EASA European Union Aviation Safety Agency	**Consultation paper** **Equivalent Safety Finding**	Doc. No.: **ESF-D29.807-01** Issue : 1 Date : 28 Jul 2021 Proposed ☒ Final ☐ Deadline for comments: 19 Aug 2021

SUBJECT	:	**Equivalent Safety Finding to CS 29.807(c) - Use of flight crew emergency exits for passenger evacuation with the rotorcraft on its side**
REQUIREMENTS incl. Amdt.	:	**CS 29.807 (c) amdt. 3**
ASSOCIATED IM/MoC	:	Yes☐ / No ☒
ADVISORY MATERIAL	:	**N/A**

INTRODUCTORY NOTE:

The following Equivalent Safety Finding (ESF) has been classified as important and as such shall be subject to public consultation in accordance with EASA Management Board decision 12/2007 dated 11 September 2007, Article 3 (2.) which states:

"*2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency.*"

IDENTIFICATION OF ISSUE:

CS 29.807(c) requires that:

> (c) Passenger emergency exits; other than side-of-fuselage. In addition to the requirements of sub-paragraph (b):
>
> (1) There must be enough openings in the top, bottom, or ends of the fuselage to allow evacuation with the rotorcraft on its side; or
>
> (2) The probability of the rotorcraft coming to rest on its side in a crash landing must be extremely remote.

A request for an Equivalent Safety Finding (ESF) to CS 29.807(c) at Amdt. 3 was submitted to EASA for a large rotorcraft that is not equipped with other than side-of-fuselage emergency exits. The interior configurations approved for the Type Certificate were granted another ESF to CS 29.807(c), taking credit of seat installation (acting as a ladder) to aid occupants when accessing the cabin emergency exits.

The Agency has received an application for the certification of various interior layout configurations for up to four (4) occupants in the cabin, where the seat layout and cabin interior will not provide support to the occupants to reach the existing cabin emergency exits when the rotorcraft is resting on its side. The applicant is proposing that the flight crew emergency exits in the cockpit can be used as emergency exits for the maximum four cabin occupants.

The rotorcraft flight crew emergency exits which are are not equipped with illuminated exit markings can be accessed from the cabin through a passage in the the bulkhead between the cabin and the cockpit.

Considering all the above, the following Equivalent Safety Finding is proposed:

Equivalent Safety Finding to CS 29.807(c) Amdt 3

Use of flight crew emergency exits for passenger evacuation with the rotorcraft on its side

The use of flight crew emergency exits in the cockpit in the case of rotorcraft resting on its side is considered to provide an equivalent level of safety compared to the evacuation openings at the location requested by the CS 29.807 (c) (location in the top, bottom, or ends of the fuselage) when the following compensating factors are met:

1. Installation of an additional emergency exit sign on the bulkhead between the cabin and the cockpit.
2. Increase in the conspicuity of the flight crew emergency exits by HEELS (Helicopter Emergency Egress Lighting System). The HEELS is triggered in case of emergency evacuation and highlights the surrounding of the Emergency Exits.
3. Limitation of a maximum of four seated cabin occupants.
4. The operation of cockpit flight crew emergency exits is similar to cabin emergency exits.
5. The cockpit flight crew emergency exits openings meet at least CS 27.807(b)(1) dimensions 0.48 m by 0.66 m (19 inch by 26 inch) ellipse, to ensure usability by the cabin occupants.
6. The RFM is amended to complete the data used by the operator to prepare the briefing to the cabin occupants about the available emergency exits / egress path in case of rotorcraft resting on its side.

The Applicant will demonstrate the access from the cabin to the flight crew emergency exits in the cockpit and the egress of cabin occupants through these exits. Such demonstration will be performed by means of a combination of test and validated 3D modelling / analysis considering the range of occupants from 5% female to 95% male.
This will have to be satisfactorily repeated for any future cabin interior configuration for which it is not possible to evacuate through the cabin emergency exits.