INFORMATION PAPER

SECOND HIGH-LEVEL SAFETY CONFERENCE 2015 (HLSC 2015)
PLANNING FOR GLOBAL AVIATION SAFETY IMPROVEMENT

Montréal, 2 to 5 February 2015

Theme 1:   Reviewing the current situation
Topic   1.2: Emerging safety issues

ITU ACTIVITIES ON GLOBAL FLIGHT TRACKING FOR CIVIL AVIATION AND AVIATION APPLICATIONS OF CLOUD COMPUTING

(Presented by the ITU Secretariat)

SUMMARY

This information paper presents activities undertaken by the International Telecommunication Union (ITU) to respond to the needs expressed by its membership and to address the recommendations adopted by the ICAO Special Meeting on Global Flight Tracking of Aircraft and the Expert Dialogue on Real-time Monitoring of Flight Data hosted by Malaysia's Ministry of Communications and Multimedia.

1.   **INTRODUCTION**

1.1   Recent events spurred worldwide discussions on global flight tracking and the need for ICAO, ITU and other relevant organizations to coordinate action within the scope of their respective mandates.

1.2   To reach a common agreement on the first key steps in making global flight tracking a priority, ICAO hosted a Special Meeting on Global Flight Tracking of Aircraft, Montreal, 12-13 May 2014, which adopted a final document presenting meeting conclusions and recommendations.[1]

1.3   Following a call from the Minister of Communications and Multimedia, Malaysia, H.E. Ahmad Shabery Cheek, ITU facilitated an Expert Dialogue on Real-time Monitoring of Flight Data, including the Black Box - the Need for International Standards in the Age of Cloud Computing and Big Data, Kuala Lumpur, 26-27 May 2014, which adopted a Communiqué proposing a number of follow-up actions.[2]

1.4   This information paper presents the resulting ITU actions on the outcomes of these events.

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[1] See http://www.icao.int/meetings/GTM/
[2] See http://itu.int/go/flightdata

2.   GLOBAL FLIGHT TRACKING FOR CIVIL AVIATION

2.1   Determining the position of aircraft and reporting this information to air traffic control centres is an important element of aviation safety and security. ICAO has developed Standards and Recommended Practices for systems that do this.

2.2   ICAO, at its special meeting on global flight tracking, encouraged ITU to take action, at the earliest opportunity, to provide the necessary spectrum allocations for satellite to meet emerging aviation needs. ICAO also encouraged ITU *"to place this on the Agenda for the upcoming ITU World Radio Conference 2015"*.

2.3   The Expert Dialogue on Real-time Monitoring of Flight Data hosted by Malaysia's Ministry of Communications and Multimedia *"encouraged ITU to continue to study and address current and future spectrum requirements for flight tracking and real-time flight data monitoring and make appropriate allocations at upcoming World Radiocommunication Conferences, including the conference in 2015"*.

2.4   In response, the ITU Plenipotentiary Conference 2014 approved a new resolution titled *"Global flight tracking for civil aviation"* (see http://www.itu.int/oth/R1204000001/en).

2.5   The new resolution *"resolves to instruct WRC-15, pursuant to No. 119 of the ITU Convention, to include in its agenda, as a matter of urgency, the consideration of global flight tracking, including, if appropriate, and consistent with ITU practices, various aspects of the matter, taking into account ITU-R studies"*.

2.6   Two ITU-R Working Parties are currently studying the issue; WP 5B (Maritime mobile service including the Global Maritime Distress and Safety System (GMDSS); the aeronautical mobile service and the radiodetermination service) and WP 4C (Efficient orbit/spectrum utilization for MSS and RDSS).

2.7   The ITU Secretary-General will bring this resolution to the attention of WRC-15 and ICAO.

2.8   The Director of the ITU Radiocommunication Bureau will prepare a specific report on the matter for consideration by WRC-15. A preliminary version of this report will be submitted to the Second Session of the Conference Preparatory Meeting (CPM15-2).

2.9   The next ITU-R meetings related to global flight tracking are:

Date	Place	Meeting title	Website
23 March-2 April 2015	Geneva, Switzerland	Second Session of the Conference Preparatory Meeting (CPM15-2)	http://www.itu.int/en/ITU-R/study-groups/rcpm/
11-15 May 2015	Geneva, Switzerland	WP 5B (extraordinary meeting on global flight tracking)	http://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5b/
June 2015	Geneva, Switzerland	WP 4C	http://www.itu.int/en/ITU-R/study-groups/rsg4/rwp4c/
July 2015	Bucharest, Romania	WP 5B	http://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5b/
2-27 November 2015	Geneva, Switzerland	World Radiocommunication Conference 2015 (WRC-15)	http://www.itu.int/go/wrc-15

3.   AVIATION APPLICATIONS OF CLOUD COMPUTING

3.1   The ICAO special meeting also recommended that, in the long-term, *"ICAO should work in coordination with ITU to develop aviation requirements for network communications associated with remote storage of flight information"*.

3.2   The Expert Dialogue highlighted *"the future need for ICAO and ITU to facilitate an open, multidisciplinary, multistakeholder and performance-based approach towards the establishment of international standards"* for cloud computing to support monitoring of flight data.

3.3   In response, the Telecommunication Standardization Advisory Group (TSAG), the advisory body to the ITU Telecommunication Standardization Sector (ITU-T), established an ITU-T Focus Group[3] to identify the requirements for telecommunication standards for cloud computing to support real-time monitoring of flight data, in close collaboration with ICAO and other partners.

3.4   The *Focus Group on Aviation Applications of Cloud Computing for Flight Data Monitoring* first met in December 2014 and agreed on the scope of its initial deliverables:

Deliverable	Scope
1	This deliverable will collect and compile current technological developments and opportunities of future enhancements using cloud computing and data analytics.
2	This deliverable will identify and describe scenarios for cloud computing for flight data. It will use existing aviation terminology and definitions.
3	The deliverable will identify issues that need to be addressed such as parameters and type of data to be transmitted; periodicity of transmission (continuous streaming; triggered transmission); reliability; liability; data security (such as integrity, availability, authenticity, non-repudiation); potential misuse of flight data; privacy; interoperability; cost and business models; ownership of data and access policies.
4	The deliverable examines the feasibility of using recent developments in commercial broadband services, as well as reusing existing infrastructure, for real-time flight data streaming where appropriate.
5	The deliverable identifies cloud computing standards necessary to support real-time monitoring of flight data.

3.5   The next Focus Group meetings are:

Date	Place	Host
5-7 February 2015	Montréal, Canada	ICAO
18-20 May 2015	Geneva, Switzerland	ITU
August 2015	*tbd*	
November 2015	*tbd*	

3.6   Participation in the Focus Group is open to any individual from a country that is a member of ITU and who is willing to contribute actively to the work. The Focus Group uses remote collaboration tools to the maximum extent.

3.7   The Focus Group will present a progress report to the next TSAG meeting in June 2015, and submit its deliverables and final report for consideration and further action to the first TSAG meeting in 2016.

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[3] See http://itu.int/en/ITU-T/focusgroups/ac/