

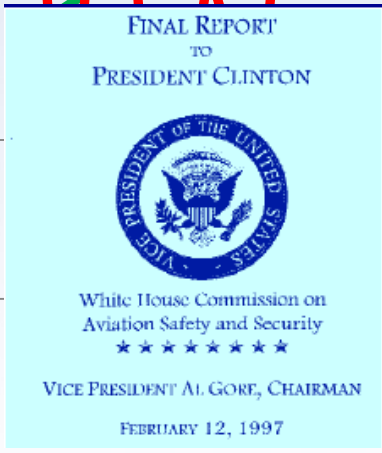
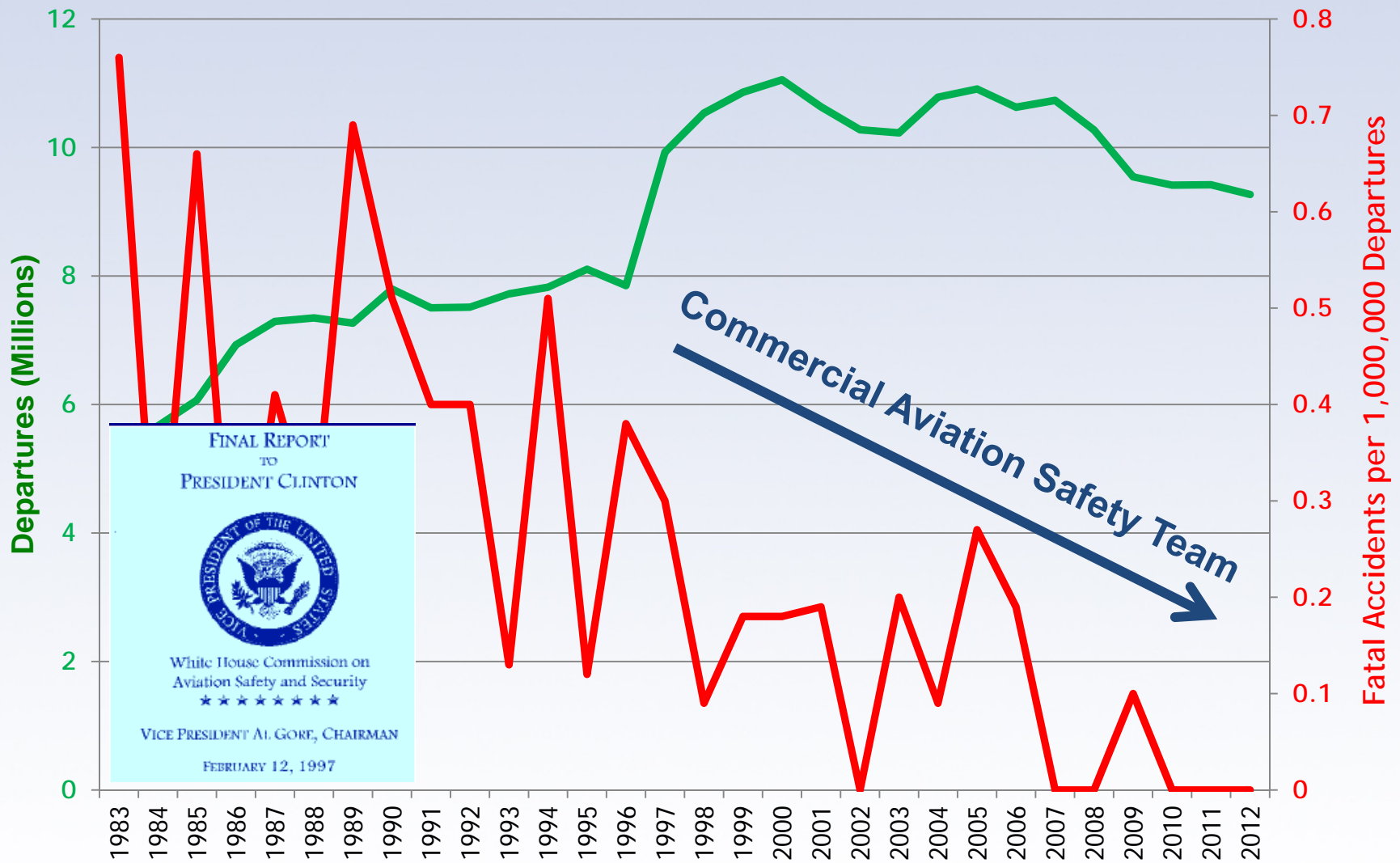
ASIAS Overview



PA-RAST Meeting
March 2016



“How can safety be improved in an environment of near-zero accident rate?”



ASIAS Is a Key Component of Continuous Improvement in Aviation Safety



A collaborative government and industry initiative on data sharing and analysis to proactively discover safety concerns before accidents or incidents occur, leading to timely mitigation and prevention

Mission of ASIAs

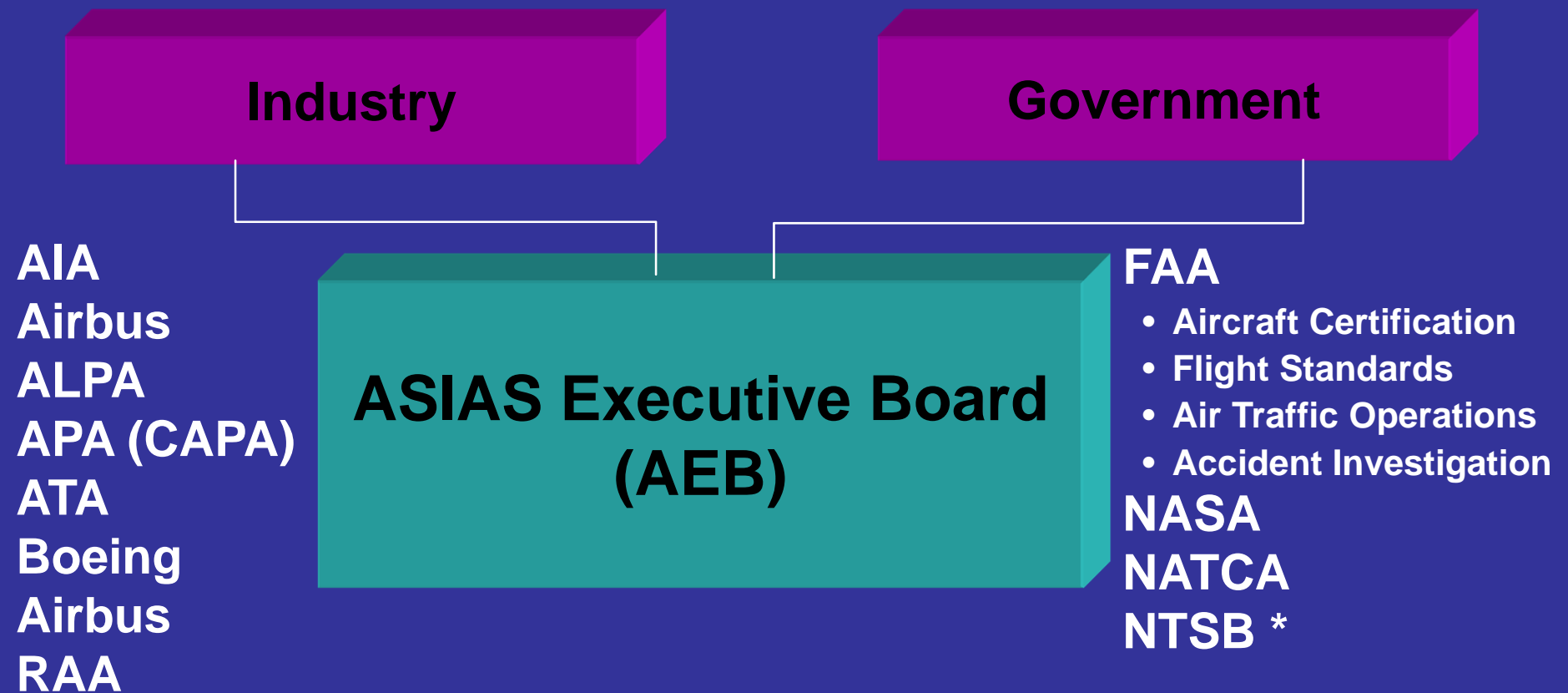
- ✈ To act as a shared resource for data acquisition, analysis, and dissemination that enables the FAA and ASIAs participants to optimize risk management
- ✈ To support NextGen with an in-depth and comprehensive perspective of operational risks that exist or could be introduced through changes in;
 - ATM procedures,
 - airspace design changes (i.e., sectors and routes),
 - area navigation (RNAV) procedures,
 - airport use, avionics, and
 - fleet mixes.

Critical Elements of a Successful Voluntary Safety Information Program

- Establish Trust and Build Confidence
- Clear Purpose – Dedicated to Safety, Non-Punitive
- Agreements Documented in “Governance”
- Transparent and Collaborative
- Act on the results ! Demonstrate value



ASIAS Executive Board brings stakeholders to cooperatively develop policy, approve studies, and reviews findings.



ASIAS moves from **REACTIVE** Analysis to **PROACTIVE** Analysis



From “What **went** wrong?”



To “What **COULD** go wrong?”

ASIAS is Governed by Formal Principles

Data used solely for advancement of safety

Endorsement of voluntary submission of safety-sensitive data

Carrier/OEM/MRO data are de-identified

Transparency – knowledge of how data are used

Procedures & policies established through collaborative governance

Analyses approved by an ASIAS Executive Board



Governance



**NON-REIMBURSABLE COOPERATIVE AGREEMENT {
BETWEEN
THE MITRE CORPORATION
AND
TBD AIRLINES
FOR
AVIATION SAFETY INFORMATION ANALYSIS AND SHARING
INITIATIVE**

1. AUTHORITY

This Cooperative Agreement (Agreement) is between [REDACTED] Airlines (hereinafter referred to as "Participant"), with a principal place of business or headquarters at [REDACTED] and The MITRE Corporation, with a principal place of business as 7515 Colshire Drive, McLean, Virginia 22102 (hereinafter referred to as "MITRE" and jointly referred to as the "Parties") for the collection of information for an information sharing initiative on behalf of the Federal Aviation Administration (FAA).

1.2 Definitions:

- 1) MITRE – The MITRE Corporation
- 2) Participant – [REDACTED] Airlines
- 3) FAA – The Federal Aviation Administration
- 4) ASIAS – Aviation Safety Information Analysis and Sharing
- 5) ASIAS EB – ASIAS Executive Board
- 6) FOQA – Flight Operational Quality Assurance data
- 7) ASAP – Aviation Safety Action Program
- 8) De-identified Data – Data which has been de-identified such that neither a crew, crew member, any employee, or airline can be identified
- 9) ASIAS P&O Plan – ASIAS Procedures and Operations Plan
- 10) Premises – As designated by the Participant to be either located at the Participant's site, a third party vendor's site, and/or MITRE's site.

2. PURPOSE

This Agreement shall be for the purpose of collecting information to enable MITRE in the development, demonstration, and analysis within the Aviation Safety Information Analysis and Sharing (ASIAS) Program. This Agreement defines the terms and conditions between the Parties whereby MITRE will be permitted to access de-identified FOQA data (referred to herein as "digital flight data") as result of ASIAS EB approved queries and/or de-identified ASAP reports (referred to herein as "safety reports") as a result of ASIAS EB approved queries for the purpose of aggregating these data for research topics requested by the ASIAS EB. The ASIAS EB is composed of key aviation stakeholders including the FAA, airline, and union representatives. This effort is more generally defined in Exhibit A, with the specific responsibilities of the Parties further defined below.

ASIAS Members

45 Air Carriers

ABX Air	Mesa Airlines
Aerodynamics, Inc.	Miami Air Intl.
Air Transport Intl.	Mountain Air Cargo
Air Wisconsin Airlines	National Airlines
Alaska Airlines	Northern Air Cargo
Allegiant Air	Omni Air Intl.
Aloha Air Cargo	Piedmont Airlines
American Airlines	Polar Air Cargo
Atlas Air	PSA Airlines
Cape Air	Republic Airlines
CommutAir	Shuttle America
Compass Airlines	Silver Airways
Delta Air Lines	SkyWest Airlines
Empire Airlines	Southern Air
Endeavor Air	Southwest Airlines
Envoy Air	Spirit Airlines
ExpressJet	Sun Country Airlines
FedEx Express	Trans States Airlines
Frontier Airlines	United Airlines
GoJet Airlines	United Parcel Service
Hawaiian Airlines	Virgin America
Horizon Air	
JetBlue Airways	
Kalitta Air	

2 Maintenance, Repair and Overhaul

AAR Aircraft Services
HAECO Americas (was TIMCO—Triad International Maintenance Corporation)

5 Government

AMC—Air Mobility Command
FAA
NASA
Naval Air Force Atlantic
USAF Safety Center

20 General Aviation*

1 Academia

University of North Dakota

11 Industry

A4A—Airlines for America
AIA—Aerospace Industries Association
Airbus
ALPA—Air Line Pilots Association
APA—Allied Pilots Association representing Coalition of Airline Pilots Associations (CAPA)
Boeing
NACA—National Air Carrier Association
NATCA—National Air Traffic Controllers Association
RAA—Regional Airline Association
SAPA—SkyWest Airlines Pilot Association
SWAPA—Southwest Airlines Pilots' Association

*Newest Member

As of 24 February 2016

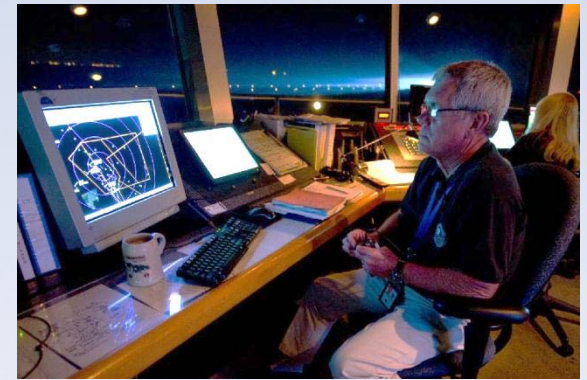
Example Aviation Datasets



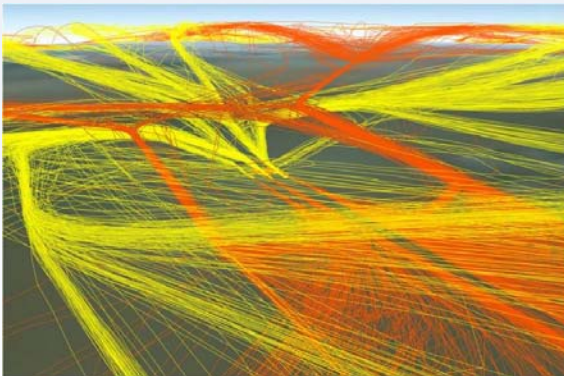
Airline Safety Reports



Aircraft Data



ATC Safety Reports



Radar



Weather



Infrastructure

Data Sources Supporting ASIAs Studies

Proprietary Data

- Aviation Safety Action Program (ASAP)
 - Pilot
 - Mechanic
 - Cabin
- Flight Operations Quality Assurance (FOQA)
- Air Traffic Safety Action Program (ATSAP)
- Manufacturers data
- Avionics data

ATC Information



- Traffic Management Reroutes and Delays
- Airport Configuration and Operations
- Sector and Route Structure
- Procedures
- Surveillance Data for En Route, Terminal and Airport
- NOTAMs

Safety Data



- FAA Accident/Incident Data System
- FAA Service Difficulty Reports
- Aviation Safety Reporting System (ASRS)
- Runway Incursion
- Surface Incident
- Operational Errors/Operational Deviation
- Pilot Deviation
- Vehicle or Pedestrian Deviation
- National Transportation Safety Board
- ICAO safety reports

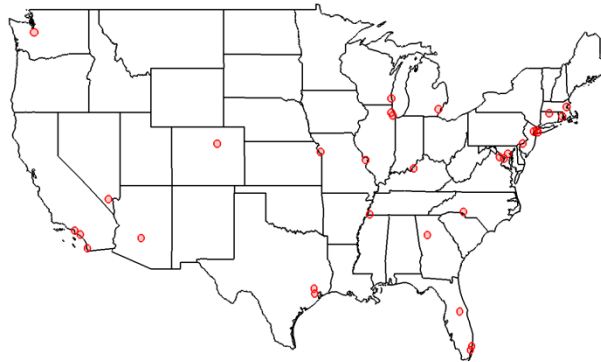
Other Information



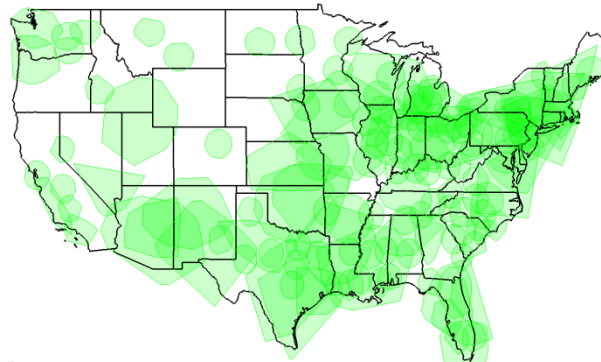
- Bureau of Transportation Statistics
- Weather / Winds
- Terrain and Obstacle Data

NAS-wide database of flights

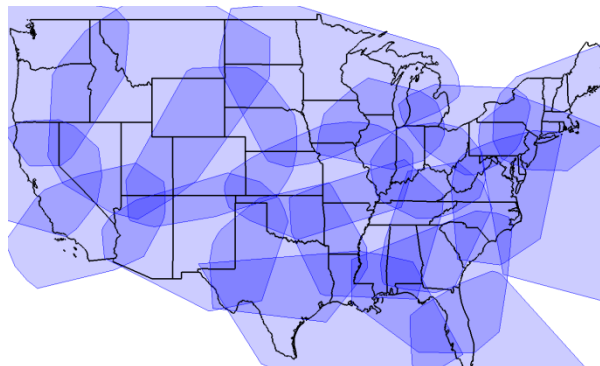
35 ASDE-X airports



147 NOP Tracons



20 NOP Centers



Daily feeds from a wide range of ASDE-X and NOP facilities provides the input to the threaded track

Each flight may be tracked by up to 10 facilities simultaneously

Studies

Directed Studies

Vulnerability Discovery

Safety Enhancement
Assessment

Benchmarks



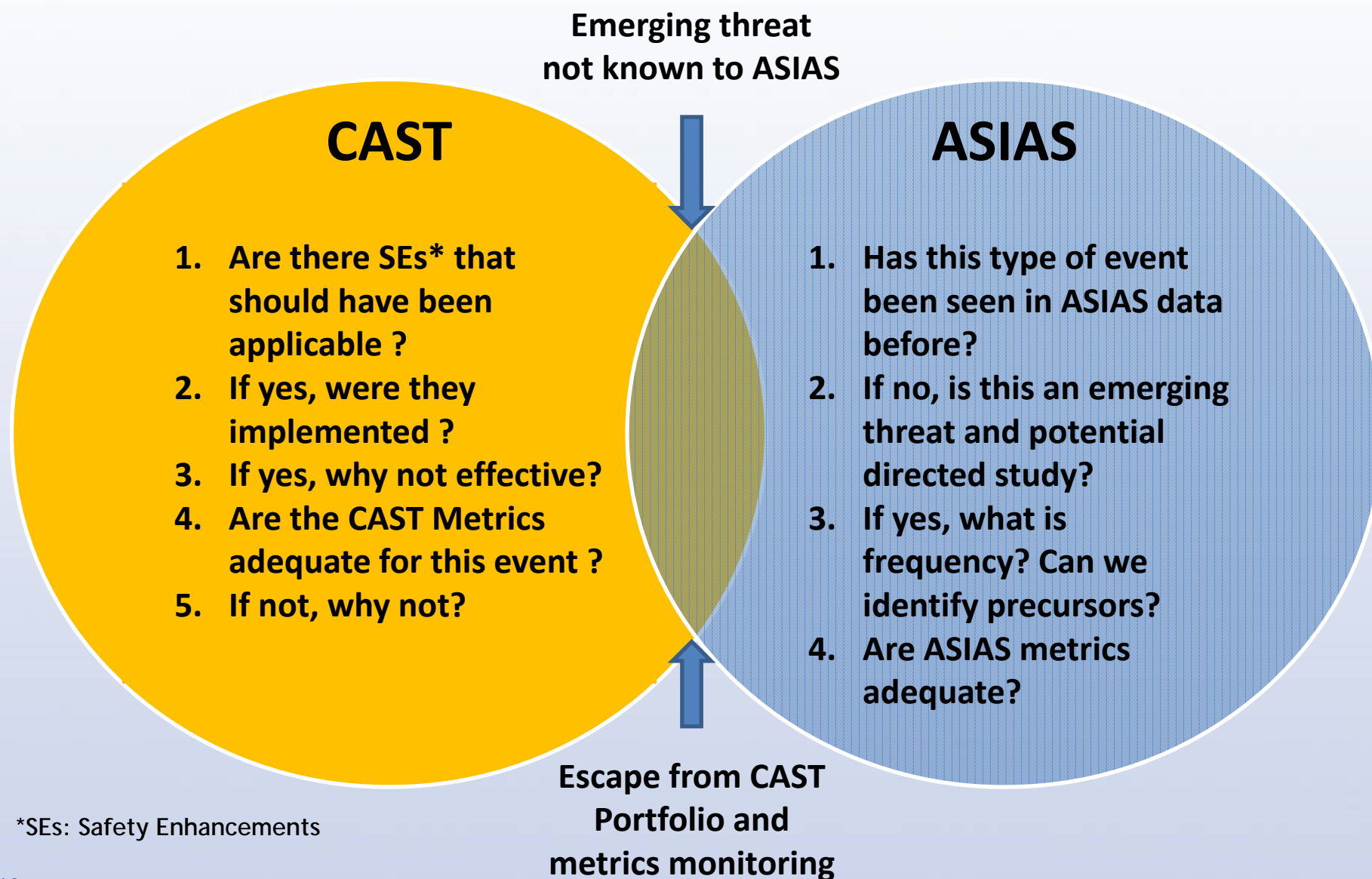
CAST and ASIAs Work Together Continuously Improve Aviation Safety



- CAST and ASIAs identify new vulnerabilities or problems with existing mitigations
- CAST develops data-driven Safety Enhancements, leveraging ASIAs information
- CAST monitors status of implementation of Safety Enhancements by government and industry
- ASIAs generates metrics for CAST to monitor effectiveness of Safety Enhancements



ASIAS /CAST Questions



*SEs: Safety Enhancements



RASG-PA/CAST Partnership

- RASG-PA and CAST entered in an agreement to exchange safety information in December 2011.
- RASG-PA forged a working relationship with CAST to leverage CAST's safety portfolio to adapt and deploy safety mitigations.
- Recent “data-sharing” home runs have been enabled by the information exchange RASG–PA developed with CAST and IATA.
 - By leveraging the information, RASG-PA was able to monitor unstable approaches at select airports within the region and evaluate the effectiveness of deployed mitigations.
 - The unstable approach rate at these airports has been reduced by about 50 percent in the last 4 years.
 - The data sharing also identified TCAS-RA hot spots that RASG-PA is actively addressing. The data has also helped improve airspace design in order to de-conflict airspace around airports.