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Drafting Future Skies - EIWAC2017

Shigeru Ozeki

Electronic Navigation Research Institute



1. Introduction

The fifth ENRI International Workshop on ATM/CNS (EIWAC 2017) was held at the Congress Square Nakano, Nakano, Tokyo, Japan from November 14th to 16th, 2017, in cooperation of communication society of IEICE. After successful meetings in 2009, 2010, 2013 and 2015, ENRI organized this conference with its theme as “Drafting Future Skies” [1].

2. EIWAC

This workshop focused on the research and development of modern air traffic management (ATM) and its enabling technology in Communication, Navigation and Surveillance (CNS). This workshop will contribute to the global harmonization of activities by air traffic control (ATC) service providers, industry, researchers and all other stakeholders such as airspace users. EIWAC is the unique forum which has participants with wide divergence in their discipline, in strategic layers from political strategy to R&D, and in geographical areas in 4 continents where they are working.

Leading experts from research, industry and academia met at the technical sessions in this workshop to share their recent results in R&D projects. In addition, opinion leaders in strategy to implement future ATM systems held the key note speeches, and participants enjoyed this chance to think about conformance of their business or R&D strategy with very high level policy, for example, in the International Civil Aviation Organization. In total, 630 participants from 13 countries enjoyed 5 keynote speeches, 1 lecture in tutorial session, 64 oral presentations and 9 posters. 3 technical exhibitions became agendas to discuss among participants. EIWAC becomes global workshop as well as presentations by Japanese researchers were only 20 in 79 presentations, i.e., about a quarter.

ENRI thanks following institutes for their support to EIWAC2017. The workshop is kindly promoted by EUROCAE who is an international body working on international standards on ATM and CNS. Air navigation service providers like as Japan Civil Aviation Bureau (JCAB), Federal Aviation Authority (FAA), and French civil aviation authority (DGAC/DSNA) also supported and interested. The office of Collaborative Actions for Renovation of Air Traffic Systems (CARATS), the Japanese council for actions toward future ATM, also supported EIWAC2017. Academic institutes like Japan Society for Aeronautical and Space, Science (JSASS) kindly

coordinated to avoid conflicts of schedules among many events or conferences. Logos from Research institutes and Universities such as French Civil Aviation University (ENAC), Japan Aerospace Exploration Agency (JAXA) are also found with indicating their kind supports to this workshop.

In preparation for EIWAC2017, the members for technical program committee, Mr. Mohamed Faisal Bin Mohamed Salleh (ATMRI), Prof. Low Kin Huat (ATMRI), Mr. Jean-Marc Loscos (DSNA, French Air Navigation Service Provider), Mr. William C. Johnson (NASA), Dr. Masatoshi Harigae (JAXA) and Terumitsu Hirata (Ibaraki Univ.) made great contributions to review and assign papers for technical sessions with considering the activation of discussion on site.

3. Plenary Sessions

EIWAC2017 started with the opening address by Prof. Hiroyuki Yamato, the president of National Institute of Maritime, Port and Aviation Technology in which ENRI was merged with keeping its name (Fig. 1).



Fig. 1 Opening Session by Prof. H. Yamato

The plenary sessions with following the opening are organized for keynote speeches to provide a forum for exchanging opinions on future air traffic managements and to introduce the demands and requirements from airspace users to project managers and researchers.

All keynote speakers indicated the importance of infrastructure for information managements and aeronautical communication which will contribute to improve the performance of ATM.

At first, Mr. Stephen P. Creamer, Director, Air Navigation Bureau, International Civil Aviation Organization (ICAO/ANB) presented their schedule to update the Global Air Navigation Plan, GANP, and its road map called Aviation System Brock Upgrades, ASBUs. He emphasized the importance of recognition

by all stakeholders on the new technologies to be introduced with applying the R&D products practically and timely.

Mr. Florian Guillet, Executive Director, SESAR JU, had his presentation to introduce their strategy for future “digital aviation infrastructure” and for modernization of ATM systems in European airspace.

Ms. Pamela Whitley, Assistant Administrator for NextGen, FAA, also indicated the importance of aeronautical communication in her presentation titled “Aviation: A Global Digital Journey.”

Mr. Yasuhiro Iijima, Director of Air Navigation Services Department, Japan Civil Aviation Bureau presented on the future plan for renovation of ATM/CNS systems in Japan.

Mr. Masahiro Kudo, Director General, ENRI, introduced recent outputs and outcomes after the research work such as enhancement of function and capacity of Airport. And, he also reported some difficulties by the reduction of investment to ATM modernization with comparing those in 20 years ago.

Participants enjoyed the chance for discussions with these opinion leaders after each presentation.

4. Invited Talks

Mr. Patrick Souchu (EUROCAE) presented the merit of contributing to the international standardization with reducing the risk of misleading projects in each company or country. The meetings for standardization always estimate the demands and requirements for 20 years later, and the estimations will become common understandings by industry in most case.

Mr. Paul Bosman, Head of ATM Strategies Division, EUROCONTROL, presented their strategy to introduce systems for SWIM, System Wide Information Management. He also used the keyword “fully digitized ATM” in his presentation.

Mr. Satoshi Kogure, Executive Director for QZSS Development, National Space Policy Secretariat, the Cabinet Office, Japan, introduced Japanese space-based Positioning, Navigation and Timing, PNT, system, QZSS, and its services and applications. EIWAC becomes a chance to promote Japanese implementation of aeronautical navigation system for near future.

5. Tutorial Session: Airspace Design Optimization

Prof. Daniel Delahaye, ENAC, lectured on the mathematics to optimize solutions for designing airspace structure. This is his second time to have tutorial session at EIWAC with following that in 2013.

6. Special Sessions

Special sessions were organized for EIWAC2017 with focusing the areas of Ground Based Augmentation System (GBAS), SWIM, space weather and future radio technologies.

7. Technical Sessions

Various themes are set to discuss in each session. For example, “Trajectory Managements”, “ATM Performance”, “Airport Management”, “Traffic Capacity and Congestion Management”, “UAS”,

“ATM Modeling”, “Aviation Safety” and “CNS Systems”.

8. What Is Next?

EIWAC2017 provided a forum to discuss on ATM/CNS and a chance to exchange with opinion leaders in future civil aviation. It is very rare chance in the Asia/Pacific region. ENRI is now working on papers to edit a book for selected papers of EIWAC2017 like as past EIWACs [2, 3].

The next EIWAC will be scheduled in 2019 or so with hoping that our activity will provide researchers with the chance to exchange their results in air traffic management, communication, navigation and surveillance related studies and to recognize the demands and requirements on what and how to provide research results.

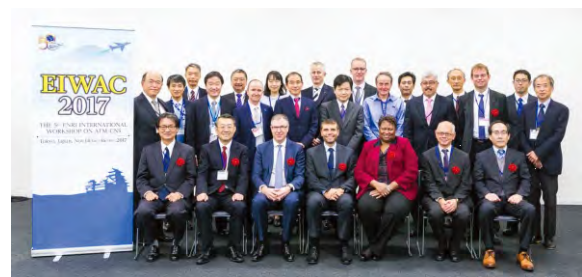


Fig. 2 EIWAC2017 Keynote Speakers, TPC members and guests from DLR and JCAB

9. References

- [1] ENRI, “Abstract of EIWAC2017 Presentations,” November, 2017.
- [2] ENRI ed., “Air Traffic Management and Systems - Selected Papers of the 3rd ENRI International Workshop on ATM/CNS (EIWAC2013),” ISBN 978-4-431-54474-6, Springer Japan, 2014.
- [3] ENRI ed., “Air Traffic Management and Systems II - Selected Papers of the 4th ENRI International Workshop on ATM/CNS (EIWAC2015),” ISBN 978-4-431-56421-8, Springer Japan, 2017.