



April 24, 2018

Customer

All scheduled / non-scheduled flight operators, aircraft manufacturers, etc who are required to adhere to regulatory norms for Flight Data Monitoring (FDM) (including readout, analysis and reporting of safety critical flight data) in conformance to Flight Operational Quality Assurance.

Problem Statement/Requirements

The customer wanted a software tool capable of analyzing/reporting data from Flight Data Recorder (Black box) which can be used for maintaining flight safety standards, aircraft health monitoring and for accident/incident investigation purposes. The tool should cater to the needs of Fixed Wing as well as Rotor Crafts for effective Flight/Helicopter Operational Quality assurance.

Solution Methodology

A software product idea was conceptualized and a client server architecture based software solution was developed as per DO-178 B Level E standard (Ground System Software). The SFO solution, FliSAFE, a comprehensive Safety Management Flight Data Monitoring (FDM)/ Flight Data Analysis (FDA) tool helped airlines to identify, classify and manage risks for the safety of flight operations and provided with a framework to build a sound business.

The steps involved in the development of the SFO solution included:

- Product conceptualization.
- Discussions with domain experts and Airline Safety managers.
- PoC and approval by selected customers.
- Developing new specifications and UI specification.
- Software Architectural design.
- UML based detailed design and implementation.
- In-house software testing and beta testing at customer locations.
- Software release.
- Product maintenance.

FliSAFE was used by airlines to carry out Flight Operations Quality Assurance (FOQA)/ Helicopter Operations Monitoring Program (HOMP). FliSAFE had the following product features and specifications:

- Designed to support any aircraft type (fixed wing / rotor) and any flight data recorder.
- Highly customizable as per user requirements.
- Feature addition/enhancement done as per the needs of airlines/operators.
- Only software certified by DGCA (Directorate General of Civil Aviation) to be on par with OEM software.
- Employs client server architecture and supports multiple clients.
- Secure system with declassification of data and user rights definition, thus ensuring “need to know basis”.
- About 100 hrs of data can be analyzed in less than 200 seconds.
- Parameter values can be validated against operational limits.
- Selected parameters of different flights can be compared using multi readout provision.

- Unique FOQA tool with integrated flight tracker module, which plots flight paths in 2D & optional 3D visualization tool.
- Supports synchronized playback of CVR audio files with FDR data.
- Optional 3D visualization module for simulating flight data.
- Completely automated processing & FOQA/HOMP – Reporting.
- Accepts data from FDR/QAR/SSFDR in different formats (bin, dat, fld, fdt, fdr, dlu, raw etc).
- Used for Exceedance analysis and incident /accident investigation
- Highly customizable event severity settings.
- Periodic trend analysis and reporting
- FTP support for remote operations
- Minimum human intervention needed
- Interface for customized performance monitoring plug-in modules for fuel consumption monitoring, reduced thrust monitoring (MOQA), ANALYSIS, 3DFlight (Animation) etc.
- Web interface to connect with FOQA server to perform monitoring remotely.

Brief description of product:

A. Software

- C++

B. Compliance

- DO-178 B

Impact

- Indigenization of the FDR analysis systems, which was considered to be the capabilities of only some of the global flight data recorder manufacturers, helped Asia Pacific Airlines to get an affordable solution, which in turn helped most of the Airline to adopt FOQA health monitoring at affordable cost.
- This helped the Indian skies to remain accident free to a great extent.

About SFO

SFO Technologies Pvt Ltd, the flagship arm of the diversified conglomerate, the NeST Group provides end-to-end design-engineering-software-manufacturing solutions to clients across geographies such as the USA, Canada, Europe, Middle East, South East Asia, Japan, Australia, and India. SFO has invested in building competence, scale and standards compliant process framework, in PCBA, fibre optics, Cable & wire Harness, Magnetics, High Level Assembly, VLSI design, embedded software development, etc. SFO's capabilities transcend the plain vanilla "Build-to-Spec or Build-to-Print" EMS and our ODM+ solutions are rapidly re-defining standards for the OEMs across Aerospace & Defence, Communications, Transportation, Healthcare and Energy & Industrial domains. .



Contact:



contact@sfotechnologies.net



www.sfotechnologies.net

SFO Technologies Pvt. Ltd.

Plot No. 2, Cochin Special Economic Zone (CSEZ), Kakkanad, Kochi (Cochin) – 682 037, India. Tel: 0484 – 6614300