

Digital Briefing - enhancing pilot situational awareness



Frequentis Digital Briefing concept allows new perspectives for all briefing phases, both on the ground and in the air:

SWIM data exchange and service reference models

Digital NOTAM (AIXM 5.1)

Flight information (FIXM)

Digital METEO data (current and forecast) (IWXXM)

NOTAM, METEO and flight routes displayed graphically

Advanced filtering for focused aeronautical and meteorological information depending on each phase of flight

The challenge for digital briefings

Currently, integrated briefing systems cannot satisfy the needs of timely and accurate aeronautical and meteorological information updates for pilots and dispatchers.

Due to the actual systems limited filtering capabilities and the vast amount of data contained in current pre-flight information bulletins, there is a risk of pilots missing information critical for their mission.

The solution

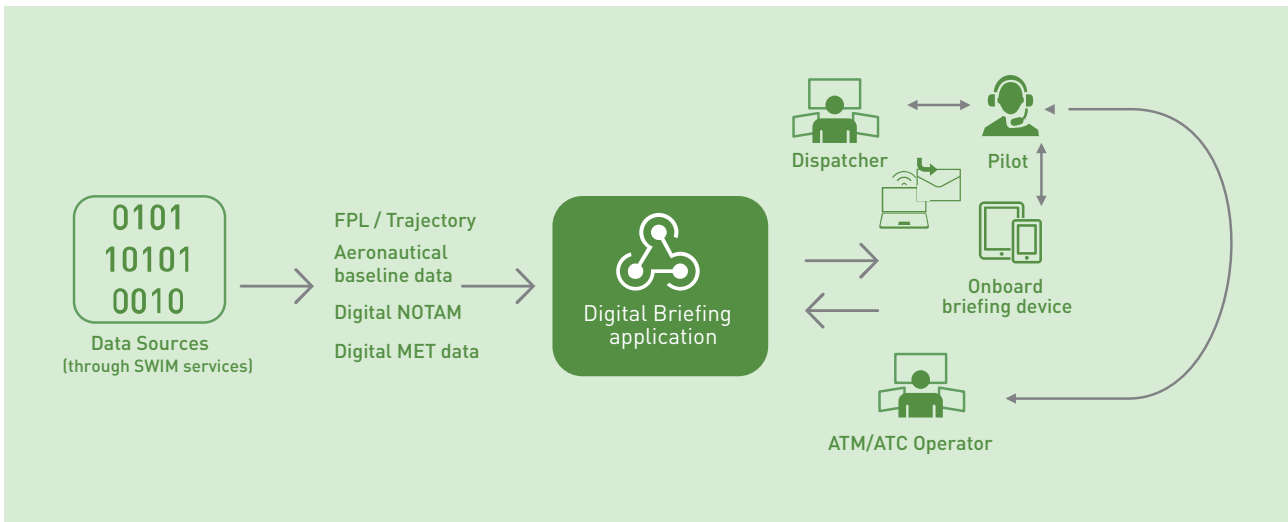
The Digital Briefing alleviates the known shortcomings of conventional briefing solutions through recognition and interpretation of digital data contents. Coupled with modern graphical presentation concepts it brings unparalleled situational awareness to pilots and airspace users.

Digital NOTAM (AIXM) eliminates the current segregation between “static” and “dynamic” aeronautical data. Both are necessary for Digital Briefing and can be accessed from the same source in the same machine readable format and structure.

Digital METEO data (IWXXM) is used extensively for the provision of pilot briefings. The accessibility of the METEO information in a common data exchange format improves the production of the enhanced Pre-flight Information Bulletin for the meteorological section by Digital Briefing applications.

Semantic grouping allows information to be organised for presentation in sequential order of the flight execution, as well as by semantic importance. Exceptional situations such as emergency returns to the departure aerodrome, emergency aerodromes along the route and alternate aerodromes at destination are highlighted. This ensures that the most vital information is visible at a glance.

Maps/charts include built-in graphical visualisations of digital NOTAM and METEO data throughout the application for an enhanced visualisation.



The Frequentis digital briefing core components were developed in collaboration with EUROCONTROL and validated within various SESAR projects as an [Integrated] Digital Pilot Briefing SWIM service.

Modern data fusion concepts applied to critical digital NOTAM and IWXXM-based METEO data result in superior graphical and textual presentation like the electronic Pre-flight Information Bulletin (ePIB) including aeronautical charts.

The know how advantage gained through the SESAR R&D activities has been consequently used to further develop the Digital Briefing into a modern SWIM application with open interfaces to make additional arbitrary legacy data available to the user.



Integrated presentation shows METEO and aeronautical data in an integrated manner as graphical overlays (e.g. airport and wind information).

Ad-hoc briefing packages for in-flight purpose, in case of an emergency landing or re-routing to a completely new destination.

SWIM System-to-System Services offer new interoperability capabilities for the exchange of aeronautical and meteorological information. Traditionally data exchange has been based on simple human readable data formats and bespoke interfaces that facilitate manual processing. The new machine-readable digital data formats are paramount for system automation while maintaining the same level of quality and safety.

Improved human performance for IFR/VFR pilots and dispatchers gain positive effects in the cost-efficiency of airspace users, flight predictability and fuel efficiency.

Vision for the future:

Digital Briefing generates possibilities for graphical presentation and enhanced filtering and prioritisation offered by digital NOTAM. Digital METEO data also simplifies and encourages interactivity between the user and the Digital Briefing application. The increased availability of Electronic Flight Bag (EFB) devices allows for interactive user interfaces to replace static documents and therefore enhance usability.

In-flight updates with Digital Briefing cover all phases of flight to enable the possibility of Digital NOTAM transmission and meteorological information updates onboard the aircraft. Compared to the conventional pre-flight briefing concept, where the main attention is put on the pre-flight phase. These innovations have been validated in SESAR projects and became unique features of the Digital Briefing system.



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