

NH90 PROGRAMME and JMAAN ORGANISATION




EDA Military Airworthiness Conference

Aix en Provence, 25-26th September 2013

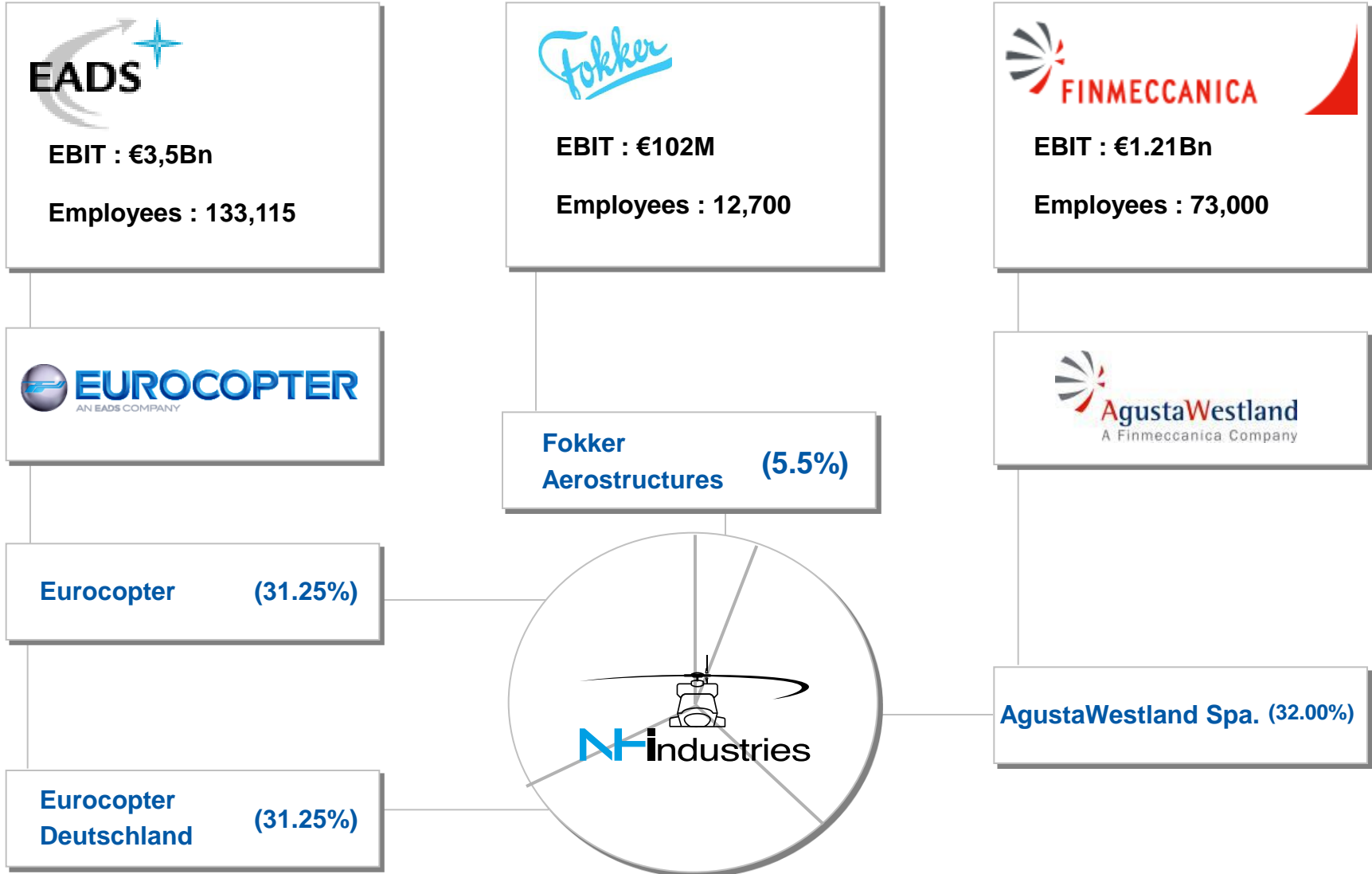


- NHI and the NH90 programme
- NH90 and JMAAN
- NH90 on Operations
- Conclusion

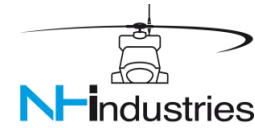
NHI and the NH90 programme

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NH Industries shareholders



NHIndustries Role / Responsibility / Value



ROLE

- **Manage NH90 programme “Through Life”**
- Manage NAHEMA and export customer requirements
- Manage work share between the parent company’s & industry

RESPONSIBILITY

- Programme management within PC’s and industry
- **Design, airworthiness, configuration control and technical support**
- Process standardization across nations/industry
- Bids/offers and post contract management
- Marketing, communication and events

VALUE

- **Single focal point for each customer and programme**
- Access to and exploitation of EU defence/aerospace expertise
- Co-ordination of functions across nations/industries
- Assurance of equity, quality and value for money



NH90 Sales Order Book



As of May 2013

The NH90 TTH



NBC PROTECTION

MULTI- REDUNDANT SYSTEMS

BALLISTIC TOLERANT DESIGN

CRASHWORTHINESS

RESCUE HOIST

WIRE STRIKE PROTECTION SYS

ARMoured CREW SEATS

PILOTING FLIR

WEATHER RADAR

CABLE CUTTER

PROTECTION SUITE (LWR, MLD, RWR, CHAFF & FLARE)

CARGO HOOK

IR SUPPRESSOR

REAR RAMP

CHAFF & FLARE DISPENSER

20 TROOPS or 12 STRETCHERS or > 2500 Kg Payload

EXTERNAL HEAVY STORE CARRIER

The NH90 NFH



2 ANTI-SHIP MISSILES MARTE MK2/S or 2 TORPEDOES MU90 /MK46 / STINGRAY



France - December 2011 – Rescue of 19 people at night in stormy weather



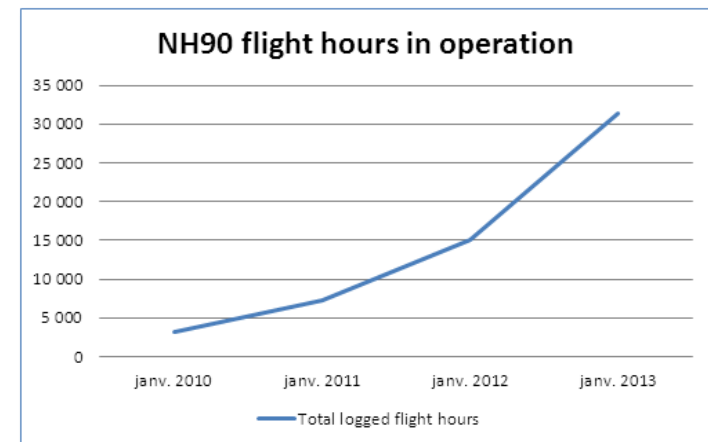
Italy – Since August 2012 5 NH90 are deployed in Afghanistan



Netherlands – 2013
Dutch NH90 anti-piracy operation in Somalia

➤ Deliveries:

- ✓ 158 helicopters delivered by end August 2013
- ✓ 12 customers delivered



Joint Military Aviation Authorities for NH90

**Military Design Organization Approval
Certificate**

granted to





NHIndustries

765, rue Albert Einstein
13851 Aix en Provence – France

Certificate JMAAN-21J-01, issued 06/09/2010

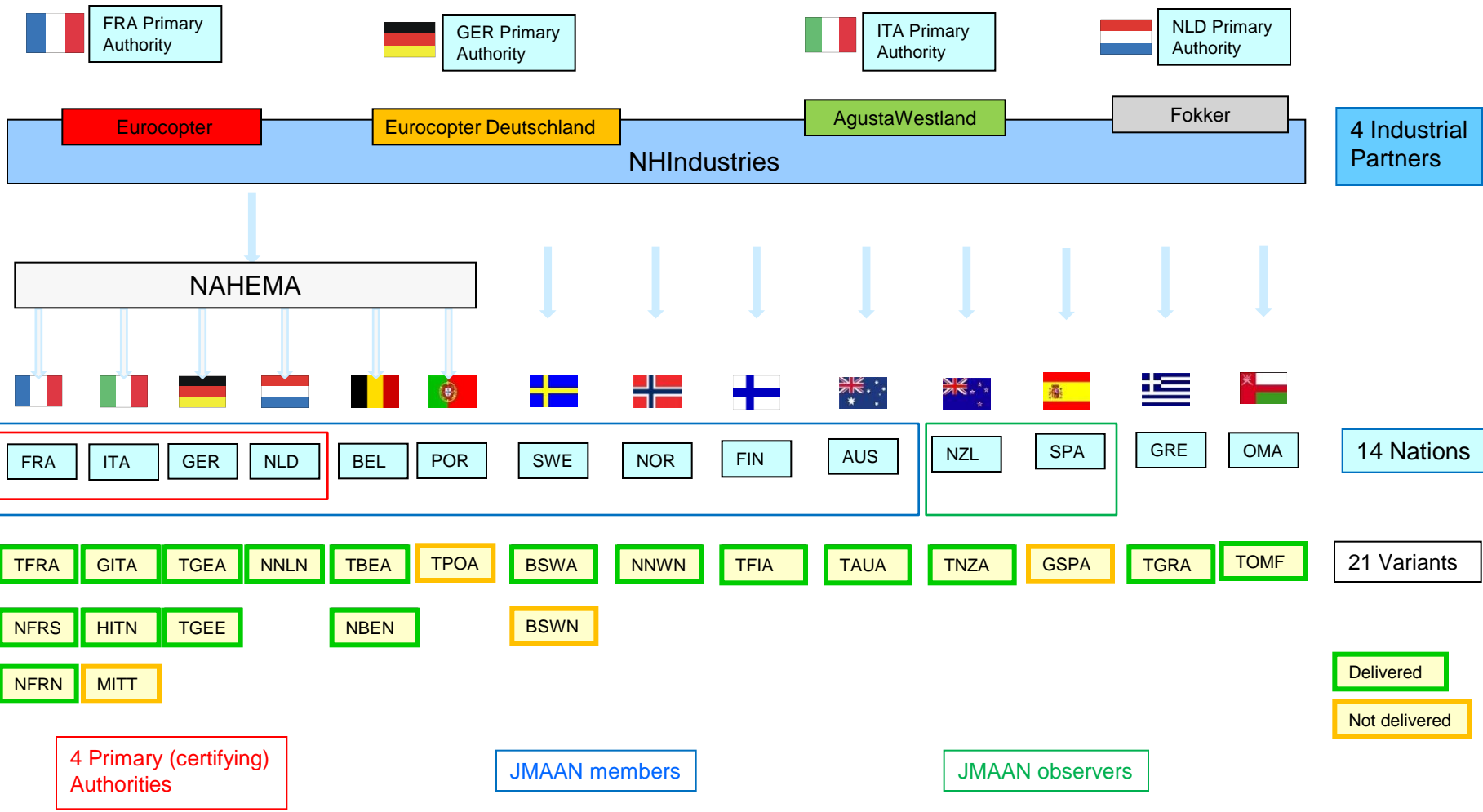
NHIndustries as defined by the Joint Venture Agreement dated 23 October 2008 among EUROCOPTER, EUROCOPTER DEUTSCHLAND GmbH, AGUSTA S.p.A. and STORK FOKKER AESP B.V. as Partner Companies (PC) complies with the JMAAN 21 version 1 dated 14 January 2009, as detailed in the NH90 Military Design Organisation Manual.

Applicable for NH90 Helicopters, JMAAN Primary Authorities issue to NHIndustries this Certificate, valid for the attached Terms of Approval.

DEU MAA	FRA MAA	ITA MAA	NLD MAA
MR. Steiger 	ICA. Colin 	Gen. Langella 	Comm. Lorraine 



NH90 programme complexity



— NHI and the NH90 programme

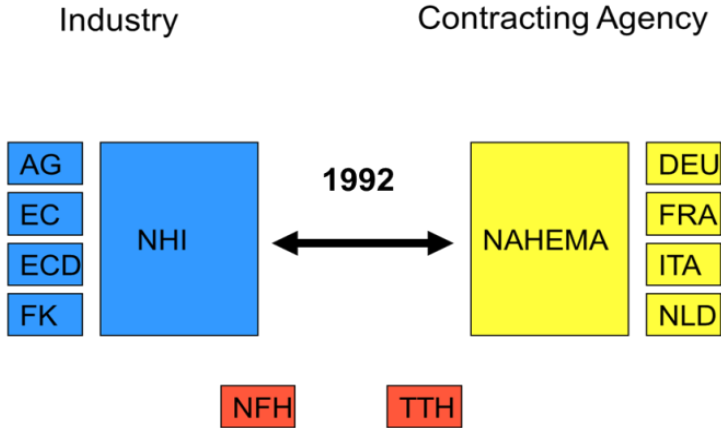
— **NH90 and JMAAN**

— NH90 on Operations

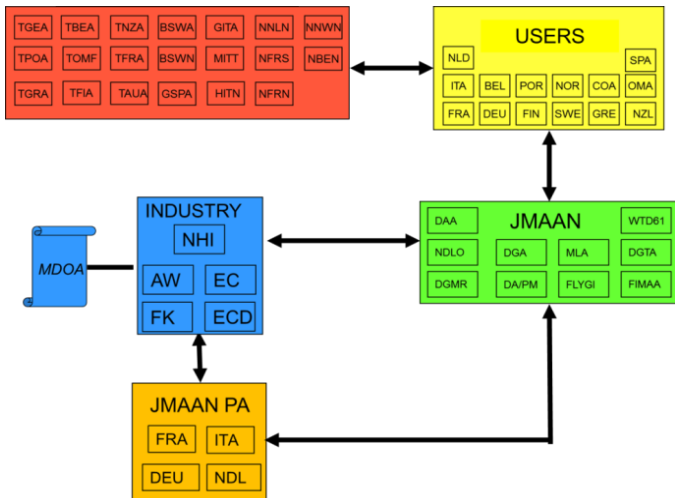
— Conclusion

JMAAN: why?

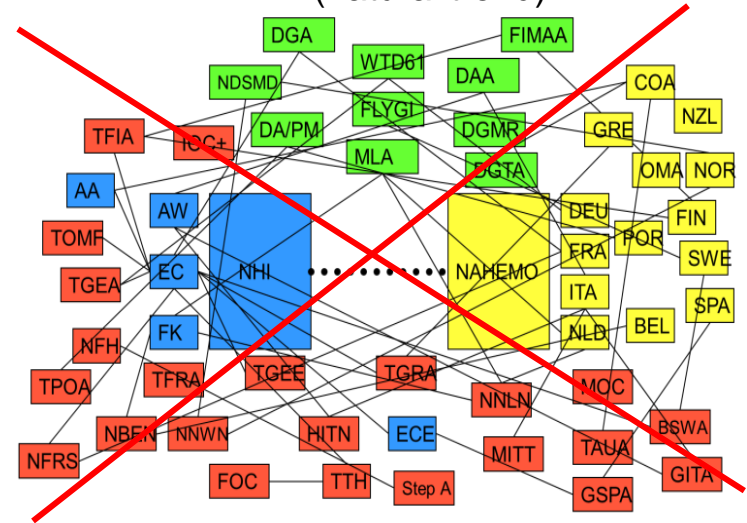
➤ How it started



➤ How JMAAN tries to keep it



➤ How it could have turned (natural trend)



Joint Military Aviation Authorities for NH90

The JMAAN is an advisory board for the national airworthiness authorities of the NH90 Nations, which remain sole responsible for the decisions impacting the airworthiness of their NH90 fleet.

The JMAAN is an international body composed of aviation/airworthiness authority representatives and chaired by NAHEMA - body of the NH90 Community

JMAAN has set up common rules for the certification of NH90 and Military Design Organisation:

- ✓ JMAAN 21 requirements (based on EASA part 21)
- ✓ JMAAN Policy Paper: the basic principles and working rules

Rules for certification of NH90 and Military Design Organisation

Reference for
the MDOA



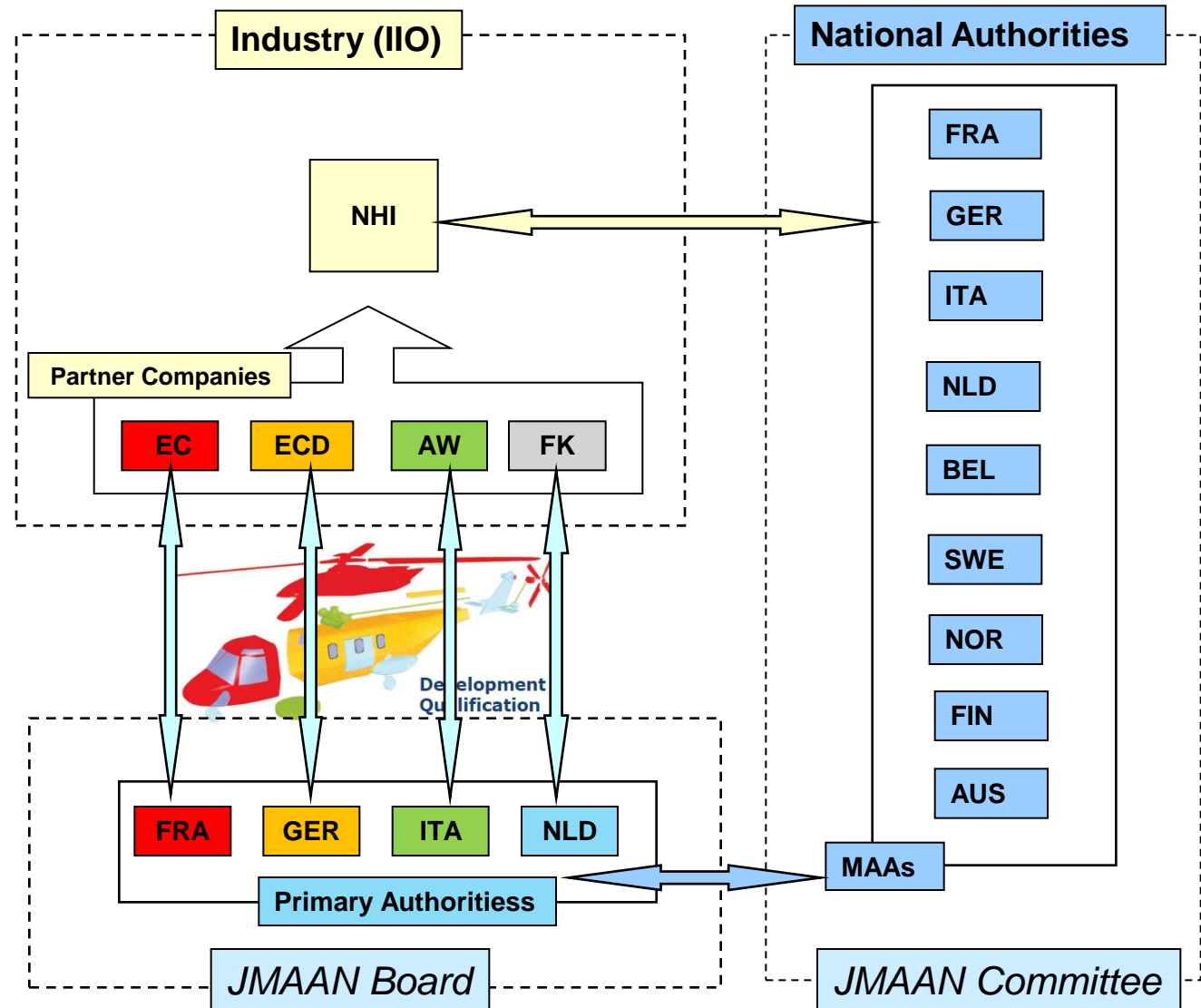
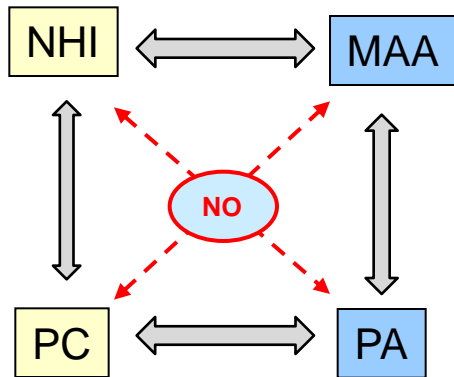
Subpart A	General (Continuing airworthiness)
Subpart B	Military Type Certificates (MTC)
Subpart D	Changes to MTC
Subpart E	Military Supplemental Type Certificates
Subpart J	Military Design Organisation Approval
Subpart K	Parts and Appliances
Subpart M	Repairs
Subpart Q	Identification of NH90, parts and appliances

EASA AMC & GM used as appropriate

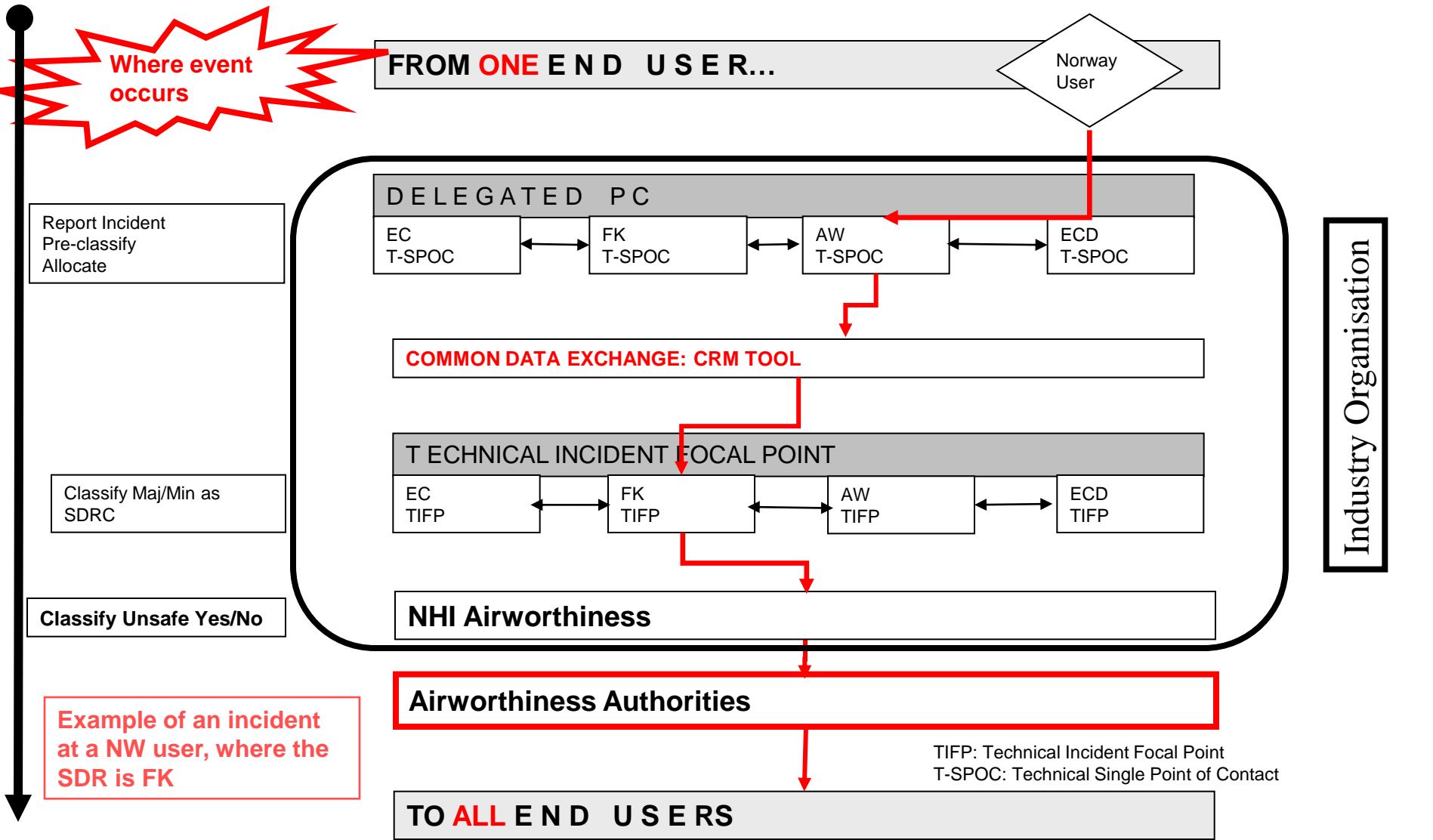
- Funnel principle
 - Communication through JMAAN and IIO (International Industry Organisation)
- Lead Nation principle
 - NH90 programme has Primary Authorities
- Recommendation
 - PAs will recommend for certification
- Aviation safety principle
 - JMAAN guided by best regulatory and safety practices
- Privilege principle
 - NH90 Nations through JMAAN will make special rights available
- Sovereignty principle
 - NH90 Nations have the sole responsibility for the decision of implementation of approved data
- Continued Airworthiness principle
 - NH90 Nations and IIO have a shared responsibility for maintaining the CA of each NH90 and its type design

JMAAN organisation

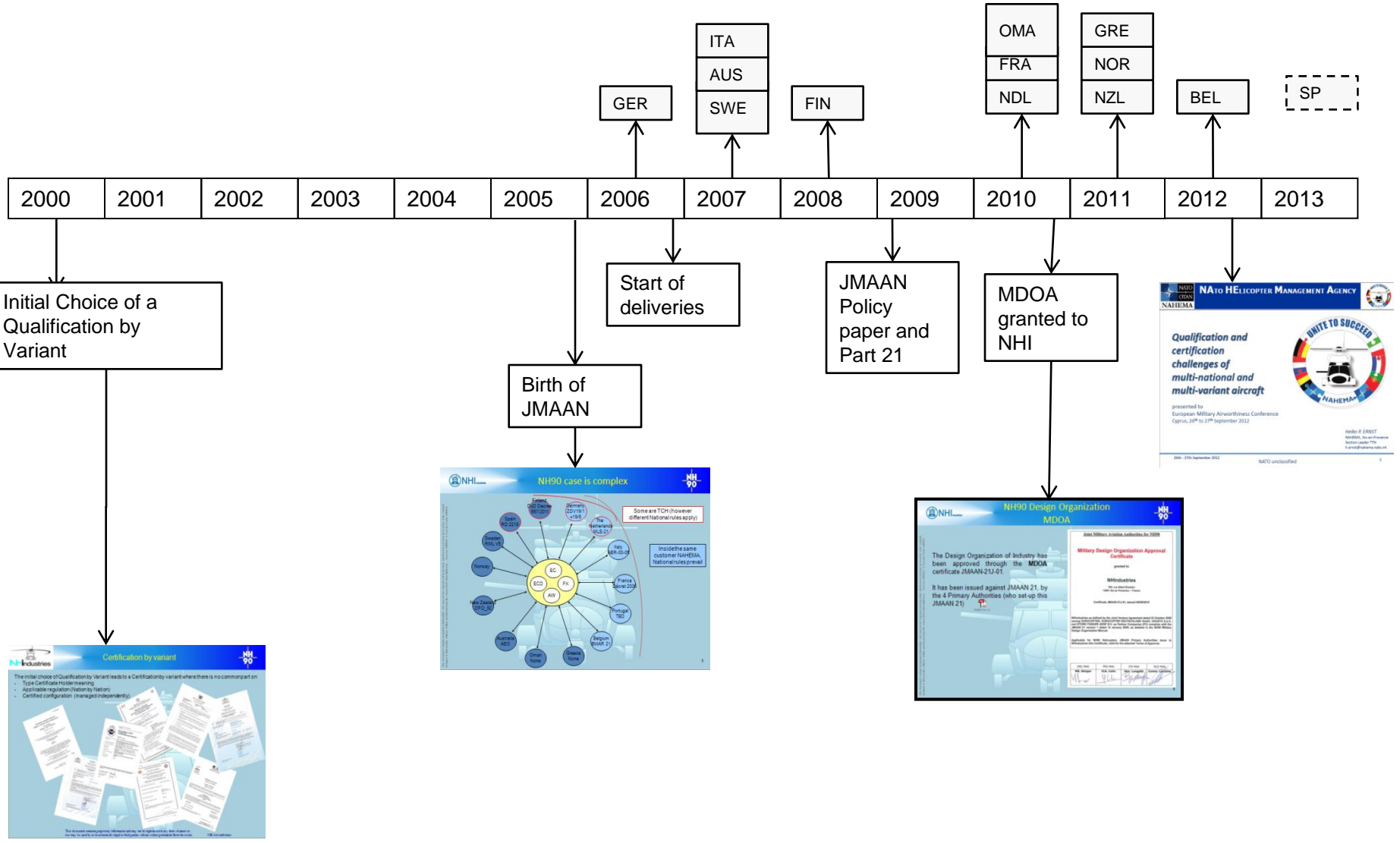
Information flow



Management of technical events – airworthiness principles



History: JMAAN Story board



Comparison EMAR / JMAAN



	MAWA	JMAAN
Common regulations	EMAR 21, 66, 145, 147, M, EMAD 1, EMAD R, EMACC	JMAAN 21
Common certification and Continued airworthiness processes	To be generated based on EMAR	JMAAN Policy Paper, NH90 Design Organization procedures based on JMAAN 21
Common approach to organizational approvals	Governed by EMAR 21	Governed by JMAAN 21 MDOA granted by the JMAAN PAs to the NH90 International Industrial Organization (IIO)
Common certification/design codes	Could be adapted from civil CS, EMACC	FAR 29 Amdt 31 QRI
Common approach to preservation of airworthiness	Governed by EMAR 21	Governed by JMAAN-21
Arrangements for mutual recognition	EMAD R	Mutual recognition in place between GE, FR, IT and NL Not formalized for others
EMJAAO	Concept to be established	Four Primary Authorities (PA's) are forming the core of JMAAN (JMAAN Board).

- NH90 solution – JMAAN – can be regarded as a kind of application of most of the MAWA / EMAR principles by anticipation
- Application of the JMAAN 21 governed by the JMAAN Policy Paper of 2009
- The system works, main achievement being an Industry Design Organisation Approved, and common Continuing Airworthiness and Changes to the Type design management
- NH90 has been confronted with essentially the same problematic which prompted EDA to create the MAWA
- The system is compatible with what is foreseen by MAWA
 - ➔ Proof that the basic principle is workable

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Italy

- Flying since 2007 (27 aircraft) for Army and Navy
- High availabilities with effective Industry integration
- Fleet leader has 814 hours
- L'Aquila earthquake in April 2009
- Current operations in Afghanistan



Experience:

- Aircraft was deployed quickly
- A reliable capability
- Low manpower footprint
- High confidence

And:

- Potential is evident

NH90 on Operations



NH90 on Operations



France

- Flying Naval and Land versions since 2010 (15 aircraft)
- OT&E with the French ALAT
- Since December 2011 Atlantic SAR duty by French Navy Lanveoc base, about 50 people rescued



Germany

- Flying since 2006, most experienced operator (28 aircraft)
- FALCOR (140 hours / 433 dust landings / live firing)
- MEDEVAC mission in Afghanistan since Summer 2013



— The Netherlands

- Flying since 2010 (10 aircraft)
- NFH only fleet, but will use a sub fleet for littoral operations, including tactical troop transport
- Recently sailed to Somalia on OP ATALANTA (Anti-piracy)



— Oman

- 13 aircraft flying since 2010
- Unique configuration
- Unique environment
- More powerful engines
- 20mm podded machine gun 0.50 cal M3M PMG
- 700nm unrefueled flight



New Zealand



All photos courtesy of RNZAF

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- **Conclusion**

- JMAAN principles work and proved its potential
- The challenges faced by JMAAN are mainly the ones which MAWA still has to address/complete:
 - Formal commitment from all members – JMAAN based so far mainly on good will
 - Roles and responsibilities of Members – Draft discussed within JMAAN
 - Mutual recognition between all Authorities – eg. PAs by MAAs
 - Privileges – From PAs or from MAAs
 - MDOA surveillance – Just started three years after MDOA
 - Vision – Not known by NHI for JMAAN
- Need for a political will to push in order to foster convergence and minimize potential national divergences
 - MAWA and EIG can bring the necessary leverage to clarify these points which are not JMAAN/NH90 specific

QUESTIONS ?

