

9 February 2015

MAWA Initiative

ASD Military Airworthiness Group view on strategic and tactical Issues

Abstract

This document provides the ASD industries position concerning the MAWA initiative, its status and potential future evolution. It details the ASD aspirations initially stated in the presentation given at the MAWA Conference in Cyprus in 2012.

The document is structured in five main chapters addressing the ASD Vision, Organisation Approvals and Privileges, Certification, Authorities, and EMARs Implementation and Evolution. In general, proposals for progressing with the initiative are made and, topics where discussions are in the early stages, or have not yet taken place, are addressed (like the potential extension to operational aspects, ATM, etc.), in order to cover not only airworthiness, but the overall aspect of the military aviation system in Europe. The summary section at the end provides the key aspects of the ASD position and proposals for progression.

1 INTRODUCTION

The aim of this document is formally to present to MAWA the ASD position on key topics regarding EMARs and some related issues and concludes with a summary of key points and proposals for progression for consideration by MAWA/EDA.

The main topics covered by this document are:

- *ASD Vision*
- *Organisation Approvals and Privileges*
 - Organisation Approvals
 - Privileges
- *Certification*
 - Type Certificates.
 - Acceptance of Extant Type Certificates
 - Centralization of Type Certification
 - Fit for Flight vs. Fit for Purpose.
 - EMARs Exemptions for Mission System Equipment
- *Authorities*
 - Mutual Recognition
 - Relationship between Military and Civil Airworthiness Authorities
 - Support from the Authorities (MAWA) in Programs for Third Countries (export support).
 - State of Design vs. State of Registration.
- *EMAR Implementation and Evolution*
 - EMAR Implementation
 - EMARs Application to Legacy Products and Ongoing Contracts
 - Evolution of the EMARs
 - Safety Considerations for Military Products/Operations
 - Extent of EMARs
 - Flight Safety Information

2 ASD Vision

At the MAWA Conference in 2012 ASD presented its vision as being:

“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

ASD recognises that the vision presented could be bolder in that it could envisage the organisation owning regulations rather than requirements. It could also seek to see the establishment of an authoritative body rather than a coordinating organisation. However, we also recognise that such a vision would require extensive political and diplomatic work to achieve and hence a two stage approach is recommended starting with the above before moving on to the final state, which could be an EASA type organisation with specific responsibilities recognising National sovereignty constraints.”

Also in 2012 we stated that:

“In our opinion, the starting point for an effective Implementation Strategy is a succinct shared Vision.

Let us always remember, the participating Member States aren't pursuing MAWA because they can; they have a goal and that is to deliver the benefits which the MAWA promises.

Nations get a regulatory framework which will be fit for purpose for the foreseeable future, which can deliver improved competition, cost savings and reduced timescales.

Industry receives a regulatory framework which is effective, clear, straightforward and common to many markets. Barriers to entry to markets will be reduced or removed. Cost savings generated in Europe will result in greater competitiveness in export markets. MAWA is a true WIN – WIN initiative for all concerned.”

ASD would like to understand if MAWA/EDA agrees with this vision and if so what the strategy and plan is to take this forward?

3 Organisation Approvals and Privileges

3.1 Organisation Approvals

One of the main issues that faces Industry today is the need to maintain a range of National organisation approvals for the different countries and business entities that it deals with. ASD's desire is therefore to have a pan participating Member States (pMSs) framework for Production, Design and Maintenance organisation approvals independent of the pMS for which the work is performed and especially for international collaboration and export programs. To achieve this state requires a JAA type model to be established in accordance with the ASD vision presented in Cyprus 2012 (see above). With this approach we would envisage that a single organisation approval that is granted in accordance with the respective EMAR will be accepted by all pMSs.

Our desire would be that for new approvals such would be granted following a single review of the organisation's capability by a group of assessors that was agreed by the pMSs. For existing approvals we would envisage that such is achieved through progressive mutual recognition by respective pMSs until such time that a tipping point was achieved that allowed for a single pan pMS approval to be granted. Once the initial pan pMS organisation approvals have been granted we would envisage that a similar approach would be followed for the continuation of such approvals whereby the audits to maintain such would be undertaken by a group of assessors that was agreed by the pMSs.

There is no reason, from ASD's perspective, why this cannot be achieved given that all of our different organisational approvals are based on the standard aviation Industry (Company by Company) conventions, procedures and processes. However, ASD recognise that where we are today is far removed from this vision given that not all pMSs have implemented the suite of EMAR's and, despite the fact that the National Armament Directors have an aspiration to incorporate the EMARs into National regulations by the end of 2015, in some cases there are no clear and robust implementation plans available to achieve such. ASD further recognise that in some pMSs a change in law may be required to allow the formal use of the EMARs in that State. Recognising this to be the case we would propose, as a starting point, that such an approach is taken for collaborative and export programs (where applicable).

It is evident that this approach will significantly reduce the workload associated with organisation approvals both for the pMSs and Industry. Whilst we might be some way

away from the vision of having a pan pMSs framework for Production, Design and Maintenance organisation approvals ASD would request that MAWA consider adopting this proposal and establish a plan by which such can be achieved.

ASD would also wish that the National Military Airworthiness Authorities (NMAAs) were able to accept Organisation approvals from the Civil Authorities without the need for duplicative initial or repeat assessments and/or audits.

Note: this pan pMSs framework is not envisaged to prevent different pMSs or business entities having different requirements for the Certification of the different products that they own. Nor is it envisaged that this framework will impact on the Sovereign rights of the NMAAs when translating the EMARs into their national regulations.

3.2 Privileges

In addition to the benefits coming from a pan pMSs organisation approval framework ASD see further benefit resulting from the granting of common privileges in the Production, Design and Maintenance domains. To achieve an effective and efficient system ASD would consider that the granting of common privileges was essential to operate an efficient and effective pan pMSs organisation approval framework. Accordingly, ASD would further request that MAWA consider adopting this element of the vision and establish a plan by which such can be achieved.

ASD believes that the granting of privileges in the Civil domain is intrinsic to the regulatory philosophy and fundamental to the successful and effective operation of the Civil Regulatory System. It follows therefore that the granting of privileges in the Military domain is equally important to the success of the MAWA initiative. The implementation of EMARs without privileges will result in higher costs for Industry, and therefore for the final product. ASD further believes that privileges granted by one NMAA should be accepted by another NMAA through the process of mutual/multi-lateral recognition and that privileges should be granted in a common manner by the respective pMSs to avoid any potential problems with mutual/multi-lateral recognition.

Note: in some cases the situation could arise whereby a pMSs has the need to control a particular activity e.g. a particular flight test with classified system or procedures. In these cases, there could be an amendment to the contract, minimizing the impact on the development and test of the product as a whole. It should be clarified however as to how these activities will contribute to the final certification of the product and under which procedures the activities will be performed.

In the case of Production, at the level presented by EMAR 21, ASD does not see the need for a permanent Government Quality Assurance (GQA) presence in Industry production lines as evidenced through the successful, efficient and safe application of the Civil Production Organisation Approval (POA) criteria and privileges in the Civil Regulatory System. To invoke such would have an adverse impact on cost and schedule with no tangible improvement in the quality or safety of the product. The argument that GQA is required to satisfy compliance with EMAR 21 is not considered to be valid because it is equivalent to saying that not granting privileges to industry is EMAR compliant. The concept of implementing EMARs without the corresponding privileges would, in our opinion, limit the success of the MAWA initiative. ASD believes that similar principles to the above can be applied in the Design and Maintenance domains.

4 Certification

4.1 Type Certificates

ASD would prefer that the Military Type Certificate (MTC) was held by Industry as is the case in the Civil Regulatory System. ASD recognise however that this is not the case in all pMSs and that to achieve commonality would require significant political effort and coordination. In the absence of a common approach the modus operandi for the different scenarios, where the MTC Holder (MTCH) rests with Industry or the Government Agency, should be common in each case.

It is recognised that, in the absence of a common approach, some cooperation programme will require a hybrid approach. It is expected that such would be dealt with on a case by case basis under the contract structure for the specific cooperation programme.

It is ASD's view that the EMAR 21 MTCH concept can only work properly for new products, and therefore specific adaptations and interpretations would need to be made for legacy products if considered applicable.

4.2 Acceptance of Extant Type Certificates

ASD would wish that NMAAs accept Civil Type Certificates (CTC) granted by recognised civil authorities as the certification basis for granting a MTC when the aircraft standard is common and the military type is operated and maintained in accordance with the civil type approved data for as long as the CTC Holder (CTCH) is fully committed to support the MTCH in this regard.

Some contracts undertaken by Industry are to introduce modifications to aircraft that hold a current (Civil or Military) Type Certificate (TC). In such circumstances a significant reduction in workload could be achieved if the customer of the modified product's NMAA was able to accept the TC of the baseline product and only consider the differences between the civil and military type, including differences in operating envelope and operating intent, for further certification activities. ASD understanding however is that there is no current unified process by which this can be achieved. It is ASD view therefore that there is a need for a formal pan pMSs process for the acceptance of such Type Certificates by the respective NMAAs of the new product. Accordingly, ASD would invite MAWA to consider this need and, if agreed, establish a

plan by which such can be achieved. ASD would recommend that as a first step MAWA consider the acceptance of existing TCs from EASA before extending the process to cover TCs underwritten by other Civil or Military Airworthiness Authorities. In addition ASD would recommend that the Military TC processes used on A400M and MRTT modifications are used as benchmarks to properly define and improve such processes and operating framework.

In the case of EASA, ASD would advocate that a global agreement is reached at transnational level to allow the provision of certification/airworthiness services to the pMSs as such is likely to be rejected by EASA if the approach were made by each individual pMS. As a matter of example the FAA has reached an agreement with the US DoD to provide certification services for commercial derivative airplanes (see FAA order 8110.101 and Advisory Circular AC20-169).

ASD would also like to see the acceptance of civil certification of engines and propellers in military registered aircraft with minimum further military certification effort.

Note: this proposal does not mean that the entire envelope and features of the new product would be certified within the original TC. The intent is to allow the NMAAs of the new product to be able to accept the original TC as part of the compliance evidence for the new product and only manage the delta between the two products.

4.3 Centralization of Type Certification

European centralisation of Type Certification independent from the Contracting Agency, which would include post Type certification control i.e. the issuing of a common baseline instructions for Continued Airworthiness for the Type, would inevitably help to maintain standards, standardise Continuing Airworthiness activities and thereby lead to further effectiveness benefits, especially where a Type is operated by more than one Nation.

4.4 Fitness for Flight vs. Fitness for Purpose.

ASD position is that we would wish that airworthiness certification (fitness for flight) and qualification (fitness for purpose) are kept separate to maintain an appropriate focus on flight safety.

ASD recognize that there may be circumstances where this separation is difficult to achieve and in these circumstances an appropriate way of working will be discussed with the Authorities in order to minimize the substantiation effort.

4.5 EMARs Exemptions for Mission System Equipment

Any tailoring of any specific certification requirements for the Type in a particular application would need to be considered on a case by case basis taking into account the specific impact of such tailoring in the particular application. As an example, any specific requirement can embody the applicable requirements that ensure minimum safety considerations in different operational environments without jeopardizing the cost by imposing inappropriately demanding safety criteria.

It is not envisaged that a general tailoring could be put in place for particular categories of equipment because the range of products that are likely to be subject to the EMARs is considered to be too large to make this practicable. In any case each NMAA/Government Agency has the ability to tailor the application of the EMARs with Industry through contract on a case by case basis including the application of special conditions.

5 Authorities

5.1 Mutual Recognition

In ASD's estimation, mutual recognition across the pMSs is critical to the success of the MAWA initiative. Whilst bilateral agreements are welcome (i.e. the case of FR and UK), ASD would advocate that a strategy and plan needs to be put in place to achieve mutual recognition across all pMSs. ASD understands that such will be difficult to achieve across the pMSs due to the different legislation and regulatory systems in place in the different pMSs and that to achieve such will require considerable political support and coordination. However, given the criticality of this to the success of the MAWA initiative, ASD would advocate that such a strategy is established to define the process and timescales over which multi-lateral recognition across all pMSs should be achieved and who should lead the implementation of the strategy. As starting point, ASD would propose that multilateral recognition is sought between the NMAAs with the greatest experience.

5.2 Relationship between Military and Civil Airworthiness Authorities

In some cases the development of a product requires discussion with both the Military and Civil Airworthiness Authorities. In such circumstances there is a benefit to be gained from the coordination of activities/discussion/progress in parallel with all Authorities. It is therefore necessary to establish a channel for coordination and discussion between the different Authorities in order to reduce the effort on the whole certification process.

5.3 Support from the Authorities (MAWA) in Programs for Third Countries (export support).

There is a benefit to be gained by industry and export customers if certification/continued airworthiness processes conducted under EMAR requirements are accepted by export customers. Where possible, therefore ASD would welcome the Nations support in this matter. Falling short of multilateral recognition ASD would also like to understand how this may be achieved.

5.4 State of Design vs. State of Registration.

A relationship needs to be established between the Design Organisation, the NMAA in the state of design and the NMAA(s) in the state(s) of registration in order to minimise the level of effort involved. For example, the roles and obligations of the Design Organisation as the TCH of a Civil Certified Engine or Propeller operated in a Military Registered aircraft should be clarified. The absence of a clearly defined relationship between this Design Organisation and the (potentially) multiple NMAAs of the states of aircraft registration could give rise to Engine or Propeller TCH Instructions for Continued Airworthiness (ICAs) including ICAs for safety not being appropriately available to support operations. ASD would propose that a generic model of the relationship is incorporated into EMAR21 and EMAD-R.

6 EMAR implementation and Evolution

6.1 EMAR Implementation

Ideally, ASD would prefer that the basic principles of the EMAR's (including the purpose and definition of the Authority (NMAA, future Supranational Authority or enabling programme specific Authorities for particular collaborative programmes)) were implemented in the National legislation of all pMSs. This would facilitate the achievement of mutual recognition across all pMSs, with the detailed technical implementation of the EMARs below the legislative level being undertaken by the respective Authority to allow for faster implementation of changes to technical material into operations.

ASD's preference is that the EMARs are 'Adopted' by the pMSs, or where this is not possible due to national constraints, that they are incorporated with minimum change.

6.2 EMARs Application to Legacy Products and Current Contracts

ASD recognises that the application of the EMARs to legacy products and ongoing contracts would be difficult to achieve for several reasons. However, if properly managed, it is envisaged that to do so could bring clear benefits from regulatory simplification and consistency of approach and would likely result in overall cost saving, particularly for those products in the early stage of their operating life. However, it is recognised that to achieve this goal contractual changes would be required. It is accepted therefore that the application of the EMARs to legacy products and ongoing contracts would need to be treated on a case-by-case basis by the relevant contracting/certifying authority.

For ASD a simplification in the regulatory frame would be welcome, especially for companies involved in multiple programmes.

6.3 Evolution of the EMARs

One of the benefits to be gained by Industry under the MAWA initiative is the coordination and streamlining of the development of airworthiness regulations/requirements between EASA, other relevant regulatory bodies and MAWA/EDA. Today the wording in the EMARs is quite similar to their EASA equivalents. However, if the development of the EASA regulations is not followed in the EMAR, and vice versa, then a significant gap could develop between the two sets that

would be difficult to manage. ASD therefore recommends that specific links with EASA are established in order to ensure maximum consistency and benefit during the EMAR evolution process. ASD would be interested to know if MAWA shared this view and, if so, could advise the means by which they would envisage such a risk to be mitigated.

A process also needs to be established to rapidly incorporate changes to EMAR into National regulations.

6.4 Safety Considerations for Military Products/Operations

In some aspects of the requirements, special attention must be paid to safety levels. It could be dangerous to make a simple extrapolation of the civil safety requirement when considering special military missions. In any case these topics should be clarified in the relevant Certification Specifications. As an example, with regards to Safety Management, the civil requirements are in continuous development and it is envisaged that Safety Management Systems will be given increasing emphasis over the next few years. Annex 19 to the Convention on International Civil Aviation was proposed by the ICAO in June 2012 – entitled Safety Management. It is ASD view that the MAWA Forum should consider building the Management of Safety into the EMARs and Annex 19 could be used as a good starting point for such consideration. It is our understanding that some military authorities have already adopted an approach along these lines.

There is a need to establish a working group to analyze the appropriate technical requirement in safety matters for military products addressing the level of risk associated with the necessary military missions and equipment. Civil rules can be useful in the context of operations that are similar to the civil ones but specific high risk military operations should be considered differently.

6.5 Extent of EMARs

ASD would propose that the MAWA Forum considers extending the suite of EMARs to include areas such as Air Traffic Management, Flying Operations, Operational Suitability Data, Operation of Military Aircraft by Civil Organisations in both Development and Service Environments and Safety Management System in order to cover the overall scope of military aviation regulations.

In addition, the scope of the Forum currently does not cover Accident and Incident Investigations. Would an instrument similar to Annex 13 of the Chicago Convention be a useful addition to cater for Accident Investigation generic protocols?

Note: ASD believes that the regulations for command structures, particularly when deployed into operational roles and theatres, should remain within the control of National arrangements. The state of European political union does not support the extension to jurisdiction that would make this appropriate. Whether this is a sensible element of an aspirational vision for the future is a potentially divisive political issue and we would not presume to offer a position at this time.

6.6 Flight Safety Information

There is a need to clarify the provision and management of flight safety information (e.g. occurrences) in military fleets. ASD proposes that a working group involving ASD should be convened to address the following topics:

- The relationship between the obligations of the operators, the MTCH, the DO and the NMAAs.
- The potential implications on civil fleets (for commercial derivative products or common equipment) and the need to inform the civil authorities (EASA)
- The appropriate management of sensitive data

7 Summary of Key Points and Proposals for Progression

7.1 ASD Vision

ASD would like to understand if MAWA/EDA agrees with the ASD vision and if so what the strategy and plan is to take this forward?

7.2 Organisation Approvals and Privileges

ASD's desire is to have a pan participating Member States (pMSs) framework for Production, Design and Maintenance organisation approvals independent of the pMS for which the work is performed that would enable a single organisation approval to be granted that would be accepted by all pMSs.

- New approvals would be granted following a single review of the organisation's capability by a group of assessors that was agreed by the pMSs.
- Existing approvals would be achieved through progressive mutual recognition by respective pMSs until such time that a tipping point was achieved that allowed for a single pan pMS approval to be granted.
- Once initial pan pMS organisation approvals have been granted we would envisage that a similar approach would be followed for the continuation of such approvals whereby the audits to maintain such would be undertaken by a group of assessors that was agreed by the pMSs.
- As starting point we would propose that such an approach is taken for collaborative and export programs (where applicable).
- ASD would request that MAWA consider adopting this proposal and, if agreed, establish a plan by which such can be achieved.
- ASD would also wish that the National Military Airworthiness Authorities (NMAAs) were able to accept organisation approvals from the Civil Authorities without the need for further initial or repeat assessments and/or audits.

ASD believes that the granting of common privileges is essential to operate an efficient and effective pan pMSs organisation approval framework.

- Privileges granted by one NMAA should be accepted by another NMAA through the process of mutual/multi-lateral recognition
- Privileges should be granted in a common manner by the respective pMSs to avoid any potential problems with mutual/multi-lateral recognition.
- ASD requests that MAWA consider adopting this element of the vision and, if agreed, establishes a plan by which such can be achieved.

ASD does not see the need for a permanent Government Quality Assurance (GQA) presence in Industry production lines as evidenced through the successful, efficient and safe application of the Civil Production Organisation Approval (POA) criteria and privileges in the Civil Regulatory System.

- ASD requests that MAWA consider this position and, if agreed, establishes a plan by which such can be achieved.
- ASD believes that similar principles to the above can be applied in the Design and Maintenance domains and would invite MAWA to consider how other similar efficiency improvements can be made in these domains through the granting of privileges to industry.

7.3 Certification

ASD would prefer that the Military Type Certificate (MTC) was held by Industry as is the case in the Civil Regulatory System. In the absence of a common approach the modus operandi for the different scenarios, where the MTC Holder (MTCH) rests with Industry or the Government Agency, should be common in each case.

ASD would wish that NMAAs accept Civil Type Certificates (CTC) granted by recognised civil authorities as the certification basis for granting a MTC when the aircraft standard is common and the military type is operated and maintained in accordance with the civil type approved data for as long as the CTC Holder (CTCH) is fully committed to support the MTCH in this regard.

In circumstances where contracts undertaken by Industry are to introduce modifications to aircraft that hold a current (Civil or Military) Type Certificate (TC) a significant reduction in workload could be achieved if the customer of the modified product's NMAA was able to accept the TC of the baseline product and only consider the differences between the civil and military type.

- ASD invite MAWA to consider the need for a formal pan pMSs process for the acceptance of extant Type Certificates (TCs) by the respective NMAAs of the new product and, if agreed, establish a plan by which such can be achieved.
- As a first step ASD proposes that MAWA consider the acceptance of existing TCs from EASA before extending the process to cover TCs underwritten by other Civil or Military Airworthiness Authorities.
- ASD would advocate that a global agreement is reached at transnational level with EASA to allow the provision of certification/airworthiness services to the pMSs as such is likely to be rejected by EASA if the approach were made by each individual pMS.
- ASD recommends that the Military TC processes used on A400M and MRTT modifications are used as benchmarks to properly define and improve such processes and operating framework.
- ASD would also like to see the acceptance of civil certification of engines and propellers in military registered aircraft with minimum further military certification effort.

European centralisation of Type Certification independent from the Contracting Agency would help to maintain standards, standardise Continuing Airworthiness activities and thereby lead to further effectiveness benefits, especially where a Type is operated by more than one Nation.

ASD's desire is that airworthiness certification (fitness for flight) and qualification (fitness for purpose) are kept separate to maintain an appropriate focus on flight safety.

7.4 Authorities

ASD would advocate that a strategy is established to define the process and timescales over which multi-lateral recognition across all pMSs can be achieved and who should lead the implementation of the strategy. As starting point, ASD would propose that multilateral recognition is sought between the NMAAs with the greatest experience.

In cases where the development of a product requires discussion with both the Military and Civil Airworthiness Authorities there is a benefit to be gained from the establishment of a channel for the coordination of activities/discussion/progress and discussion between the Military and Civil Authorities.

ASD would welcome the Nations support in circumstances where certification/continued airworthiness processes conducted under EMAR rules could be accepted by export customers. Falling short of multilateral recognition ASD would also like to understand how this may be achieved.

A relationship needs to be established between the Design Organisation, the NMAA in the state of design and the NMAA(s) in the state(s) of registration in order to minimise the level of effort involved. ASD would propose that such is incorporated into EMAR21 and EMAD-R

7.5 EMAR Implementation and Evolution

ASD would prefer that the basic principles of the EMAR's were implemented in the National legislation of all pMSs and that the detailed technical implementation of the EMARs below the legislative level is undertaken by the respective Authority.

ASD's preference is that the EMARs are 'Adopted' by the pMSs, or where this is not possible due to national constraints, that they are incorporated with minimum change.

ASD recommends that specific links with EASA and other regulatory bodies are established in order to ensure maximum consistency and benefit during the EMAR evolution process.

ASD believes that a process needs to be established to rapidly incorporate changes to EMAR into National regulations.

ASD proposes that the MAWA Forum considers extending the suite of EMARs to include;

- Air Traffic Management,
- Flying Operations,
- Operational Suitability Data,
- Operation of Military Aircraft by Civil Organisations in both Development and Service Environments,
- Safety Management System in order to cover the overall scope of military aviation regulations,
- Accident and Incident Investigations and

- The Management of Safety

ASD propose that a working group is established to analyze the appropriate technical requirement in safety matters for military products addressing the level of risk associated with the necessary military missions and equipment.

ASD proposes that a working group involving ASD should be convened to clarify the provision and management of flight safety information (e.g. occurrences) in military fleets.

Jan Pie
Secretary General, ASD

Brussels, 9th February 2015