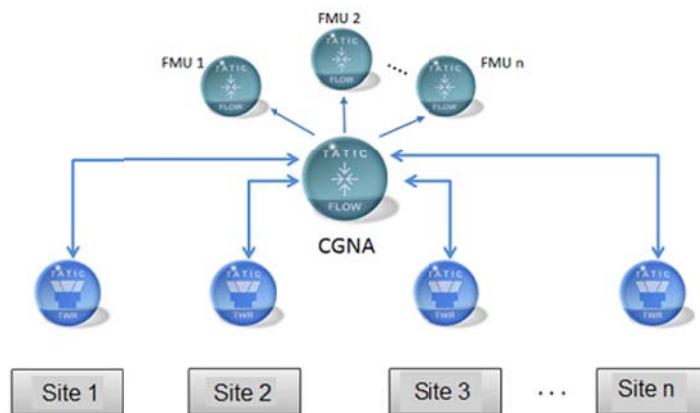
## 2. The TATIC FLOW system

2.1 The TATIC FLOW system is a web based platform and it uses the Brazilian corporate aeronautical data network (Intraer) to transit these data, permitting that the system can be used anywhere in that network, and can extend the application to the FMU.



Figures 3 and 3a: Examples of the work area

2.2 The system does not have a fixed graphical interface and it allows each user to select the indicators and the information from the aerodromes and configure the layout presentation of the system according to his interests.



*Figure 4: Representation of the data flow*

### **3. Summary**

3.1 The TATIC FLOW system is in operation for more than 2 years in the CGNA - Brazil and it is presenting the information from an increasingly quantity of aerodromes, as the first generation of EFPS systems are replaced by the TATIC TWR system, which is capable to exchange data with other systems applying the CDM concept.

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