



## Terms of Reference

for a rulemaking task

### Helicopter Vibration Health Monitoring

RMT.0350 AND RMT.0351 (OPS.074) – ISSUE 1 – 23/08/2013

<b>Applicability</b>		<b>Process map</b>	
Affected regulations and decisions:	Commission Regulation (EU) No 965/2012 'Air Ops' and related Decisions	Rulemaking lead:	R3
Affected stakeholders:	Commercial Air Transport operators of large helicopters not involved in offshore operations.	Concept Paper:	No
Driver/origin:	Safety	Rulemaking group:	No
Reference:	N/A	RIA type:	Light
		Technical consultation during NPA drafting:	No
		Publication date of the NPA:	2013/Q4
		Duration of NPA consultation:	3 months
		Review group:	TBD
		Focussed consultation:	TBD
		Publication date of the Opinion:	2014/Q3
		Publication date of the Decision:	2015/Q3

## 1. Issue and reasoning for regulatory change

Due to their design, helicopters are potentially vulnerable to catastrophic mechanical failures because of the number of single-load-path critical parts within the rotor and rotor drive systems and the reduced redundancy within their design.

This vulnerability and the high accident rates in the 1970s and 1980s led to the development of systems able to monitor the health and integrity of rotors and rotor drive systems.

Vibration Health Monitoring (VHM) systems are now established as a proven safety tool used to identify the onset of mechanical failure.

In 2006, JAA proposed an Amendment to JAR-OPS 3 to require helicopters operating over water in a hostile environment with either a maximum operational passenger seating configuration (MOPSC) of more than 19 or a MOPSC of more than 9 in offshore operations to be fitted with a VHM-system. This task was transferred to EASA.

In addition, ICAO Annex 6 Part III, Section II, Chapter 4, item 4.15 (Vibration health monitoring system) recommends that 'A helicopter which has a maximum certificated take-off mass in excess of 3 175 kg or a maximum seating configuration of more than 9 should be equipped with a vibration health monitoring system'.

At the present time, VHM-system is a requirement for commercial air transport to obtain approval for offshore operations mandated through national rules in Norway and the United Kingdom.

Other Member States have not yet adopted similar safety requirements which introduce an unequal degree of operational equipment and organisational standards.

In 2007, NPA 2010-12 proposed to amend Certification Specifications for large rotorcraft (CS-29) to ensure that operationally or otherwise required VHM equipment will meet a minimum standard of design and performance that provides an acceptable level of effectiveness and reliability. CS-29 subsequently changed accordingly in 2013.

In 2012, NPA 2013-10 was published for consultation, proposing to harmonise the rules for helicopter offshore operations at EU level to provide for a level playing field whilst ensuring that the necessary standards of safety are maintained. An operational requirement for VHM equipment in helicopters performing offshore operations is part of the proposed regulation.

RMT.0350 and RMT.0351 (OPS. 074) 'Helicopter Vibration Health Monitoring' shall, therefore, be limited to cover commercial air transport helicopters that are not involved in offshore operations, but have a maximum certified take-off mass of over 3 175 kg or a MOPSC of more than 9.

## 2. Objectives

The task is to validate the need for a regulatory requirement for VHM system to be installed in new and retrofitted into existing in commercial air transport helicopters that are not involved in offshore operations, but have a maximum certified take-off mass of over 3 175 kg or a MOPSC of more than 9.

If considered necessary, regulatory framework will be created to harmonise the requirement for VHM systems at EU level.

## 3. Activities

The main activity is the assessment of:

- the number of relevant existing helicopters;
- accidents involving the relevant helicopters;
- the safety benefits from VHM systems in the relevant helicopters;

- the costs involved in fitting or retro-fitting VHM system; and
- which IR or AMC and GM might need amendment.

#### **4. Deliverables**

A proposal to introduce regulatory changes would include new paragraphs to Commission Regulation (EU) No 965/2012, Annexes III and IV, and associated EASA AMC/GM.

#### **5. Annex I: Reference documents**

##### **5.1. Affected regulations**

Commission Regulation (EU) No 965/2012, Annex III and Annex IV.

##### **5.2. Affected decisions**

EASA Acceptable Means of Compliance (AMC) and Guidance Material (GM) Part-ORO and Part-CAT.

##### **5.3. Reference documents**

EASA databases for helicopter accidents and helicopters in general.