

ED-274

OPERATIONAL SERVICES & ENVIRONMENT DEFINITION (OSED) FOR AERODROME FOREIGN OBJECT DEBRIS (FOD) DETECTION SYSTEMS

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CHAPTER 1

INTRODUCTION AND CONTEXT

This document is the Operational Services and Environment Definition (OSD) and provides guidance related to the operation of an automatic FOD detection system on an Aerodrome Movement Area. The contents align with ED-235 MASP for Foreign Object Debris Detection System.

Foreign Object Debris (FOD) is defined as “Any solid, inanimate object within the movement area which has no operational or aeronautical function”. FOD within the movement area presents a key hazard to aircraft and their operation, in particular when present on runway surfaces.

NOTE: 1. *Amendment 13A to Annex 14, Volume I, notified through ICAO State Letter AN 4/1.2.26-16/19, 5 April 2016;*
2. *Commission Regulation (EU) N° 139/2014 and its amendments.*

The International Civil Aviation Organization (ICAO) has identified the FOD elements and classified them by distinguishing them in “Contaminants” and “Debris”.

A “Contaminant” is an element deposited on the aerodrome movement area like snow, mud, ice, water, dust, sand, oils and grease.

The “Debris” are, instead, real fragments of material, such as metal objects, shreds of paving, stones, paper, rubber, wood, the effect of which can cause serious damage to aircraft, if not even disasters.

Automatic FOD detection system shall concentrate in the latter category.

The operation of a FOD detection system within the runway surface complements the above inspection requirements, and whilst the use of such a system is not a regulatory requirement, it contributes to enhancing the above regulatory and safety objectives. The use of a FOD detection system does not reduce the number of inspections required by any other applicable regulation.

The primary objective of the operation of such systems as described in this document is to enhance the safety performance of the aerodrome through improved FOD detection, whilst minimizing the impact on aircraft operations.

1.1

GLOSSARY OF DEFINED TERMS

The following terms are used in this document:

Aerodrome (ICAO SARPS ANNEX 14)

A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Apron (ICAO SARPS ANNEX 14)

A defined area on a land aerodrome intended to accommodate aircraft for the purpose of loading or unloading passengers, mail or cargo, fueling, parking or maintenance.

False alert

Alert raised by the FOD detection system when, at the moment of detection, there is no object on the monitored surface.

FOD

An inanimate object within the movement area which has no operational or aeronautical function and which has the potential to be a hazard to aircraft operations.

FOD Alarm

Initiation of activities following the Alert, raised by the FODDS, with the purpose of removing the FOD. This action is triggered by the system operator and, if available, can be transmitted to external interfaces.

FOD Alert

Notification by the FOD Detection System to the operator console and, if available, to the external interfaces that an object was detected on the monitored surface.

Manoeuvring Area (ICAO SARPS ANNEX 14)

Part of an aerodrome used for take-off, landing and taxiing of aircraft, excluding Aprons.

Monitored surface

Part of an aerodrome that is monitored by a FOD Detection System.

Movement Area (ICAO SARPS ANNEX 14)

Part of an aerodrome to be used for take-off, landing and taxiing of aircraft, consisting of the Manoeuvring Area and Aprons.

Obstacle (ICAO SARPS ANNEX 14)

All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:

- are located on an area intended for the surface movement of aircraft
- extend above a defined surface intended to protect aircraft in flight
- stand outside those defined surfaces and have been assessed as being a hazard to air navigation.

1.2

ABBREVIATIONS

The following abbreviations are used in this document.

A-CDM	Airport Cooperative Decision Making
AFIS	Aerodrome Flight Information Service
AMA	Aerodrome Movement Area
AOA	Aerodrome Observation Area
ATC	Air Traffic Control
ATS	Air Traffic Services
CNS	Communication Navigation Surveillance
EASA	European Union Aviation Safety Agency
ECCAIRS	European Co-ordination Centre for Accident and Incident Reporting Systems
EUROCAE	European Organisation for Civil Aviation Equipment
FOD	Foreign Object Debris
FODDS	Foreign Object Debris Detection System
HMI	Human Machine Interface
ICAO	International Civil Aviation Organisation
MASPS	Minimum Aviation System Performance Specification
NOTAM	NOtice To AirMen
OSD	Operational Services Operational Environment
RTF	Radio Telephony
SARPS	Standards and Recommended Practices
SMS	Safety Management System
SOP	Standard Operating Procedure

CHAPTER 2

PURPOSE AND SCOPE

This chapter outlines the purpose and scope of a FOD detection system within an aerodrome operational environment. It also outlines the benefits associated with the deployment and use of a system, and the underlying assumptions.

Compliance with this OSED will facilitate the operational deployment of a FOD Detection System at an aerodrome.

The following describes each chapter contents:

Chapter 1 includes the definitions of terms used in the document, and lists the abbreviations and references to other documents

Chapter 3 (Operational Readiness), contains requirements to be addressed in the preparatory phase, in order to facilitate a FOD detection system deployment and subsequent operation.

Chapter 4 (FOD detection and response), outlines the operational needs for the activities and actions that are to be carried out by the persons that are involved in the day-to-day operation of the system in case of a FOD detection response and investigation.

Chapter 5 (Safeguarding of the system), details the requirements necessary for the protection of a FOD detection system from various activities and developments within the aerodrome environment, in order to ensure that the system and its individual elements are not negatively affected, and so to maintain its availability and functionality.

Chapter 6 (System operational maintenance) contains operational needs associated with the various maintenance aspects and related activities that should be planned and performed, in the context of a maintenance programme, in order to ensure the availability and functionality of a FOD detection system.

Chapter 7 (Training) addresses the training that needs to be created and delivered as part of a system's implementation and use within the aerodrome FOD management Programme. The training should be provided to both the front line operators and other stakeholders.

Chapter 8 (Compliance) outlines the requirements related to the assessment of the system in terms of its compliance and its outputs, with a view to continually improve its effectiveness and performance throughout its use.

2.1

BENEFITS

2.1.1

Safety

The detection of FOD on the movement area is normally accomplished through physical inspections that take place at regular intervals, or as reaction to various stimuli (e.g. pilot reports, occurrences, weather phenomena etc.). This practice leads to unknown FOD accumulation between physical inspections since FOD can occur anytime.

The deployment and continuous use of a FOD detection system will contribute to a more efficient management of FOD related risks and, as a result, improve the safety level at an aerodrome.

The safety improvement associated with the operation of a FOD detection system at an aerodrome, is achieved through the capability to continuously monitor the movement area and, as a result, to acquire information about the presence of FOD and to react in a timely manner. The possibility to monitor and acquire information of operational value in adverse meteorological or poor visibility conditions under which physical inspections may not be practicable, is an additional safety benefit.

The use of a FOD detection system, also enables the improvement of safety-related activities that need to be performed in the context of a FOD management programme at an aerodrome. Hereafter are some examples:

- data analysis and information sharing