

## 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 or Appliances installed in Air Systems. ► A lack of clarity 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)►<sup>1</sup>◀ 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.◀*

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### Regulation 1014(1)

#### ►◀ **Design or Co-ordinating Design Organization**

1014(1) The relevant DO or CDO **shall** be responsible for the through-life configuration management of the design of each Product, Part or Appliance installed in an Air System.

### Acceptable Means of Compliance 1014(1)

#### ►◀ **Design or Co-ordinating Design Organization**

1. A DO or CDO **should** be approved through the Design Approved Organization Scheme (DAOS), as detailed in RA 5850<sup>2</sup>, 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 or Appliance is in compliance with the contract specification, and 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 or Appliance, and other supporting data associated with the design.
  - c. The preparation of, and supply of, information for the development and upkeep of the Air System Document Set, including Release To Service Recommendations►<sup>3</sup>, Military Permit To Fly (MPTF) (In-Service) Recommendation<sup>4</sup>, MPTF (Special Case Flying)<sup>5</sup>,◀ and all Aircrew Publications and Technical Information.
  - d. Making appropriate arrangements to report to the TAA or Commodity ►CE◀ in a timely manner any failure, malfunction, defect or other occurrence related to a Product, Part or Appliance which has resulted in or may result in an unsafe condition.
  - 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

<sup>1</sup> ►Where the Air System is Civilian-Owned, ownership of regulatory responsibility by either the TAA or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model for Type Airworthiness (TAW) management; 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. Dependant on the agreed delegation of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RA.◀

<sup>2</sup> Refer to RA 5850 – Military Design Approved Organization (MRP ►Part◀ 21 Subpart J).

<sup>3</sup> ►Refer to RA 1300(2): Release To Service Recommendation.

<sup>4</sup> Refer to RA 1305(2): Military Permit To Fly (In Service) Recommendation.

<sup>5</sup> Refer to RA 1305(5): Military Permit to Fly (Special Case Flying).◀

**Acceptable Means of Compliance 1014(1)**

Special Instructions (Technical)<sup>6</sup> 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<sup>1</sup>, Commodity ▶ CE ◀ or by a privileged DO.

g. Contributing towards the equipment elements of the ▶ Air System Safety Case<sup>7</sup> ◀ 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. In addition, the DO or CDO **should** prepare a Certificate of Design<sup>8</sup> for each Product, Part or Appliance, 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<sup>2</sup>, or the work **should** be within the scope of the CDO's DAOS approval.

**Guidance Material 1014(1)**

▶ ◀ **Design or Co-ordinating Design Organization**

5. A DO may be appointed the CDO for a Product, Part or Appliance; 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 AMC Para 2 may be discharged by other DOs or CDOs.

6. ▶ For Air Systems conducting development activity, RA 5880<sup>9</sup> contains the DO and TAA MPTF (Development) requirements. ◀

**Regulation 1014(2)**

▶ ◀ **Air System Co-ordinating Design Organization**

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 Organization**

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 and integration of the Products, Parts and Appliances 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

<sup>6</sup> ▶ Refer to RA 5405 – Special Instructions (Technical).

<sup>7</sup> Refer to RA 1205 – Air System Safety Cases. ◀

<sup>8</sup> Refer to RA 5103 – Certificate of Design.

<sup>9</sup> ▶ Refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P). ◀

**Acceptable  
Means of  
Compliance  
1014(2)**

► RA 5726<sup>10</sup>. ◀ 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 Organization**

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.

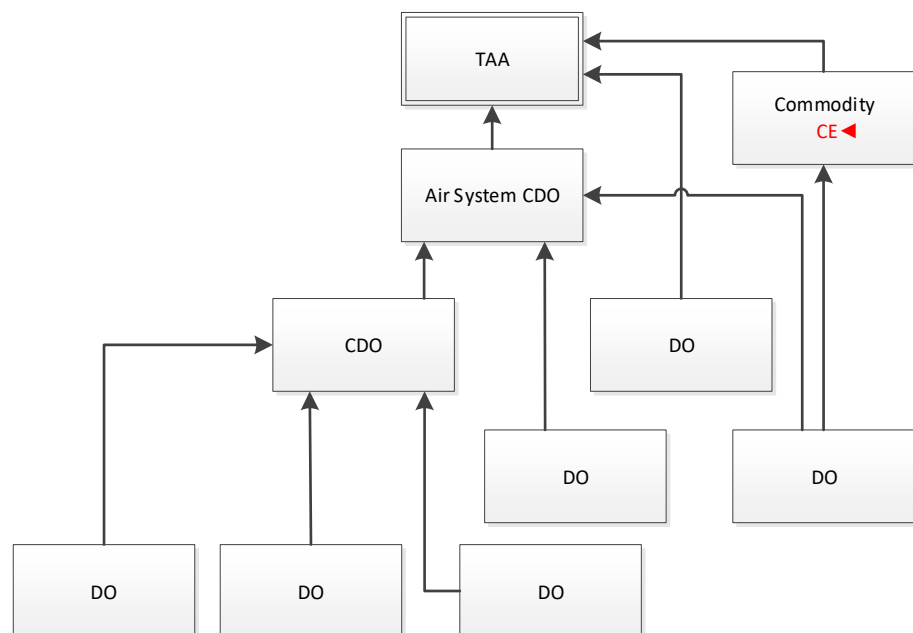
9. In particular, it is recognized that some Air System CDOs will have an emphasis on the overall design of the Air System, whereas some will have an emphasis on the through-life configuration management of the Air System.

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<sup>11</sup> with the TAA with the provision for regular engagement, such that the TAA can discharge ► their ◀ responsibilities as laid down in RA 1015<sup>12</sup>.

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.



<sup>10</sup> Refer to ► RA 5726 ◀ – Integrity Management.

<sup>11</sup> ► Refer to RA 1005 – Contracting with Competent Organizations. ◀

<sup>12</sup> Refer to RA 1015 – Type Airworthiness ► Management ◀ – Roles and Responsibilities.

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