

# European Aviation Safety Agency

## European Technical Standard Order

**Subject:** Airborne Head-Up Display

### 1 - Applicability

This ETSO provides the requirements which airborne head up displays that are designed and manufactured on or after the date of this ETSO must meet in order to be identified with the applicable ETSO marking.

This ETSO standard does not address enhanced vision systems (either infrared, millimeter wave or other imaging technologies), displays worn by the pilot (goggles, helmet-mounted displays) or specific symbology to be displayed.

### 2 - Procedures

#### 2.1 - General

Applicable procedures are detailed in CS-ETSO, Subpart A.

#### 2.2 - Specific

None.

### 3 - Technical Conditions

#### 3.1 - Basic

##### 3.1.1 - Minimum Performance Standard

Standards set forth in SAE AS8055A, Minimum Performance Standards for Airborne Head Up Display, dated July 2015.

Some requirements of SAE AS8055A Section 4 are installation-dependent and cannot be fully verified at TSO article level. When the manufacturer is not able to test the TSO article in conditions representative of the overall range of the intended installation cases:

- the installation conditions for which the manufacturer has performed the test should be documented
- the installation procedures must define the functional qualification required to ensure the installed performance meets AS8055A.

##### 3.1.2 - Environmental Standard

See CS-ETSO, Subpart A, paragraph 2.1.

##### 3.1.3 - Software

See CS-ETSO, Subpart A, paragraph 2.2.

##### 3.1.4 - Airborne Electronic Hardware

See CS-ETSO, Subpart A, paragraph 2.3.

**3.2 - Specific**

None.

**3.2.1 - Failure Condition Classification**

See CS-ETSO, Subpart A, paragraph 2.4.

The failure condition classification appropriate for the equipment will depend on the intended use of the equipment in a specific aircraft. The loss of function and malfunction failure condition classification for which the equipment is designed should be documented, considering also obstructions to the pilot's field of view resulting from potential malfunction conditions.

**4 - Marking****4.1 - General**

Marking as detailed in CS-ETSO, Subpart A, paragraph 1.2.

**4.2 - Specific**

None

**5 - Availability of Referenced Document**

See CS-ETSO, Subpart A, paragraph 3.