Introduction of K-SDCPS
Korea-Safety Data Collection & Processing System

Claire Gyunghwa SOHN

Technical Officer, Korea Office of Civil Aviation

Hosted by: Ministry of Land, Infrastructure and Transport   KAU 한국항공대학교 Korea Aerospace University

K - SSP (State Safety Program)

State Safety Policy, Objectives & resources

State Safety Risk Management

Government

SSP	MOLIT & KARAIB

MOLIT

Personnel Licensing	Aircraft Operation	Airworthiness
Air Navigation Services	Aerodrome operation	

K-ARAIB

Accident & Incident Investigation

Managing Safety Risk at State Level

① Safety Data collection and Processing system ②

Service Provider

Approved Training Org.	Air Operator	Approved Maintenance Org.
Air Navigation Service Provider	Aerodrome Operator	

Safety Management System Cooperation with State

④ ③

State Safety Promotion

State Safety Assurance

Aviation Safety Act article 58

MOLIT
Ministry of Land,
Infrastructure and Transport

Data Driven Decision Making

DATA

- Bird Strike
- Safety investigation
- Weather
- SDR
- ICAO data
- Hazard List
- DG Report
- IATA data
- Accident investigation
- Safety reports
- Radar Data
- Aerodrome Safety
- Oversight Data

ANALYSIS

SAFETY

- Organizing, structuring, contextualizing data

- Uncover pattern, trends
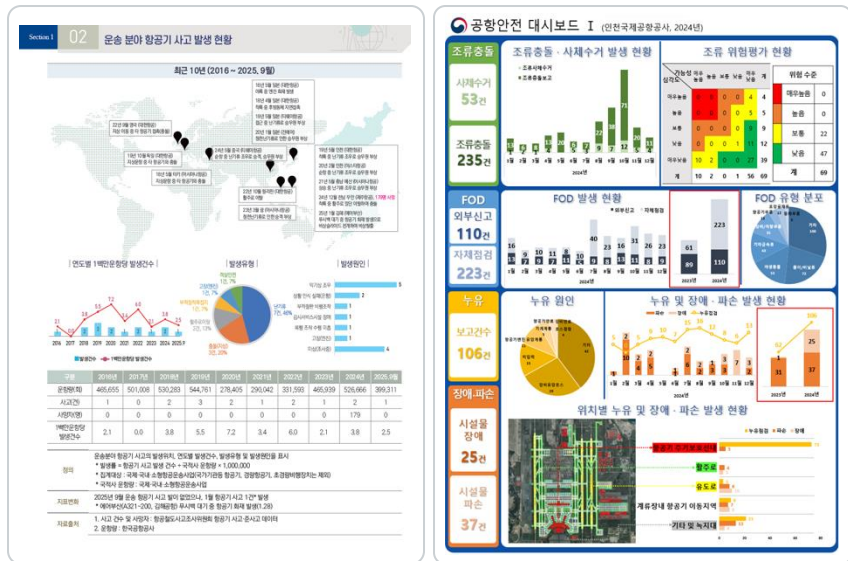- Identify why & how happens
- Hazard Identification and Risk assessment

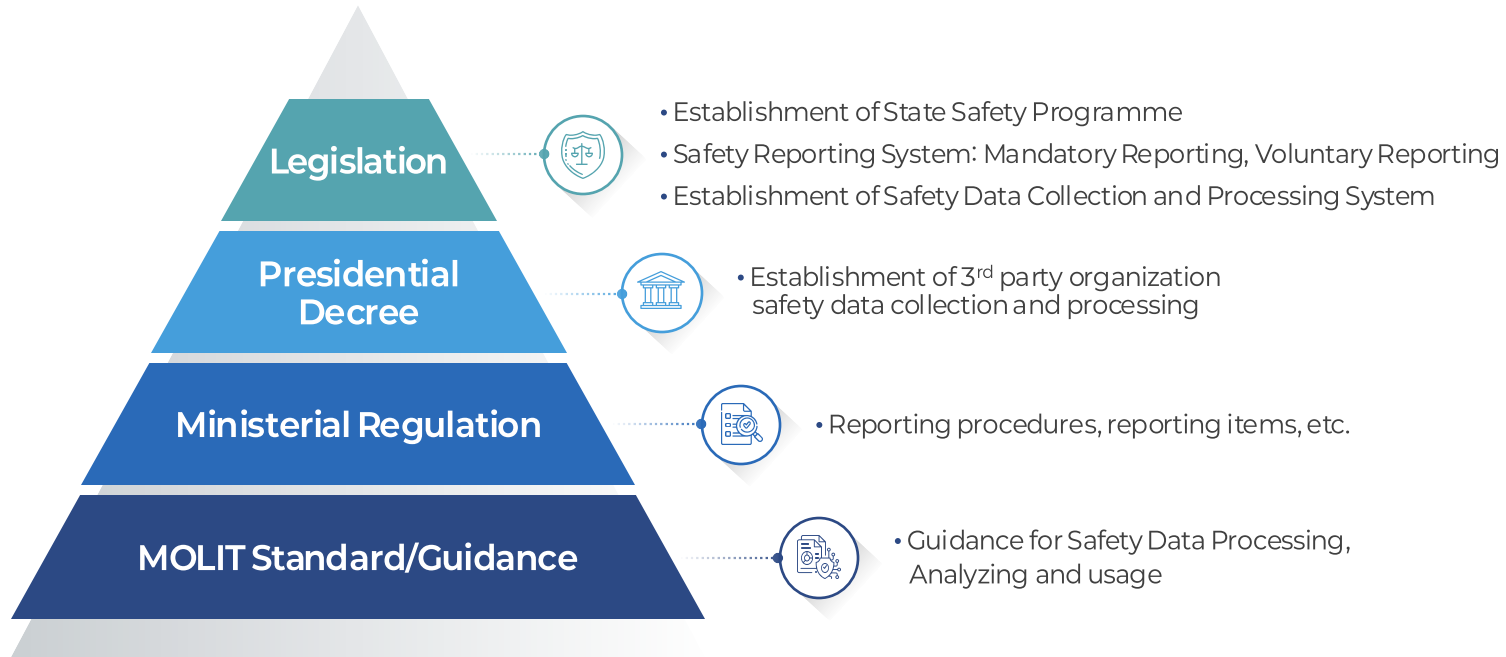- Safety Risk Mitigation
- Ensuring effectiveness of safety action taken

MOLIT
Ministry of Land,
Infrastructure and Transport

Safety Risk Management and Safety Assurance

Data Driven Decision Making

Safety Performance Indicator
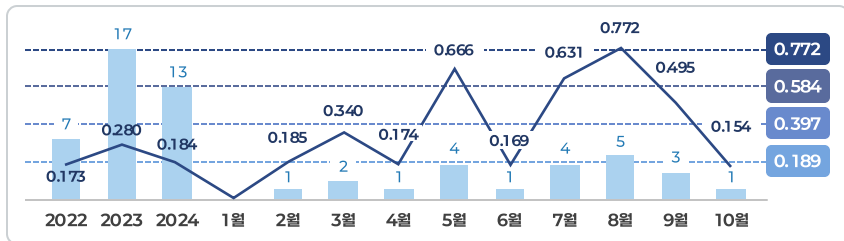
Safety Risk Profile

Regulatory Framework

SDCPS related Regulation

Legislation
- Establishment of State Safety Programme
- Safety Reporting System: Mandatory Reporting, Voluntary Reporting
- Establishment of Safety Data Collection and Processing System

Presidential Decree
- Establishment of 3rd party organization safety data collection and processing

Ministerial Regulation
- Reporting procedures, reporting items, etc.

MOLIT Standard/Guidance
- Guidance for Safety Data Processing, Analyzing and usage

MOLIT
Ministry of Land, Infrastructure and Transport

Safety Data – Definition in Aviation Safety Act

Government

- Oversight Data
- Safety investigation
- Accident investigation
- Hazard List

Type of Safety Data
(Aviation Safety Act)

- Safety Reports
- SDR
- DG Report
- ICAO data
- Radar Data
- Aerodrome Safety
- Flight Data
- IATA data
- Bird Strike
- Weather

Industry & Stakeholders

MOLIT
Ministry of Land,
Infrastructure and Transport

How to collect Safety Data from the Industry and Stakeholders?

Government

Safety Reports

SDR

DG Report

ICAO data

Radar Data

Aerodrome Safety

Type of Safety Data
(Aviation Safety Act)

Flight Data

IATA data

Bird Strike

Weather

Industry & Stakeholders

Safety Reporting System
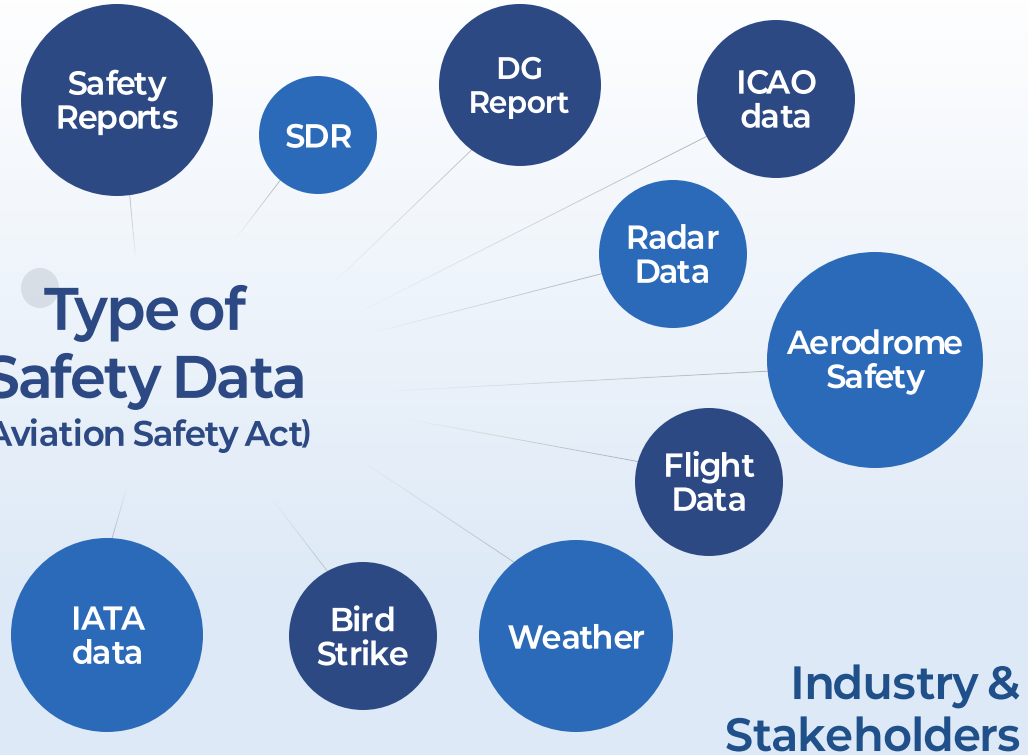
Mandatory Reporting

- Accident, Serious Incident,
  Incident (56 types of occurrences)
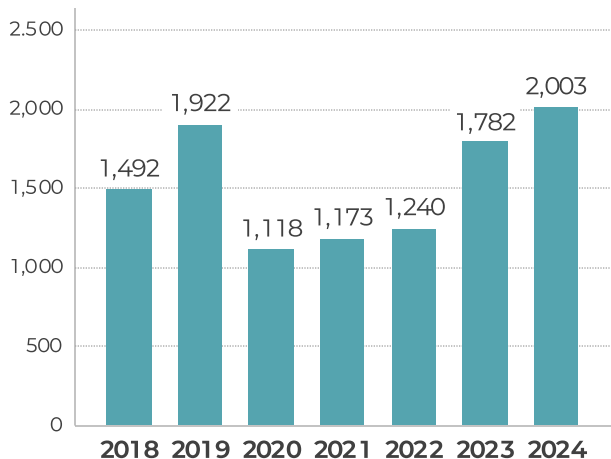
Voluntary Reporting

- Any occurrence other than
  for mandatory reports

Mandatory Reporting bar chart:
- 2018: 1,492
- 2019: 1,922
- 2020: 1,118
- 2021: 1,173
- 2022: 1,240
- 2023: 1,782
- 2024: 2,003

Pyramid: Accident / Serious Incident / Incident

Voluntary Reporting bar chart:
- 2018: 105
- 2019: 163
- 2020: 120
- 2021: 140
- 2022: 169
- 2023: 302
- 2024: 569

Aviation Safety Act Article 59 & Article 61

Safety Reporting System
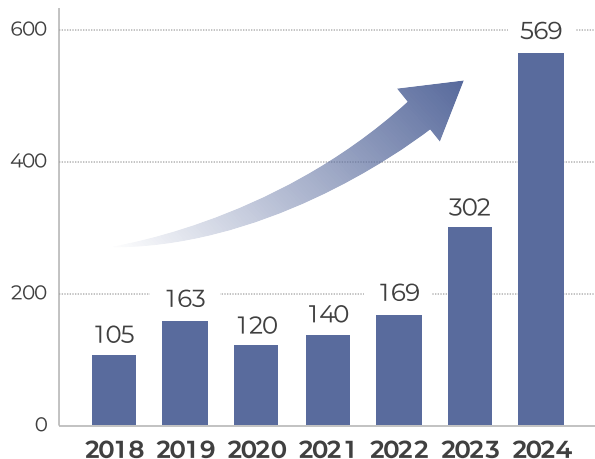
Principle of Protection

• Not disclosed to the public

• Used only for maintaining and improving safety

• Non-punitive approach

• Except for identifying gross negligence and wilful misconduct, etc.

Voluntary Reporting

• Source of data Protection

• Used only for safety purpose

• Non-punitive approach(standard)

• Collected, analyzed by 3rd party

Mandatory Reporting

• Source of data Protection

• Used only for safety purpose

• Non-punitive approach(recommendation)

• Processed, analyzed by 3rd party

Aviation Safety Act Article 59 & Article 61

MOLIT
Ministry of Land,
Infrastructure and Transport

Data Sharing & Exchange MOU with Industry partners

Safety Data collected from Industry & Stakeholders

PIREP: Pilot Report
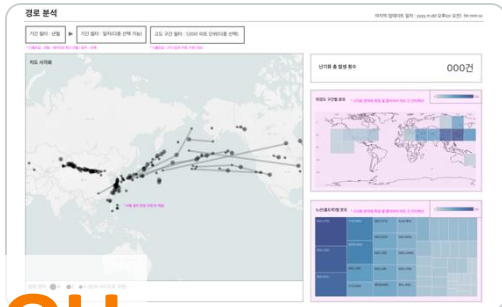
Flight Data (FDAP)
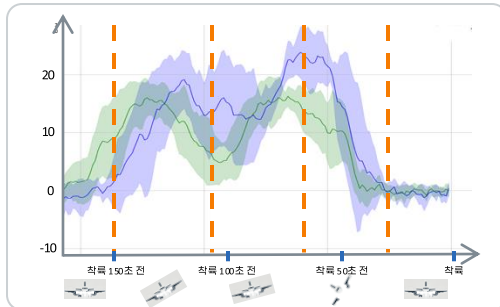
AIR Operator Information

MOU

ADS-B Data

IATA Turbulence aware (EDR Data)

ICAO API (ADREP, etc.)

MOLIT
Ministry of Land,
Infrastructure and Transport
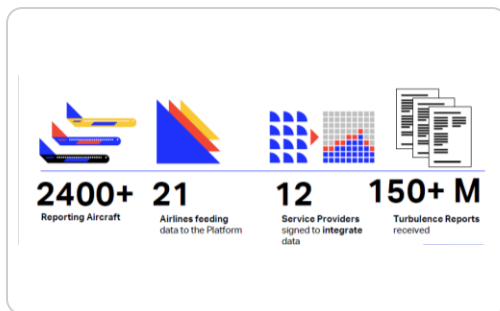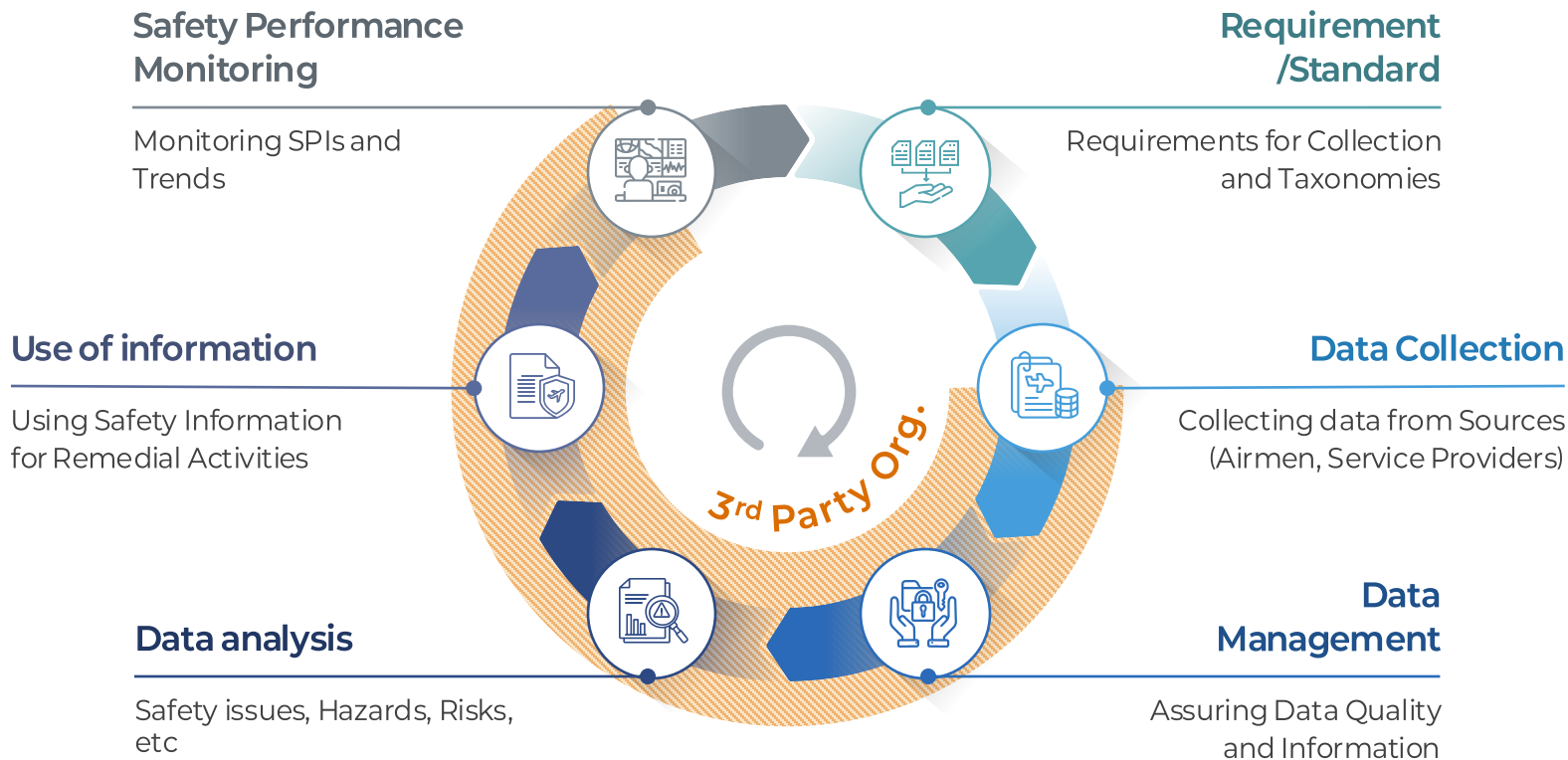
3rd Party Organization

• Effectively cooperation with industry on data collection

• Effective protection of Safety Data, Safety Information and Sources

• Enhancing expertise in data categorization, processing, and overall management
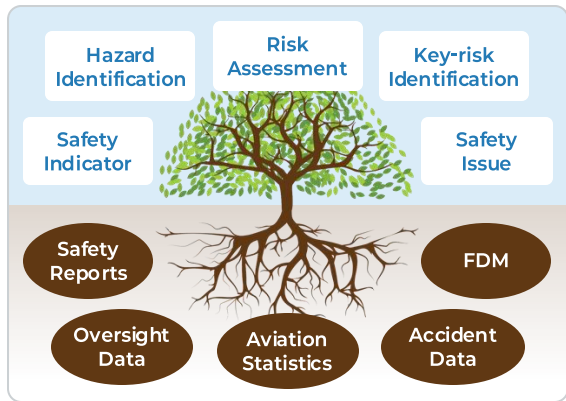
Voluntary safety Reporting –
<Korea Transport Safety Authority>

Other Safety Data (SDCPS)
<Korea Institute of Aviation Safety Tech.>

Safety Data Life-Cycle

Safety Performance Monitoring

Monitoring SPIs and Trends

Requirement /Standard

Requirements for Collection and Taxonomies

Use of information

Using Safety Information for Remedial Activities

3rd Party Org.

Data Collection

Collecting data from Sources (Airmen, Service Providers)

Data analysis

Safety issues, Hazards, Risks, etc

Data Management

Assuring Data Quality and Information
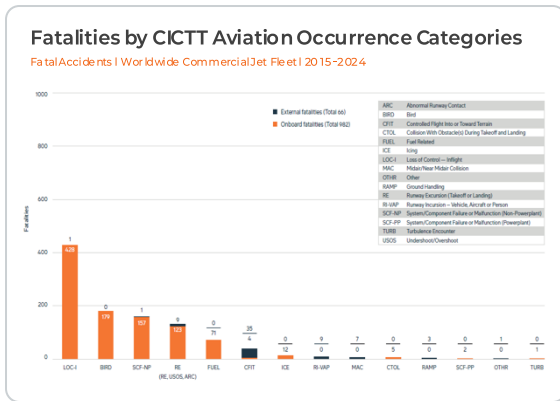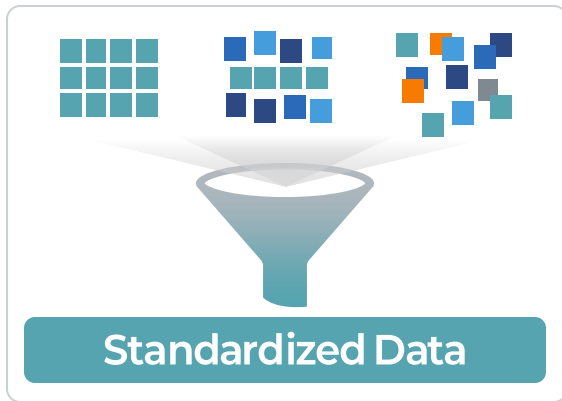
MOLIT
Ministry of Land,
Infrastructure and Transport

Challenges

- Enhancing regulation, procedure to foster a positive safety culture

- Improve Data Quality, Increase Data Quantity and types

- Identifying useful and meaningful insights from the analysis → Development of Safety Intelligence

- Sharing analyzed information/intelligence with Industry

- Strengthening the capabilities of third-party organizations

- Improve efficiency powered by Artificial Intelligence

Standardized Data

Fatalities by CICTT Aviation Occurrence Categories
Fatal Accidents | Worldwide Commercial Jet Fleet | 2015-2024

Hazard Identification

Risk Assessment

Key-risk Identification

Safety Indicator

Safety Issue

Safety Reports

FDM

Oversight Data

Aviation Statistics

Accident Data

MOLIT
Ministry of Land,
Infrastructure and Transport

2025
Korea Aviation
Safety Forum

2025 대한민국항공안전포럼

Thank you!

Ministry of Land, Infrastructure and Transport

KAU 한국항공대학교
Korea Aerospace University