# ADVISORY CIRCULAR

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| Guidance Material on Environmental Management Systems | 01-September-2024 | 156-010 | 1.0 |

Note: This Advisory Circular is published to provide additional information and recommended actions that further elaborate on provisions or concepts prescribed in the GACAR-156.

## 1. Introduction

### 1.1 Purpose

The purpose of this advisory circular is to provide an overview of:

- Environmental management systems and prescribe their definition, elements, benefits, and success factors.

- ISO 14001:2015 and its Plan-Do-Check-Act model.

### 1.2 Applicability

This advisory circular is applicable to all GACA's certified entities.

### 1.3 Cancellation

This is the first official version of this advisory circular, and it cancels no other advisory circular on the subject matter.

### 1.4 Related regulatory references

a) GACAR Part-156.

### 1.5 Related reading material

a) ICAO, An Environmental Management System for Airports, Eco Airport Toolkit, available at: https://www.icao.int/environmental-protection/Pages/Ecoairports.aspx

b) ICAO, Document 9968, Report on Environmental Management System (EMS) Practices in the Aviation Sector, available at: https://store.icao.int/en/report-on-environmentalmanagement-system-ems-doc-9968

### 1.6 Approval

This advisory circular has been approved for publication by the Executive Vice President for Safety and Environmental Sustainability of the General Authority of Civil Aviation.

## 2. EMS overview

### 2.1 EMS definition

Environmental management systems (EMS) are comprehensive frameworks designed to help organizations effectively manage their environmental impact and achieve sustainability goals. An EMS provides a systematic approach to identify, monitor, and control an organization's environmental aspects, such as resource consumption, waste generation, and emissions. By implementing an EMS, organizations can establish environmental objectives, develop action plans, and continuously improve their environmental performance. These systems often follow internationally recognized standards, such as ISO 14001, and involve various components like policy development, legal compliance, training, and regular audits.

An effective EMS should be able to set a comprehensive framework to assist an organization in planning, implementing, mitigating and managing its environmental impacts, through a systematic, sustainable, transparent and accountable manner that is coherent with its environmental policy. The overall success of an EMS implementation relies on the engagement of all levels and functions of the organization.

### 2.2 International EMS Standards

There are international agencies that set standards and provide certification for EMS. Below are the most often used EMS international standards:

**ISO 14001:2015 Standard**

ISO 14001:2015 is part of the ISO 14000 "family of standards" that focuses on management of an organization's environmental responsibilities, regardless of its type of activity. Specifically, ISO 14001:2015 is based on implementing environmental management systems to achieve its objectives while other standards in the family focus on specific solutions such as audits, communications, labelling and life cycle analysis, as well as environmental challenges such as climate change.

ISO 14001:2015 is applicable to any organization, regardless of size, type and nature, and applies to the environmental aspects of its activities, products and services that the organization determines it can either control or influence considering a life cycle perspective.

**EMAS European Standard**

The European Union Eco-Management and Audit Scheme (EMAS) is the EMS standard developed by the European Commission to evaluate, report, and improve an organization's environmental performance. Like other international standards, EMAS is appropriate for many kinds of organizational models – private or public, large or small. EMAS includes additional requirements beyond ISO 14001:2015 such as performance measurements, employee engagement and stakeholder involvement.

### 2.3 The benefits from implementing an EMS

Implementing an EMS offers numerous benefits for organizations in the aviation sector. Some key advantages include:

1. **Enhanced environmental performance**: An EMS enables organizations to identify and manage their environmental aspects and impacts more effectively. By setting environmental objectives and targets,

implementing sustainable practices, and monitoring performance, organizations can improve their overall environmental performance and reduce their ecological footprint.

2. **Cost savings and resource efficiency**: Through the systematic identification and reduction of resource consumption, waste generation, and energy usage, an EMS helps organizations achieve cost savings. By optimizing resource efficiency, organizations can lower operating costs, minimize waste disposal expenses, and improve overall financial performance.

3. **Improved risk management and response to incidents**: An EMS facilitates the identification and assessment of environmental risks and vulnerabilities. By proactively managing these risks, organizations can minimize the likelihood and impact of environmental incidents, such as pollution, accidents, or reputational damage, reducing potential liabilities and associated costs.

4. **Employee engagement and morale:** An EMS encourages employee involvement in environmental initiatives and decision-making processes. This engagement can boost employee morale, promote a sense of purpose, and create a positive work environment focused on sustainability.

5. **Competitive advantage and improved relationship with government entities:** Organizations with a well-implemented EMS often gain a competitive edge in the marketplace. Being environmentally responsible can differentiate a company, attract environmentally conscious customers, and open doors to new business opportunities.

6. **Continuous improvement and innovation:** An EMS fosters a culture of continuous improvement, encouraging organizations to seek innovative solutions to environmental challenges. By regularly reviewing and updating their EMS, organizations can stay ahead of emerging environmental trends, technologies, and best practices.

## 3. Basic EMS Principles

### EMS policy statement: top management commitment

The top management of an organization shall commit and express its leadership regarding an EMS through (at a minimum) establishing, implementing and maintaining an environmental policy that, provides a framework for defining environmental goals, and offers a commitment to protect the environment, in coherence with the organization's activities.

Additional leadership commitments are expected by the ISO 14001:2015, such as:

o Providing conditions for the environmental policy to be implemented, to include ensuring necessary resources, support and internal coordination
o Being accountable for the effectiveness of the EMS

### Planning

An organization using an EMS should identify the required processes and practices to address environmental aspects and compliance obligations, while also dealing with identified risks and opportunities. In order to address risks and opportunities, it is essential to understand the organization and its context, the needs and expectations of interested parties, and also to determine the scope of the EMS, through a comprehensive planning process.

### Implementation and Operation

The criteria for required operational processes should be established and required controls should be planned. The organization can also control the implementation of planned changes or improvements into the operational processes and make sure that outsourced processes are also controlled and influenced. Considerations of emergency preparedness and response, and consistency with life cycle perspectives, can also be part of this process.

### Checking

The organization must continuously evaluate its environmental performance through monitoring and analysis. In this regard, it requires the use of specific methodology, appropriate criteria and suitable indicators that shall be defined in advance. Internal auditing and management reviews can also be part of the defined checking processes.

### Management Review

The top management of the organization is in charge of reviewing the EMS at defined intervals, in order to guarantee its continued suitability, adequacy and effectiveness. These reviews should include the status of the actions from the previous reviews, including the changes that should be considered, determining which environmental objectives have been achieved, analyzing the overall environmental performance, the adequacy of resources and the opportunity for continuous improvement.

### Continuous Improvement

Through monitoring and evaluation, the organization is able to identify the opportunities for improvement and achievement of the defined environmental goals. This prospect should include the identification of errors and the decision to take corrective actions, in order to guarantee a continuous improvement.

### Plan, Do, Check, Act (PDCA)

The PDCA principle is a continuous approach applied to both an EMS as a whole and each of its elements. In this regard, it is sort of a combination of the individual principles mentioned above.

- o Plan: The advanced establishment of environmental objectives, along with the set of processes and practices necessary to achieve the defined objectives, and in accordance with the organization's environmental policy.
- o Do: the implementation of the set of processes and practices according to the defined Plan.
- o Check: Constant monitoring and assessing processes and practices compared to the defined environmental policy. Results of this evaluation must be reported.
- o Act: take actions to continually improve

## 4. Preparing for, developing and maintaining an EMS

### 4.1 Preparing for an EMS development

Whichever tool is chosen to plan and implement an EMS process, it is necessary to consider some essential steps before starting. These are considered critical success factors for EMS implementations.

### i)  Define the scope of your organization's involvement

For instance, airports can be managed by more than one entity (e.g., one managing airside and another landside). It is also common to have one single entity managing several airports. Therefore, it is necessary to define the boundary

of the EMS's implementation. This boundary could be defined by the legal responsibility of the entity (e.g., the scope of a concession) or by location, (e.g., just that one particular airport in question).

**ii) Identify the stakeholders and the project leader**

When engaging in an EMS process at an airport or other aviation organization, it should be discussed with all the organizational parts that can contribute and participate in its development. The most difficult step is to define who is going to lead the entire process: it could be the airport administrator or the aeronautical authority. This should be defined at the beginning.

**iii) Ensure support of top management**

An organization's commitment to the EMS system is critical to its success. Top management should lead the organization's commitment, which should cascade to all levels and functions.

**iv) Define the integration with existing management systems and processes**

It is necessary that the EMS is integrated with the goals and activities of the different processes that already exist at the organization.

## 4.2 Developing an EMS

Organizations can develop their management process in different ways. An effective example of an EMS cycle is described in the ISO 14001 standard: the 'plan, do, check, act' cycle. Some airports may prefer to hire a consultant to assist in developing an EMS, while others may want to develop it themselves. Either way the same information is needed. Getting started on the process begins with the following steps:

**i) A clear environmental policy statement**

The initial review can identify the extent to which the organization already has systems in place to manage environmental matters and where gaps exist that should be fixed. The policy statement should include the high-level commitments to prevention of environmental impacts, pollution, and waste, the satisfaction of legal and regulatory compliance obligations, and a commitment to continuous environmental improvements. The policy statement will often outline the organization's mission and vision and should be tailored to the specific environment and operational needs of the organization. The policy statement must have support from senior officials and should be signed by either the head of the organization's governing board, the senior executive, or a senior manager. In addition, the organization must ensure that all employees are aware of the policy and have an understanding of its contents.

**ii) An initial environmental review**

The initial environmental review will require gathering information. Following the steps described in ISO 14001: 2015, the basic process is to identify environmental aspects and determine which of them can have a significant impact on the environment.

- o   An environmental aspect is an element of the organization's activities, products, and services that can interact with the environment in either a beneficial or negative way (e.g. consumption of materials, discharges, spills, etc.).
- o   An environmental impact is a change to the environment, beneficial or negative, resulting from the activities, products, or services.

### iii) An assessment of potential impacts

To get started, identify the organization's environmental aspects, identify the potential impacts of those aspects, assess the significance of the aspects, and assess the level of control or influence the organization has over such aspects and impacts. This information gathering can be done through review of past environmental performance, review of documents and records, interviews with staff and stakeholders, and through direct observation/examination of the airport operations. Determining the significance of the potential impacts may require a ranking system or comparison with certain criteria such as cost, scale of risk, frequency of occurrence, or level of stakeholder concerns. A Leopold Matrix could be a useful tool in order to tackle this task.

It is essential to review the legal framework that applies to the organization. Legal requirements applicable to environmental aspects can include such things as water quality regulations, energy use, noise restrictions, or handling of hazardous waste, for example. The EMS process must, at a minimum, satisfy any enforceable environmental regulations set by GACA. It can also simplify the process of documenting and reporting to the GACA.

### iv) Development of targets to minimize impacts and address policy objectives

When significant environmental aspects have been identified, the organization must develop objectives and targets for addressing them. These targets are specific performance requirements set by the organization and will relate to specific operations and environmental aspects. Targets should be measurable and might include things such as achieving a recycling rate of 10%, reducing nitrogen concentrations in wastewater by 20% compared to the 2005 average, or improve the documentation of bird strikes. Targets can be developed informally through brainstorming and staff knowledge, or through a more formal and structured process of scoring and ranking environmental impacts. The policy statement may set environmental goals and objectives that will influence the targets. The targets are specific performance metrics that must be met in order for the organization to achieve the identified objectives.

### v) Development of processes and procedures

Once the organization can identify the processes/procedures that have an environmental impact, an EMS can be designed to manage the processes. Using the information on aspects and targets described above, design a program to efficiently manage the various aspects and potential impacts. This management system will be a set of processes and procedures that include timelines, resources, roles and staff responsibilities, and other information that will help the organization accomplish the environmental targets and objectives. The EMS is a tool for the organization's management to specify the individuals responsible for specific actions, how communications will take place, the different levels of responsibility, as well as the documents and records that will be produced to report these actions. Ideally, the EMS would streamline the procedures necessary for managing environmental actions, satisfy any legal requirements associated with environmental aspects, and be designed to improve the overall environmental performance of the organization.

### 4.3 Maintaining and auditing an EMS

The performance evaluation of an organization's EMS should be assessed on a regular basis through monitoring, measuring, analyzing and evaluating some of its elements, in order to ensure valid results and the overall effectiveness of the EMS. It is important to retain the relevant documentation containing the performance evaluation as evidence. This reinforces the transparency of the system. Compliance should also be evaluated in a timely fashion, defined in advance, by the organization.

Internal auditing of the EMS at determined intervals is a requirement for an organization to assess the organization's conformity with its own requirements and requirements from an International Standard, if this is the case. This Audit must also assess if the EMS is effectively implemented and maintained. In order to perform this internal auditing, the organization must establish an internal auditing program.

**GACA Contact:**

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