Global Aviation Data Management

What is GADM?

- Global Aviation Data Management
- GADM is a department under IATA Safety
- It contains a data management platform integrating several sources of operational data received from different IATA programs
- GADM is structured as an “umbrella” program focussed on operational safety and audit data

GADM Goals

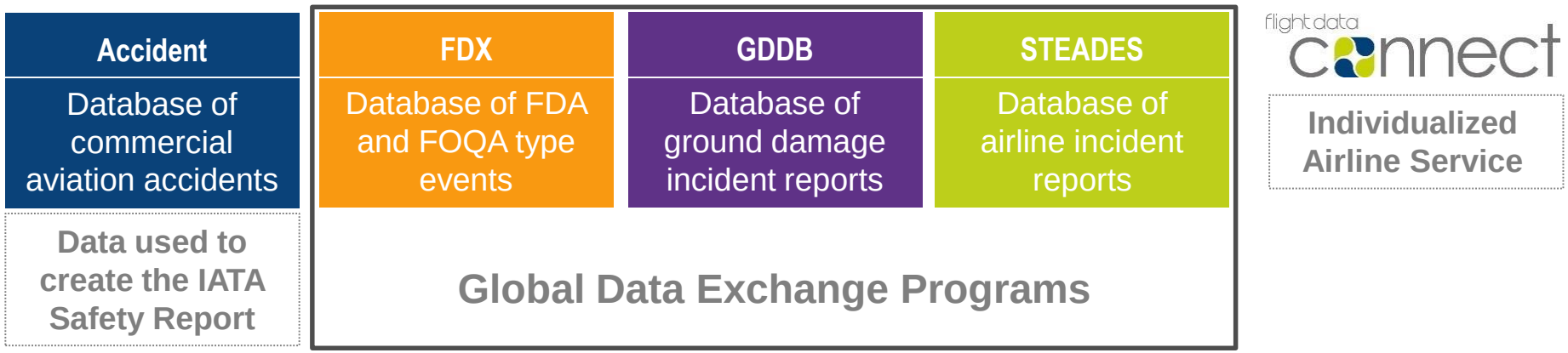
- **Goals**:
  - To provide the industry with comprehensive, cross-database analysis
  - To support a proactive data-driven approach for advanced trend analysis and predictive risk mitigation

Support Consistent Implementation of SMS

The power of data - GADM

- Built on a comprehensive data warehouse platform
- Integrate all possible sources and areas of aircraft operations
- Produce a wide spectrum of analyses to:
  - Identify industry issues
  - Drive initiatives and actions to solve the identified problems

GADM Portfolio



Data Sources

Accident	FDX	GDDB	STEADES	flight data connect
Accident Reports, Accident Classification Task Force	more than **55** participants and a database of over **2 million** flights	more than **180** participants (airlines & ground service providers)	Over **200** participants and a database of over **1.5 million** records	Flight Data Recorder (FDR) or Quick Access Recorder (QAR)

Global Data Exchange Programs

Main Goals

Accident	FDX	GDDB	STEADES	flight data connect
Identify contributing factors in aviation accidents	Identify and anticipate flight safety issues for different event scenarios	Compare performance against a baseline of ground damage information	Pool safety information for global benchmarking and analysis needs	Provide a best in class Flight Data Analysis Service

Global Data Exchange Programs

GADM

IATA Safety Exchange Programs

- FDX
- STEADES
- GDDB

→ New Incident DB

- Accident

Accident Database

Accident | FDX | GDDB | STEADES

- The accident database covers all commercial aviation accidents worldwide that meet IATA accident inclusion guidelines
- The database is updated on a bi-annual basis after the Accident Classification Technical Group (ACTG) meetings
- Data is used to create the IATA Safety Report, which is the flagship safety document produced by IATA since 1964
- Produced annually, the Safety Report provides the industry with critical information derived from the analysis of aviation accidents
- www.iata.org for free download

Flight Data eXchange

Accident | **FDX** | GDDB | STEADES

- **Flight data** is merged into a database that provides **aggregated de-identified information** back to airline participants
- Airlines use FDX to identify flight safety issues by querying a shared, de-identified, database holding a wide range of safety measurements.
- IATA uses collated FDX data when working with States to mitigate safety risks and improve flight efficiency.
  - For example, airspace redesigns have been carried out to mitigate mid-air collision risk.

FDX | How does it work?

Airline A

Airline B

Raw data from the aircraft is downloaded routinely for FOQA/FDM/FDA

Data is processed internally by the airline or its service provider or Flight Data Connect for FOQA/FDM/FDA

In FDX, airlines submit flight data to IATA*

where it is processed using a common event set,

de-identified results are integrated into a database with inputs from multiple operators,

to generate global trends, rates and training materials and to support advocacy work

(*) IATA works with Flight Data Services as its collaborative partner for FDX data processing. Data is displayed only when there are at least 3 operators with the same aircraft type. De-identification includes: no airline information is available, the tail numbers and the flight numbers are written off, the flight date is set to the first day of the month.

FDX Web Interface

(V1)

AVIATION SAFETY TEAM

Overview

The FDX analysis pages enable querying of event occurrences through a much larger data set than that of your own. Contributors' data is processed using a single platform into a single database to ensure consistency of analysis. FDX members benefit from free access to this innovative tool to identify systemic issues and benchmarking. Data is always de-identified and updated on a regular basis. Users can drill down several layers of data from flights to event categories, regions and airports.
For more information on how to participate, access the GADM Site.

Data Submission

Misconfigured Takeoff

TCAS

LOC-I

TAWS

Runway Approach & Landing

Latest update

2017-03-30: Updates and improvements.

2017-03-16: Initial release.

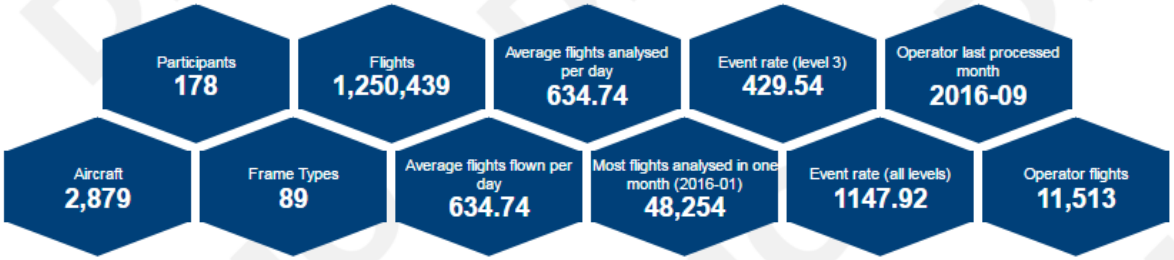
Definitions

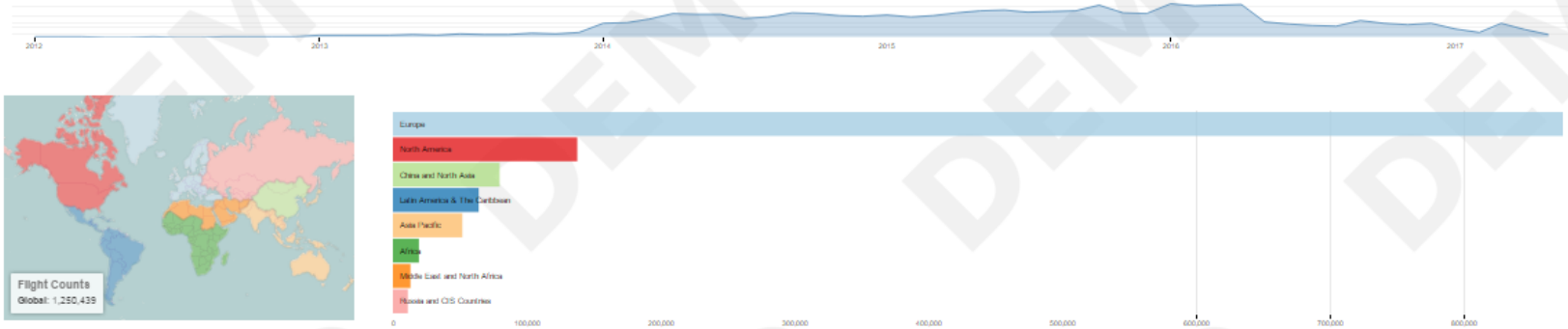
- Rule of Three
- Event Rates
- IATA Region of Operator
- Flight Date

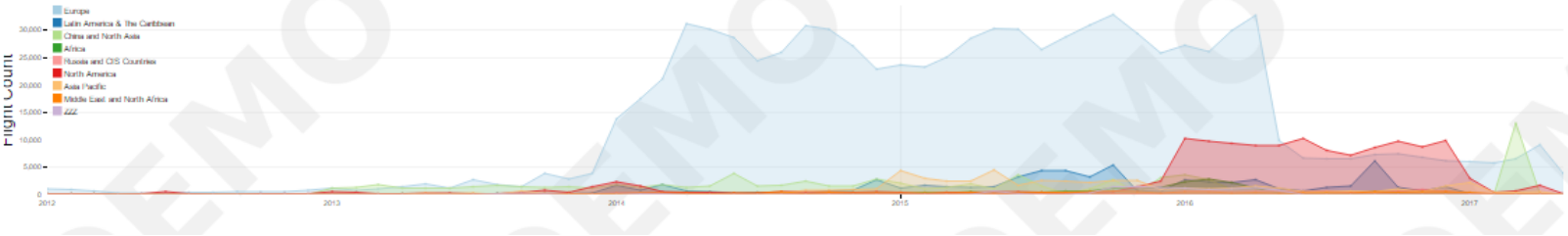
Data Submission

The map represents the number of FDX flights submitted by operators within each IATA region. Hovering over the regions reveals the number of flights flown by operators based in that region and the number of airports meeting the Rule of Three (3 or more FDX participants operating to that airport) in the time period selected.

The data submission bar chart displays the number of flights processed by IATA region. The line chart represents the number of processed flights by month flown. If an IATA region is selected on the map, the values will be filtered for the selected region.

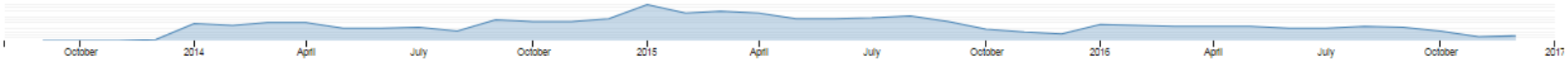




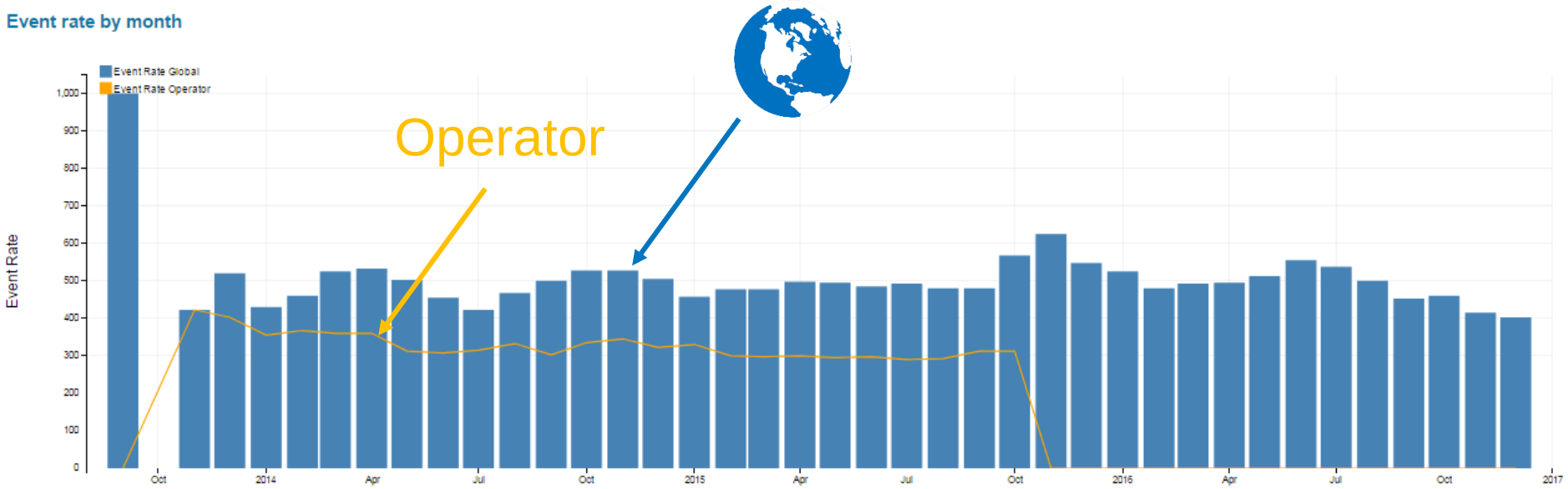


Runway Approach & Landing

The Approach and Landing Accident Reduction page contains metrics on go-around, long landing, tailwind, stopping distance events and other KPVs. Currently displaying all event levels.



Event rate by month



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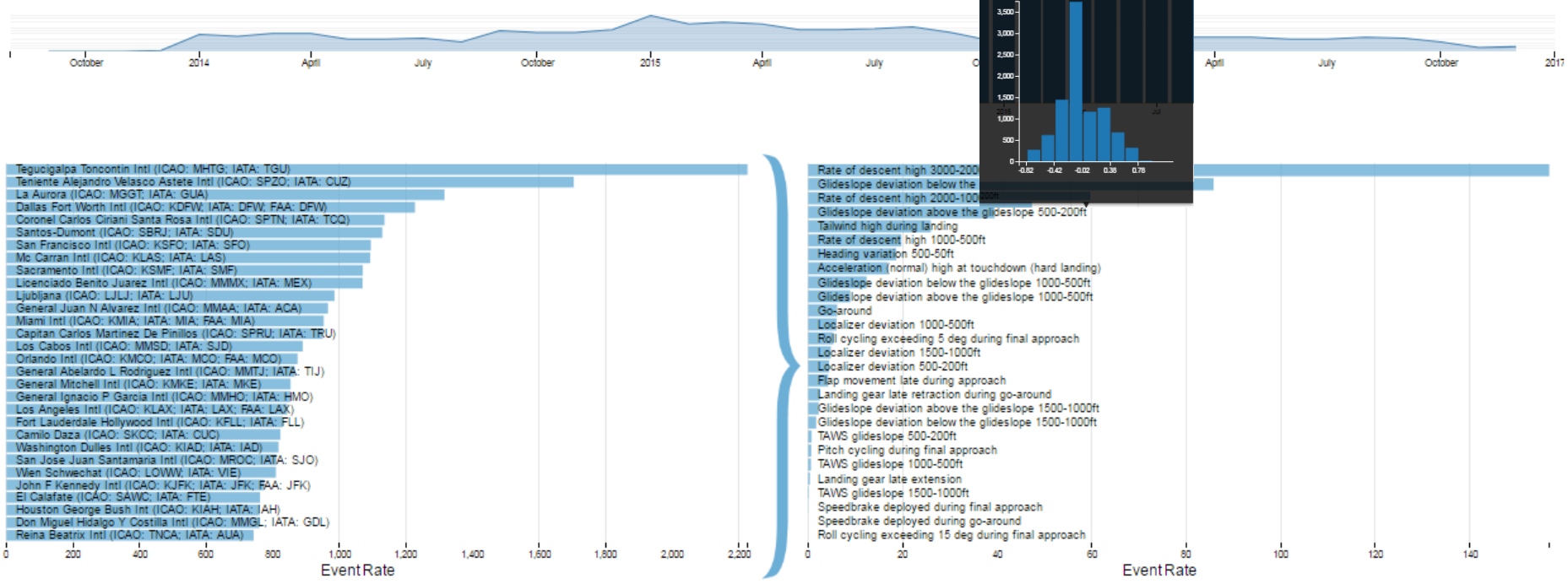

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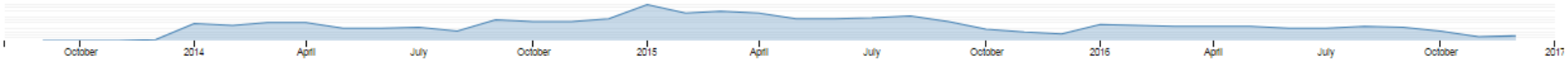
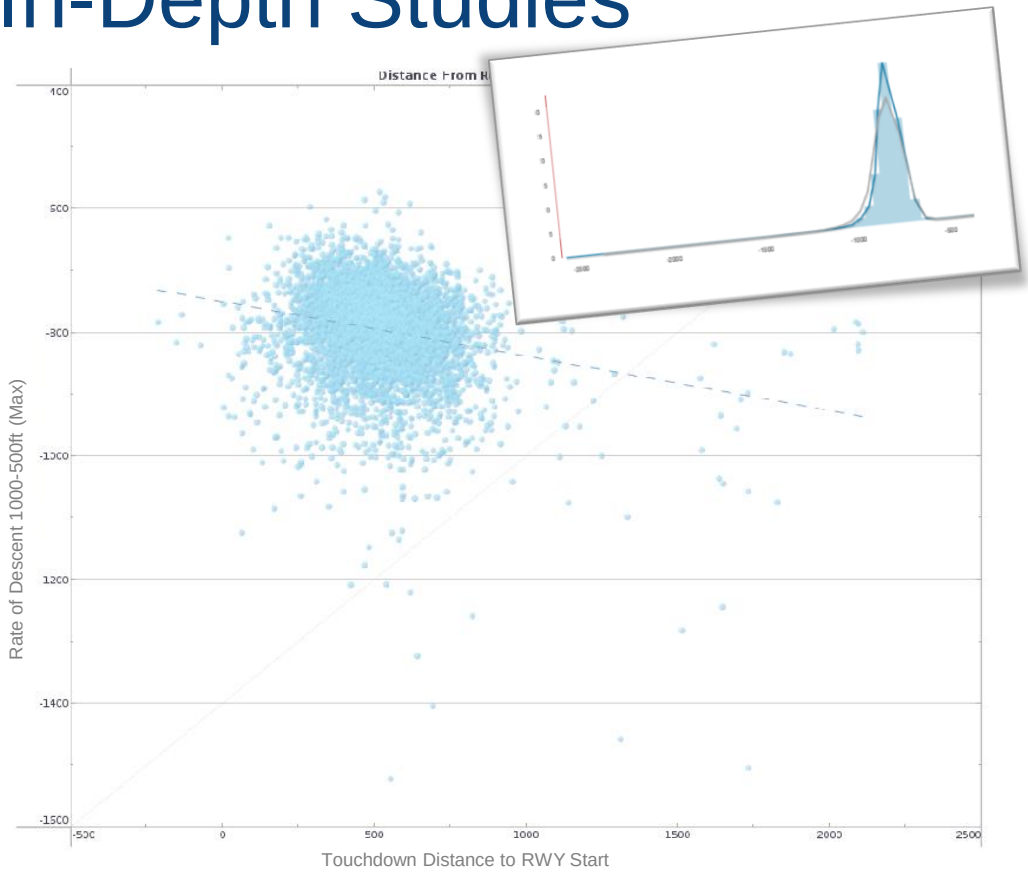
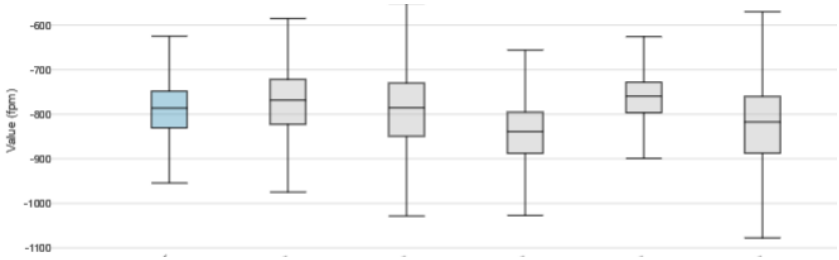
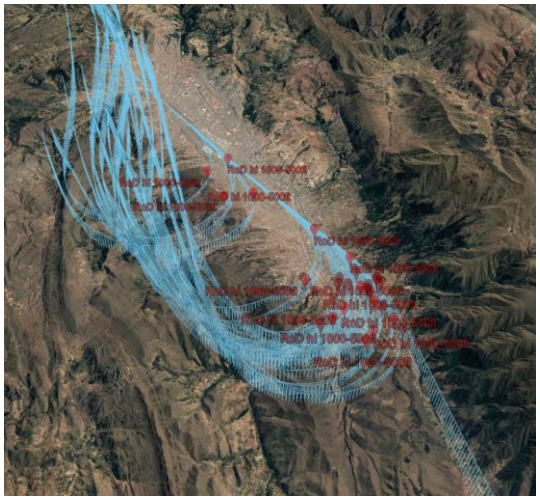


In-Depth Studies





Minimum:	-2524	-1685	-1772	-2327	-1984	-1970
Average:	-796	-777	-799	-847	-768	-834
Maximum:	-40	-585	-378	-11	-1	0
Std Dev:	76	82	102	84	65	143
Range:	2484	1100	1394	2316	1984	1970
Count:	1000's	1000's	1000's	1000's	1000's	1000's



Ground Damage Database

Accident | FDX | **GDDB** | STEADES

- GDDB main goal is to identify ground damage issues to enable the implementation of measures that will improve safety and reduce ground damage and associated costs
- Participants have access to **Quarterly Reports** and the GDDB **Interactive Interface**
- Analyses are shared with the IATA Ground Operations task forces and the IATA Safety Audit for Ground Operations (ISAGO) task force
- Membership continues to grow rapidly, driven by IOSA and ISAGO recommended practice

GDDB | How does it work?

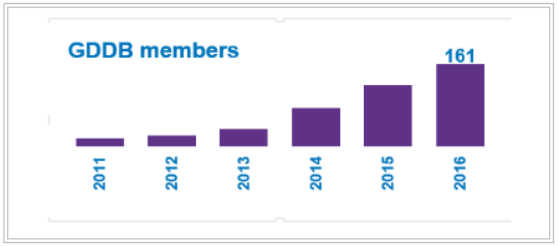
1. Reports are submitted on a quarterly basis using a template or by an automated form accessible through GDDB website
2. The “Rule of Three” is applied to ensure de-identification of collated information - there must be at least three different participants providing data for any applicable analysis to be published (i.e. Region, Airport, aircraft type, etc.).
3. Distribution is by direct download from the GDDB website

GDDB | Website

GDDB

Facilitating decisions to reduce avoidable costs

GDDB is a program that encompasses a database of Ground Damage incidents, allowing participants to compare their performance to a baseline of global ground damage information. GDDB is designed to facilitate data-driven decisions to measurably reduce aircraft ground damage. Information from the GDDB will feed existing IATA ground operations working groups and support the continuous improvement of both the Aircraft Handling Manual (AHM) and ISAGO audit program. Should you need any information, please contact us at GDDB@iata.org



Analysis Reports

Interactive Interface

GDDB Satisfaction Survey
Please take the time to provide us your feedback!

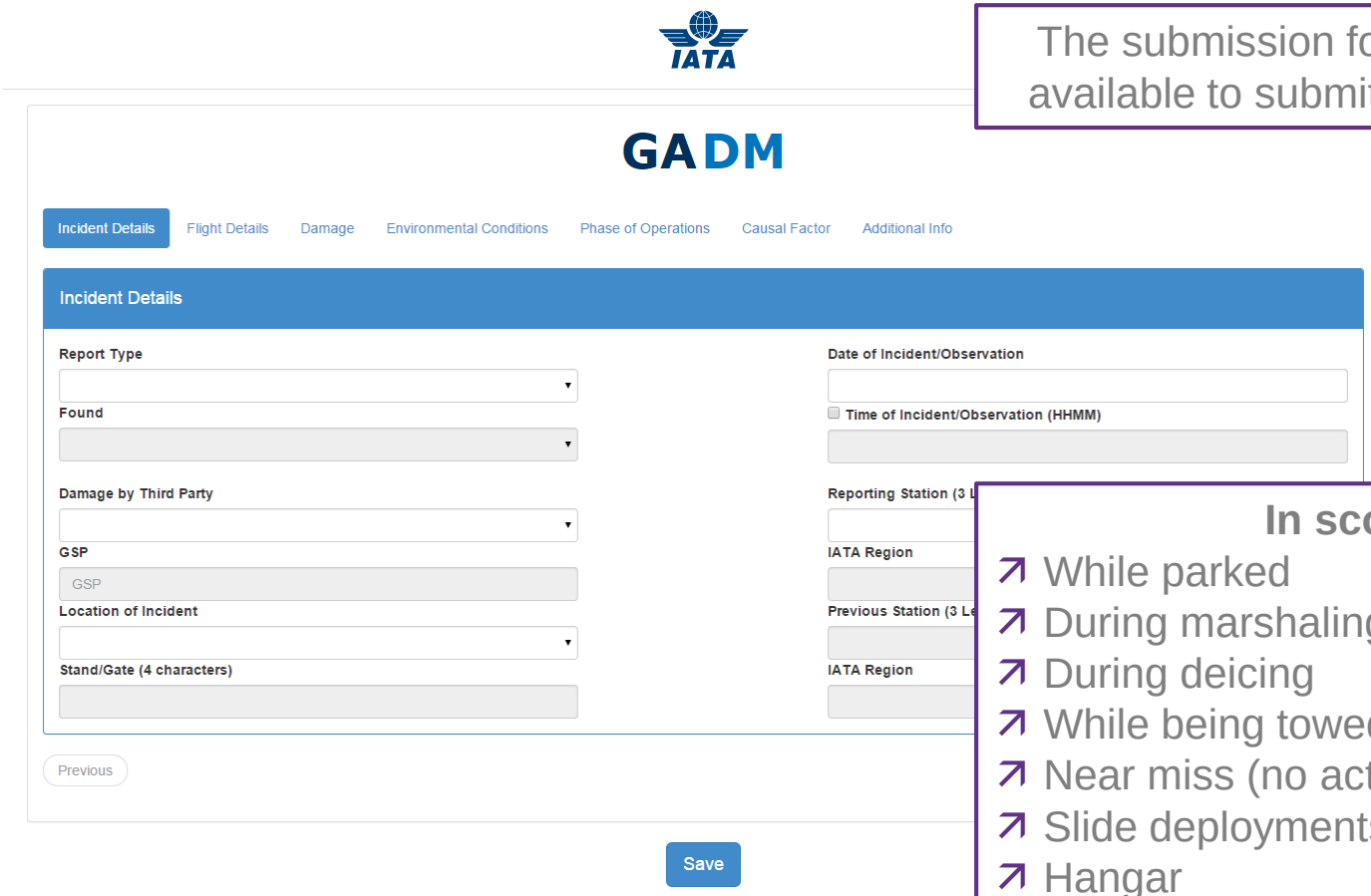
Post your testimonial
Use this link to share your experience

Analysis Topic Suggestion
Use this link to suggest a topic

Data upload | GDDB submission form | Guidelines for data upload

What's new?

GDDB | Submission Form



The submission form is one of the options available to submit ground damage reports

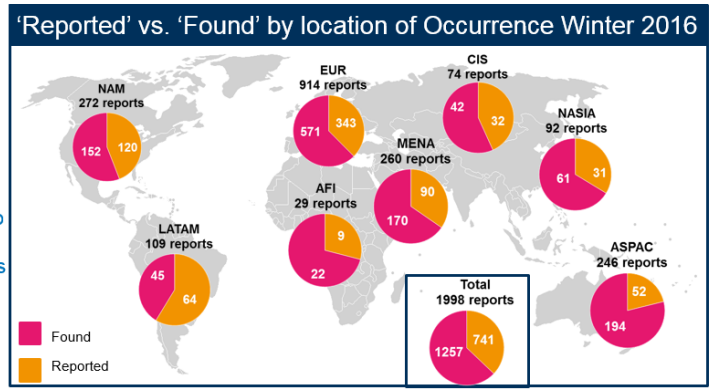
In scope events:

- While parked
- During marshaling or using stand guidance
- During deicing
- While being towed
- Near miss (no actual damage)
- Slide deployments
- Hangar

GDDB | Quarterly Reports

IATA Regions

- Europe has the highest amount of reports and a significant number are 'Found'.
- Latin America is the only region to have more 'Reported' events than 'Found'.



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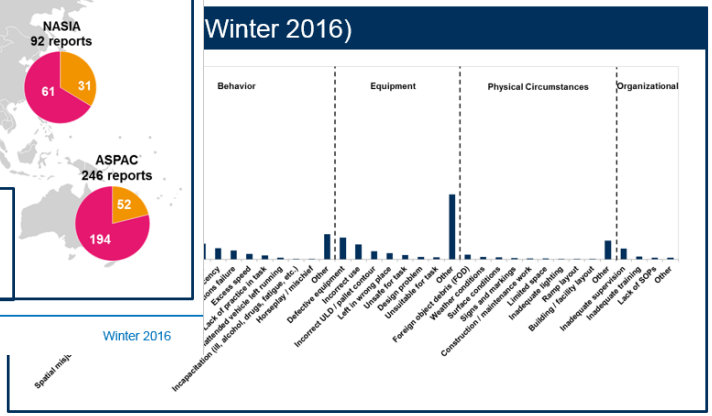
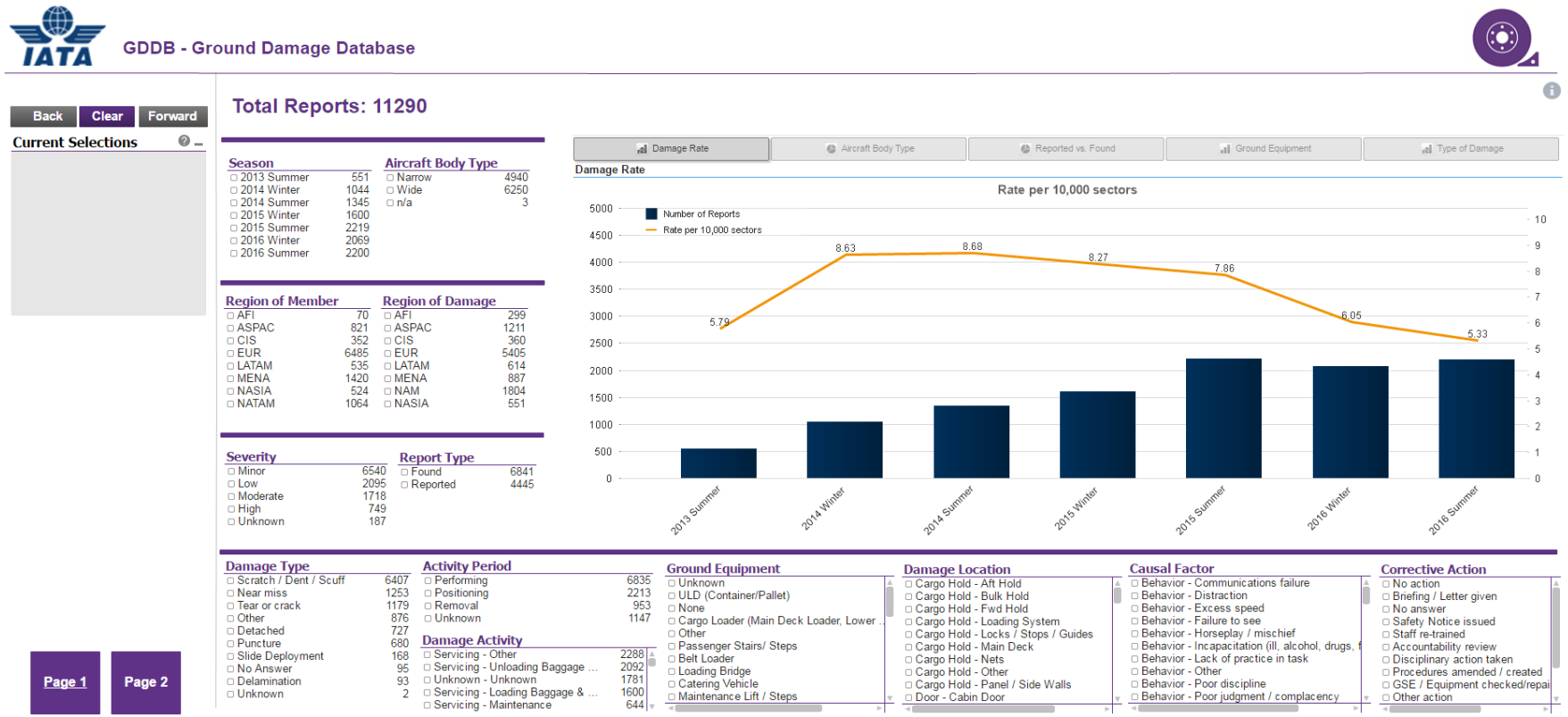


GADM
ase (GDDB)

Winter 2016
(Q4 2015 & Q1 2016) Analysis Report

GDDB Dashboard



Safety Trend Evaluation Analysis and Data Exchange System

Accident | FDX | GDDB | **STEADES**

- STEADES provides **benchmarking** rates, regular in-depth Trend **Reports**, topical analysis and access to a web **Query Tool**
- Participants use global and regional STEADES analysis to:
  - Drive airline safety committee meeting agenda
  - Compare performance against other airlines in the region or globally as part of SMS Safety Performance Monitoring
  - Discover if safety concerns are shared by other airlines
  - Query STEADES data directly to anticipate issues at airports of new routes
- STEADES analysis provides the basis to IATA's **advocacy work**, Task Forces and Working Groups in supporting the redesign of procedures and standards

STEADES | How does it work?

1. Reports are submitted on a quarterly basis
2. The “Rule of Three” is applied to ensure de-identification of collated information - there must be at least three different participants providing data for any applicable analysis to be published (i.e. Region, Airport, aircraft type, etc.).
3. Distribution is by direct download from the STEADES website

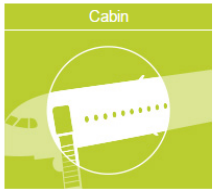
STEADES | Website

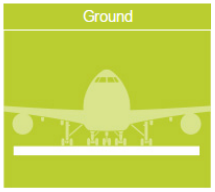
STEADES

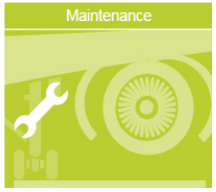
Setting the Benchmark in Global Aviation Safety Data Sharing

STEADES is a program that encompasses a database of airline incident reports, offering a secure environment for airlines to pool safety information for global benchmarking and analysis needs. Should you need any information, please contact us at STEADES@iata.org.

Reports







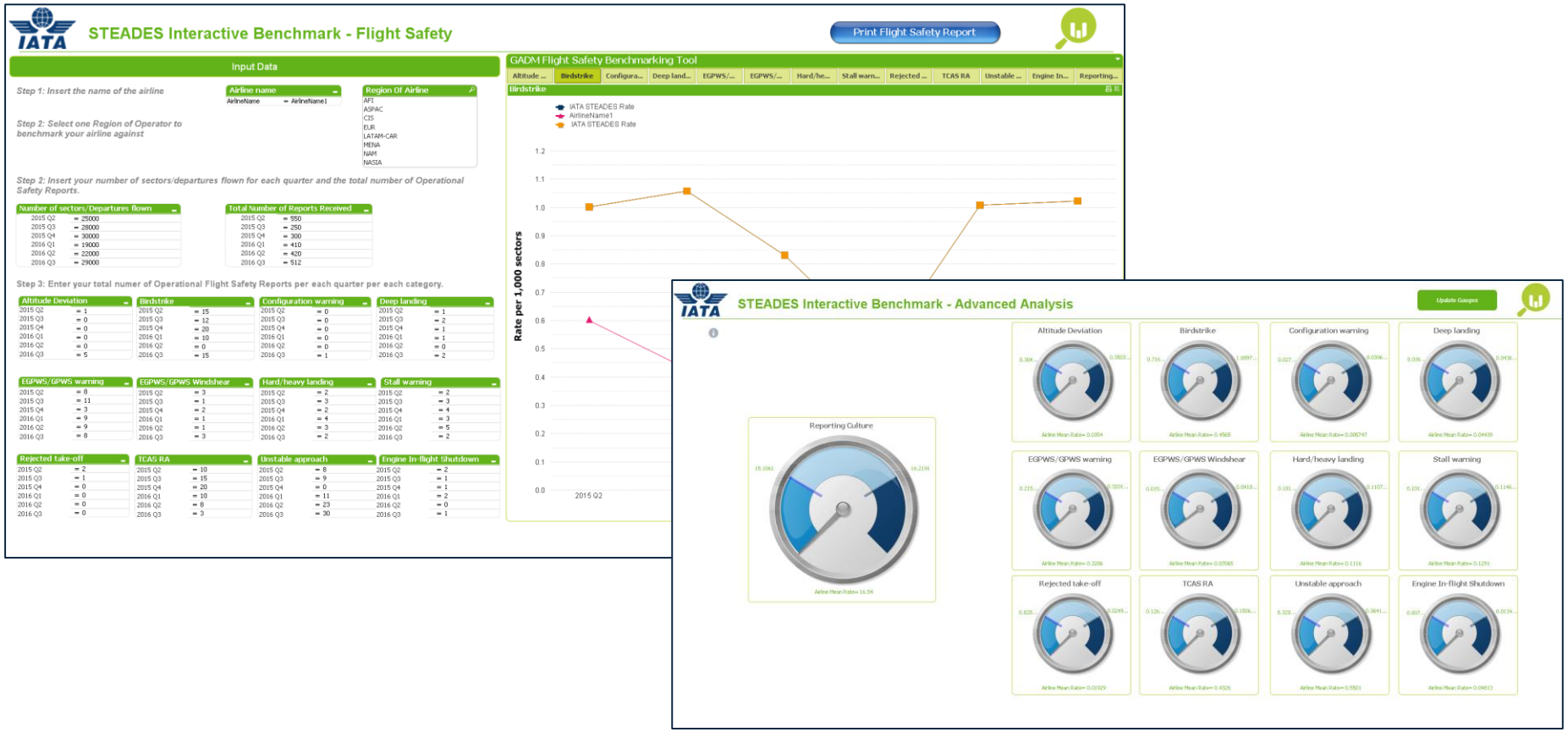
STEADES Library
Click here to access the complete list of STEADES reports

STEADES

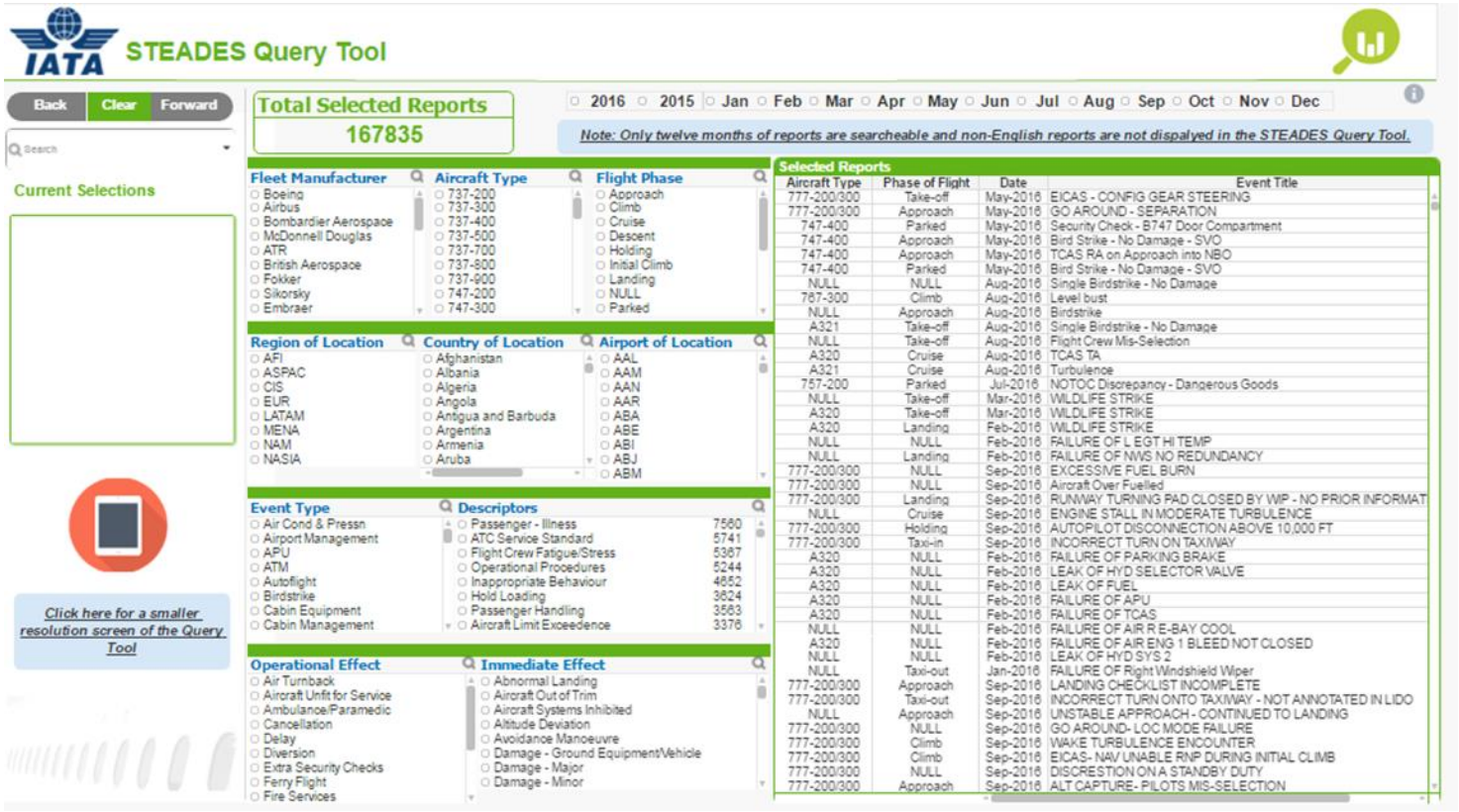
Airport Analysis

Airport Analysis uses STEADES data to provide an overview of incidents occurring at individual airports. The analysis was developed using commonly reported airport incidents and the scope of the IATA Airport Operational Visits. Please click on the links on the map below to access airport specific reports. If you'd like to request an airport analysis of an airport not already covered please click on the Airport poll link below. Should you need any information about airport analysis, please contact us at STEADES@iata.org.

STEADES Benchmarking

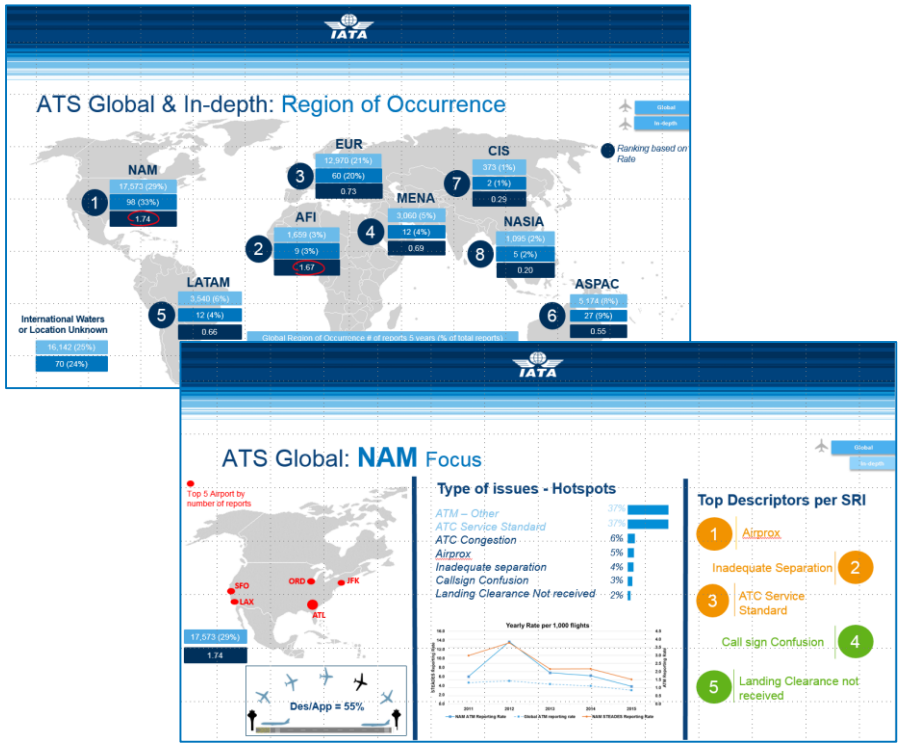


STEADES | Query Tool



STEADES | Reports

- Provide a detailed review of a specific subject to understand ‘what’ is happening and ‘why’
- The analysis gives industry direction to mitigate the issues highlighted in the report

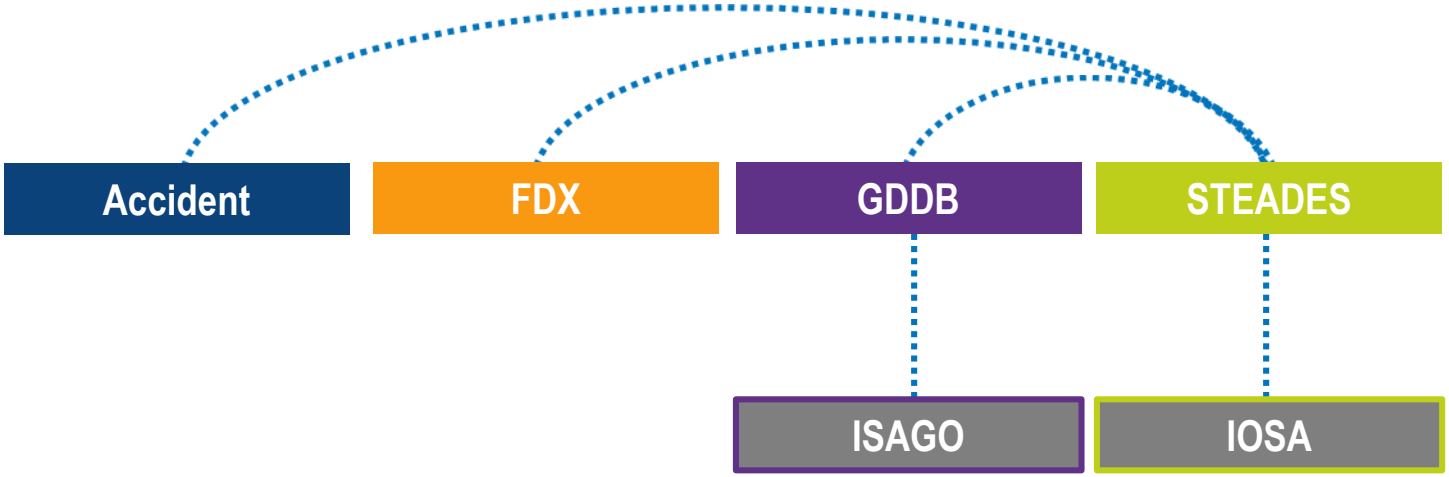


Industry Benefit

- Analysis for IATA Working Groups and Task Forces
- Supports industry initiatives
  - e.g. Runway safety initiative, Go Around Symposium Europe, ICAO MPL Symposium…
- Information sharing with numerous industry stakeholders
  - e.g. ICAO, EASA, CAST
- Feedback into audit standards and recommended practices
- Support for airline SMS programs (incident/accident analysis)

The Future

The foundations are now in place to be able to provide **cross program analysis**



Instead of looking at each program individually we can now start to review analysis from **different perspectives**


flight data
connect

How IATA's FDA Service Started

- IATA launched the FDA Service in 2006 to assist small and medium sized airlines meet the ICAO standard for flight data analysis programs
- In 2015 IATA selected Flight Data Services in the UK as a collaborative partner

flight data connect

- Unique, industry leading, flight data analysis service
- Flight Data Connect is the Flight Data Analysis (FDA) service brought to industry by IATA and Flight Data Services.
- As well as providing the best in class Flight Data Analysis service, airlines can optionally connect to the IATA Flight Data eXchange (FDX) program to see how their data compares with an FDX benchmark*.
- Mission:

To improve aviation safety by connecting the best analysis tools to more flight data across the world.

* = requires membership of the FDX Program

How does it work?

Airline

Binary flight data from the aircraft is uploaded via secure internet using a data transfer unit

Data is analyzed using POLARIS software in order to detect events and take statistical measures

Users are immediately notified when an event from a tailored list of monitored events occur

Users access the Flight Data Connect website to view events and flights

flight data connect

- No need for airline to recruit flight data expertise and purchase hardware and software
- Airlines maintain full ownership of flight data and access results anytime through the website
- Cost effective way to meet
  - The recommendations of the IATA Operational Safety Audit (IOSA)
  - The International Civil Organization (ICAO) standard
  - Meet National Aviation Authority laws in all countries (excluding non-mandated countries)
  - … and of course improve safety by identifying risks

Global Aviation Data Management

GADM@iata.org

www.iata.org/GADM