FACTSHEET – PRODUCTION OF AVIATION SOFTWARE

SCOPE

This factsheet applies only to aviation software designed and produced under DASR 21. It does not apply to software designed and produced under recognised aviation safety frameworks eligible for installation in Defence registered aircraft under the conditions and caveats of a recognition certificate.

Aviation software refers only to software installed in an aircraft used for operating and controlling the aircraft and does not include mission system software, condition monitoring software, aeronautical information or ground-based aircraft diagnostic systems.

KEY POINTS

- Aviation software is classified as a 'part or appliance' and subject to the same rules applicable to all 'hard' parts and appliances.
- All parts and appliances, including aviation software, produced under DASR 21 must be accompanied by a DASR Form 1—*Authorised Release Certificate* to be eligible for installation on a Defence registered aircraft.
- Only organisations that hold Military Production Organisation Approval (MPOA) can obtain privileges to issue a DASR Form 1 for newly developed (or modified) software for release for installation.[1]
- In order to obtain MPOA and associated privileges, organisations must meet the requirements of DASR 21 Subpart G.[1]

DEFINITIONS OF THE TERMS USED TO DESCRIBE MANUFACTURING AND PRODUCTION, AS THEY PERTAIN TO SOFTWARE

Manufacturing: manufacturing is to produce something into a finished product using raw materials. In regard to software production, manufacturing is considered to be the development of software but not including replication.

Replication: defines the equipment and software applications needed to produce electronic copies of software executables on the desired distribution media and should include the packaging of the distribution media, manuals, warranty information, and so on, so that it may be distributed to customers or retail/resale outlets, as appropriate.

The Production stage comprises software replication and represents the software production process.

CERTIFICATION OF AVIATION SOFTWARE

The development of new (or the modification of existing) aviation software is a change to a product's type design and must be approved under DASR 21 Subpart D or E. For changes to aviation software classified as minor, a minor change approval can be issued by an organisation holding Military Design Organisation Approval (MDOA) in accordance with its Terms of Approval. For changes to aviation software classified as major, the approval must be issued by DASA as either an amended Military Type Certificate (MTC) or a Military Supplemental Type Certificate (MSTC).

[1] DASR Form 1—*Authorised Release Certificate* can also be issued under a Letter of Agreement through compliance with DASR 21 Subpart F—*Production Without Military Production Organisation Approval*, however, no privileges can be awarded. All Authorised Release Certificates issued under DASR 21 Subpart F must be countersigned by DASA prior to the component (software) being released for installation. Privileges to release software for installation under DASR 21 Subpart G gives the organisation a high level of autonomy without direct DASA involvement in the release of every component (software).

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PRODUCTION OF AVIATION SOFTWARE

DASR 21 *does not* allow the production of aviation software under an organisation's MDOA Terms of Approval. Organisations producing aviation software for installation in Defence registered aircraft must meet the requirements of DASR 21 Subpart G—*Military Production Organisation Approval* in order to obtain privileges to release the software for installation.[1]

The replication of software is the responsibility of an MPOA and the release of aviation software for installation on a Defence registered aircraft is via DASR Form 1. The software's 'part' number (version) should be marked on the media hosting the software for installation, in accordance with the requirements of DASR 21 Subpart Q.

ORGANISATION APPROVAL REQUIREMENTS

Organisations developing and producing software for installation on Defence registered aircraft must hold both MDOA under DASR 21 Subpart J and MPOA under DASR 21 Subpart G[1], in order to obtain the necessary privileges to approve the development and production of aviation software. Underpinning these organisation approvals and privileges are a Design Assurance System documented in a Design Organisation Exposition (DOE), and a Production Quality System documented in a Production Organisation Exposition (POE). It is *not* necessary to have discrete and dedicated stand-alone procedures manuals entitled 'DOE' or 'POE' to meet both sets of organisation approval requirements. A single manual, document (irrespective of its title) or set of procedures that covers the development and production of software may simultaneously meet the requirements of both a DOE and POE.

The regulatory requirements of a DOE (DASR 21.A.243) and a POE (DASR 21.A.143) are the *minimum* required of such a manual or document to be awarded the relevant organisation approval and privileges. Any manual or document(s) identified as a DOE/POE (or both simultaneously) should be a working level document(s) published for use by personnel working in the organisation. The DOE/POE should not be written purely to satisfy regulatory requirements, although this aspect will be assessed by DASA when reviewing the working level documentation and the organisation's staff's understanding of it.

FURTHER READING

- DASR 21 Subpart G – Military Production Organisation approval
- DASR 21 Subpart F – Production without Military Production Organisation approval
- DASR 21 Subpart K – Parts and Appliances