**ASD Proposal for Introduction in the**

**European Plan for Aviation Safety 2020-2024**

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| **Title**Rulemaking on Fuel Cell Systems application |
| **New task?**Yes | **Existing Task No.:****-** |
| **Issue/Rationale**Fuel cells have become increasingly important as alternative sources of power, offering the potential for a reduction in emissions in particulate matter, nitrogen oxides, and carbon dioxide. In addition, they could support the combustion engines in producing power and as such allow more efficient use of the engines and they offer more flexible energy storage density compared to batteries. Apart from emissions reduction and thermal efficiency, fuel cell technology can constitute distributed power systems; enabling locating the power near the point of use and also reducing the power draw from the engines. The main by-products of a fuel cell are water and heat. Both of these by-products can be discarded; however, they also have the potential to provide potable water and heat for use by other airplane systems. Another by-product is oxygen depleted air that could be used for fuel tank inerting. Thus, potentially negating the need for a nitrogen inerting system. |
| **What we want to achieve**Advanced technical studies around possible integration of a fuel cell system into aircraft are followed by several OEMs while a EUROCAE/SAE working group is already discussing potential safety and certification approaches for such a system. Furthermore an ARC was initiated by the FAA (with EASA participation) which ran from 2015 to 2017. The applicable certification specification needs to be identified. In addition, the certification context of infrastructure, maintenance and ground support items need to be clarified.The goal of this activity would be:* Identification of gaps in the current CS in order to certify a fuel cell system and definition of potential new requirements
* Certification relevant maintenance and ground support procedures
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| **Category (X)** | Safety | Environment | Efficiency | Level Playing Field |
| Rulemaking | X | X |  |  |
| Safety Promotion |  |  |  |  |
| Research |  |  |  |  |
| **Related SAB subcommittee (X)** | CAS.COM | GA.COM | R.COM | C.COM |
| FS.TEC | DM.TECX | EM.TEC | ADR.TEC | ATM/ANS.TEC |

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