



**WORKING PAPER**

**MULTIDISCIPLINARY MEETING REGARDING GLOBAL TRACKING**

**Montréal, 12 May to 13 May 2014**

**Agenda Item 3: Explore the potential for strengthening ICAO provisions on global tracking**

**INTERNATIONAL STANDARDS FOR GLOBAL FLIGHT TRACKING**

(Presented by the ICAO Secretariat)

**SUMMARY**

This working paper identifies current ICAO provisions related to global tracking and explores the possibility of establishing new Standards to facilitate global implementation of global flight tracking.

**Action:** Action by the meeting is contained in paragraph 5.

**1. INTRODUCTION**

1.1 Events such as the loss of AF447 and the disappearance of MH370 for a prolonged period of time have reiterated the need to improve global flight tracking capabilities in the near term. Working Paper 2 outlined an industry-led initiative to develop criteria for global flight tracking, to be facilitated through ICAO guidance material. This approach would, in the short term, result in implementation of global flight tracking by the majority of airlines. To encourage the world-wide implementation of flight tracking by air operators, updated international Standards would be needed.

1.2 Annex 6 — *Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes* and Part III — *International Operations — Helicopters*, Section II state that an operator shall establish and maintain a method of control and supervision of flight operations as one of the prerequisites for the issuance and continued validity of an air operator certificate (AOC). The operator therefore needs to have the capability of organizing, conducting and supervising its intended or existing commercial aviation operations. These Standards do not presently obligate an air operator to track its flights. The existing ICAO provisions were established a number of years ago, based on the technology available at that time. ICAO guidance documents include some reference to the supervision of flight operations, but do not go into details related to flight tracking.

## 2. DISCUSSION

2.1 Standards requiring global flight tracking should be built upon experience gathered as a result of the industry initiative and should take a more comprehensive approach to the overall objectives of tracking flights. Technologies to support global flight tracking are available and others continue to be developed. A prescriptive approach to any future Standards may hamper the innovative use of new technologies in the future. Therefore, a performance-based approach which addresses elements such as, but not limited to, tracking parameters, reliability, accuracy, global coverage and target levels of performance could be established and serve as the basis for international Standards. These target levels of performance should be established without reference to any specific technical solution.

2.2 In developing new Standards for flight tracking a holistic review of other related Standards should be conducted. A performance-based approach to global flight tracking may be conducive to a system that could support other requirements, both current and under development, such as:

- a) transmission of basic flight data;
- b) implementation of triggered transmission of flight data;
- c) new generation of emergency locator transmitters (ELTs);
- d) deployable flight data recorders; and
- e) identification of the location of an accident site.

2.3 Any future flight tracking Standards should also leverage the emergence of new technologies to support air traffic services (ATS) surveillance systems. The emergence of new technologies may not only provide increased capacity and efficiency in remote/oceanic airspace, but may also provide a future data source for flight tracking purposes. Consequently, the development of any future Standards addressing global flight tracking will require a multidisciplinary approach involving, at a minimum, expertise in such areas as flight operations, airworthiness, flight data and air traffic control.

2.4 There are several different options that could be explored for international Standards related to global flight tracking. The following should not be considered as an exhaustive list of alternatives, but are given as examples. Annex 6, Parts I and III, Section II could be targeted so as to establish flight tracking requirements for commercial air operators. Annex 6 could also be a vehicle to further stipulate the types of operations requiring flight tracking. These requirements could then be used as the basis for issuance or continued validity of air operator certificates (AOCs). However, it may be more appropriate to write provisions on global tracking based on the type of airspace (e.g. high seas airspace) rather than on the type of operations. Annex 2 — *Rules of the Air* apply without exception over the high seas. Thus, the inclusion of Standards requiring flight tracking in Annex 2 would carry the strength of an ICAO Standard in all airspace and have the further effect of establishing hard requirements for flight tracking over high seas airspace. However, a consequence of inclusion of such a Standard in Annex 2 is that it would apply regardless if a flight is for commercial or non-commercial purposes (i.e. general aviation).

## 3. CONCLUSIONS

3.1 States, ICAO, operators and all appropriate stakeholders should work together to analyse existing technology and develop guidance to enable global tracking capability in the near term. While the

most expeditious means to establish criteria for flight tracking and to motivate implementation is through an industry-led initiative, ICAO Standards will likely be needed to establishment of uniform regulatory frameworks and encourage the world-wide implementation.

#### 4. **RECOMMENDATIONS**

4.1 The development of any future Standards that specify an international requirement for global flight tracking may require a substantial commitment and investment on the part of the international civil aviation community, as well as a re-prioritization of the technical work programme of ICAO. If the meeting agrees to the merit of Standards to support flight tracking, a decision on the part of the Council of ICAO would be required and, to facilitate this, it is proposed that the meeting recommend that:

- a) ICAO develop international Standards that support the widest global implementation of operational flight tracking;
- b) a performance-based approach be used so that any future Standards are stable and do not unnecessarily prescribe equipment which may, in the long run, hinder the ability of the industry to make best use of emerging technologies;
- c) throughout the development of any future Standards in this area, a multidisciplinary approach be used to promote comprehensive solutions that address more than an immediate need to track operating flights; and
- d) during the process of developing any future Standards in this area, that the full range of Annexes be considered so as to facilitate implementation.

#### 5. **ACTION BY THE MEETING**

5.1 The meeting is invited to:

- a) note the information provided in the paper;
- b) consider a multidisciplinary and performance-based approach towards the development and the formulation of any international Standards requiring global flight tracking;
- c) consider the various options for future Standards such as incorporation into Annex 6 and/or Annex 2; and
- d) agree to the recommendation presented in paragraph 4 above, as may be amended by the meeting.