BERMUDA CIVIL AVIATION AUTHORITY

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Electronic Flight Bags (EFB) Approval Checklist

RESET

Operator: **Submitted by:**
Registration Mark(s): **Date:**
EFB Make(s): **EFB Type:**

Reference: ICAO Doc. 10020

PART I **HARDWARE**		**BCAA Comments**
Have the installed EFB resources been certified by a NCAA to accepted aviation standards either during the certification of the aircraft, service bulletin by the original equipment manufacturer, or by a third-party STC?	Yes ☐ No ☐ N/A ☐	
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?	Yes ☐ No ☐ N/A ☐	
Will the display be readable in all the ambient lighting conditions, both day and night, encountered on the flight deck?	Yes ☐ No ☐ N/A ☐	
Has the operator demonstrated that the EFB will not electromagnetically interfere with the operation of aircraft equipment?	Yes ☐ No ☐ N/A ☐	
Has the EFB been tested to confirm operation in the anticipated environmental conditions (e.g. temperature range, low humidity, altitude)?	Yes ☐ No ☐ N/A ☐	
Have procedures been developed to establish the level of battery capacity degradation during the life of the EFB?	Yes ☐ No ☐ N/A ☐	
Is the capability of connecting the EFB to certified aircraft systems covered by an airworthiness approval?	Yes ☐ No ☐ N/A ☐	

When using the transmitting functions of a portable EFB during flight, has the operator ensured that the device does not electromagnetically interfere with the operation of the aircraft equipment in any way?	Yes ☐ No ☐ N/A ☐	
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?	Yes ☐ No ☐ N/A ☐	
Can the brightness or contrast of the EFB display be easily adjusted by the flight crew for various lighting conditions?	Yes ☐ No ☐ N/A ☐	

PART 2 **INSTALLATION** **Mounting**		**BCAA Comments**
Has the installation of the mounting device been approved in accordance with the appropriate airworthiness regulations?	Yes ☐ No ☐ N/A ☐	
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.?	Yes ☐ No ☐ N/A ☐	
Has it been confirmed that the mounted EFB location does not impede crew ingress, egress and emergency egress path?	Yes ☐ No ☐ N/A ☐	
Is it evident that the mounted EFB does not obstruct visual or physical access to aircraft displays or controls?	Yes ☐ No ☐ N/A ☐	
Does the mounted EFB location minimize the effects of glare and/or reflections?	Yes ☐ No ☐ N/A ☐	
Does the mounting method for the EFB allow easy access to the EFB controls and a clear unobstructed view of the EFB display?	Yes ☐ No ☐ N/A ☐	

Is the EFB mounting easily adjustable by flight crew to compensate for glare and reflections?	Yes ☐ No ☐ N/A ☐	
Does the placement of the EFB allow sufficient airflow around the unit, if required?	Yes ☐ No ☐ N/A ☐	

PART 3 *Note. This part should be completed multiple times to account for the different software applications being considered* **SOFTWARE** **Software application: (fill in the name of the software application)**		**BCAA Comments**
Is the application considered an EFB function (see Chapter 6)?	Yes ☐ No ☐ N/A ☐	
Has the software application been evaluated to confirm that the information being provided to the pilot is a true and accurate representation of the documents or charts being replaced?	Yes ☐ No ☐ N/A ☐	
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))?	Yes ☐ No ☐ N/A ☐	
Does the software application have adequate security measures to ensure data integrity (e.g. preventing unauthorized manipulation)?	Yes ☐ No ☐ N/A ☐	
Does the EFB system provide, in general, a consistent and intuitive user interface, within and across the various hosted applications?	Yes ☐ No ☐ N/A ☐	
Has the EFB software been evaluated to consider HMI and workload aspects?	Yes ☐ No ☐ N/A ☐	

Does the software application follow Human Factors guidance?	Yes ☐ No ☐ N/A ☐	
Can the flight crew easily determine the validity and currency of the software application and databases installed on the EFB, if required?	Yes ☐ No ☐ N/A ☐	
Power connection/batteries		**BCAA Comments**
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)?	Yes ☐ No ☐ N/A ☐	
Is the power source suitable for the device?	Yes ☐ No ☐ N/A ☐	
Have guidance/procedures been provided for battery failure or malfunction?	Yes ☐ No ☐ N/A ☐	
Is power to the EFB, either by battery and/or supplied power, available to the extent required for the intended operation?	Yes ☐ No ☐ N/A ☐	
Has the operator ensured that batteries are compliant to acceptable standards?	Yes ☐ No ☐ N/A ☐	
Cabling		**BCAA Comments**
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)?	Yes ☐ No ☐ N/A ☐	
Stowage		**BCAA Comments**
If there is no mounting device available, can the EFB be easily and securely stowed and readily accessible in-flight?	Yes ☐ No ☐ N/A ☐	
Is it evident that stowage does not cause any hazard during aircraft operations?	Yes ☐ No ☐ N/A ☐	

Viewable stowage		**BCAA Comments**
Has the operator documented the location of its viewable stowage?	Yes ☐ No ☐ N/A ☐	
Has the operator ensured that the stowage characteristics remain within acceptable limits for the proposed operations?	Yes ☐ No ☐ N/A ☐	
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?	Yes ☐ No ☐ N/A ☐	

PART 4 **MANAGEMENT** **EFB Management**		**BCAA Comments**
Is there an EFB management system in place?	Yes ☐ No ☐ N/A ☐	
Does one person possess an overview of the complete EFB system and responsibilities within the operator's management structure?	Yes ☐ No ☐ N/A ☐	
Are the authorities and responsibilities clearly defined within the EFB management system?	Yes ☐ No ☐ N/A ☐	
Are there adequate resources assigned for managing the EFB?	Yes ☐ No ☐ N/A ☐	
Are third party (e.g. software vendor) responsibilities clearly defined?	Yes ☐ No ☐ N/A ☐	
Crew procedures		**BCAA Comments**

Is there a clear description of the system, its operational philosophy and operational limitations?	Yes ☐ No ☐ N/A ☐	
Are the requirements for EFB availability in the operations manual and/or as part of the minimum equipment list (MEL)?	Yes ☐ No ☐ N/A ☐	
Have crew procedures for EFB operation been integrated within the existing operations manual?	Yes ☐ No ☐ N/A ☐	
Are there suitable crew cross-checks for verifying safety-critical data (e.g. performance, mass and balance (M&B) calculations)?	Yes ☐ No ☐ N/A ☐	
If an EFB generates information similar to that generated by existing flight-deck systems, do procedures identify which information will be primary?	Yes ☐ No ☐ N/A ☐	
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?	Yes ☐ No ☐ N/A ☐	
Are there procedures that specify what actions to take if the software applications or databases loaded on the EFB are out of date?	Yes ☐ No ☐ N/A ☐	
Are there procedures in place to prevent the use of erroneous information by flight crews?	Yes ☐ No ☐ N/A ☐	
Is there a reporting system for system failures?	Yes ☐ No ☐ N/A ☐	
Have crew operating procedures been designed to mitigate and/or control additional workload created by using an EFB?	Yes ☐ No ☐ N/A ☐	
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?	Yes ☐ No ☐ N/A ☐	
EFB Risk Assessment		**BCAA Comments**

Has an EFB risk assessment been performed?	Yes ☐ No ☐ N/A ☐	
Are there procedures/guidance for loss of data and identification of corrupt/erroneous outputs?	Yes ☐ No ☐ N/A ☐	
Are there contingency procedures for total or partial EFB failure?	Yes ☐ No ☐ N/A ☐	
Is there a procedure in the event of a dual EFB failure (e.g. use of a paper checklist or a third EFB)?	Yes ☐ No ☐ N/A ☐	
Have the EFB dispatch requirements (e.g. minimum number of EFBs on board) been incorporated into the operations manual?	Yes ☐ No ☐ N/A ☐	
Have MEL or procedures in case of EFB failure been considered and published?	Yes ☐ No ☐ N/A ☐	
Training		**BCAA Comments**
Is the training material appropriate with respect to the EFB equipment and published procedures?	Yes ☐ No ☐ N/A ☐	
Does the training cover the list of items in Chapter 4 — Flight crew training?	Yes ☐ No ☐ N/A ☐	
Hardware Management Procedures		**BCAA Comments**
Are there documented procedures for the control of EFB hardware configuration?	Yes ☐ No ☐ N/A ☐	

Do the procedures include maintenance of EFB equipment?	Yes ☐ No ☐ N/A ☐	
Software Management Procedures		**BCAA Comments**
Are there documented procedures for the configuration control of loaded software and software access rights to the EFB?	Yes ☐ No ☐ N/A ☐	
Are there adequate controls to prevent corruption of operating systems, software and databases?	Yes ☐ No ☐ N/A ☐	
Are there adequate security measures to prevent system degradation, malware and unauthorized access?	Yes ☐ No ☐ N/A ☐	
Are procedures defined to track database expiration/updates?	Yes ☐ No ☐ N/A ☐	
Are there documented procedures for the management of data integrity?	Yes ☐ No ☐ N/A ☐	
If the hardware is assigned to the flight crew, does a policy on private use exist?	Yes ☐ No ☐ N/A ☐	