

Terms of Reference for a Focus Group on Aviation Applications of Cloud Computing for Flight Data Monitoring

The Focus Group is established in accordance with [Recommendation ITU-T A.7](#).

1. Rationale and Scope

Motivated by the events surrounding Malaysia Airlines flight MH370, the Expert Dialogue on Real-time Monitoring of Flight Data facilitated by the International Telecommunication Union (ITU), 26-27 May 2014 in Kuala Lumpur, Malaysia, highlighted the need to address the following long-term tasks, the completion of which would be an important contribution towards the establishment of international standards for the use of an aviation cloud for real-time monitoring of flight data.

2. ITU-T Focus Group on Aviation Applications of Cloud Computing for Flight Data Monitoring (FG AC)

On-going discussion, at various levels and on a range of platforms, is considering the feasibility of streaming flight data from aircraft to the ground in real-time. Subjects debated within this discussion include the type of data to be transmitted to the ground and the required transmission rates; data security, storage and analytics; ownership of flight data; and the costs and changes to business models required to implement such systems on a global scale.

Government and industry agree that the way forward should be one based on international standards.

2.1 Objectives

Based on the operational requirements for real-time monitoring of flight data identified by the International Civil Aviation Organization (ICAO), the ITU-T FG AC, in close collaboration with ICAO and other partners of the Focus Group, should identify the requirements for telecommunication standards for an aviation cloud for real-time monitoring of flight data. This will include the protection and security, data ownership and access to flight data.

2.2 Relationships

The Focus Group should work in close collaboration with ICAO and other international organizations, relevant ITU-T study groups, ISO/IEC JTC 1, ISO TC 20, as well as key stakeholders such as ICT solution providers, aircraft manufacturers and airlines.

Experiences from other industry sectors and other cloud computing application providers would be useful because questions on the use of real-time flight data resemble the challenges faced by other industries (e.g., automotive, healthcare, utilities) exploiting cloud computing, big data analytics and other ICT-based solutions.

2.3 Specific Tasks and deliverables

- Collect and compile, store information on current technological developments and opportunities for future technological enhancements using cloud computing and data analytics.
- Develop use cases how interested parties could apply state-of-the-art data analytics and data mining techniques in real-time if flight data was stored on standards-based aviation clouds.
- Develop a report that addresses issues that need to be addressed such as the 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.

- Develop a report that examines the feasibility of using recent developments in commercial broadband services for aircrafts to also be used for real-time flight data streaming where appropriate and justified.
- In collaboration with ICAO and other partners of the Focus Group, write a report on which necessary standards would need to be developed for real-time monitoring of flight data, including studying requirements on the protection of flight data, information security, privacy, appropriate use of flight data and data ownership for the use of an aviation cloud for real-time monitoring of flight data.
- In collaboration with ICAO and other partners of the Focus Group, propose a collaborative mechanism on how to best develop the international standards to facilitate interoperability and compatibility and optimizing costs through economies of scale for real-time monitoring of flight data.
- Establish and maintain a roadmap including schedule of events and meetings leading to its implementation.
- Submit the final deliverables to TSAG no later than four calendar weeks before the TSAG meeting.

2.4 Parent group

The parent group is TSAG.

2.5 Leadership

See clause 2.3 of Recommendation ITU-T A.7.

2.6 Participation

See clause 3 of Recommendation ITU-T A.7. A list of participants will be maintained for reference purposes and reported to the parent group.

It is important to mention that the participation in this Focus Group has to be based on contributions and active participation.

2.7 Administrative support

See clause 5 of Recommendation ITU-T A.7.

2.8 Financing

See clauses 4 and 10.2 of Recommendation ITU-T A.7.

2.9 Meetings

The frequency and location of meetings will be determined by the Focus Group and the overall meetings plan will be announced as soon as possible. The Focus Group will use remote collaboration tools to the maximum extent, and collocation with existing meetings to the maximum extent. The meetings will be announced by electronic means (e.g., e-mail and website, etc.) at least four weeks in advance.

2.10 Technical contributions

Contributions are to be submitted at least twelve calendar days before the meeting takes place.

2.11 Working language

The working language is English.

2.12 Approval of deliverables

Approval of deliverables shall be taken by consensus.

2.13 Working guidelines

See clause 13 of Recommendation ITU-T A.7.

2.14 Progress reports

See clause 11 of Recommendation ITU-T A.7.

2.15 Announcement of Focus Group formation

The formation of the Focus Group will be announced via TSB Circular to all ITU membership, via the ITU-T Newslog and other means, including communication with the other involved organizations.

2.16 Milestones and duration of the Focus Group

The Focus Group lifetime is 12 months from the first meeting, but extensible if necessary by decision of the parent group (TSAG).

A preliminary set of milestones includes:

- First Focus Group meeting: Fourth quarter of 2014

2.17 IPR policy

See clause 9 of Recommendation ITU-T A.7.
