

“Recomendações de investigações e melhorias de projeto”

HELIBRAS – AIRBUS HELICOPTERS

Antonio Modesto – Aviation Safety Manager
December 2015

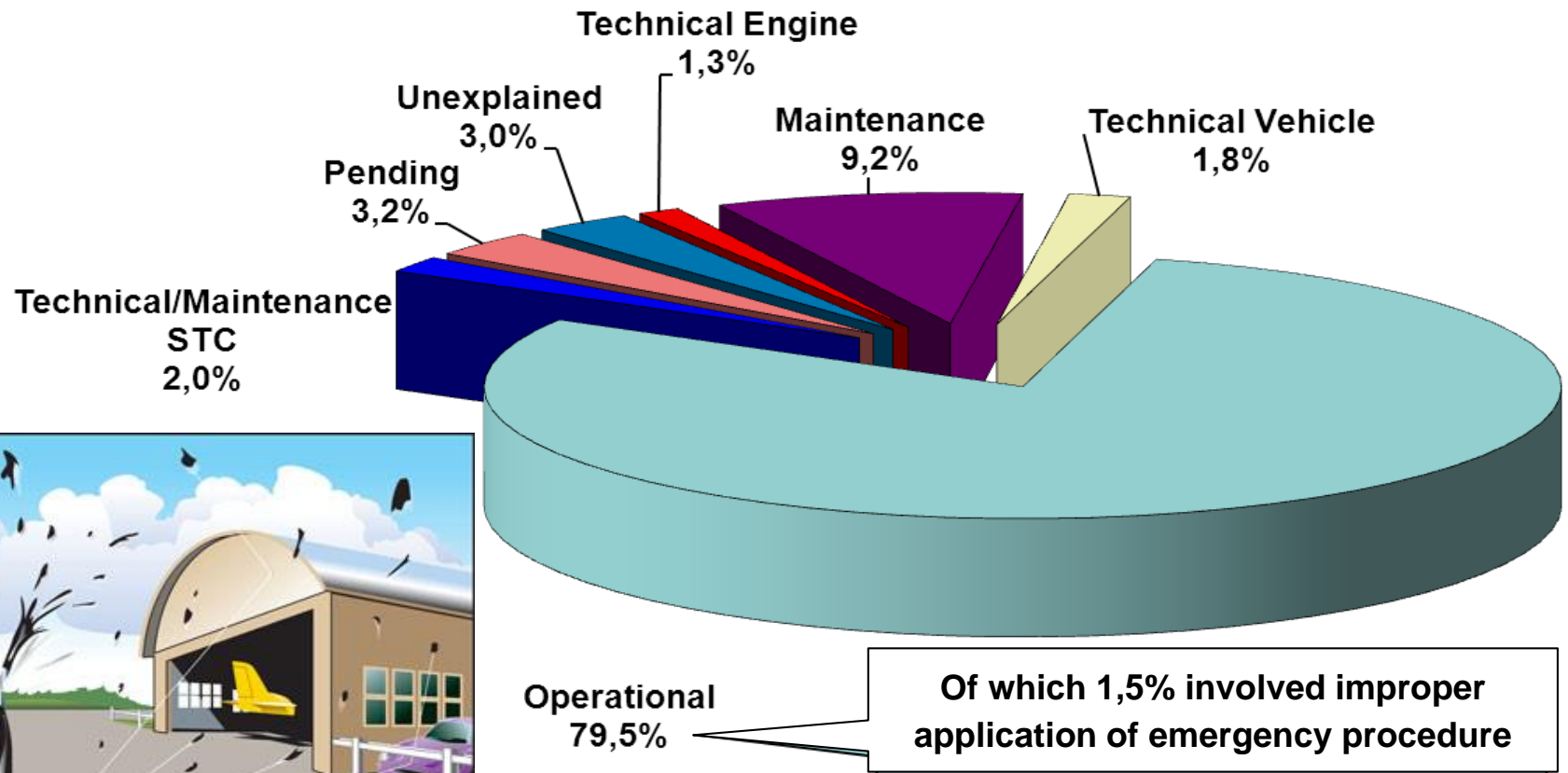
AGENDA

- Causas / Causes
- Modelo Reativo / Reactive Model
- Aeronavegabilidade Continuada / Continued Airworthiness
- Processo de Investigação / Investigation Process
- Melhoria Continua / Continuous Improvement



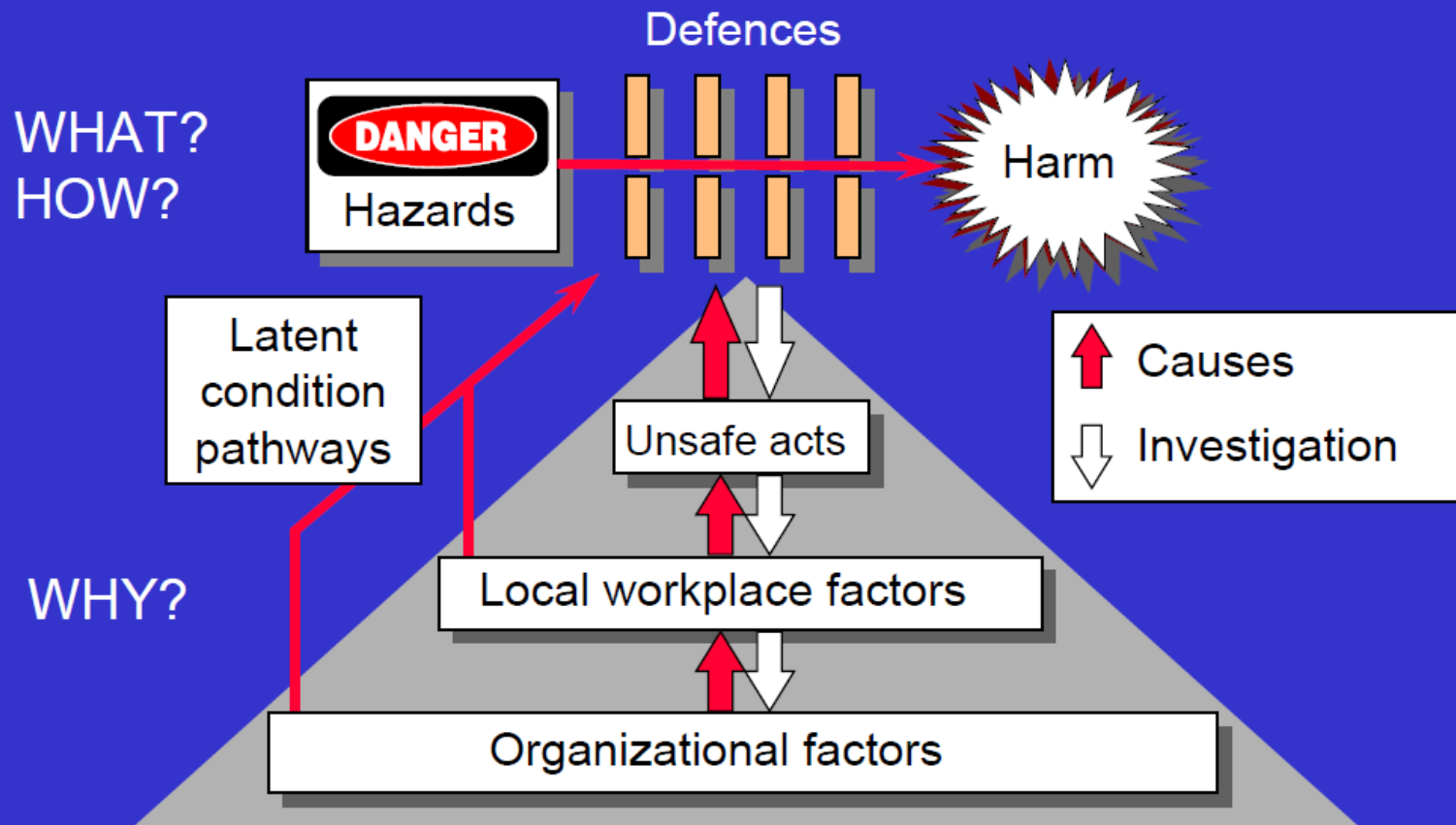
Accident causes

Airbus Helicopters 2004-2013
Worldwide fleet; 10 year period

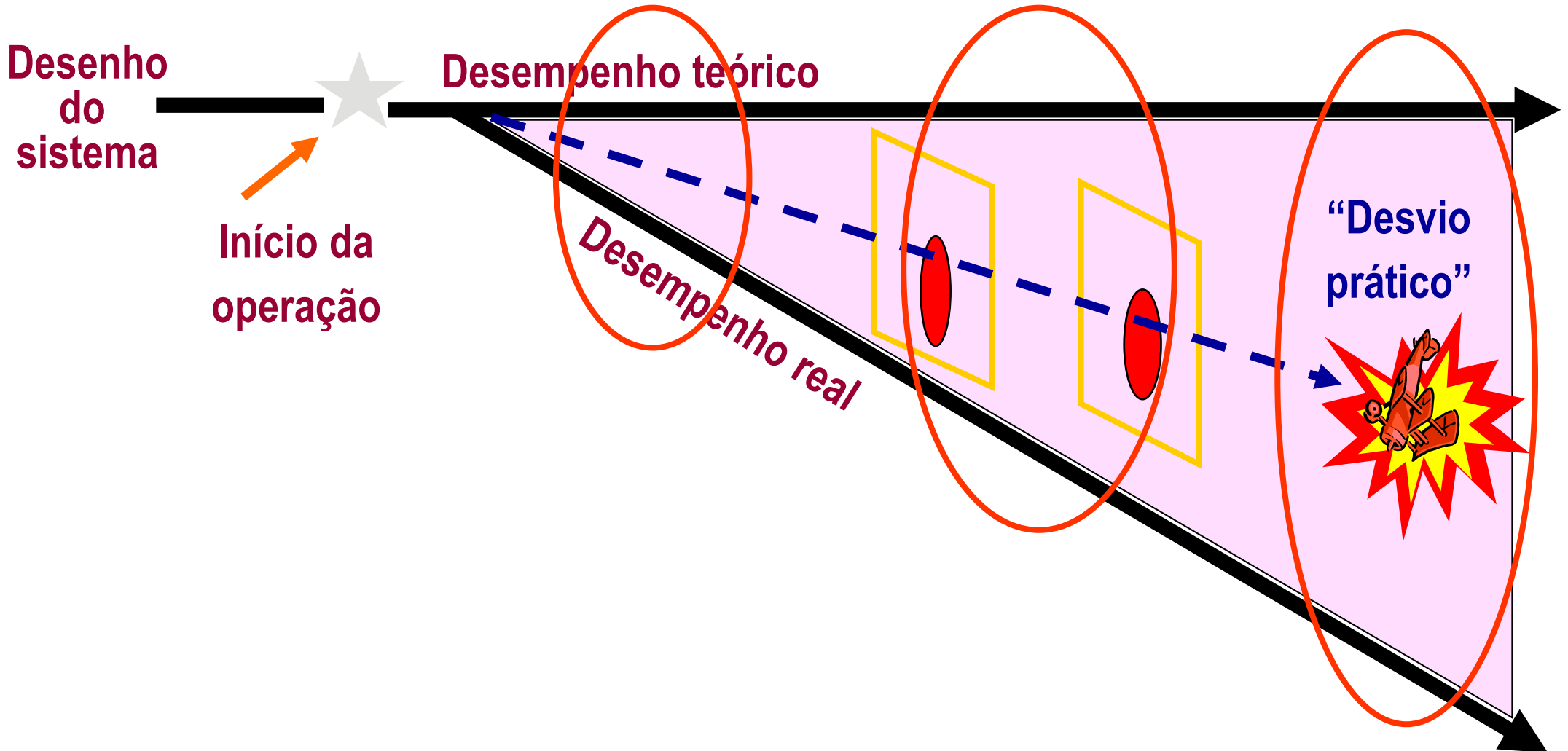


Database extraction on January 13th, 2014 (Tiger and NH90 accidents out of scope)

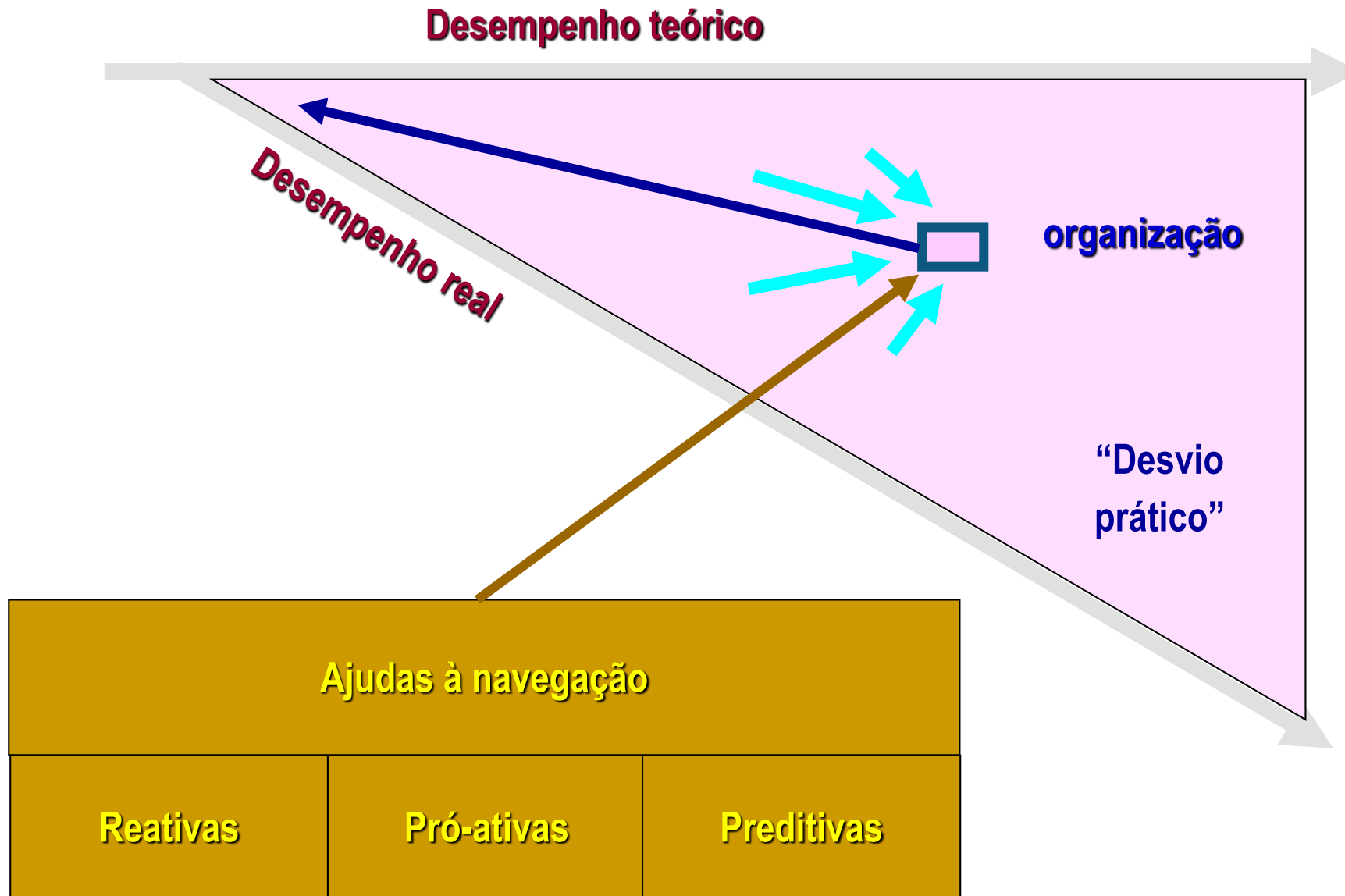
A system perspective on adverse events



Porque Gerenciamento da Segurança? Um sistema imperfeito



O que fazer para não navegar a deriva?



Gestão da segurança reativa

- **Investigação** de acidentes e incidentes graves.
- Baseado na noção de esperar até que o sistema “se rompa” para consertá-lo.
- É apropriada para:
 - situações que envolvem falhas de tecnologia.
 - eventos incomuns.
- O valor do enfoque reativo à gestão da segurança depende da profundidade com que se leva a cabo a investigação além das causas imediatas e incluindo todos os fatores contribuintes e as constatações sobre os riscos.



Gestão da segurança pró-ativa

Sistema de reportes mandatórios e voluntários, auditorias e pesquisas de segurança.

Baseada na noção de que as falhas do sistema podem ser minimizadas:

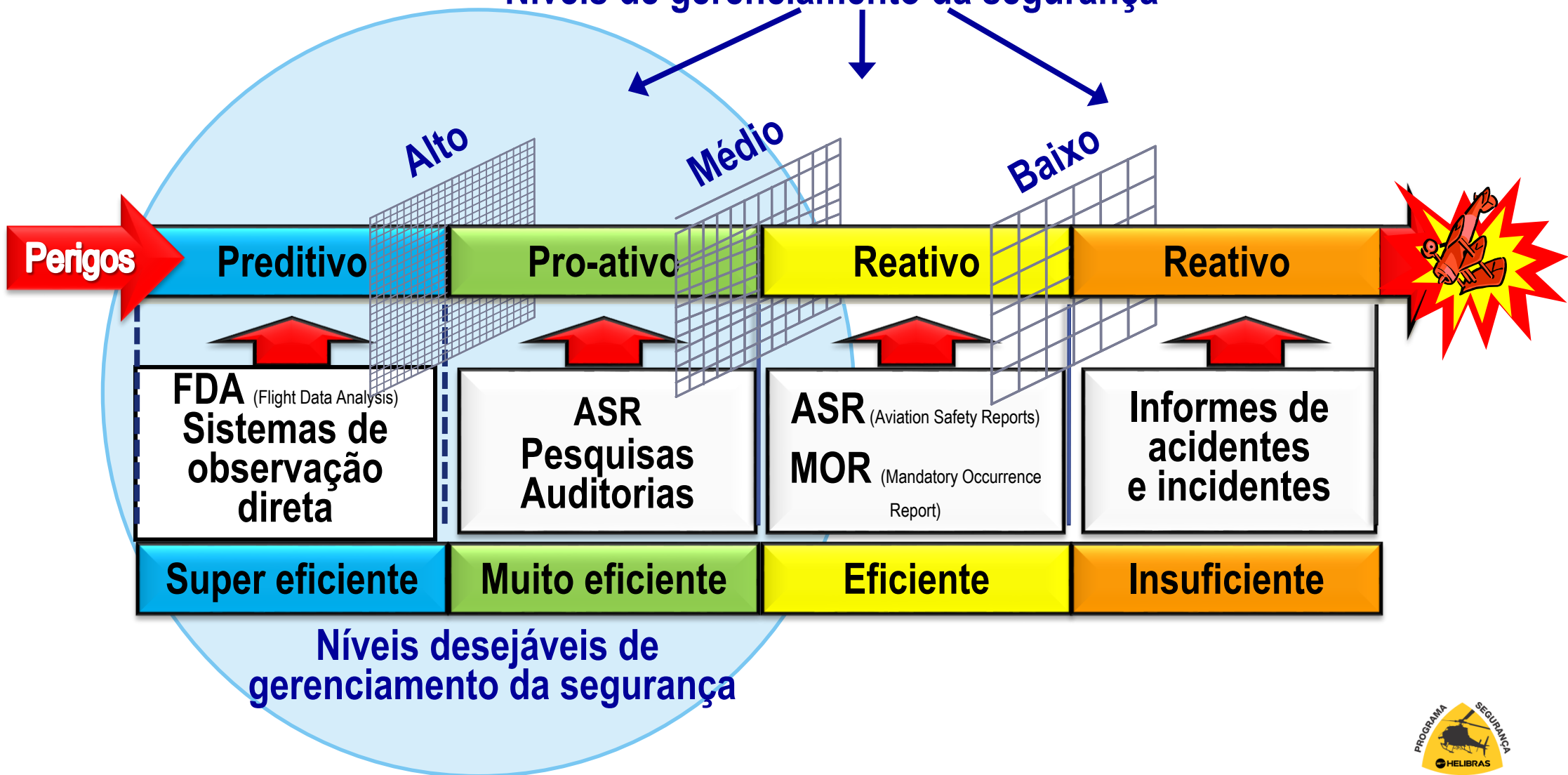
- identificando os riscos à segurança existentes no sistema antes que o sistema falhe; e
- tomando as ações necessárias para reduzir os riscos que afetam a segurança.

Gestão da segurança preditiva

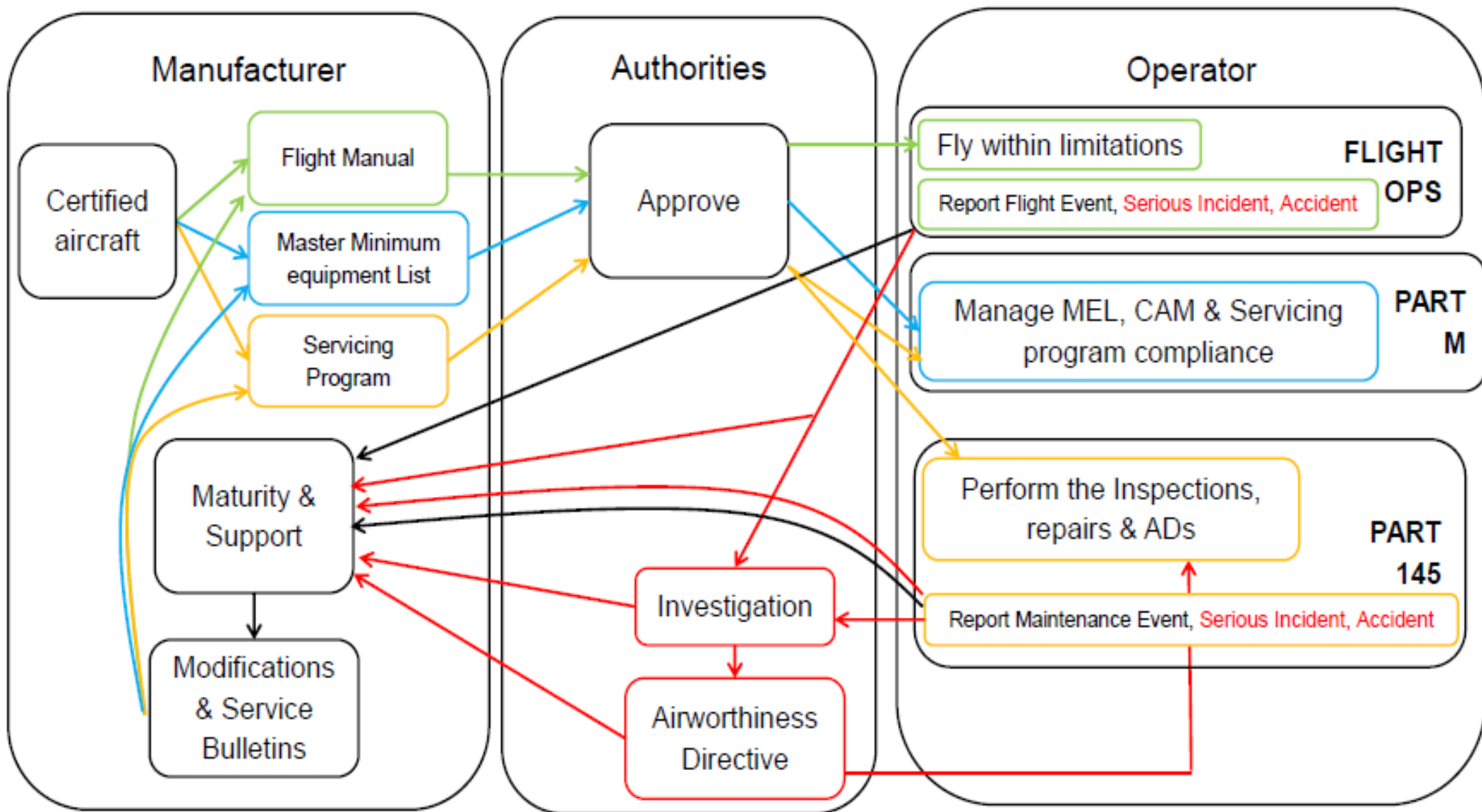
- Sistemas de reporte confidenciais, análise dos dados de vôo e monitoramento de operações normais. **VISION 1000**
- Baseada na noção de que o gerenciamento da segurança se otimiza buscando descobrir os problemas e não esperando que apareçam. **Levantamento dos Perigos e Riscos.**
- Busca agressiva da informação de diferentes fontes que pode revelar riscos iminentes à segurança. **RELPREV, Ger. Riscos, CRM, PPSP, Auditorias, Vistorias.**

Métodos de Gerenciamentos

Níveis de gerenciamento da segurança



Continued Airworthiness – basics



Airworthy aircrafts are the result of joint efforts between Manufacturers, Operators and Authorities.

Accident or Serious Incident occurred on AH/AHD products

2 cases

- Civil helicopter – Rules defined by the ICAO Annex13
- Military helicopter – Rules defined by the Local military Investigation Board

The subsidiary or the KAM in charge of the occurrence country must inform as soon as possible at least:

- For AH products → support.accident-investigation.ah@airbus.com
- For AHD products → support.accident-investigation.ahd@airbus.com

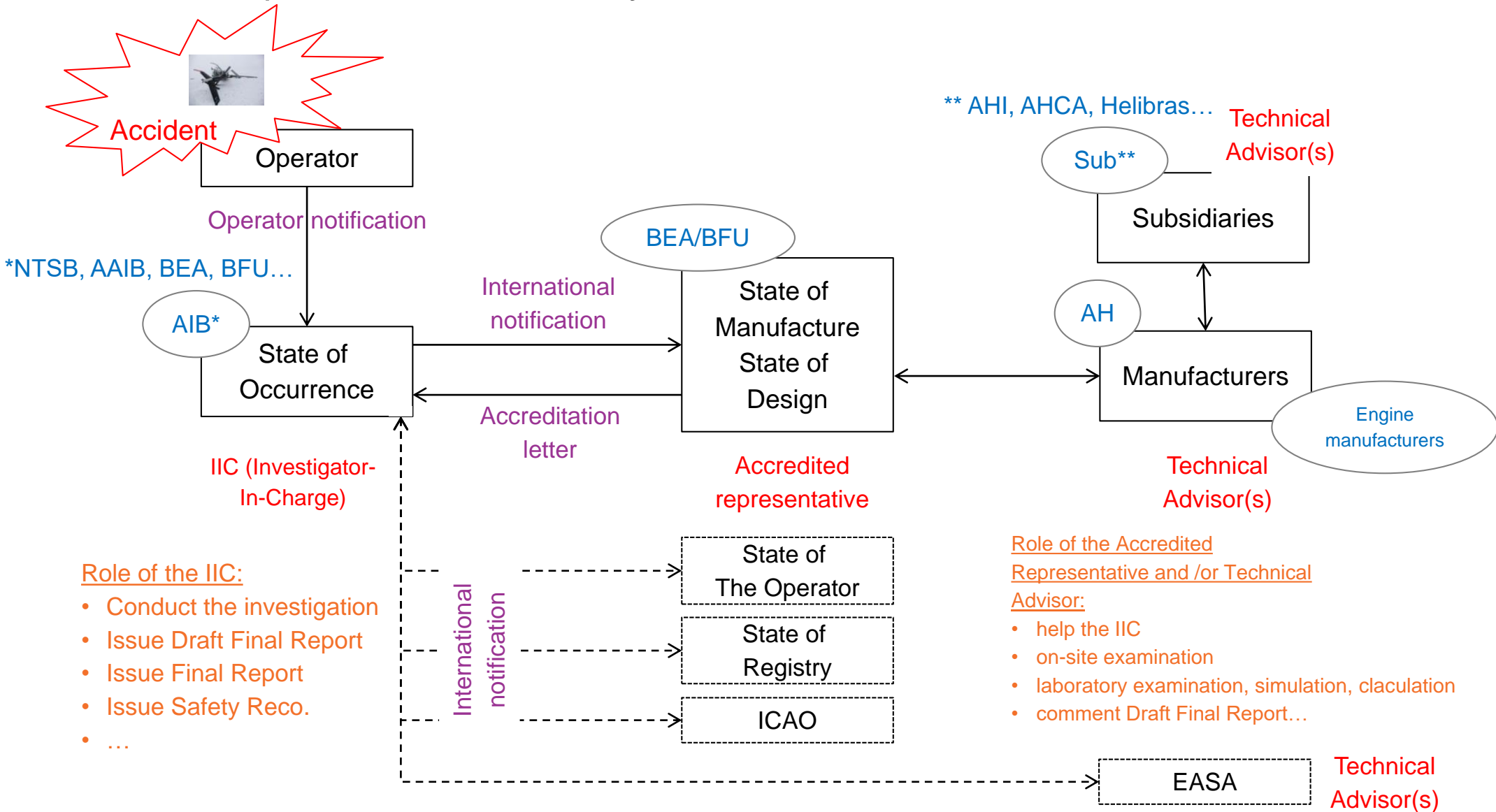
The participation of AH/AHD investigators is free of charge

EI050 05-007 explains the organization of technical investigations concerning accident or serious incident occurred on AH/AHD products.

BEA is the official investigation board of the State of Manufacture / Design for AH civil products and BFU for AHD civil products.

Accident or Serious Incident occurred on AH/AHD products – Civil

Civil helicopter – Rules defined by the ICAO Annex13



Accident or Serious Incident occurred on AH/AHD products

— Military helicopter – Rules defined by the Local military Investigation Board

1. Event (Accident or Serious Incident) occurred in a country (ie: France)
2. Military Investigation board is responsible for the investigation (ie: BEAD-Air)
3. AH/AHD (Aviation Safety dept.) proposes its assistance to the local military Investigation board. This assistance can be proposed through the subsidiary or KAM if requested by AH/AHD
4. AH/AHD or subsidiary representative when nominated can participate to the investigation (On-site investigation, laboratory examination...)

AH/AHD Accident Investigation and Product Integrity – Points of Contact

Aviation Safety	BRUNIAUX Gilles	c: +33 627 021 854	Gilles.Bruniaux@airbus.com
	SOULHIARD Michel	c: +33 6 81 58 43 43	Michel.Soulhiard@airbus.com
	GOGEL Thomas	c: +49 151 142 293 08	Thomas.Gogel@airbus.com

For new Accident or Serious incident, please use the form and send immediately an email to :

FRENCH PRODUCTS

support.accident-investigation.ah@airbus.com

The following persons have access to this generic email.

LASSUS Vincent	c: +33 6 70 04 52 78 o: +33 4 42 85 65 53	Vincent.Lassus@airbus.com	Investigator
MARTIN Michel	c: +33 6 75 82 43 39 o: +33 4 42 85 97 11	Michel.Martin@airbus.com	Investigator
MICHEL Anne- virginie	o: +33 4 42 85 93 57	Anne-Virginie.Michel@airbus.com	Database/statistics

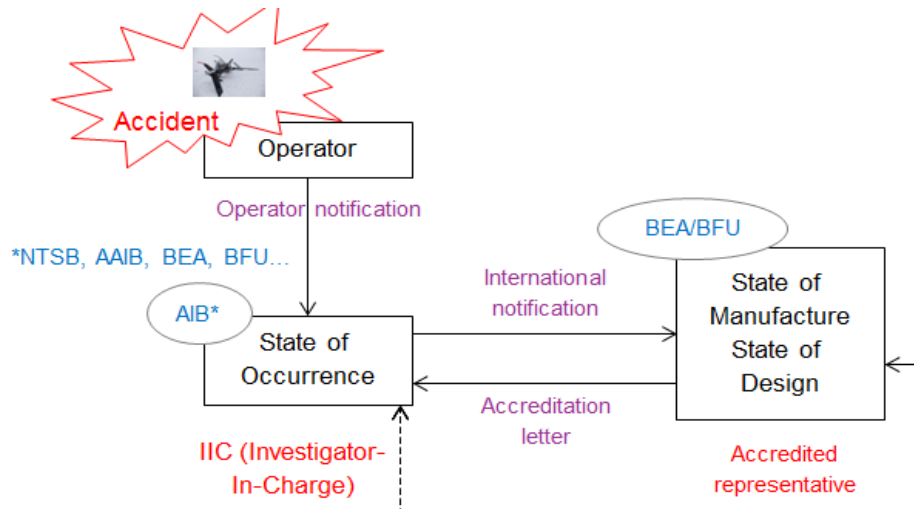
GERMAN PRODUCTS

support.accident-investigation.ahd@airbus.com

The following persons have access to this generic email.

BERNHARDT Christian	c: +49 151 142 29154 o: +49 906 714 060	Christian.Bernhardt@airbus.com	Investigator
VIETZKE Roland	c: +49 151 142 29006 o: +49 906 713 136	Roland.Vietzke@airbus.com	Investigator

BEA and BFU contacts – Permanent duty - 24 hour reporting line



The State of Occurrence shall send an international notification to the State of Manufacture/Design (BEA or BFU). Here after the contacts if not known by the State of Occurrence.

State of Design and State of Manufacture	Tel	Fax	E-mail
BEA (French products)	+33 1 48 35 86 54	+33 1 49 92 72 90	permanence@bea-fr.org
BFU (German products)	+49 531 3548 - 0	+49 531 3548 - 246	box@bfu-web.de

Accident & Serious Incident form declaration



F050-05-007-Sub-B

Name of the subsidiary
Contact: Name / First name / Email

Date: 17-March-2015
SUB+Preliminary-Information-N
Issue: - Date: 17-March-2015
Addressees: Airbus Helicopters - Accident Investigation Unit

Preliminary Accident or Serious Incident Information

Event type:	Event date:	Local time:
Model:	Serial number:	Registration:
Operator:	Aircraft damage:	
Location:	Fire:	

Aboard:	Fatalities:	Injuries:	No injury:
Third parties:	Fatalities:	Injuries:	

Circumstances reported to the Subsidiary:

Event type: Accident or Serious Incident

Event date: dd/mm/yyyy

Model: AS350 B3e, EC135 T2....

Aircraft damage: None, Minor, Substantial, Destroyed, Unknown

Location: Place, Country

Fire: No, In flight, On ground, Post-crash, Unknown

Aboard or Third parties: Number of persons (fatalities, injuries and no injuries)

Circumstances: Description of the event and detail of injuries (ex: Pilot – serious, Passenger – fatal , Passengers – none)

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Melhoria Continua

- Recomendações elaboradas após análise da causa raiz e fatores contribuintes;
- Recomendações elaboradas com objetivo de construir barreiras efetivas através de novas soluções de projetos focados na ergonomia;
- Recomendações elaboradas com objetivo de construir barreiras sólidas e efetivas através do monitoramento constante de dados e análise;
- Modificações de projetos;
- Parcerias em projetos de melhoria e monitoramento focados no ser humano e sua interação com o meio e a máquina.



Quest

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