

# ETSO-2C522

ED Decision 2022/018/R

## HELICOPTER TERRAIN AWARENESS AND WARNING SYSTEM (HTAWS) ADVANCED FEATURES

### 1 Applicability

This ETSO provides the requirements that helicopter terrain awareness and warning system (HTAWS) advanced features 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.

### 2 Procedures

#### 2.1 General

The 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

The applicable standard is that provided in Table 1 for the intended equipment class.

Table 1 — Equipment class standards

Equipment class	Equipment type	Minimum Performance Standards
Helicopter Offshore Operations (HOFO)	Offshore Helicopter Terrain Awareness and Warning System (HTAWS)	EUROCAE ED-285 'Minimum Operational Performance Standard for Offshore Helicopter Terrain Awareness and Warning System (HTAWS)' dated March 2021.

Table 2 describes the modes covered by this ETSO standard.

Table 2 — HTAWS modes

Mode		Equipment class HOFO
1	Excessive rate of descent	Required
3A	Altitude loss during take-off	Required
3B	Loss of airspeed during take-off	Required
4A	Flight near terrain when not in landing configuration	Required
4B	Flight near terrain when in landing configuration	Required
5	Excessive downward glideslope/glidepath deviation	ILS: Required GLS/LPV: Optional

Mode		Equipment class HOFO
7A	Airspeed versus total torque	Optional
7B	Vortex ring state	Optional
N/A	Fixed altitude callout	Optional
N/A	Terrain display	Not covered*
N/A	Forward looking terrain avoidance (FLTA)	Not covered*
N/A	Radio altitude interface	Not covered*

\* Local regulations on air operations may require additional modes as defined in ETSO-C194, 'Helicopter Terrain Awareness and Warning System (HTAWS)'.

### 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

### 3.2.1 Failure Condition Classification

See CS-ETSO, Subpart A, paragraph 2.4.

Failure of the function defined in paragraph 3.1.1 resulting in false warnings or an unannounced loss of function is a major failure condition.

A loss of the function defined in paragraph 3.1.1 is a minor failure condition.

### 3.2.2 Documentation

The manufacturer of the offshore HTAWS shall document in its declaration of design and performance (DDP), installation and operator manuals the transition speed between the two-mode 4A alerts, and, when the corresponding modes are implemented, the intended helicopter type for which the mode 7A and/or 7B alerts have been designed.

## 4 Marking

### 4.1 General

See CS-ETSO, Subpart A, paragraph 1.2.

### 4.2 Specific

None.

## 5 Availability of Referenced Documents

See CS-ETSO, Subpart A, paragraph 3.

[Amdt ETSO/17]