Comparison of EMAR Implementation Strategies in various pMS from Industry's Perspective

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ASD
AeroSpace and Defence Industries
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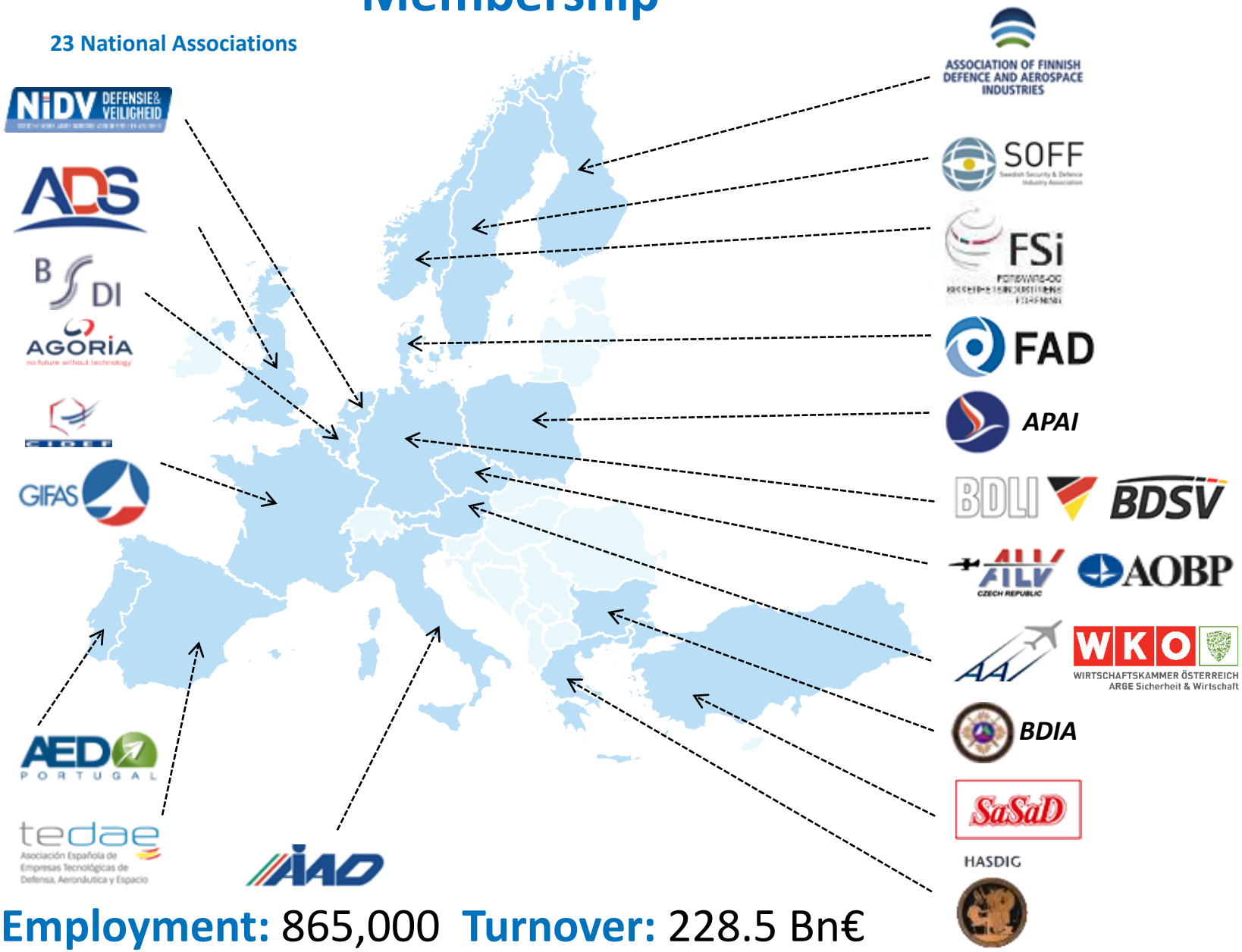
23 National Associations



Employment: 865,000 **Turnover:** 228.5 Bn€

ASD Vision for Military Airworthiness in Europe

The ASD Vision

A single European Military Airworthiness Organisation (JAA Model) owning a suite of European Military Airworthiness Requirements used by all participating Member States to govern peacetime European Military Airworthiness activities…

…facilitated by Mutual Recognition, consistent implementation and Standard Industry Arrangements including Obligations and Privileges

EMAR-Implementation – the Journey

Since 2015 all MAWA-documents are validated by the pMS and since then the time is running for introducing them in the national Military Regulations.

For all pMS the national EMAR-Implementations are substitutes of former applicable regulations.

The strategy, the schedule and the implementation - range differ from Nation to Nation.

These implementing strategies are of a very high interest to Industry who are the end users.

EMAR-Implementation Strategies – Takeaway #1

The methodology of EMAR implementation into National Regulation has a direct and significant impact on:

- **Industry Organisation**
- **Industry Process**
- **Industry Decisions**

An adapted business model is required for

Design, Licensing, Maintenance and Procurement

EMAR-Implementation Strategies - Comparison

Emerging Similarities

- Regulation
- Implementation
- Privileges
- granting Approvals
- Transitions
- Mutual Recognition

Experiences

SWOT

- Scope - ASD view of main Commonalities/Specifics
- Identify main challenges offered by EMAR implementation

Side Note:

- All information presented is merged from different official and internal sources for the purpose of this presentation and claims not to be a complete picture.

EMAR-Implementation - Emerging Similarities I

Regulation - New vs. Legacy	**EMAR derivatives implemented by contract on new products. No common approach for applicability of EMARs on legacy platforms.**
Regulation – New vs. Legacy	**The co-existence of legacy requirements and EMAR national implementation is difficult to combine. Not fully harmonized.**
Implementation	**National implementing rules normally mirror EMAR structure (AER.P-21, DEMAR21, FRA21…) with national differences.**
Delegations/ Privileges	**Privileges permitted but currently not widely granted to Industry.**

EMAR-Implementation - Emerging Similarities II

Granting Approvals	**Only a few OEMs have so far been granted military PO or MO approvals, even fewer DO.**
Transitions	**EMAR transition focused on Maintenance (EMAR FR 145, 66, M) and Production (EMAR 21G)**
Mutual Recognition	**Common Need to enter into programme of mutual recognition triggered by national differences in EMAR Implementation.**

Experience - Italy

Old regulation: AER-P. Legacy

New regulation: AER.P-21, 66, 145 + DTs

General Strategy:

- Follow as closely as possible the „master“ EMAR structure
- Where necessary “bridge” norms are prepared
- Legacy norms are still valid for many aspects of military airworthiness.

Industry Challenges:

- Implementation of EMAR21 set of rules to legacy programs (some very old but still in service)
- Adoption of EMAR21 without privileges scheme. Difficulties to manage the approval of technical data in the perimeters of design, repair
- Opportunity to be investigated: dedicated approval scheme for COTS and TSO
- Sometimes not fully harmonized EMARxx and legacy norms.
- Lack of visibility over sub-components suppliers (no DataBase) and on mutual recognition with other NMA

Experience - The Netherlands

Old regulation: MLE-series **New regulation: NLD-MAR series**

General Strategy:

- Follow as closely as possible the „master“ EMAR structure and content
- NLD MoD is Military TC Holder
- For Industry, no formal approval to military regulations possible. However Industry can be “accredited” what gives a similar status.

Industry Challenges:

- Authority not organised/staffed to perform Industry oversight in general, still program related.
- No structured forum where MLA and industries talk on regulations.

Experience - Germany

Old regulation: A1-275/2-890x series **New regulation: DEMAR series**

General Strategy – DEMAR Strategy:

- **DEMAR - applicable future default standard (exception for small UAV)**
- **Decision on the application of DEMAR in relation to individual weapon systems or A/C-type (time-frame planned for the next 3-5 years):**
  - for new weapon systems (WS), certification and operation managed under DEMAR only
  - for existing WS, specific criteria to be applied for the decision of a change from old to new regulation (e.g. remaining time in service)
  - Industry organisation approvals only with granting of privileges (liability under discussion)
  - usage of existing civil approvals (DE CAA, EASA) for "Delta" organisational approvals

Industry Challenges:

- Criteria for transition of existing mil. Weapon systems from legacy to new regulation
- DEMAR 21J – important provisions not yet detailed (military TC Holder,..)
- Preferred Industry Position - DEMAR Transition per Organisation
- Industry involvement in rulemaking

Experience - France

General Strategy:

- EMAR transition focused on Maintenance (EMAR FR 145, 66, M) and Production (EMAR 21G)
- Full adoption of EMAR21 foreseen (with a 2 year transition period expected for 2.0)

Industry Challenges:

- NMAA conditions for Mutual recognition of design organisation approvals based on a common investigation and surveillance by the industry state MAA
- Limit airworthiness code inflation of EMACC
- Use of MTSO in aircraft certification program. Possible use case initiative ?
- Caution in LOI deployment
- Harmonization on a OSD Certification basis limited to MMEL

Experience - United Kingdom

General Strategy:

- UK MAA controls all military aircraft airworthiness aspects and certifications
- **For Industry:**
  - Need to hold delegated UK DAOS approval from the MAA to be able to design and modify military aircraft

Change to New Reg.- Organisations:

- UK Military Aviation Authority Controls all Mil Reg Aircraft and approves Design Organisations that design and support them
- Some Military Aircraft are Civil Certified through the UK CAA but a degree of engagement still exists with MAA

Industry Challenges :

- Civil certified military aircraft bring challenges when dealing with equipment not normally fitted to civil aircraft.
- Joint UK MAA and UK CAA agreements are required to resolve such issues for certification purposes, boundaries not always clear.

Synthesis – SWOT – Takeaway #2

Strength	Weakness
1) Mutual recognitions 2) Commonalities among national implementations 3) Implementation of EMARs - enabler for Industry engagement in collaborative programmes 4) Opportunity of using civil artefacts	1) Mutual recognition status not visible to industry 2) Harmonised implementation difficult without guidelines issued 3) Lack of central, coordinating organisation to govern EMAR implementation 4) No visibility over EMAR21 Edition 2 implementation (is there a plan how evolution of EMARs will be implemented...) 5) Lack of Mutual recognition is duplicating certifications for industry 6) Adoption of EMAR21 without full granting of privileges does not release full benefits (DO-PO concept)

Synthesis – SWOT – Takeaway #2 (cont'd)

Opportunities	Threat
1) Mutual recognitions 2) Shared DataBase with approvals 3) Opportunity for national strategic initiatives supporting EMAR implementation 4) Industry involvement in the implementation strategy definition 5) Assure governance in the EMAR implementation 6) Single MTSO approval recognised by all nations 7) Establish Cooperation Framework of permanent nature between NMAAs	1) Co-existence of old norms and new norms (huge gaps) 2) Main parts of the new regulation are not regulated or subtly different in/to the old one: e.g. Repairs, Change to TC, Permit to Fly 3) Number of organisational approval requirements far higher in new vs. old regulation 4) Complex mixture of organisation approvals acc. old and new regulation with necessities for interface-descriptions (usage of new regulation - artefacts in the legacy regulatory environment)

Conclusion

The EMAR Implementation by Nations provides a vastly improved regulatory framework which paves the way to European Defence Industries cooperations.

Industry analysis demonstrates a central coordinating military airworthiness organisation of permanent nature between NMAAs would further improve efficiency.

Thank you!

AeroSpace and Defence Industries
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