



# Atuação Internacional da ANAC no RASG-PA (Regional Aviation Safety Group – Pan America)

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SRI – Superintendência de Relações Internacionais

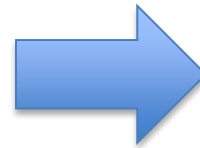
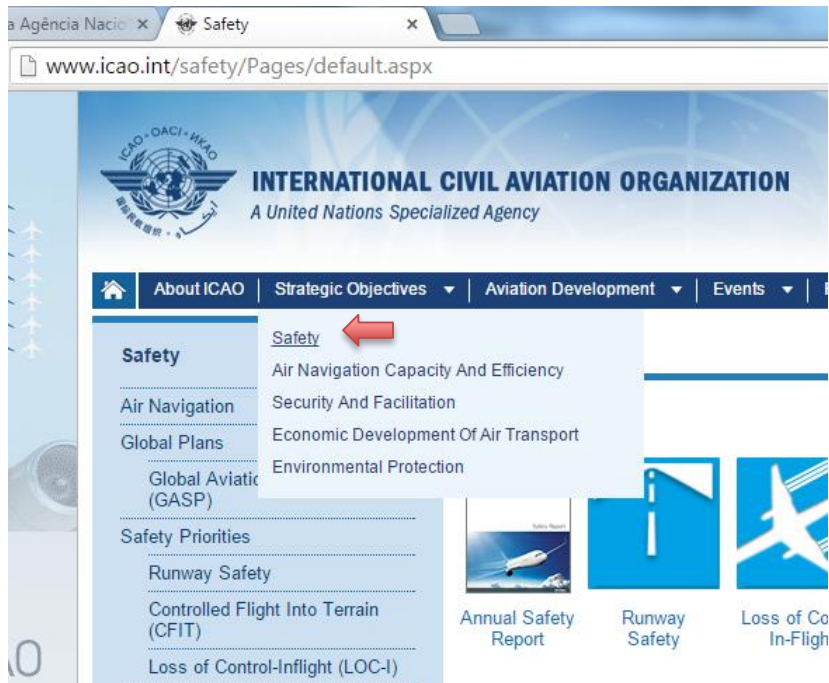
Brasília, 23 de março de 2016

- **Objetivo:**

Informar as superintendências da ANAC sobre a atuação da Agência no Grupo Regional Panamericano da Segurança Operacional da Aviação Civil (RASG-PA), e suas implicações práticas para a melhoria da segurança operacional da aviação brasileira.

## Tópicos:

- Global Aviation Safety Plan (GASP)
- RASG-PA (o que é, objetivos)
- BCAST (o que é, interface com RASG-PA)
- Produtos Atuais da Participação da ANAC



<http://www.icao.int/publications/Pages/Publication.aspx?docnum=10004>

## GASP:


- Política de alto nível, documento direcionado aos Estados-membros para o planejamento e a implementação de ações voltadas à manutenção e a melhoria proativa da **segurança operacional**, diante de um cenário de crescimento das operações aéreas (domésticas e internacionais):
  - Duplicação do tráfego aéreo global nos próximos 15 anos;
  - Necessidade de gerenciamento criterioso frente a esta expansão de capacidade (regulação e infraestrutura).

## Como o GASP auxilia os Estados:

- Definindo **objetivos** para a segurança operacional, incluindo milestones e prioridades para as equipes de planejamento dos Estados.
- Fornecendo uma **matriz (framework)** para implementação de melhorias seguindo os *Safety Performance Enablers*: **Padronização, Colaboração, Recursos e Compartilhamento das Informações** de Segurança.
- Fornecendo **estratégias** de implementação e guia de **melhores práticas** para a convergência das soluções locais aos objetivos e prioridades globais.



## Safety Performance Enablers:

- Padronização
- Colaboração 
- Recursos
- Compartilhamento IS

Salvaguardas quanto ao uso impróprio das informações de segurança operacional. Brasil: Emenda ao CBA, Lei 12.970/14

“Como parte integral do GASP, os RASGs harmonizam todas as atividades em curso para mitigação de riscos de segurança operacional a nível regional, utilizando uma abordagem “top-down”, em complemento à abordagem dos Estados e da Indústria. Os RASGs dão assistência aos Estados e são um canal formal de reporte, que permite à ICAO monitorar a implementação mundial do GASP.”

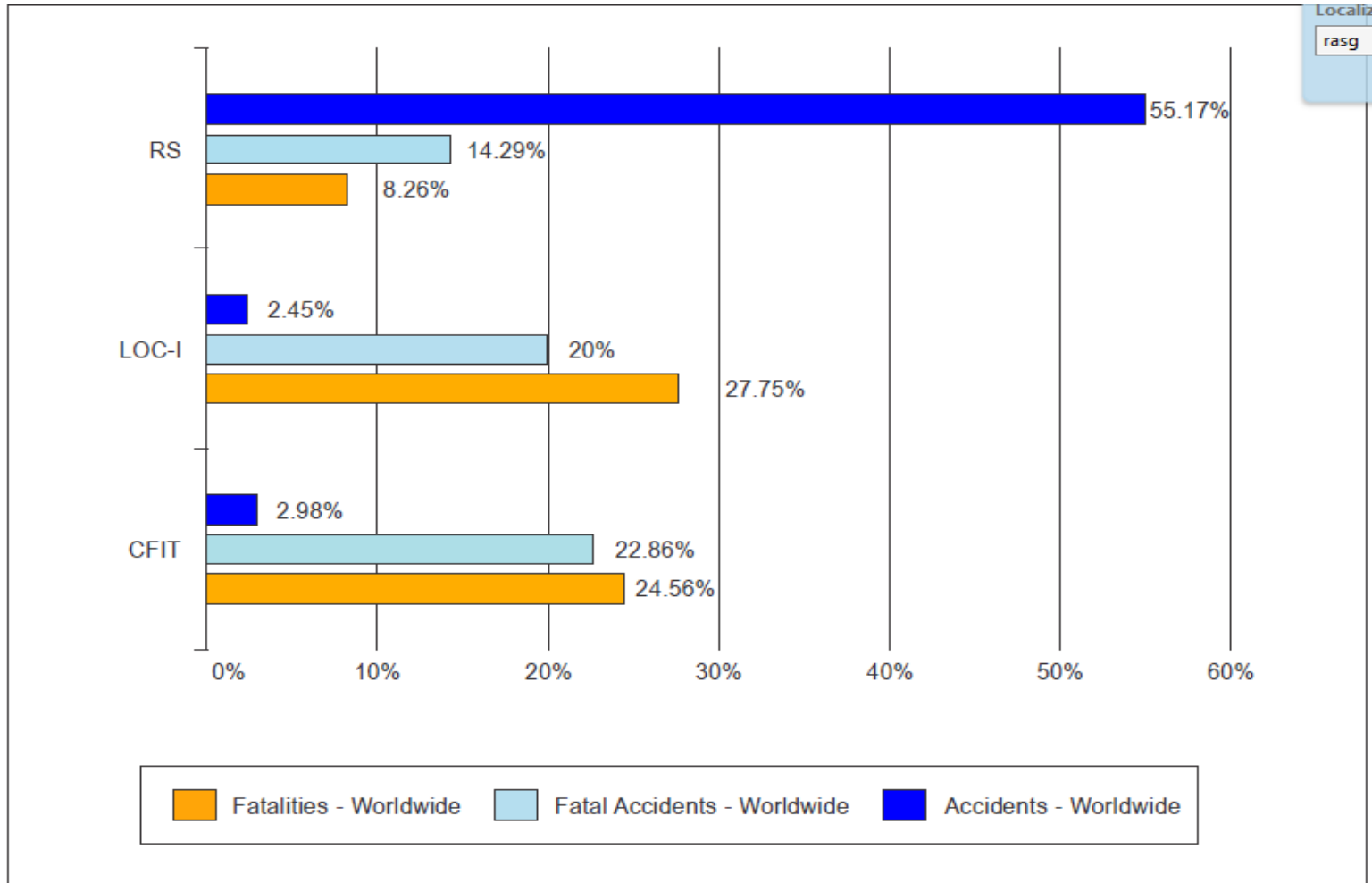


Figure 3-1. High-risk accident categories worldwide (2010–2014)





## Missão

- Melhorar a segurança e a eficiência operacional na região Pan Americana

## Visão

- Envolver todos os stakeholders em um esforço coordenado

- Características:

**First in the World (2008)**

**Multi-regional**

**States/Territories, Intl' Organizations & Industry**

**Adopted in other ICAO Regions**

**Aligned with GASP**

**Data-driven Results Oriented**

- Composição:

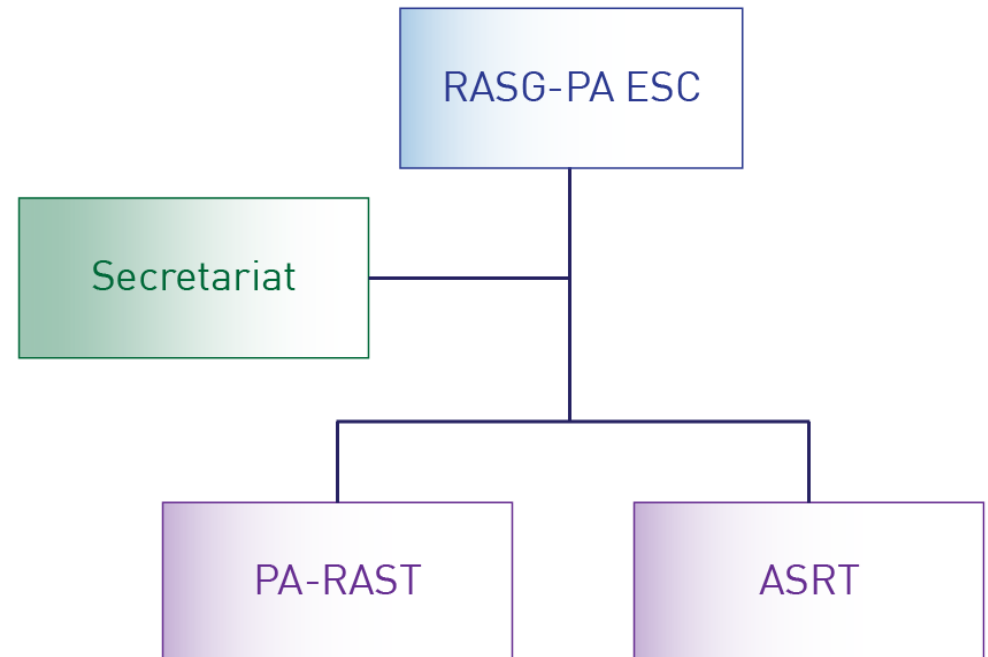
## 34 NAM/CAR/SAM States, 19 Territories and...



- Organograma do RASG-PA


# RASG-PA

## RASG-PA Organizational Chart Organigrama del RASG-PA 2016




- ESC: Executive Steering Committee / Comité Directivo Ejecutivo
- PA-RAST: Pan-America Regional Aviation Safety Team / Equipo Regional de Seguridad Operacional de la Aviación Panaméric
- ASRT: Aviation Safety Report Team / Equipo del Informe de Seguridad Operacional


- RASG-PA utiliza dados/informações de segurança de diferentes fontes:



**Fatal Accidents by CAST/ICAO Taxonomy Accident**  
Pan American\* Airline Domicile – 2000 thro

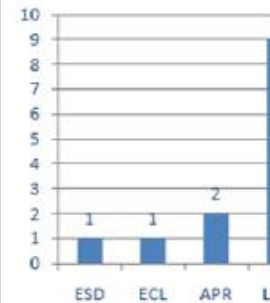
Accident Type	2000	2001	2002	2003	2004	2005	2006
CFIT	1	1	1	1	1	1	1
LOC-I	1	1	1	1	1	1	1
Loss of Control	1	1	1	1	1	1	1
Loss of Control - Terrain	1	1	1	1	1	1	1
Loss of Control - Water	1	1	1	1	1	1	1
Loss of Control - Obstacle	1	1	1	1	1	1	1
Loss of Control - Loss of Direction	1	1	1	1	1	1	1
Loss of Control - Loss of Control	1	1	1	1	1	1	1
Loss of Control - Loss of Control - Loss of Direction	1	1	1	1	1	1	1
Loss of Control - Loss of Control - Loss of Direction - Loss of Control	1	1	1	1	1	1	1



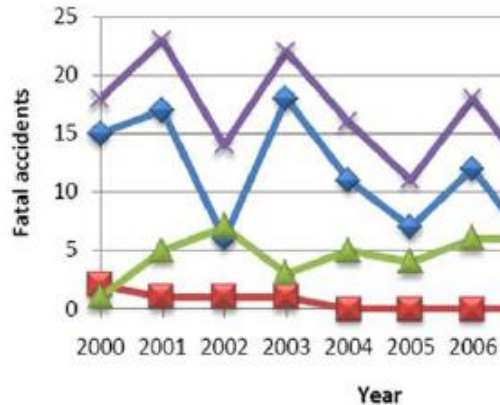


North America		IATA Members		
14 Accidents (2009)		Hull Losses		
		Fatal		
Passenger	Cargo	Ferry	Jet	Turboprop
64%	36%	0%	100%	0%

**Accidents per Phase of**



**Fatal Accidents Distribu**



**ASIAS Member**

**44 Airlines**

- ABX Air
- Air Wisconsin Airlines
- Alaska Airlines
- Aloha Air Cargo
- American Airlines
- American Eagle Airlines
- Atlas Air
- Cape Air
- Chautauqua Airlines
- CitationAir
- CommutAir
- Compass Airlines
- Delta Air Lines
- Empire Airlines
- Evergreen International Airlines
- ExpressJet
- FedEx Express
- Frontier Airlines
- Gojet Airlines
- Hawaiian Airlines
- \*Horizon Air
- JetBlue Airways
- Mesa Airlines
- Miami Air International
- North American Airlines
- Omni Air International
- Piedmont Airlines
- Pinnacle Airlines
- Polar Air Cargo
- PSA Airlines
- Republic Airlines
- Shuttle America
- Silver Airways
- SkyWest Airlines
- Southern Air
- Southwest Airlines
- Spirit Airlines

**Government**

- FAA, NASA,
- Naval Air Force Atlantic,
- USAF Safety Center

**Industry**

- AIA, Airbus, ALPA,
- A4A, Boeing, CAPA, NACA,
- NATCA, RAA, SWAPA

\*Newest Member      As of 14 February 2013

- RASG-PA utiliza diferentes tipos de dados/informações de segurança:





- Processo do RASG-PA:



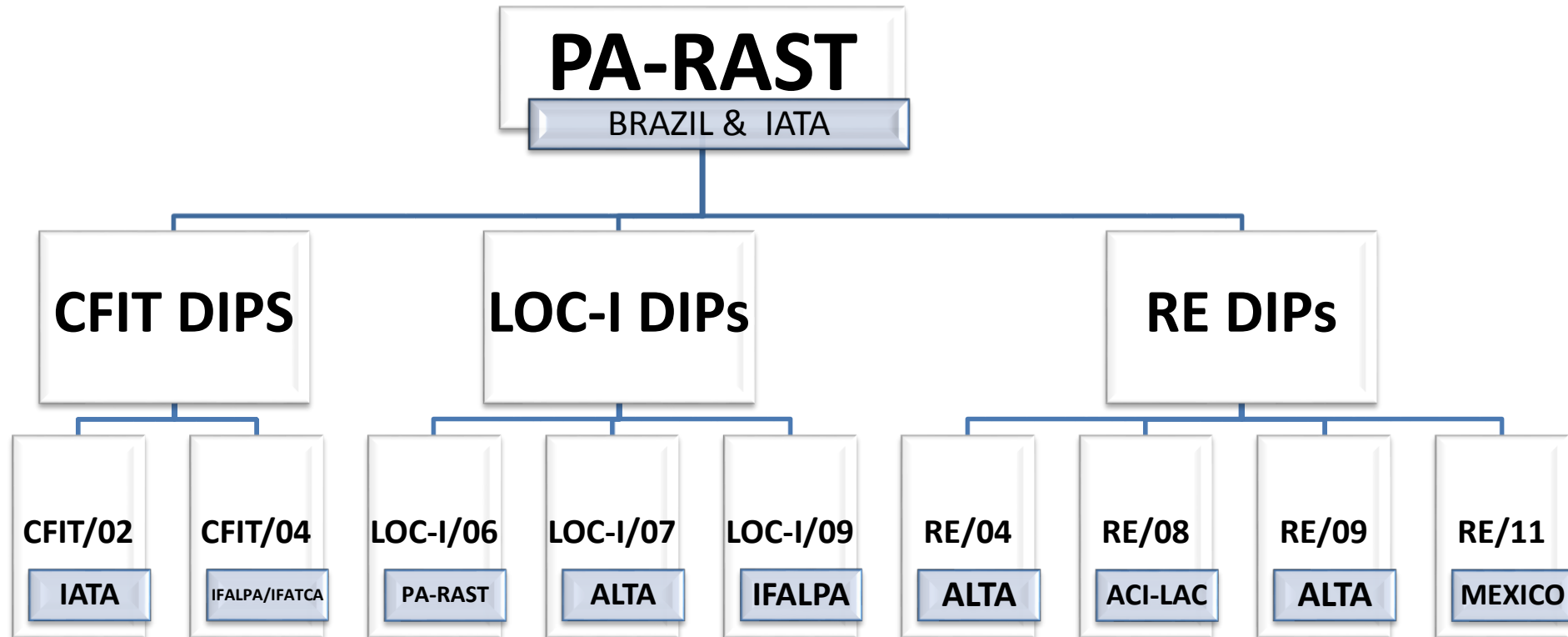


- O RASG-PA desenvolve iniciativas de segurança (SEIs) focadas nas principais áreas de risco:



- Cada SEI tem um plano de implementação associado e seus outputs.

# Pan America - Regional Aviation Safety Team



## All DIPs completed

- Objetivo RASG-PA:

*“Considerando 2010 como referência, reduzir o risco de fatalidades para operações 121 ou equivalentes em 50% até o ano 2020 (**América Latina e Caribe**).”*

## Análise de Risco/Situação Atual

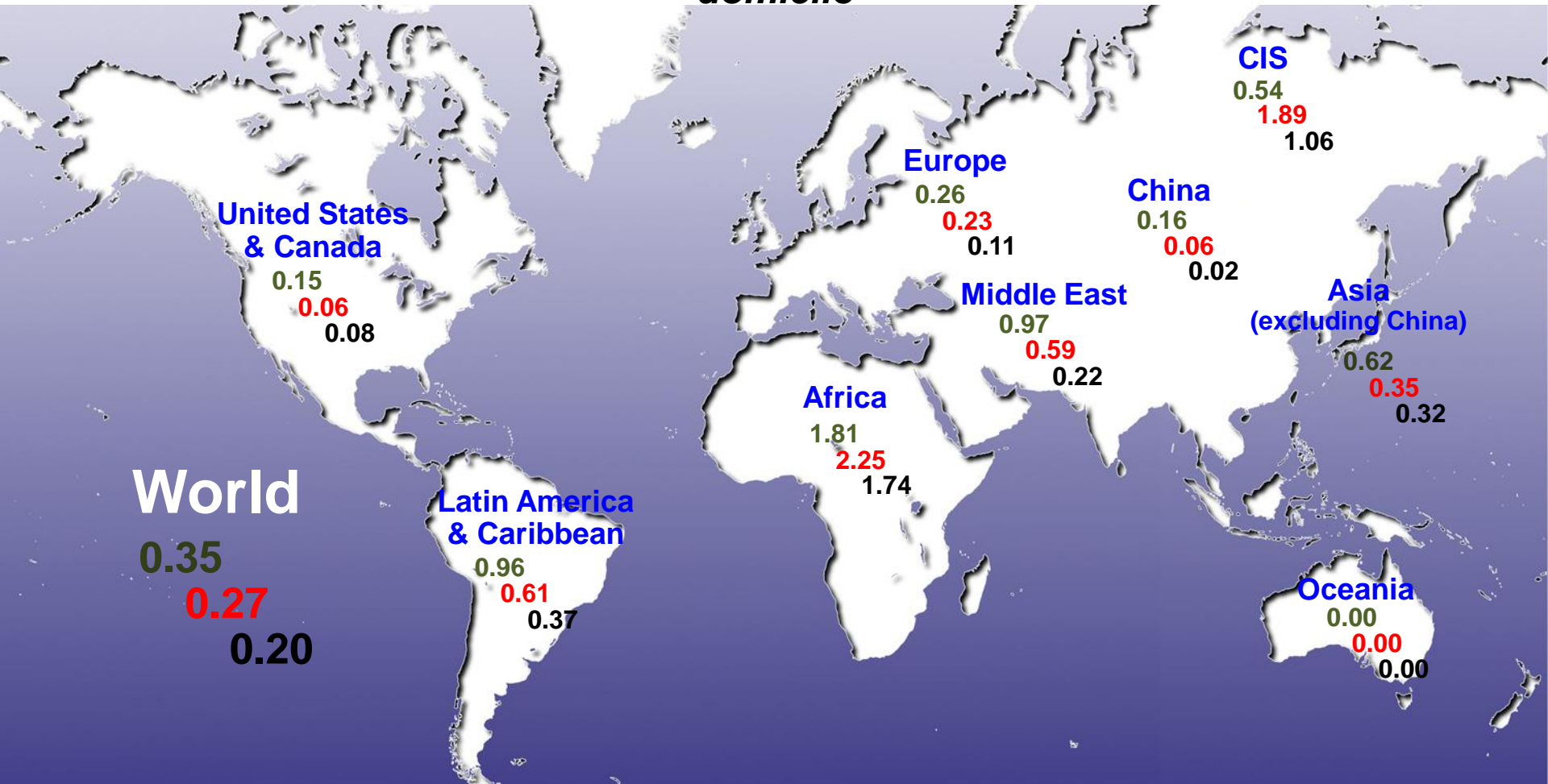
- **RASG-PA Goal: 50% fatality risk reduction (2010 – 2020)**
- **Fatality risk: full loss passenger load equivalent per million departures**
- **Baseline: 5 year average fatality risk in 2010 = 0.6**
- **2020 Goal = 0.3**
- **Calculated risk reduction due to SEIs implemented in the period 2009-2013 = 25%**
- **Calculated Risk through 2014 = 0.39, actual = 0.37**

# Fatality Risk\* of Commercial Jet Air Travel by Region of the World (10-year rolling average)



2004  
2009  
2014

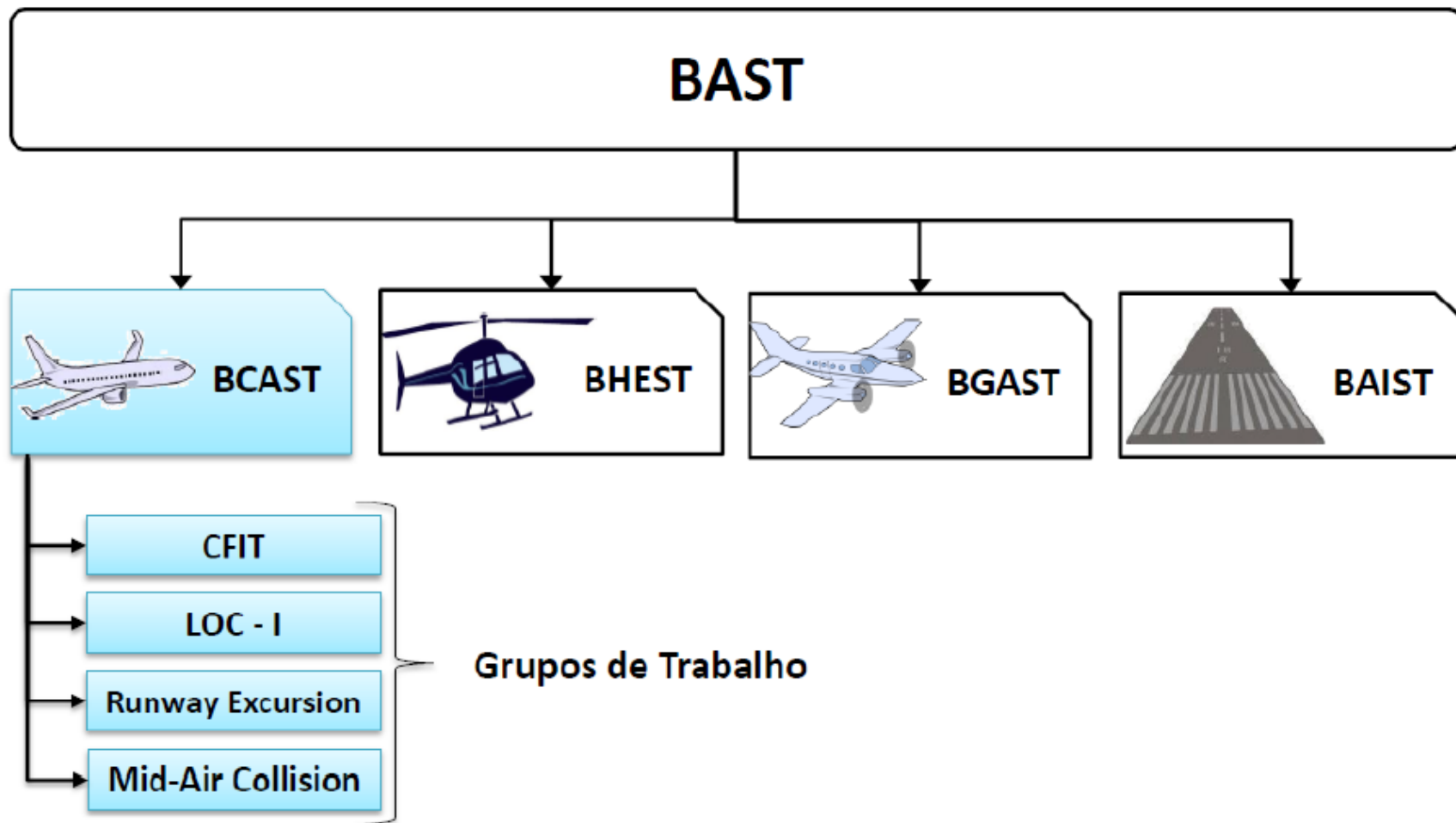
Western-built jet transports >60,000-pounds *onboard fatal* accidents, by *airline domicile*



\* Fatality Risk – Full passenger load loss equivalents per million departures



- Estrutura:





- Grupos de Trabalho e Coordenadores:



- Letter of Agreement ANAC/IATA (19/11/2013):

*Objetivo:*

*- prover informações relevantes, coletadas através do sistema FDX (Flight Data Exchange), em suporte ao BAST na implementação de Iniciativas de Melhoria de Segurança de Voo no Brasil (**Safety Enhancement Initiatives - SEI**).*

↔ Princípios acordados:

↔ **Informações de-identificadas.**

↔ Aeroportos com no mínimo 3 operadores (**“Rule of 3”**).

↔ Análises referentes apenas à região geográfica do Brasil.

↔ BAST e IATA se comprometem ao sigilo das análises.

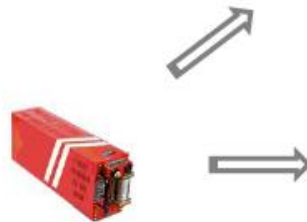
↔ BAST compromete-se a informar o status das SEI.

↔ Suporte provido pelo escritório local da IATA (SAO).

- Flight Data Exchange (FDX):

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

Data is processed by the airline or its service provider (internal FOQA – IATA doesn't get any of that information)



Data is sent to IATA where it gets processed using a common set of events covering:

- Unstable approaches
- GPWS
- Tailwind on landing
- TCAS
- Hard landing
- Rejected Takeoff
- Go Around



## Produtos da participação da ANAC no RASG-PA:

- Liderança do Task Force e revisão do Plano Estratégico e do Plano de Comunicação do RASG-PA
- Coordenação das reuniões do PA-RAST e inclusão do posicionamento técnico brasileiro
- Divulgação do trabalho do BCAST na região PA
- Incorporação de dois novos stakeholders no BCAST: Boeing e Airbus
- Obtenção de informações técnicas junto ao CAST (EUA), que contribuem para o desenvolvimento de novas iniciativas brasileiras (p.ex. “Cost-Benefit criteria”, Safety Enhancements)

## Produtos da participação da ANAC no RASG-PA (cont):

- Participação no SET de Loss Of Control In Flight (LOC-I), e desenvolvimento de novos DIPs na área
- Monitoramento das discussões nos demais SETs (RE, CFIT e MAC) e contínua atualização do BCAST, para desenvolvimento das iniciativas nacionais de Safety
- Retroalimentação do PA-RAST com as propostas desenvolvidas pelo GT de MAC do BCAST
- Aprovação de proposta de nova metodologia de trabalho aos SETs do PA-RAST, contendo a abordagem reativa para as atividades de mitigação. A partir de agora, a informação de relatórios de investigação passa a ser considerada no desenvolvimento de novos DIPs.

# BACKUP SLIDES

**web portal**





BCAST

EVENT NAME	TRIGGER
Excessive Glideslope Deviation - Above (1000 – 500 ft)	> 1 dot between 1,000 and 500ft AGL
Excessive Glideslope Deviation - Above (Below 500 ft)	> 1 dot between 500 and 200ft AGL
Excessive Glideslope Deviation - Below (1000 – 500 ft)	< -1 dot between 1,000 and 500ft AGL
Excessive Glideslope Deviation - Below (Below 500 ft)	< -1 dot between 500 and 200ft AGL
Excessive Localizer Deviation (1000 – 500 ft)	> 1 dot between 1,000 and 500ft AGL
Excessive Localizer Deviation (Below 500 ft)	> 1 dot between 500 and 200ft AGL
High Rate of Descent (1000 – 500 ft)	RoD > 1200 ft/min between 1,000 and 500ft AGL
High Rate of Descent Below 500 ft	RoD > 1200 ft/min between 1,000 and 0ft AGL
Late Flap Configuration (1000 – 500 ft)	Landing flap selected between 1,000 and 500ft AGL
Late Flap Configuration (Below 500 ft)	Landing flap selected between 500 and 0ft AGL
Late Gear Configuration (1000 – 500 ft)	Landing gear selected between 1,000 and 500ft AGL
Late Gear Configuration (Below 500 ft)	Landing gear selected between 500 and 0ft AGL
Low Power on Approach (1000 - 500)	Low power between 1,000 and 500ft AGL
Low Power On Approach Below 500 ft	Low power between 500 and 0ft AGL
High Speed on Approach (1000 - 500)	Vref Deviation > 20kt between 1,000 and 500ft AGL
High Speed on Approach Below 500 ft	Vref Deviation > 20kt between 500 and 0ft AGL
Low Speed on Approach (1000 - 500)	Vref Deviation < -5kt between 1,000 and 500ft AGL
Low Speed on Approach Below 500 ft	Vref Deviation < -5kt between 500 and 0ft AGL
Excessive Tailwind on Landing	Tail Wind > 10kt
Go Around	Go Around executed below 3,000ft / 1,000 and 500ft
Hard Landing	Vertical Acceleration > 1.8g
Rejected Takeoff	RTO executed > 60kt
TCAS RA	TCAS RA when available in data frame
TCAS TA	TCAS TA when available in data frame
GPWS	All GPWS modes when available in data frame

### Summary

Total of 209228 flights  
Total of 335958 hours of flight

▼ Maps

Select Event Type  
Unstable Approach

Select Event  
Unstable Approach - All

De-identification Filter

Select Date Range  
Dec/00 Jun/12

Show Events

Zoom to IATA Region

Road Aerial

- ▶ Reports
- ▶ Animations

Legend

- Over 25 events/100 flights
- 10 - 25 events/100 flights
- 1 - 10 events/100 flights



The web portal shows data against a world map background which in this example is showing airports with unstable approaches.

The user can only see airports with at least 3 airlines flying into them.



### Summary

Total of 209226 flights

Total of 335958 hours of flight

### Maps

Select Event Type

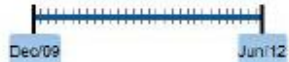
Unstable Approach

Select Event

Unstable Approach - All

De-identification Filter

Select Date Range



Show Events

Zoom to IATA Region



Road

Aerial

> Reports

> Animations

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# Each balloon represents an airport



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Select Event Type

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Show Events

Zoom to IATA Region



Road


Aerial

> Reports

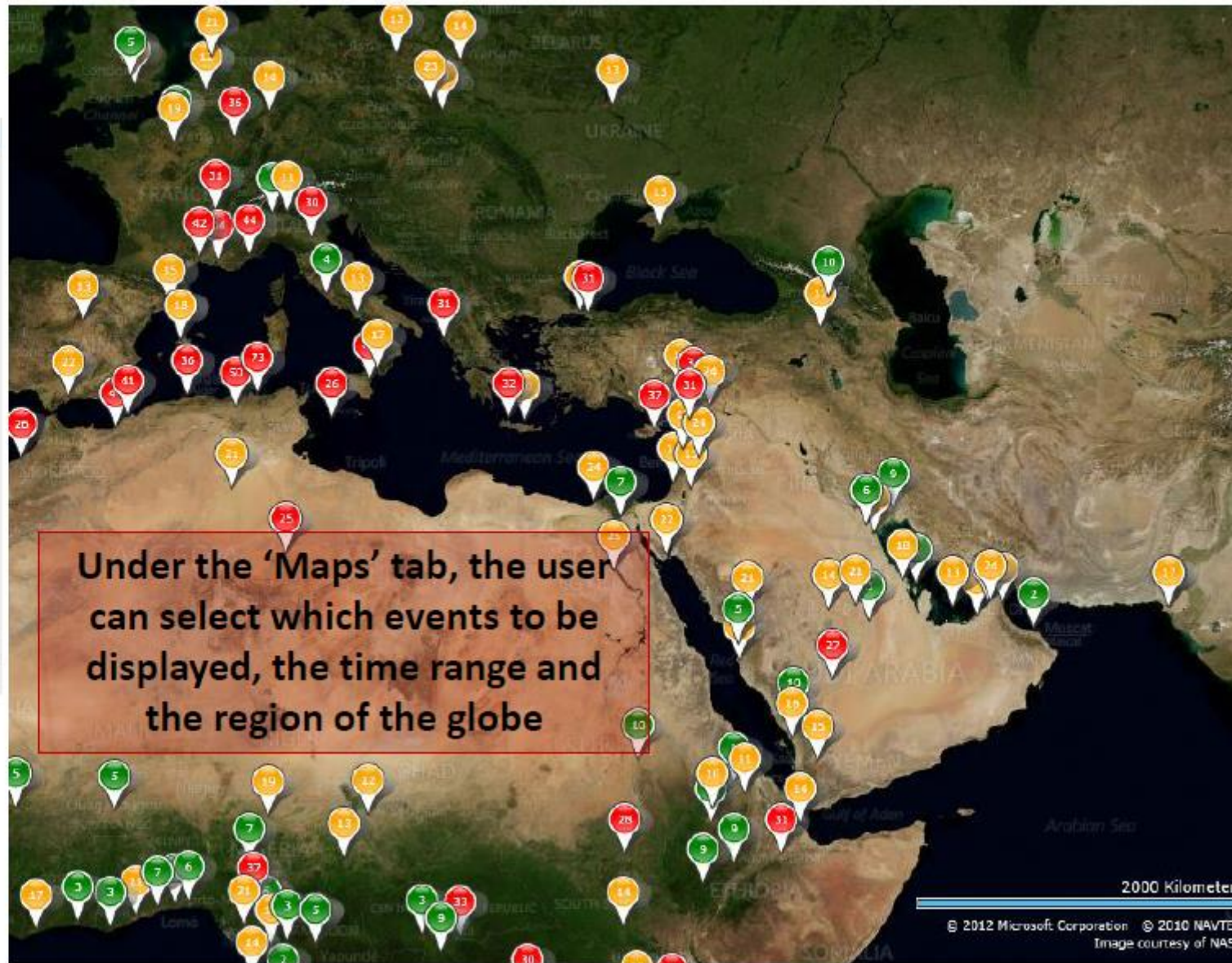
> Animations

### Legend

 Over 25 events/100 flights

 10 - 25 events/100 flights

 1 - 10 events/100 flights





### Summary

Total of 208582 flights

Total of 334464 hours of flight

### Maps

Select Event Type

GPWS Scatter Plot

Select Event

GPWS All

De-identification Filter

Select Date Range



Show Events

Zoom to IATA Region

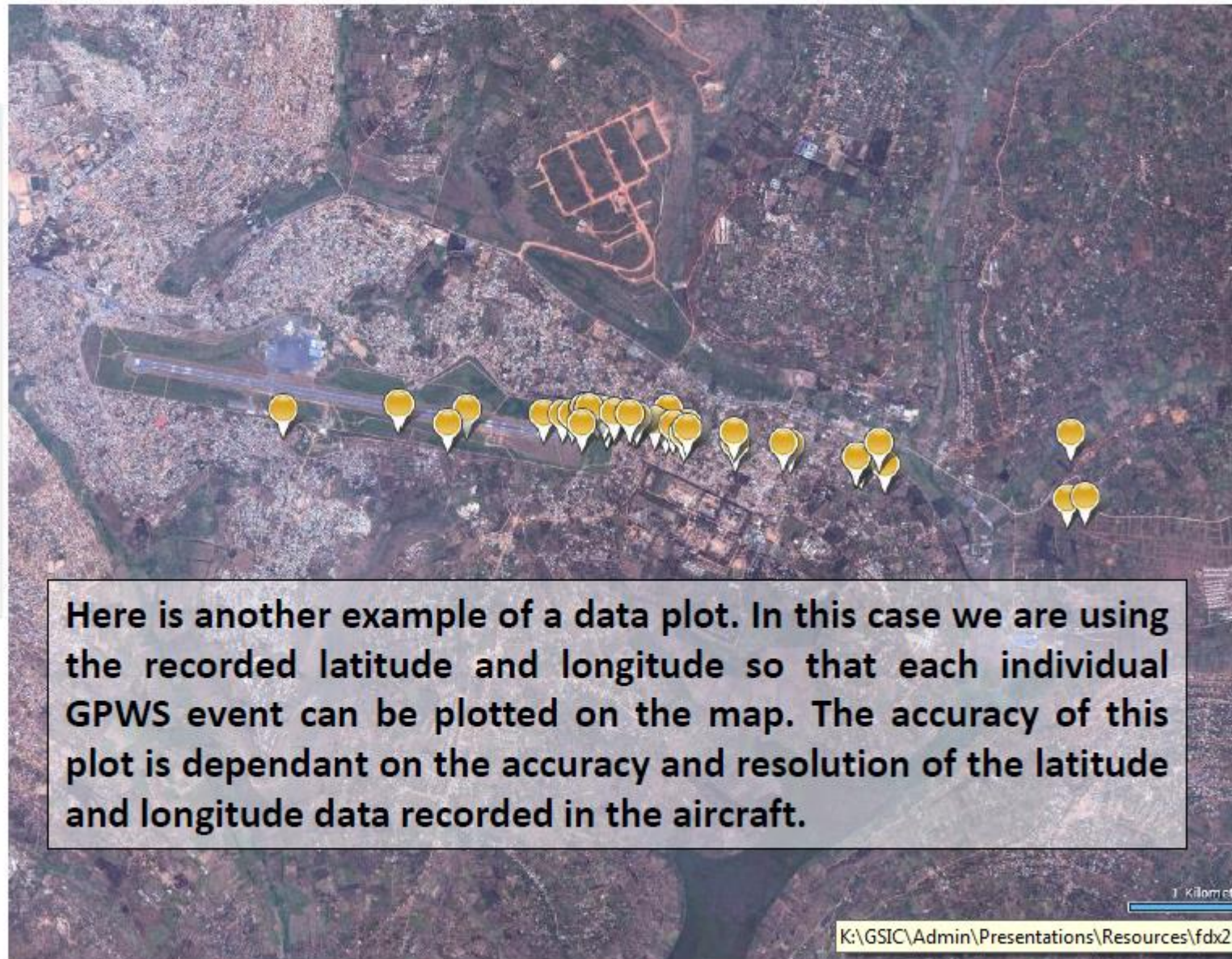


Road

Aerial

> Reports

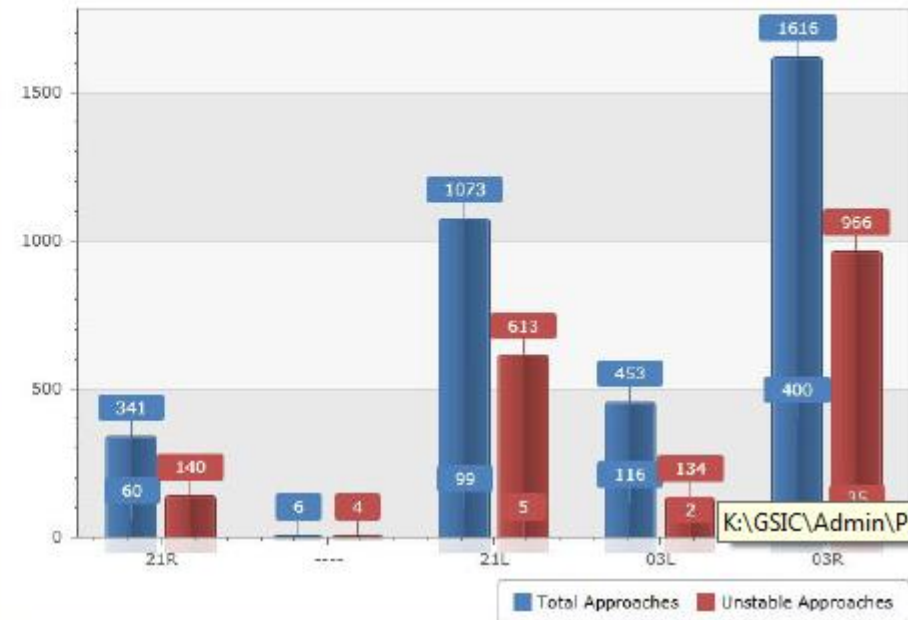
> Animations



**Here is another example of a data plot. In this case we are using the recorded latitude and longitude so that each individual GPWS event can be plotted on the map. The accuracy of this plot is dependant on the accuracy and resolution of the latitude and longitude data recorded in the aircraft.**



### JOHANNESBURG INTL (JNB)



**FDX can support airline's case for implementation of better approach procedures.**

**Example: The IATA Africa office is working with the South African authority for the implementation of CDA procedures into JNB.**

**Summary**  
 Total of 208582 flights  
 Total of 334464 hours of flight

Maps

Select Event Type  
 Unstable Approach

Select Event  
 Unstable Approach - All

De-identification Filter

Select Date Range  
 Dec/08 - Mar/12

Show Events

Zoom to IATA Region

Road | Aerial

- > Reports
- > Animations

Legend

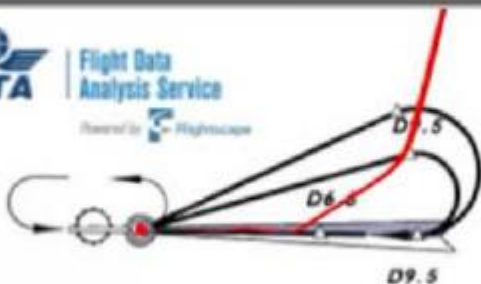
- Over 25 events/100 flights
- 10 - 25 events/100 flights
- 1 - 10 events/100 flights





Animation

FROM ABOUT 300 FT AGL (0.6 DME) A SERIES OF GPWS WARNINGS OCCUR DUE TO EXCESSIVE RATE OF DESCENT AND LOW FLAP CONFIGURATION NEAR TO THE GROUND. SPEED IS STILL 60 KT ABOVE VREF. THE SPOILES ARE RETRACTED AT ABOUT 240FT AGL AND FULL FLAP IS SELECTED.



VREF DEV: 54 KT (VREF: 124 KT) SEL SPD: 152 kt  
VSI: -820 FT/MIN  
DME: 0.4  
HAA: 199 FT (AGL)

RECORDED TIME: 112873



Included in FDX is a Global Animation Archive, where animations will be created during the course of the program. Contributing airlines can share and use these animations for training and safety awareness.

Data is always de-identified.



About GSIC FDX

Total of 208592

Total of 334484

- Maps
- Reports
- Animations

B738 Deep L

B738 Deep L

B733 Deep L

B738 Deep L

B738 Deep L

B733 Deep L

Legend

Over 25

10 - 25

1 - 10