

## Summary

This Technical Newsletter intends to inform users of Filter Monitors (FM) of delays in the development of possible new replacement technologies for FM. Consequently, despite the impending withdrawal of EI 1583, the continued use of FM cannot be entirely phased out before the end of year 2020 as originally anticipated by the industry. It is therefore unavoidable that the use of FM will continue in JIG Standards for an interim period beyond 2020. In this transition period, all actions defined in JIG Bulletin 105 shall be strictly adhered to for all FM systems still in use.

JIG will continue to review and update its position in the light of developments and assessment of new technology and in coordination with all key industry stakeholders and will be communicating quarterly status updates.

## The industry timeline for FM withdrawal

Since the announcement from the Energy Institute that the EI 1583 specification will be withdrawn by the end of 2020, the aviation industry has been continuously working to develop and test alternative drop-in replacement solutions (new technology elements that can be used to replace existing FM with no vessel configuration changes). The ultimate objective is to eliminate Super Absorbent Polymer (SAP)-based filtration solutions in all aviation fuel handling applications.

JIG Bulletin 105 has defined actions to provide additional mitigation of potential SAP migration from FM, until suitable replacement systems are developed in sufficient capacity to meet industry fuel supply requirements.

Despite the considerable efforts of all concerned, the development of new filtration technologies has not progressed as quickly as envisaged and some are still in the development stage. This has delayed the commencement of required qualification to the relevant EI specification, robustness testing and subsequent JIG Field Evaluation of possible drop-in replacement solutions.

It is now clear that the use of Filter Monitors cannot be entirely phased out before the end of year 2020 as originally anticipated by the industry, despite the impending withdrawal of EI 1583.

## Filter Monitor Phase Out

The following positions are based on current knowledge of new technologies, progress being made with Field Trials and following discussions and with the support of the airline community, regulators and manufacturers:

1. Due to known flight safety related events, it is JIG's intention to continue to facilitate the progressive phase out of FM as additional suitable alternatives become available.
2. In the future, JIG intends to define FM phase out plans and remove the option of using FM from JIG standards, but, at present, it is not possible to define an exact timeline.
3. In order to expedite FM phase out, the option for FM elements for new-build equipment may be removed from JIG standards in advance of the total removal of FM, depending on field trial data.
4. The use of Filter elements qualified to EI 1583 7th ed. will unavoidably remain in the JIG Standards for the duration of the phase-out period, despite the imminent withdrawal of the specification.
5. In the interim, JIG reminds users of the requirement to strictly comply with the measures described in JIG Bulletin 105, which include the following:
  - FM Elements in service shall be compliant to EI 1583 7th ed.
  - The FM change-out dP (at max flow) is 15psi, with dP limiting devices being mandatory for ITP operations
  - Updated protocol for FM commissioning and inspection and cleaning of relevant hose-end strainers
  - All converted FM systems (Filter Water Separator (FWS) vessels) shall be reconverted to FWS
  - Vessels with 6" In-to-Out FM elements that cannot be retrofitted with FWS shall be replaced

All actions of JIG Bulletin 105 are subject to a site-specific MOC. A copy of JIG Bulletin 105 can be found here: [LINK](#)

## Alternatives to Filter Monitors

The JIG TN No4 ([LINK](#)) included information about the filtration technologies that are currently under evaluation and testing in conjunction with EI 1598 qualified and tested electronic water sensors, which are the following:

- Water Barrier filters qualified to EI 1588
- Dirt Defence filters qualified to EI 1599

In addition, one manufacturer has shown initial details of a 'water holding' drop-in replacement element with similar water removal performance characteristics as a filter monitor, with data currently being generated to demonstrate the stability of the new media.

The above systems are under evaluation and are not currently referenced for use in JIG Standards. Their use in the Field Trial Protocol that has been produced by JIG in conjunction with IATA and A4A, under strictly defined conditions and for a limited number of agreed operators only, is compliant with JIG Standards by approved variance.

## In the meantime, the following positions reflect current status and knowledge of FM alternatives:

- Other options of suitable filtration technologies currently exist for equipment being designed or re-evaluated: EI 1581 FWS for Jet/Avgas systems or EI 1590 MicroFilters (MF) for Avgas only
- Any new replacement technology requires robust evaluation and extended assessment under a diverse range of operating conditions before being referenced for use in JIG Standards.
- The industry field trial programme of EI 1599 Dirt Defence filters coupled with EI 1598-qualified and tested water sensors commenced in July'19 at selected operations, with additional sites being progressively added until the end of this year. The field trials are being undertaken in accordance with the industry accepted JIG field trial protocol, under JIG's technical supervision and in coordination with IATA and A4A.
- Additional airport locations are currently being prepared for field trials of EI 1588 Water Barriers but these can only commence as soon as robustness testing of EI 1588-qualified elements has been successfully completed.
- Any FM replacement technologies that are successfully evaluated will be added to the JIG Standards without delay.
- When the use of additional FM replacement technologies is added to the JIG standards there will be a defined implementation period to achieve compliance. The length of this transitional period is currently unknown as it will depend on multiple factors, some of which may only be known after field trials have been completed.

## Considerations for Transition Planning

Users are reminded of the importance of preparing a transition plan at each location by evaluating conditions and analysing options that would best serve the needs at each location. Consideration should be given to the history of fuel cleanliness and future changes in filtration/sensing technology in both the choice of filter vessel types and space/pipework flexibility to allow for possible future modifications in any new or to-be-modified fuelling equipment.

Operators should note that although the technical community believes this is unlikely, there is the possibility that existing FM vessels may become obsolete. This needs to be considered in the ordering of new equipment.