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ASIA AND PACIFIC REGIONS**

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AGENDA ITEM 3 : AVIATION SAFETY

**IMPROVING SAFETY DATA COLLECTION AND
PROCESSING SYSTEM (SDCPS) OF
THE REPUBLIC OF KOREA**

Presented by the Republic of Korea

INFORMATION PAPER

SUMMARY

In line with the intent of the amendment 1 of the Annex 19–Safety Management, the Republic of Korea has established a roadmap with action items to improve its Safety Data Collection and Processing System (SDCPS).

Based on this new roadmap, an amendment of the Korean Aviation Safety Act, stipulating, including but not limited to, the establishment of SDCPS and safety data protection, was drafted and now it is under review by the National Assembly. And developments are planned to be conducted to enhance data analysis. ROK believes the SDCPS improvement is a common interest shared by Regional States and would appreciate any sharing of experiences and challenges on this matter.

IMPROVING SAFETY DATA COLLECTION AND PROCESSING SYSTEM (SDCPS) OF THE REPUBLIC OF KOREA

1. INTRODUCTION

1.1 The amendment 1 of the Annex 19 – *Safety Management* has introduced the concept of the *Safety Data Collection and Processing System (SDCPS)* with the upgraded provisions for the protection of safety data, safety information and related sources. SDCPS is a set of regulations, procedures and tools to capture, store, aggregate and enable analysis of safety data and safety information to support safety management activities. For example, safety reporting systems, databases and schemes for exchange of data and information are included in this new term.

1.2 In line with the intent of this amendment of *Standard and Recommended Practices (SARPs)*, the Republic of Korea (ROK) has established a roadmap with action items to improve its SDCPS. Based on this new roadmap, an amendment of the Korean Aviation Safety Act, stipulating, including but not limited to, the establishment of SDCPS and safety data protection, was drafted and now it is under review by the National Assembly. And developments are planned to be conducted to enhance data analysis. ROK believes the SDCPS improvement is a common interest shared by Regional States and would appreciate any sharing of experiences and challenges on this matter.

2. DISCUSSION

2.1 The present SDCPS of ROK (*hereinafter, referred to as “Korean SDCPS”*) is mainly based on occurrence data, such as accidents, serious incidents and non-serious incidents reported by the mandatory reporting system and shared by the accident investigation authority. In addition, data on safety inspections, aircraft registrations and medical assessments are stored on the same IT-based data platform. Voluntary safety reports are not on the same platform as they are undertaken by a third party organization to ensure its independence.

2.2 In the past, the abovementioned kinds of safety data were simply treated as records related to safety oversight activities of the regulator. However, as safety management matures, these records have proven valuable for safety risk management. To make the most out of these safety data, ROK has decided to improve its SDCPS, in terms of regulation, policy and technology. For a systematic approach on this new project, a roadmap was established for further improvement of the quality of data-driven decision-making within the framework of State Safety Programme (SSP).

2.3 *Regulatory and Policy schemes*

2.3.1 Regulatory and policy schemes are mainly about defining the scope of safety data, data standardization and data protection.

2.3.2 ***Scope of safety data.*** A variety of safety data, which are now included in the Korean SDCPS, need to be supported by other kinds of safety data and statistics for effective identification of hazards. The draft amendment of the Aviation Safety Act defines safety data to cover not only the data owned by the regulator but also those from the service providers. It also encourages service providers to share safety data with the regulator, in a voluntary manner. Flight data, ATC radar data, airport movement area data, weather data (TAF, METAR, etc.) and any other related statistics are preferred to be included or connected to the Korean SDCPS. ROK is planning to conclude Letter of Agreements (LOAs) on Safety Data Sharing with service providers intending to share safety data with the regulator.

2.3.3 ***Data Standardization.*** For effective safety data and safety information sharing with the service providers and other stakeholders, development of data taxonomy for occurrences and safety inspections are in progress. By benchmarking best practices of Member States, and researching on the occurrences of the Korean industry, the common taxonomy of the safety data is being adopted in phases. Compatibility with ADREP is an essential factor to be considered.

2.3.4 **Data protection.** Since service providers can be not so willing to share safety data due to possible punishment from the government, need for a consensus remains on the safety data and safety information protection. The existing regulation of the ROK ensures safety data protection only for voluntary reports. To promote safety data sharing and safety reporting, ROK is currently amending its regulation to expand the scope of data protection to every safety data and safety information, which will be stored and connected to the Korean SDCPS. Challenges are expected in implementation as it will have a great impact on the enforcement policy.

2.4 **Technical aspects**

2.4.1 **Integration and Analyzing.** As the various safety databases owned by the regulator are managed by different divisions and regulations, integrating all of these databases is a challenge. Through complete enumeration, every government owned databases has been identified and a new tool, a data platform as a part of the Korean SDCPS, is expected to be developed for integration of these databases. Interfaces with databases owned by the service providers are also considered as its function. Through demonstration analysis on sample data such as rejected take-off, short-term conflict alert, etc., data analytics for predictive risk management is also to be developed and stored on the new data platform. The feasibility study is now underway and is expected to be completed at the end of this year. The scheduled term for the first phase of this development project is a total of 5 years which is expected to be commenced in 2019.

2.5 **Reaching a consensus with service providers**

2.5.1 Neither the government nor a private entity can independently establish the above mentioned SDCPS due to legal restrictions, lack of authorities and resources, and conflicts of interests. For effective implementation of SDCPS, a close cooperation between the regulator and service providers will be required. In tandem with regulator’s efforts on establishing regulation for safety data protection and concluding LOAs for safety data sharing, continuous efforts in building up mutual trust between the regulator and service providers are essential.

2.5.2 Korea Office of Civil Aviation (KOCA) is encouraging service providers to participate in the SDCPS improvement project, including development of safety data platform, discussion on data standardization and monitoring of common safety performance indicators. Although these activities are challenging, participants are reaching on consensus of the need of safety data sharing and analysis with other service providers and the regulator, as many hazards are systemic and cross cutting through various factors at the state level.

2.5.3 To strengthen the mutual trust among the participants, the new data platform is expected to be undertaken by an independent third party organization for data protection, processing and analysing. And a board and working group, consisting of participants, will oversee, share and discuss on analysed information. Only authorized users will be able to obtain these data and analysed information.



3. ACTION BY THE CONFERENCE

3.1 Through this project, ROK expects to establish qualitative safety performance indicators and capture valuable safety information to identify and diagnose deficiencies at the State and also at the single service provider's level. Furthermore, ROK is convinced that such safety management activities will lead to an overall elevation of the quality of safety management activities of the regulator and service provider. ROK believes that the abovementioned efforts are experienced by many Member States. Sharing of know-hows and lessons learned during experiences, among Member States, will benefit the international society as a whole.

3.2 The Conference is invited to note the information in this discussion paper.

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