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CAR/SAM Regional Planning Implementation Group (GREPECAS)
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(Lima, Peru, 16 to 18 July 2013)

Agenda Item 2: Global and Inter Regional Activities including Results of ANConf/12 and PIRG-RASG Global Coordination Meeting

THE EVOLUTION OF ELECTRONIC TOOLS AND DATA: A STRATEGIC PLAN FOR THE CREATION OF A COMMUNITY-DRIVEN DECISION-SUPPORT DIGITAL ENVIRONMENT FOR THE GLOBAL AVIATION COMMUNITY

(Presented by the Secretariat)

SUMMARY

This paper presents an overview of the continued transition of the ICAO's centred, paper-based, data collection and reporting processes into a set of tools designed to support the implementation of the global strategies, including the Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan (GANP).

The action by the Meeting is in Paragraph 6.

ICAO Strategic Objectives:	*This working paper relates to all Strategic Objectives*

1. INTRODUCTION: WHY ICAO MUST CHANGE ITS ROLE IN AVIATION DATA MANAGEMENT

1.1 ICAO had traditionally been tasked with the collection, processing and dissemination of aviation data in order to allow States to use the data as a significant catalyst for the safe orderly growth of international civil aviation services and to make sure that it is operated in a sound and economic manner.

1.2 In its role as a key source of advisory material to decision makers, both at the global and regional levels, ICAO is also responsible for generating a wide range of information, from "air transport statistics traffic forecasts" (such as Circular 333, *The Global Air Transport Outlook*) and "safety reports" to processing feedback received by States on items such as proposed amendments to the Annexes.

1.3 To that end and as a response to the Member State's evolving needs, a digital 'eco-system' of over 200 web sites and a few dozen databases supporting activities related to safety, air transport and air navigation, were produced at ICAO in the past two decades.

1.4 The digital eco-system entailing a myriad of various types of applications was produced to meet specific ICAO-centric immediate needs, such as creating a web site for a particular study group or to support an ICAO data set such as the list of location indicators or the ICAO Statistics Programme.

1.5 However, as recognized at the 37th Session of the Assembly, the ICAO-centric approach was cumbersome, mostly manual and costly.

2. REPORTING PROGRESS: WHAT ICAO HAS DONE IN THE LAST THREE YEARS

2.1 To resolve these undesired effects of the ICAO-centric approach to data management, it was found that a transformation to a user-centred approach was necessary. To that effect, over the last three years, ICAO has taken significant steps towards becoming more "user-centric". These developments included:

a) creating a web-based system which groups together different safety-related datasets and allows for effective integrated safety analysis called iSTARS (available at the secure portal https://portal.icao.int/iSTARS);
b) implementing a unique air transport statistical site for both internal and external users, called ICAO *data+* (available at http://www2.icao.int/en/G-CAD/Pages/default.aspx);
c) grouping all tools related to ICAO Standards and Recommended Practices (SARPs) and their implementation on to a single platform called the SARPs Management and Reporting Tool (SMART) (available at www.icao.int/USOAP);
d) launching a platform that would become the single entry point for all "Air Navigation" related data at the Twelfth Air Navigation Conference (available at http://portal.icao.int/SPACE).

3. HEADING IN THE RIGHT DIRECTION: THE PRINCIPLES THAT DRIVE THE DEVELOPMENT OF AVIATON TOOLS

3.1 The demand for new tools to be developed is increasing due to the needs of many States and others in the aviation sector for information. And without a strategic plan for the development of tools, this demand creates a risk of ending up with as many disconnect tools as there were disconnected web sites and databases.

3.2 To avoid this ICAO is following a set of guiding principles, listed below, as it continues the complex task of re-tooling the aviation regulatory community:

a) *Access* — all aviation stakeholders should have access to accurate data and information critical to performing their responsibilities;
b) *Harmonization* — all aviation data critical for the sustainable development of air transport should be harmonized with the full participation of all States.
c) *User-centric* — aviation tools are not developed for ICAO purposes, but those of the greater aviation community. To that end ICAO will create a "digital space" to publish and exchange tools not just for the data and information that ICAO holds but for all data and information as required by decision makers to implement the strategic plans; and
d) *Focused on Aviation* — aviation tools are developed to solve aviation problems. They are not "IT" projects designed to meet the needs of the aviation community, but aviation projects to solve aviation problems which makes use of "IT"; and
e) *Quality Management* — all aviation data should come with a statement of its quality to ensure that they are interpreted in the correct context.

3.3 As the number of aviation tools grow it is useful to categorize the tools based on familiar aviation terminology. There are the following types:

a) **Planning** tools (similar to navigation tools): they allow users to "set" the course required and derive the necessary "actions";

b) **Monitoring** tools (similar to surveillance tools): they provide information to keep the users "aware" of the most current situation and trends of aviation (including reports and alerts);
c) **Communication** tools: they allow cooperation and communication among States, stakeholders and ICAO; and
d) **Decision support system** tools (similar to flight management systems): they integrate information from the other three set of tools to assist in efficient decision making.

4. WHAT'S NEXT: CONTINUING THE LOGICAL EVOLUTION

4.1 As ICAO continues to implement the strategy of aviation tools over the coming years it will focus on the following:

a) create and share open exchange formats and technical specifications for ICAO, States and others to publish data, analysis and tools;
b) publish the ICAO data, analysis and tools in the open formats with digital guarantees for their security (to ensure that data is not shared with those who are not entitled to it);
c) create a "catalogue" of ICAO data, analysis and tools to enable States and stakeholders to install and use them according to their specific needs;
d) monitor, collect, feedback and enhance the tools according to the community's actual needs;
e) develop and launch a set of tools as required to support the near term objectives contained in the global strategies including the Global Aviation Safety Plan (GASP), and the Global Air Navigation Plan (GANP); and
f) migrate all paper-based processes used to support the achievement toward ICAO Strategic Objectives to digital formats.

5. THE RIGHT BUSINESS MODEL: RETURN ON INVESTMENT FOR VALUE ADDED SERVICES

5.1 In order to ensure the sustainability of the digital space, the participation by the stakeholders cannot be "mandate" driven. It must be needs-based and user-driven and be supported by a healthy funding mechanism. To that end, ICAO will consider the following when developing the policies related to the digital space:

a) making safety critical data, analysis or tools available free of charge when this is possible within the Regular Programme or on a cost recovery basis when not;
b) re-investing in the continuous evolution of the digital space and for the sustainability of support infrastructure; and
c) re-investing any savings generated by replacing paper based processes into the maintenance and further development of the collective digital space for the benefit of aviation.

6. ACTION BY THE MEETING

6.1 The Meeting is invited to note the development of a set of aviation tools designed to support the implementation of GANP and GASP.

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