Use of Cargo Supply Chain Data Loggers

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Referenced Documents: ** Revision Changes Implementation Control (RCIC)*		
Document Name	Revision	RCIC* Required
EASA AMC1 CAT.GEN.MPA.140 Portable electronic devices		☐ YES ☒ NO
Refer Table 1, paragraph 2.1 in this Engineering Statement for list of operator approved supply chain logger devices.		☐ YES ☒ NO
SR ID 35609691124_MSG AGT-AGT-23-0111-02B		☐ YES ☒ NO

Contact:	E-Mail: Fleet-Management@aerologic.aero Tel: +49 (34204) 443 406

Preparation and Release: *(This document has been written and approved by)*				
ME / ME-FM	05 August 2025 | 11:28 CEST Marco Böhm Aircraft Systems Engineer Signed by: Marco Böhm FB588624E85A49A...		Marius Bednar Manager Engineering & Fleetmanagement Digitally signed by Bednar, Marius Date: 2025.08.05 11:32:57 +02'00'	
Responsible	Prepared By	Signature / Stamp / Date	Approved By	Signature/ Stamp / Date

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1 Allgemein/ General

1.1 Revision Highlights

Revision 22 is issued to add devices from MSR Electronics, Reelables, Trackonomy Sytems, AviusULD, SkyCell into operator approval list.

1.2 Effectivity

This engineering statement is applicable to all Aerologic 777F aircraft.

1.3 General

Aerologic's shareholders desire to use re-usable supply chain loggers to monitor environmental conditions along the transport chain of delicate cargo. The use of such loggers is regulated due to their radio transmission function and the installed batteries. The requirements for such loggers are laid down in EASA AIR OPERATIONS Part-CAT.GEN.MPA.140. Compliance with these requirments must be shown before loggers are employed on aerologic aircraft.

This Engineering Statement provides an overview of PEDs used in the Aerologic fleet, the compliance status of the PEDs named in Table 1 with applicable requirements.

2 Compliance with applicable regulations

2.1 EASA AIR OPS requirements

EASA AIR OPS CAT.GEN.MPA.140 establishes rules for the use of portable electronic devices (PEDs) on board of aircraft. The use of PEDs that could adversely affect the performance of the aircraft's systems and equipment shall not be permitted. Cargo logging devices for example the Controlant CO 10.01 can be considered transmitting PEDS in this context.

AMC1 to CAT.GEN.MPA.140 defines scenarios for permitting the use of (T)-PEDs. With the portable electronic devices (PEDs) named in Table 2 ability to automatically deactivate the transmission function any of the methods as outlined under CAT.GEN.MPA.140 (d) (3) is considered as acceptable evidence for its safe operation.

The 777F airplane has been HIRF certified during the type certification process (FAA Type Certificate T00001SE, Special Condition 25-ANM-78; EASA TCDS IM.A.003, Special Condition CRI D-5).

Boeing furthermore confirmed in SR 35609691124 that all 777 aircraft models have demonstrated full PED Front door and Back Door Tolerance and therefore Scenario 1 of EASA AMC1 CAT.GEN.MPA.140 guidance is applicable and T-PEDs can be utilized in all phases of flight, including cargo tracking devices.

2.2 List of Aerologic approved supply chain logger devices

For the PEDs listed in Table 1, Aerologic Engineering has received and reviewed the documentation. The compliance documentation demonstrats the compliance with EASA and/or FAA requirements. The available compliance documentation can be viewed in the engineering library.

Table 1

No.	Manufacturer	Product Name	Product Type
1.	Controlant	Real-Time Data Logger, Tracking device	CO 10.01
2.	Controlant	Real-Time Data Logger, Tracking device	Saga Saga H Saga P
3.	Sendum	Real-Time Data Logger, Tracking device	PT300D
4.	Sensitech	Real-Time Data Logger, Tracking device	T11013050
5.	Sensitech	Real-Time Data Logger, Tracking device	T11013070,TTGEO X T11013210, XP T11013230, XE T11013220, XEP T11013220
6.	Onasset	Real-Time Data Logger, Tracking device	Sentry 600 Flight Safe
7.	Onasset	Real-Time Data Logger, Tracking device	Sentry 500 Flight Safe
8.	Tive	Real-Time Data Logger, Tracking device	TT-7100 (Non-Lithium)
9.	7PSolutions	Real-Time Data Logger, Tracking device	GL300series, GL521, GD100
10.	Here	Premier Tracker, Tracking device	JM-LL03S
11.	Roambee	Cargo Tracking device	BeeSense Flex BNG 500, BeeSense Modbus (BNG 500M) BL-MOD-3, BeeLabel
12.	Tempnote	Cargo Tracking device	T32SU, T32
13.	Sony	Cargo Tracking device	VT-G100
14.	Tive	Cargo Tracking device	TT-7000 (Solo 5G)
15.	Swiss Airtainer	Cargo Tracking device	TR005 Swiss Airtainer RKN In-Flight Detection (integrated tracking device)
16.	Descartes	Cargo Tracking device	CORE Pallet Tag PLT001
17.	Descartes	Cargo Tracking device	CORE Pallet Tag PLT003
18.	Descartes	Cargo Tracking device	CORE Standard Tag STD001
19.	Sigfox	Cargo Tracking device	Sensolus Track 1020
20.	System Loco Track/Tag	Cargo Tracking device	Loco HGR4, HGD4, Loco Tag E4BL, 2CPL
21.	CalAmp	Cargo Tracking device	SC1204
22.	SODAQ	Cargo Tracking device	SODAQ TRACK Solar
23.	SODAQ	Cargo Tracking device	SODAQ TRACK Active
24.	FedEx	Cargo Tracking device	SenseAware ID1, -ID2, -ID3

25.	FedEx	Cargo Tracking device	Sense Aware M4 (Alias production names: Sense Aware 4000, EUT-SA4000, HM4)
26.	Thingfox T2	Cargo Tracking device	Thingfox T2
27.	Intelyt	Cargo Tracking device	iCHIME, iTAG
28.	Sensos	Cargo Tracking device	Sensos Label Gen 2.0
29.	CartaSense	Cargo Tracking device	O-Sensor
30.	Chorus	Cargo Tracking device	Chorus Scout DOS
31	Log Tag Recorders Ltd.	Cargo Tracking device	LogTag TRIX-8, TRIX-16; LogTag EV-16, USRIC-8, USRIC-16
32	In Virtus Technologies	Cargo Tracking device	ivTrackEvo, ivTrackNano
33	LivingPackets France	Cargo Tracking device	THE BOX L V2, THE BOX Pro, taille M, THE BOX Pro, taille L, THE BOX Pro, taille S, THE BOX Pro, taille XS, THE BOX Pro, taille XXS, TABLET V2
34	MSR Electronics	Cargo Tracking device	MSR 63, 64, 83, 84 MSR 145b4, 145B7, 145B8, 145B15, 154B16 MSR165B8, MSR175B16T2AA5, MSR175B16T6H3P5AA5L2, MSR175plus, 175B56T6H3P5AA5L2G
35	Avius ULD	Cargo Tracking device	Avius Smart ULD
36	Frigga	Cargo Tracking device	Frigga V5 Series, Frigga T7, M, U1, Smart Tag
37	Reelables	Cargo Tracking device	5G Shipping Label
38	Trackonomy Systems	Cargo Tracking device	CGB-2002, FBO-2005
39	AviusULD	Cargo Tracking device	AviusULD Smart ULD
40	SkyCell	Cargo Tracking device	MR 810, 812, 813, 814, 815, 816

2.3 Conclusion

The manufacturers of portable electronic devices (PEDs) listed in Table 1 have demonstrated and confirmed full compliance with EASA AIR OPS AMC1.CAT.GEN.MPA.140 and FAA AC.91.21.1D. The compliance documentation provided by the manufacturers show compliance with requirements of EASA AIR OPS AMC1.CAT.GEN.MPA.140 and FAA AC.91.21.1 for use by the operators.

Furthermore Boeing confirmed in SR 35609691124, that all 777 aircraft models have demonstrated full PED Front door and Back Door Tolerance and that T-PEDs (including cargo tracking devices) can be during all phases of fligtht.

No additional demonstration / certification efforts are therefore required and Aerologic Engineering herewith approves the use of the portable electronic devices (PEDs) listed in Table 1 on Aerologic 777F airplanes.