RA 1014 - Design Organizations and Co-ordinating Design Organizations - Airworthiness Responsibilities

Rationale

Airworthiness responsibilities may be held by Design Organizations (DO), Co-ordinating Design Organizations (CDO), or Air System CDO involved in the design of Products, Parts, Appliances, ►Airborne Equipment[1] (AE), Air Launched Weapons[1] (ALW), Aircrew Equipment Assemblies[1] (AEA) and Survival Equipment[1] (SE)◄ installed in, ►or on◄ Air Systems. A lack of ►clearly defined Responsibilities◄ could lead to a gap in the work to sustain an airworthy and safe Air System occurring between the DOs and the Type Airworthiness Authority (TAA)[2] or Commodity Chief Engineer (CE). To mitigate this, the Responsibilities of DO, CDO, or Air System CDO need to be clearly defined to ensure they have auditable processes and Competent people to enact the Airworthiness duties required by the TAA or Commodity CE.

Contents

Regulation 1014(1)

Design ►Organizations and◄ Co-ordinating Design Organizations

1014(1) The relevant DO or CDO **shall** be responsible for the through-life Configuration Management►3◄ of the design of each Product, Part, Appliance, ►item of AE, ALW, AEA and SE◄ installed in, ►or on◄ an Air System.

Acceptable Means of Compliance 1014(1)

Design ►Organizations and◄ Co-ordinating Design Organizations

1. A DO or CDO **should** be approved through the Design Approved Organization Scheme (DAOS), as detailed in RA 5850[4], by the MAA.

2. The approved DO or CDO responsibilities **should** include, as appropriate:

   a. Demonstrating to the TAA or Commodity CE that the initial design of a particular Product, Part, Appliance, ►item of AE, ALW, AEA or SE◄ is in compliance with the contract specification, ►◄ is airworthy and that independent Airworthiness scrutiny of the design has been undertaken.

   b. The preparation and custody of specifications, drawings and instructions for maintaining the design of the Product, Part, Appliance, ►item of AE, ALW, AEA or SE,◄ and other supporting data associated with the design.

   c. The preparation ►◄ and supply of information for the development and upkeep of the Air System Document Set, including Release To Service Recommendations[5], Military Permit To Fly (MPTF) (In-Service) Recommendation[6], MPTF (Special Case Flying)[7], and all Aircrew Publications and Technical Information.

   d. ►Reporting◄ to the TAA or Commodity CE in a timely manner any failure, malfunction, defect or other Occurrence related to a Product, Part, Appliance, ►item of AE, ALW, AEA or SE◄ which has resulted in or may result in an unsafe condition.

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[1] ►As defined in MAA02: Military Aviation Authority Master Glossary.
[2] Where the Air System is not UK MOD-owned, Type Airworthiness (TAw) management◄ regulatory Responsibility by either the TAA or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model ►◄; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems, or refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. Dependent on the agreed delegation of TAw responsibilities TAM may be read in place of TAA as appropriate throughout this RA.
[3] ►Refer to RA 5301 – Air System Configuration Management.◄
[4] Refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).
[5] Refer to RA 1300(2): Release To Service Recommendation.
[6] Refer to RA 1305(2): Military Permit To Fly (In Service) Recommendation.
[7] Refer to RA 1305(5): Military Permit To Fly (Special Case Flying).

Acceptable Means of Compliance 1014(1)

e. Ensuring that any notified design-related Occurrence is investigated with provision of advice to the TAA or Commodity CE in a timely manner detailing appropriate recovery action (eg Modifications, Repair schemes, Technical Instructions) to restore TAw. Subsequent review and release of Special Instructions (Technical)[8] applicable to an Air System **should** be by the TAA.

f. In agreement with the Air System TAA, the scheming, design, development and preparation of Modifications and Repairs to maintain TAw. Subsequent clearance and Approval **should** be by the TAA[2], Commodity CE, or ►◄ a privileged DO.

g. Contributing towards the equipment elements of the Air System Safety Case[9] in support of the TAA or Commodity CE.

h. Ensuring that, where the organization's DAOS Approval scope does not adequately cover a sub-system, the relevant Competent sub-Contracted organization is consulted in respect of Airworthiness decisions regarding that sub-system.

i. Providing appropriate sub-system and interface data in the form of specifications and drawings for those aspects of the system or equipment that are designed by another DO.

j. Having arrangements in place with its sub-Contractors to support TAw activities.

3. ►◄ The DO or CDO **should** prepare a Certificate of Design[10] for each Product, Part, Appliance, ►item of AE, ALW, AEA or SE,◄ in accordance with the DAOS Approval, and submit it to the TAA or Commodity CE.

4. In the case when a CDO is dependent on design work by another DO, then either that DO **should** be approved under RA 5850[4], or the work **should** be within the scope of the CDO's DAOS Approval.

Guidance Material 1014(1)

Design ►Organizations and◄ Co-ordinating Design Organizations

5. A DO may be appointed the CDO for a Product, Part, Appliance, ►item of AE, ALW, AEA or SE;◄ in this context 'co-ordinating' means that the organization is dependent on other DO(s) for some or all of the design work. When an organization is appointed as the CDO, it is noted that some or all of the responsibilities listed at Acceptable Means of Compliance (AMC) Para 2 may be discharged by other DOs or CDOs.

6. For Air Systems conducting Development activity, RA 5880[11] contains the DO and TAA MPTF (Development) requirements.

Regulation 1014(2)

Air System Co-ordinating Design Organizations

1014(2) There **shall** be one overall DO or CDO appointed by the TAA as the Air System CDO to manage the overall design or through-life Configuration of each Air System.

Acceptable Means of Compliance 1014(2)

Air System Co-ordinating Design Organizations

7. When an organization is appointed by the TAA as the Air System CDO, in addition to the responsibilities of a DO or CDO, it **should** also:

a. Be responsible for the overall design or through-life Configuration Management of the design of the Air System, and for co-ordinating the design

[8] Refer to RA 5405 – Special Instructions (Technical).
[9] Refer to RA 1205 – Air System Safety Cases.
[10] Refer to RA 5103 – Certificate of Design.
[11] Refer to RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P).

Acceptable Means of Compliance 1014(2)

and integration of the Products, Parts, Appliances, ►items of AE, ALWs, AEA and SE◄ designed by other DO(s) and CDO(s).

b. Provide support to the TAA in maintaining Structural, Propulsion and Systems Integrity of the Air System Type Design through-life, as detailed within RA 5726[12]. These activities include, but are not limited to, attendance at Integrity Working Groups, review of lifing and usage data and the triennial review of the Statement of Operating Intent and Usage.

Guidance Material 1014(2)

Air System Co-ordinating Design Organizations

8. It is understood that there may exist different models which reflect the various arrangements between the Air System CDO and TAA. The diagram in Figure 1 is an illustration of the multiple relationships that could exist between the TAA and an Air System CDO, a CDO and respective DOs.

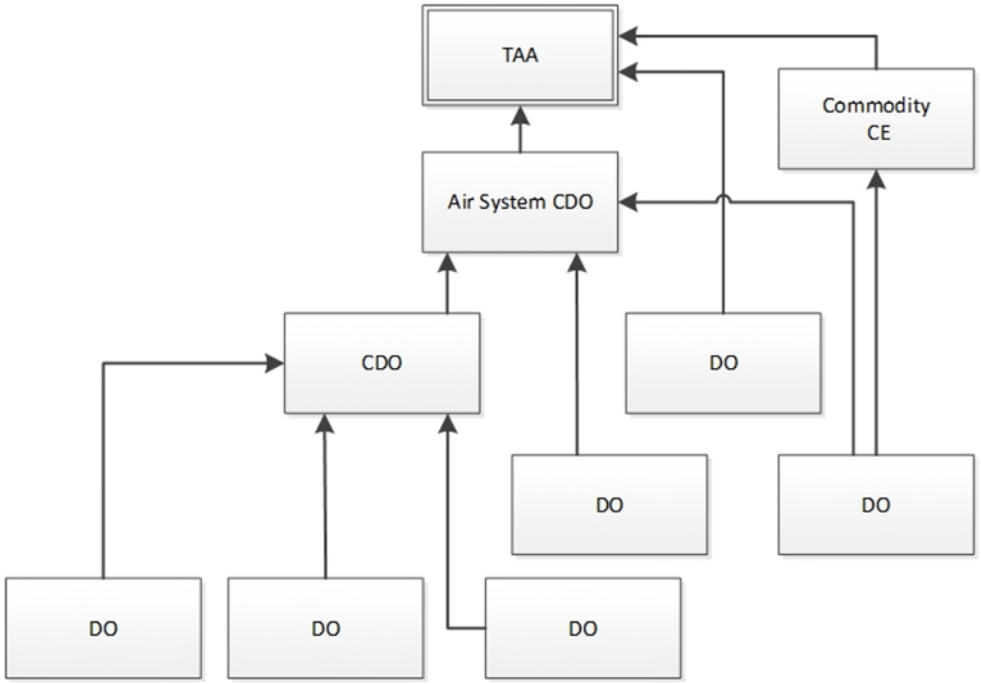
9. In particular, it is recognized that some Air System CDOs will have an emphasis on the overall design of the Air System, whereas some will have an emphasis on the through-life Configuration Management of the Air System.

10. When an organization is appointed as the Air System CDO, it is possible that some or all of the responsibilities listed in AMC Sub-para 7.b may be discharged by other DOs and CDOs. The responsibilities will be defined for each DO and CDO under the scope of their DAOS Approval and are accounted for in contractual terms under the direction of the TAA.

11. The Air System CDO is expected to have a direct contractual relationship established[13] with the TAA with the provision for regular engagement, such that the TAA can discharge their responsibilities as laid down in RA 1015[14].

12. It is noted that a Commodity CE may contract directly with a DO; some DOs (often the Propulsion System DO) are not Subcontracted by the CDO or Air System CDO, nonetheless they need to provide interface information to the relevant CDO or Air System CDO.

Figure 1. Illustration of multiple relationships.



[12] Refer to RA 5726 – Integrity Management.
[13] Refer to RA 1005 – Contracting with Competent Organizations.
[14] Refer to RA 1015 – Type Airworthiness Management – Roles and Responsibilities.

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