



EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

EASA managed projects

Helicopter Safety Research
Management Committee

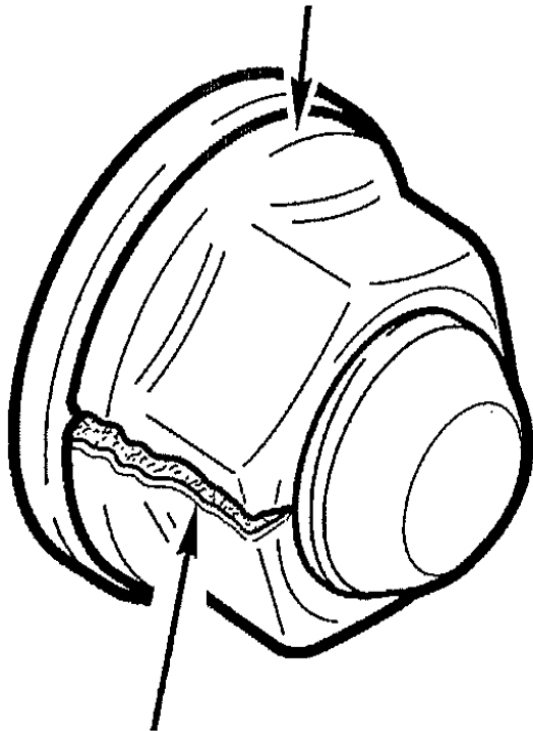
20 May 2014

Your safety is our mission.



- **Self locking nuts MS21042 / NAS1291**

MS21042L-series Nut



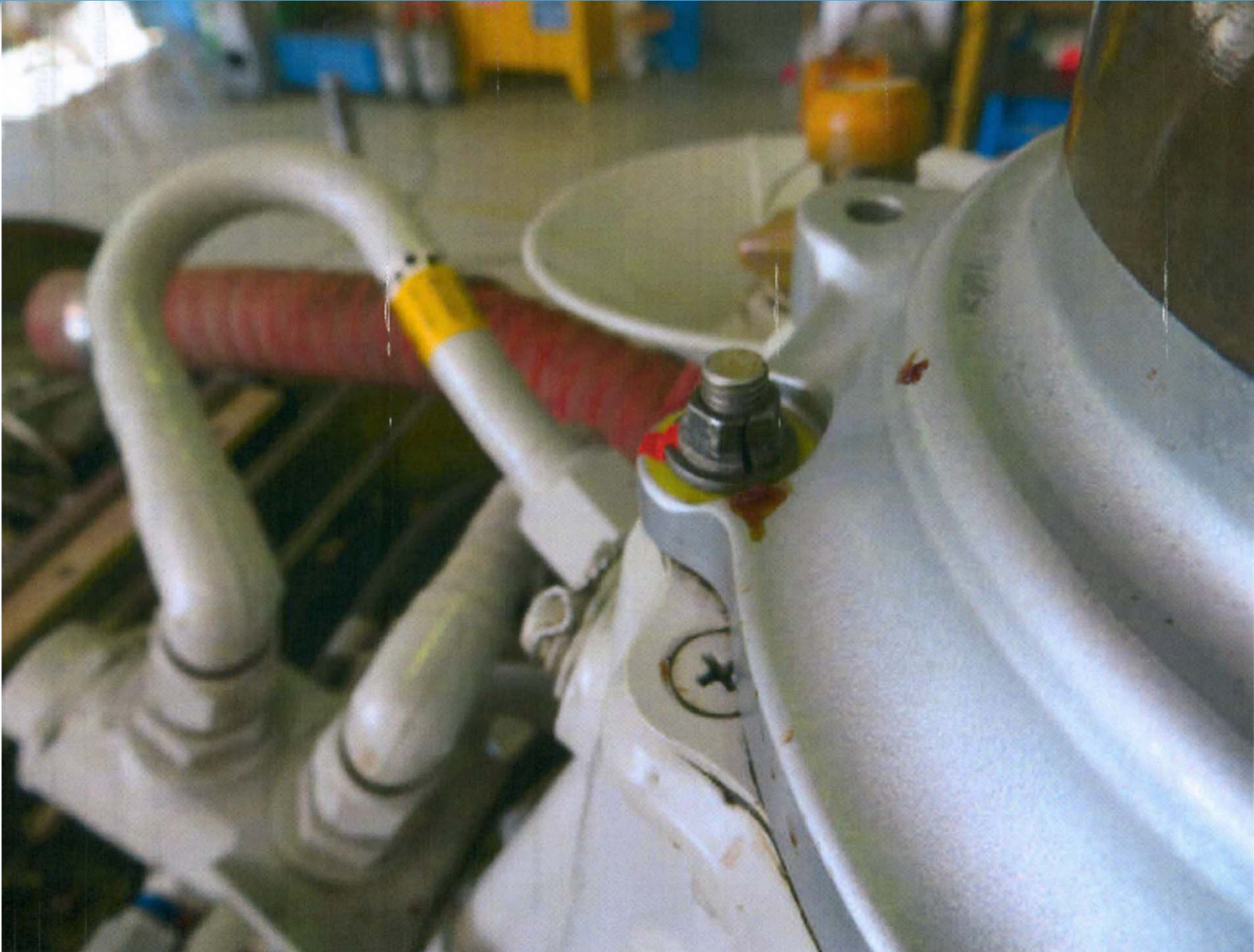
Any crack, if present, would be parallel with nut axis.

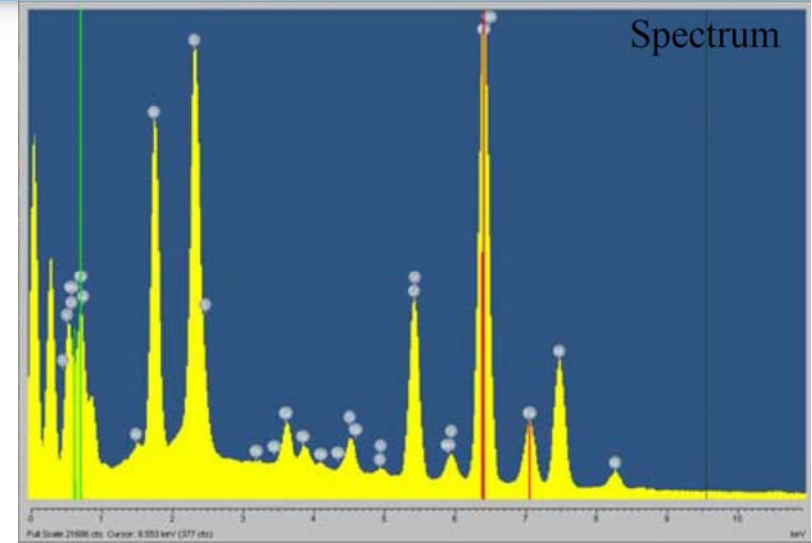
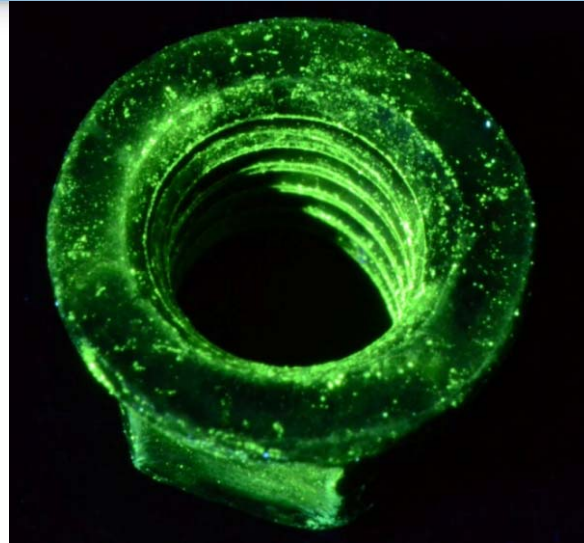




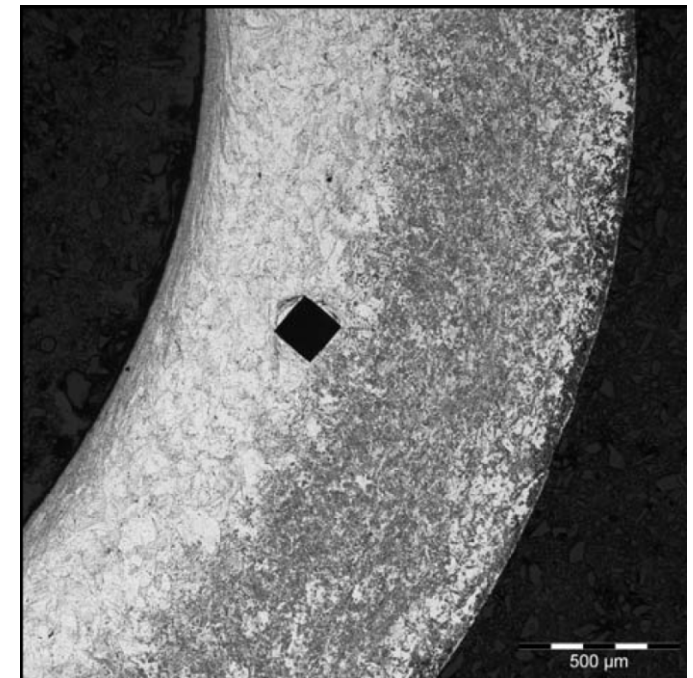


MASH (Metallurgical Assessment of Standard Hardware)



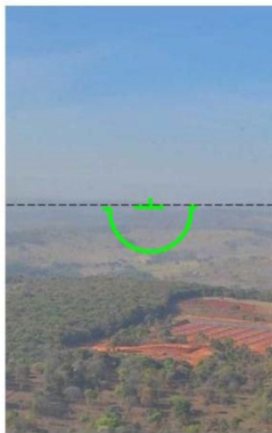
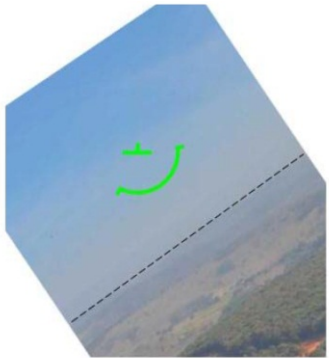


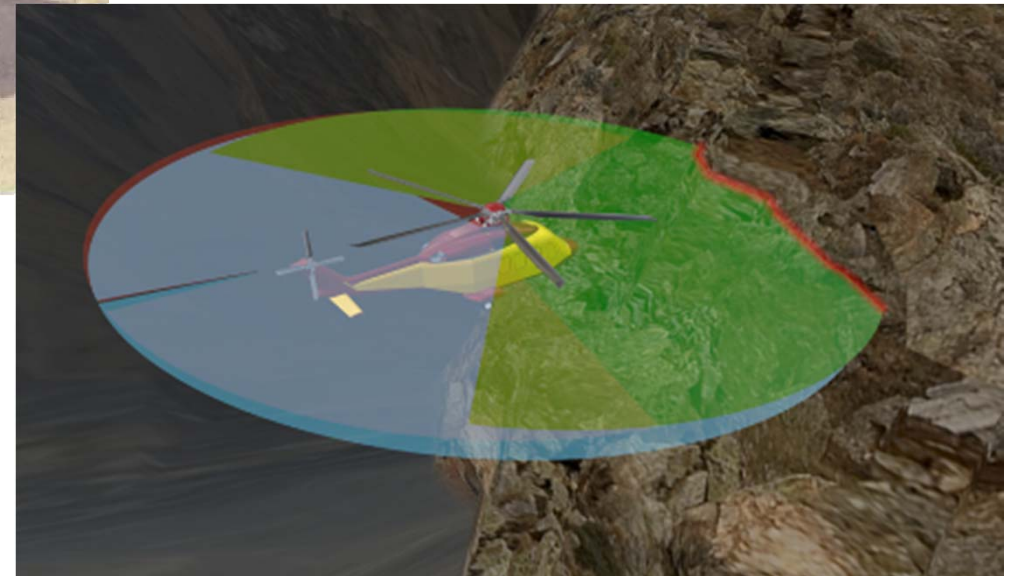
► **Sample of European manufactured nuts conforms to the standard**



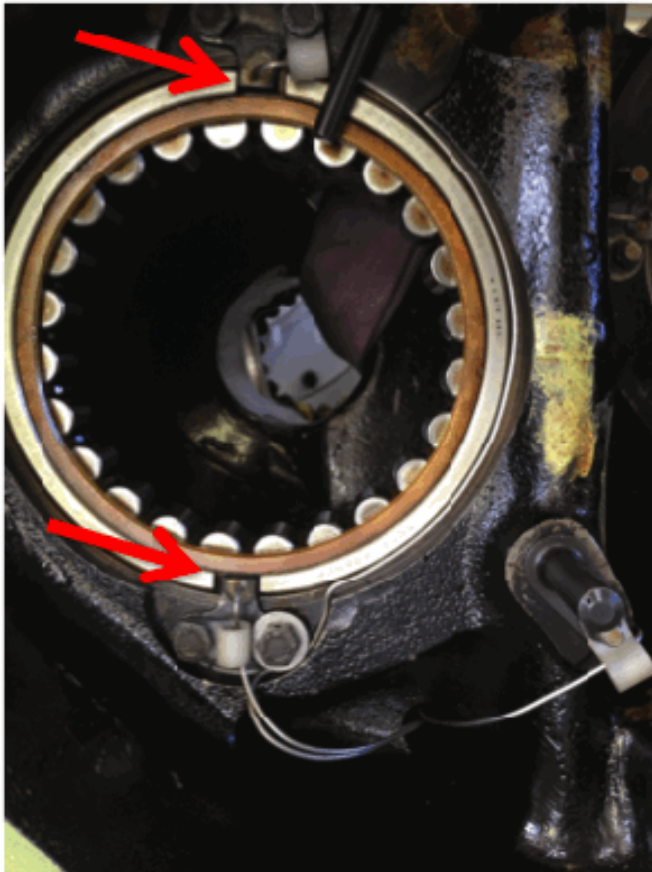


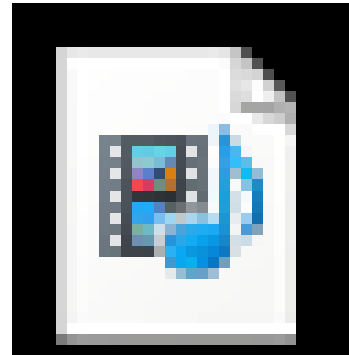
HDVE (Helicopter Flight in a Degraded Visual Environment)











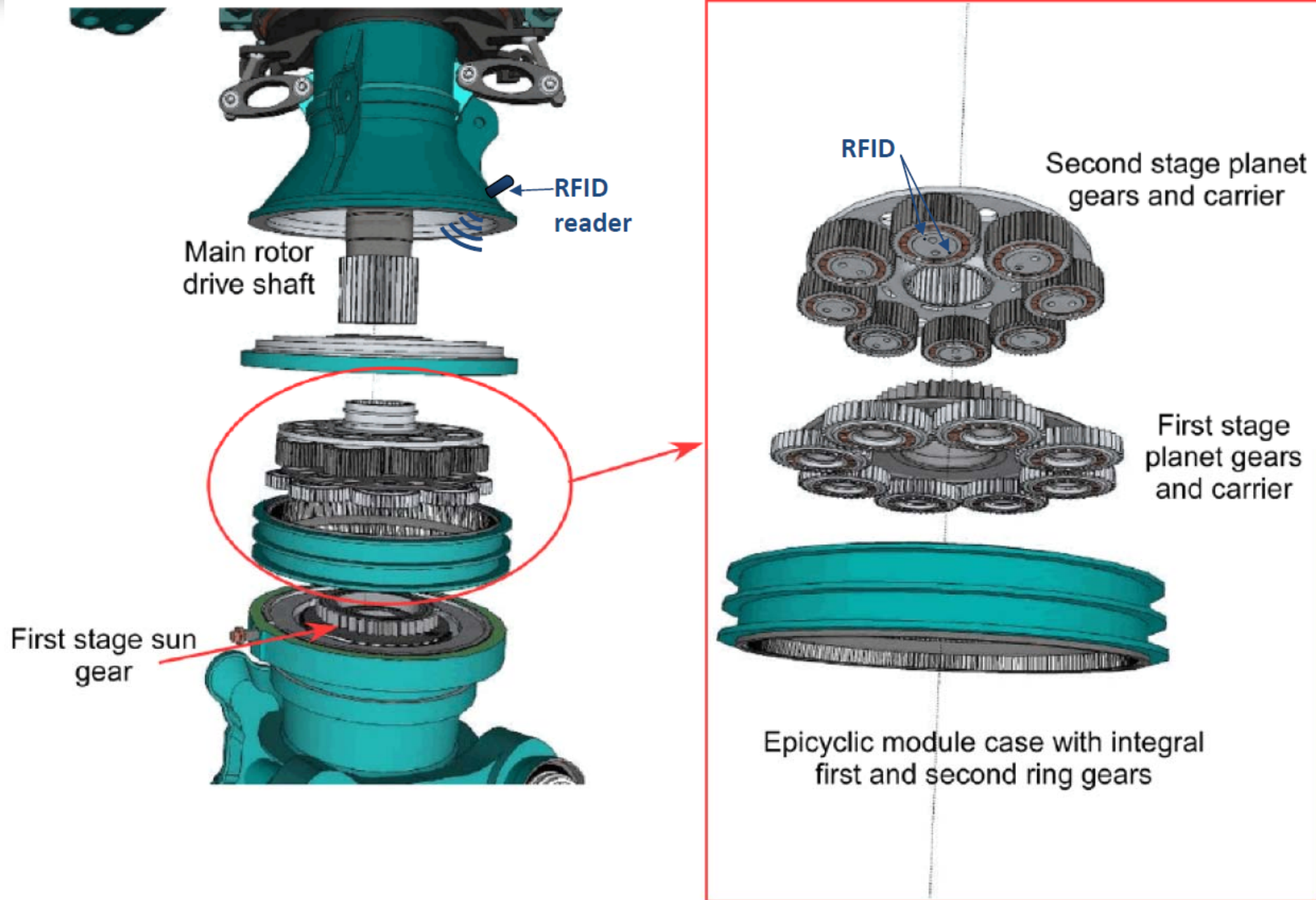
Delivery in casing.MOV

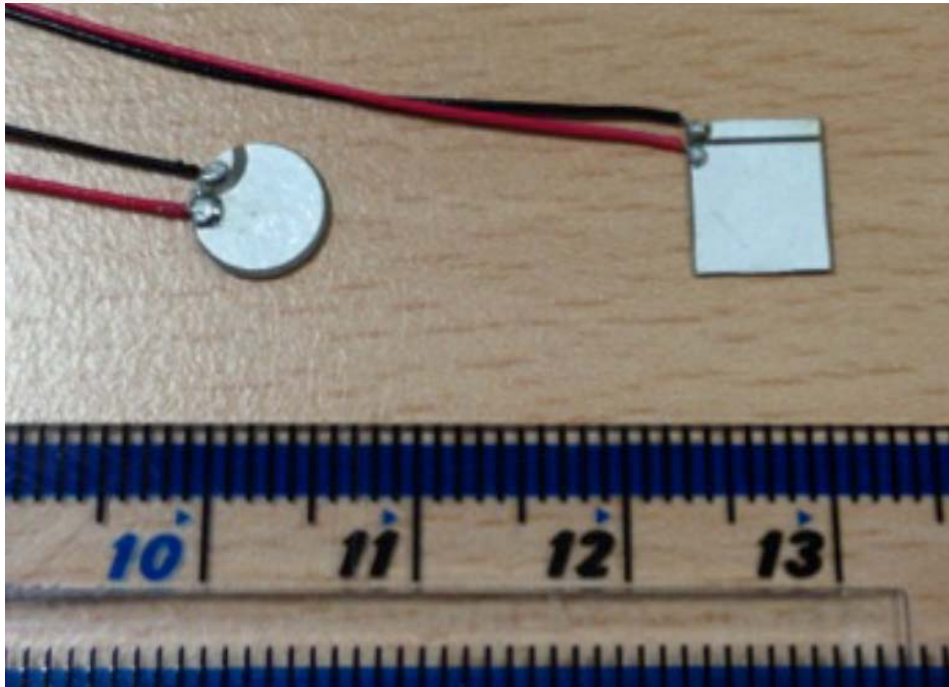


HELMGOP II

(Helicopter Main Gearbox loss of Oil
Performance optimisation)



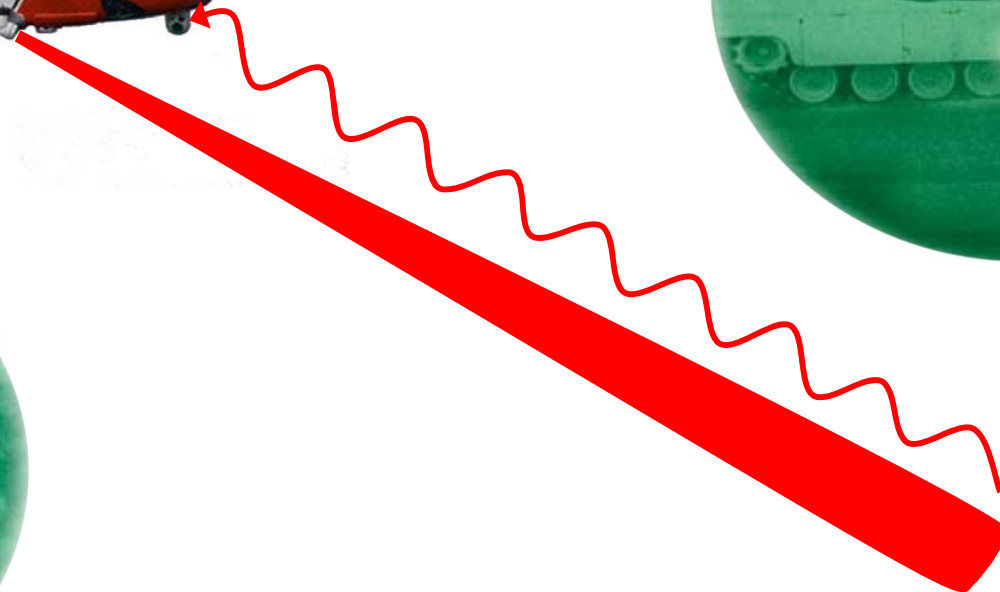




► Acoustic Emission sensor



► Crew immersion suits conspicuity





Title	Description
Vibration health monitoring - 2nd phase	Follow-up of 1st phase (technology feasibility) to better evaluate the performances of identified technologies for health monitoring in the operating conditions and constraints of rotors and Gearboxes
Helicopter Low Airspeed and Warning Device	Investigate the technical feasibility and safety benefit of a device indicating the helicopter airspeed at low values (mitigating risk of vortex ring state and Loss of tail rotor effectiveness).
Power reserve for rotorcraft	A feasibility study of the implementation of power reserve would allow the Agency to gain a better understanding of this concept and evaluate the possible need to adapt the operational rules and certification specifications.



Title	Description
De-icing of smaller helicopters	Feasibility study of the implementation of a rotor de-icing system for smaller helicopters would allow the Agency to gain a better understanding of new technology in this field and evaluate the possible need to adapt the corresponding certification specifications and guidance material.
Disorientation recovery training, (especially for helicopters)	Develop practical training scheme covering spatial disorientation or visual illusion based on existing research and developments (not limiting to civil aviation)



European Aviation Research Partnership Group (EARPG)

Ref.	Theme	Description	Update status and actions
RC-1	Augmented vision technologies in helicopter	A helicopter HUD could harness the full potential of new technologies. It would also enable other helicopter specific safety enhancements, such as Autorotation or Category A cuing, demanding phases of flight during which the scan of the pilot is best dire	EASA project on visual augmentations for VFR completed. manufacturer project UK HRMC programme
RC-2	Data collection and analysis	Lightweight health monitoring – how existing technology may be applied to helicopters	EASA projects completed (FDM, HUMS)
RC-3	Helicopter operations	Safety of helidecks on ships/moving structures to be investigated	UK CAA project, FP7 HEDGE NEXT project
RC-4	Tail rotor damage tolerance	To investigate methods to prevent or mitigate the effects of tail rotor failures	EASA project HFOD
RC-5	Improved instrumentation	Helicopter Low Airspeed and Warning Device and generally improved alerting to pilots review	research planned by EASA
RC-6	Greater systems redundancy	Investigate helicopter gearbox reliability with respect to oil leakage	EASA project
RC-7	Helicopter decision making	Investigate t benefits of formal decision making tools	UK CAA - manufacturer project EHEST activity
RC-8	Helicopter icing	Research on solutions for both light and large helicopters	Manufacturer research on-going



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Point of Contact:

**Lionel Tauszig, Project Certification Manager,
Rotorcraft**

lionel.tauszig@easa.europa.eu

[http:// www.easa.europa.eu](http://www.easa.europa.eu)

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