



REPUBLIC OF SAN MARINO
CIVIL AVIATION AUTHORITY

TEL: +378 (0549) 882929 | FAX: +378 (0549) 882928 | EMAIL: dennis.michelotti@caa-mna.sm

APPLICATION FOR OPERATIONAL USER APPROVAL FOR ELECTRONIC FLIGHT BAG

A vertical line in the margin indicates an amendment to the previous version.

1. DETAILS OF AIRCRAFT			
Registration Mark:	T7-		
Manufacturer's Designation of Aircraft:			
Serial Number:			
2. DETAILS OF AIRCRAFT OPERATOR			
Name of Operator:			
EFB Administrator:			
Telephone No.:		Email:	
3. EFB HARDWARE & SOFTWARE			
Type of EFB Hardware:	☐ Portable	☐ Installed	
Software application type(s):	☐ Type A ☐ Type B	☐ Type A ☐ Type B	
Make & Type of EFB:			
Onboard power supply (certified for portable only):	☐ Yes ☐ No		
Is permission being requested for documents required to be carried (under the applicable CAR OPS), to be available in electronic format only within an EFB?	☐ Yes	☐ No	
<i>(If yes, please ensure the EFB procedures are clearly described as guided by CAP 06.)</i>			
4. SUPPORTING DOCUMENTATION			
☐ AFM or STC	ALL APPLICANTS - If applying for installed EFB user approval		
☐ Compliance Checklist completed	ALL APPLICANTS - Section A to be completed		
☐ EFB operational suitability test report	AOC HOLDERS ONLY - see Note 2 below ALL OTHER APPLICANTS – see Note 3 below		
☐ EFB hardware and application specifications	ALL APPLICANTS - Submit document describing hardware and software in use		
☐ EFB operator procedures	ALL APPLICANTS - Submit document containing the EFB process and procedures		
☐ EFB training programme	ALL APPLICANTS - Submit document containing the EFB training programme		
☐ EFB risk assessment	ALL APPLICANTS - if no previous EFB approval with same operator on same type – also see Note 1 & 2 below		
☐ EFB initial operational evaluation report	AOC HOLDERS ONLY – also see Note 2 below		
☐ EFB final operational evaluation report	AOC HOLDERS ONLY – also see Note 2 below		

See notes on next page.



Note 1: Operator's operational risk assessment guidance can be found in Appendix M to CAP 06.

Note 2: If the operator holds an EFB approval for the aircraft type with another ICAO Contracting State, then the operator's EFB risk assessment, aircraft's EFB operational suitability test report and operational evaluation report that such an approval was based on may be submitted and accepted by San Marino CAA. In all other cases temporary approval will be granted for 90 days for the use of an EFB pending the submission of the final operational evaluation report.

Note 3: If the operator holds an EFB approval for the aircraft type with another ICAO Contracting State, then the operator's EFB risk assessment, aircraft's EFB operational suitability test report and operational evaluation report that such an approval was based on may be submitted and accepted by San Marino CAA.

5. APPLICANTS DECLARATION

The undersigned certifies that the above items ticked indicate that the EFB installation, continuing airworthiness of systems, minimum equipment for dispatch, operating procedures and flight crew training comply with requirements of CAR OPS 1, CAR OPS 3, CAR OPS 2A or CAR OPS 2H, as applicable.

I also confirm that the compliance checklist (below) has been completed and is an accurate statement of compliance.

I also confirm that the use of the EFB does not interfere with equipment or systems required for flight.

Date:			
Name of Flight Operations Manager:		Signature of Flight Operations Manager:	



Electronic Flight Bag (EFB) – Compliance Checklist

This compliance checklist must be completed on initial application for use of an EFB and for subsequent significant changes, e.g. introduction of a new Type B application, change of hardware, or hardware operating system.

Section A

Question	Operator's Reference in Operations Manual or EFB Policy and Procedures Manual (if not applicable please make with N/A if applicable indicate reference).
Hardware ICAO Doc 10020 Chapter 1	
Have the installed EFB resources been certified by a CAA to accepted aviation standards either during the certification of the aircraft, service bulletin by the original equipment manufacturer, or by a third-party STC? specify	
Has the basic non-interference testing of the EFB been undertaken and submitted, and using method 1 or 2? specify	
Has the operator conducted the additional testing required when using the transmitting functions of a portable EFB during flight to ensure that the device does not electromagnetically interfere with the operation of the aircraft equipment in any way? Which test requirement method was used 1 or 2? Specify	
Has the EFB undergone environmental testing, especially for rapid decompression in accordance with EUROCAE ED-14D/RTCA DO-160D guidelines and submitted?	
Has the operator assessed the physical use of the device on the flight deck to include safe stowage, crashworthiness (mounting devices and EFBs, if installed), safety and use under normal environmental conditions including turbulence?	
Will the display be readable in all the ambient lighting conditions, both day and night, encountered on the flight deck?	
Is the display within 90 degrees of the crew member's line of sight, and would glare or reflection interfere with the pilot?	
Are any EFB 'anti-theft' devices removed before flight?	
Mounting Devices	
Has the mounting device been approved in accordance with the appropriate airworthiness regulations?	
Does the EFB have a suitable Mount or Viewable Stowage? If not have procedures been developed to ensure that it is stowed during critical phases of flight?	
Does the mounting device for the EFB allow the pilot (when strapped in a seated position) to have easy access to the EFB controls and a clear unobstructed view of the EFB display?	
Does the mounted EFB location minimize the effects of glare and/or reflections? Is the EFB mounting easily adjustable by flight crew to compensate for glare and reflections?	
Has it been confirmed that the intended EFB hardware in its mounting device does not obstruct visual or physical access to aircraft displays, controls or external vision, and that its location does not impede crew ingress, egress and emergency egress paths.	



Question	Operator's Reference in Operations Manual or EFB Policy and Procedures Manual (if not applicable please make with N/A if applicable indicate reference).
Is it evident that there are no mechanical interference issues between the EFB in its mounting device and any of the flight controls in terms of full and free movement, under all operating conditions and no interference with other equipment such as buckles, oxygen hoses, etc?	
Is the EFB able to be easily removed from its mount or stowage?	
Power Supply, Connection and Source to the EFB	
Does the installed power provisions comply with the applicable airworthiness regulations?	
Is the power source suitable for the device?	
Is the power supply to the EFB, either by battery or externally supplied power, is available to the extent required for the intended operation.	
Is there a means, other than a circuit-breaker, to turn off the power source (e.g. can the pilot easily remove the plug from the installed outlet)?	
Batteries	
Does the EFB battery, and any additional battery power sources, meet the requirements of CAP 06 paragraph 6.2.1.2?	
Are the batteries compliant with the applicable standards for use in an aircraft?	
Are there procedures to handle thermal runaways or similar battery malfunctions potentially caused by EFB batteries (e.g. lithium-based batteries). At least the following issues should be addressed: a) risk of leakage; b) safe storage of spares including the potential for short circuit; and c) hazards due to on-board continuous charging of the device, including battery overheat.	
Is there a programme to replace EFB batteries?	
Cabling	
Has the operator ensured that any cabling attached to the EFB, whether in the dedicated mounting or when handheld, does not present an operational or safety hazard (e.g. it does not interfere with flight controls movement, egress, oxygen mask deployment)?	
Temperature Rise	
Does the placement of the EFB allow for sufficient airflow around the unit to prevent overheating.	
Data Connectivity between EFBs	
If two or more EFBs on the flight deck are connected to each other, has the operator demonstrated that this connection does not negatively affect otherwise independent EFB platforms?	
Stowage	
If there is no mounting device available, can the EFB be easily and securely stowed and readily accessible in-flight?	



Question	Operator's Reference in Operations Manual or EFB Policy and Procedures Manual (if not applicable please make with N/A if applicable indicate reference).
Is it evident that stowage does not cause any hazard during aircraft operations?	
Has the operator documented the location of its viewable stowage?	
Has the operator ensured that the stowage characteristics remain within acceptable limits for the proposed operations?	
Has the operator demonstrated that if the EFB moves or is separated from its stowage, or if the viewable stowage is unsecured from the aircraft (as a result of turbulence, manoeuvring, or other action), it will not interfere with flight controls, damage flight-deck equipment or injure flight crew members?	
Human Factors ICAO Doc 10020 Chapter 2	
Has the operator carried out an assessment of the human-machine interface and aspects governing crew coordination when using the EFB. At least the following issues should be addressed: a) general considerations including workload, usability, integration of the EFB into the flight deck, display and lighting issues, system shutdown and system failures b) physical placement issues, including stowage area, use of unsecured EFBs, design and placement of mounting devices; c) considerations for interference with anthropometric constraints, cockpit ventilation and speaker sound; d) training and procedure considerations, including training on using EFB applications, the EFB policy and procedures manual, fidelity of the EFB training devices and mechanisms for gathering user feedback on EFB use; e) hardware considerations; and f) software considerations.	
Has the degradation of the display due to ageing/abrasion been considered?	
Crew Operating Procedures ICAO Doc 10020 Chapter 3	
Is there a clear description of the system, its operational philosophy and operational limitations?	
Are the requirements for EFB availability in the operations manual and/or as part of the minimum equipment list (MEL)?	
Have crew procedures for EFB operation been integrated within the existing operations manual?	
Are there suitable crew cross-checks for verifying safety-critical data (e.g. performance, mass and balance (M&B) calculations)?	
If an EFB generates information similar to that generated by existing flight-deck systems, do procedures identify which information will be primary?	
Are there procedures when information provided by an EFB does not agree with that from other flight-deck sources or, if more than one EFB is used, when one EFB disagrees with another?	
Are there procedures that specify what actions to take if the software applications or databases loaded on the EFB are out of date?	



Question	Operator's Reference in Operations Manual or EFB Policy and Procedures Manual (if not applicable please make with N/A if applicable indicate reference).
Are there procedures in place to prevent the use of erroneous information by flight crews?	
Is there a reporting system for system failures?	
Have crew operating procedures been designed to mitigate and/or control additional workload created by using an EFB?	
Are there procedures in place to inform maintenance and flight crews about a fault or failure of the EFB, including actions to isolate it until corrective action is taken?	
Flight Crew Training ICAO Doc 10020 Chapter 4	
Does the operator describe the training requirements for the use of the EFB.	
The training requirements should be in accordance with the operator's SOP (including abnormal procedures)	
The training syllabus should include the following: a) overview of the system architecture; b) preflight checks of the system; c) limitations of the system; d) use of each operational software application; e) restrictions on the use of the system, including when some or all of the EFB functions are not available; f) conditions (including phases of flight) under which the EFB may not be used; g) procedures for cross-checking data entry and computed information; h) human performance considerations on the use of the EFB; i) additional training for new applications, new features of current applications or changes to the hardware configuration; j) recurrent training and proficiency checks; and k) any area of special emphasis raised during the EFB evaluation with the CAA.	
EFB Risk Assessment ICAO Doc 10020 Chapter 5	
Has a risk assessment been undertaken, and submitted, incorporating all the elements required by CAP 06 Paragraph 7.2?	
Are there procedures/guidance for loss of data and identification of corrupt/erroneous outputs?	
Are there contingency procedures for total or partial EFB failure?	
Is there a procedure in the event of a dual EFB failure (e.g. use of a paper checklist or a third EFB)?	
Have the EFB dispatch requirements (e.g. minimum number of EFBs on board) been incorporated into the operations manual?	
Have MEL or procedures in case of EFB failure been considered and published?	
EFB Functions ICAO Doc 10020 Chapter 6	
Have all applications to be used on the EFB been classified (Type A or Type B) and detailed in the EFB Policy and Procedures Manual or listed in the OM Part A.	
Has the software application been evaluated to confirm that the information being provided to the pilot is a true	



Question	Operator's Reference in Operations Manual or EFB Policy and Procedures Manual (if not applicable please make with N/A if applicable indicate reference).
and accurate representation of the documents or charts being replaced?	
Has the software application been evaluated to confirm that the computational solution(s) being provided to the pilot is a true and accurate solution (e.g. performance, and mass and balance (M&B))?	
Does the software application have adequate security measures to ensure data integrity (e.g. preventing unauthorized manipulation)?	
Does the EFB system provide, in general, a consistent and intuitive user interface, within and across the various hosted applications?	
Has the EFB software been evaluated to consider HMI and workload aspects?	
Does the software application follow Human Factors guidance?	
Can the flight crew easily determine the validity and currency of the software application and databases installed on the EFB, if required?	
Has it been demonstrated that the criterias for the use of IFW (In-flight weather) applications are fulfilled?	
Has it been demonstrated that the criterias for the use of applications displaying own-ship position in-flight (OSPIF) are fulfilled?	
If the own-ship position is displayed on terminal charts (SID, STAR or approach plates) is the label 'AIRCRAFT POSITION NOT TO BE USED FOR NAVIGATION' displayed?	
If a commercial off-the-shelf (COTS) position source has been used, how have the requirements of CAP 06 Appendix H been met?	
Have specific AMMD crew procedures and training been developed highlighting that it is only an aid to positional awareness and not to be used as the basis for ground manoeuvring?	
Has it been demonstrated that the criterias for the use of chart applications are fulfilled?	
If electronic signatures are to be used, what procedures has the operator put in place?	
EFB Management ICAO Doc 10020 Chapter 6	
Is there an EFB management system in place?	
Does one person possess an overview of the complete EFB system and responsibilities within the operator's management structure?	
Are the authorities and responsibilities clearly defined within the EFB management system?	
Are there adequate resources assigned for managing the EFB?	
Are third party (e.g. software vendor) responsibilities clearly defined?	
Are internal inspections/audits of the EFB system integrated in the compliance monitoring system?	
Is there a list and description of the software applications contained in the operations manual?	
Are there procedures established by the operator to notify crews about changes in the EFB system?	



Question	Operator's Reference in Operations Manual or EFB Policy and Procedures Manual (if not applicable please make with N/A if applicable indicate reference).
Are there procedures established by the operator to notify the competent authority about changes in the EFB system?	
Operational Evaluation Process ICAO Doc 10020 Chapter 7	
Have the details of the Initial Operational Evaluation Test been confirmed and a plan submitted to the Authority?	
When the Final Operational Report is issued and submitted, will it conform to the requirements of, and follow the format shown in CAP 06 paragraph 7.15 & Appendix I?	