European Union Aviation Safety Agency

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EMCO-SIPO EASA.2022.C17

D-COM.4 – FINAL REPORT ON STAKEHOLDER ENGAGEMENT

eMCO-SiPO – Extended Minimum Crew Operations – Single Pilot Operations

An Agency of the European Union

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SUMMARY

Problem area

Recent advancements in automation, technology, and unmanned autonomous aircrafts sparked interest in and a desire to investigate if it is possible to run commercial air transport with fewer flight personnel in large aircraft. Being EASA the regulatory body, it needs additional information about how this new concept of operations will affect regulations and safety to be ready for these developments. The eMCO-SiPO project will then outline where the effects of the eMCO- and SiPO-related modifications to the regulations may be anticipated.

Description of work

This document represents deliverable 'D-COM.4' of the extended Minimum Crew Operations – Single Pilot Operations research programme (EASA.2021.HVP.23). It reports on the results of the communication, dissemination and knowledge-sharing activities, and of the stakeholders' management initiatives, planned for and presented in 'D-COM.1' and 'D-COM.2' respectively.

Section 2 describes the communication, dissemination and knowledge-sharing strategy planned for in 'D-COM.1'; the related activity, as implemented, are reported in Section 3 and their success is discussed in Section 4. Section 5 describes the stakeholder management strategy planned for in 'D-COM.2'; the related activity, as implemented, are reported in Section 6 and their success is discussed in Section 7.

CONTENTS

ABBREVIATIONS

ACRONYM	DESCRIPTION
ANSP	Air Navigation Service Provider
ATCO	Air Traffic Controller
CANSO	Civil Air Navigation Services Organisation
CAT	Commercial Air Transport
CEST	Central European Summer Time
CET	Central European Time
CONOPs	Concept of Operations
D	Deliverable
EASA	European Union Aviation Safety Agency
ECA	European Cockpit Association
eMCO	Extended Minimum Crew Operations
EUROCAE	European Organisation for Civil Aviation Equipment
FAA	Federal Aviation Administration
FAQs	Frequently Asked Questions
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IFALPA	International Federation of Air Line Pilots' Associations
IFATCA	International Federation of Air Traffic Controllers' Associations
KPIs	Key Performance Indicators
M	Month
Q&A	Questions & Answers
R&D	Research and Development
SCG	Stakeholder Consultation Group
SiPO	Single Pilot Operations

1. Introduction

1.1 Background

Due to the ongoing developments in technology, automation and autonomous unmanned aircraft, there is an interest and desire to explore whether it is feasible to operate commercial air transport (CAT) with reduced flight crews in large aeroplanes. This feasibility is considered from both the safety as well as efficiency perspectives. Two specific CONOPs were identified:

- Extended Minimum-Crew Operations (eMCOs) – previously called "Reduced Crew Operations". These are operations with a minimum flight crew (e.g., two people) where, during cruise phase, one pilot controls the aircraft while the other pilot takes a rest. When conditions are met, this concept of operations may result in a longer flight time, while still operating with a crew of two pilots.
- Single-Pilot Operations (SiPOs) – For these operations, all flight phases are executed by one pilot, without a second pilot in the aircraft. The safety levels of these flights must also be the same as current two-pilots operations.

EASA setup a research programme to look further into the above two topics.

1.2 Scope and structure of the document

This document represents deliverable 'D-COM.4' of the extended Minimum Crew Operations – Single Pilot Operations research programme (EASA.2021.HVP.23). It reports on the results of the communication, dissemination and knowledge-sharing strategy, and of the stakeholders' management activities, planned for and presented in 'D-COM.1' and 'D-COM.2' respectively.

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2. Communication, Dissemination and Knowledge-Sharing Strategy

The strategy planned by eMCO-SiPO to raise the visibility and maximise the impact of the project had the goal of supporting the project in reaching several objectives, such as increasing awareness about the project outcomes and its benefits, making project results available to interested people and key decision makers, engaging stakeholders, and supporting the usage of the project results.

A multilevel and progressive communication and dissemination plan was devised to identify the best communication format and means for communicating with the target audience, also based on the dissemination goals and project phases identified, spanning the whole duration of the project.

The plan comprised:

- The description of four high-level **key communication and dissemination goals**, namely:
    - Raising **awareness** about the project.
    - Generating **understanding** around the project activities by transferring key messages to the target audience, verifying that the messages are correctly received and comprehended.
    - **Engaging** stakeholders in the use of the project results and findings, showing the relevance of the work in their own practices and collecting feedback and comments.
    - **Maximising the impact** by making the project results available to interested people and key decision makers.
- A series of key messages for the different phases of the project, to ensure its thorough understanding. These detailed the nature of the **eMCO-SiPO project**, its **scope**, its **motivation**, and **the expected outcomes.**
- The **target audience** to be reached. A high-level conceptual categorisation of the target audience comprised:
    - The **specialised audience** (R&D Community and relevant stakeholder associations).
    - **Policy Makers**, **Decision Makers**, **Governmental** and **International bodies**.
- The **communication and dissemination approach**, based on the match between the identified audience, dissemination goals, and communication channels, done by selecting the proper means and channels for the communication activities, and considering the timing of the project and the different sensitivities of the audience.

3. Communication, Dissemination and Knowledge-Sharing Activities

The defined goals, audience and messages were structured into a **communication plan**, which consisted of a flexible schedule of dissemination activities that could be updated timely. Established at the launch of the project, it was meant to be updated periodically to ensure its adaptation to the progress and development of the project, and to consider unexpected constraints and opportunities.

Since the project started, the topics of eMCOs and SiPOs proved to be very sensitive and have been receiving increasing public attention, especially by professional associations and unions; meanwhile, other research topics and strands rose in prominence within EASA. Following extensive discussion with the Agency, this led to a decision to divert much of the effort from the communication of the project to the stakeholder engagement activities, a decision that is reflected in the report on the implementation of the planned activities, which follows in the paragraphs below.

3.1 Visual Identity

Objectives: Inform and Raise Awareness.

A logo was designed to keep the project communication consistent, by framing all eMCO-SiPO communication and dissemination activities and products, and to promote awareness of the project. The logo was meant to give a conceptual representation of the project and to be graphically appealing and manageable.

Three logo proposals were prepared and presented to the Consortium. A preference was given to the second proposal, which was then refined into the final logo.

Figure 1: Initial logo proposals

The final logo concept revolved around elegance and simplicity, incorporating two shades of blue. The warm orange of the sunset was chosen as accent colour, adding to the complexity of the colour palette. The logo was developed both in a vertical and horizontal version, in colour and grey scale, and adapted to different background colours, to adapt to all usages.

Below, the logo is presented within its style guide, which presents the inspirational mood board used by project partners to agree on the general idea and feeling of the project; the colour palette, defining the logo style; and the typography selection.

Figure 2: Final logo, with style guide

LOGO

GREYSCALE

COLOR

Rationale

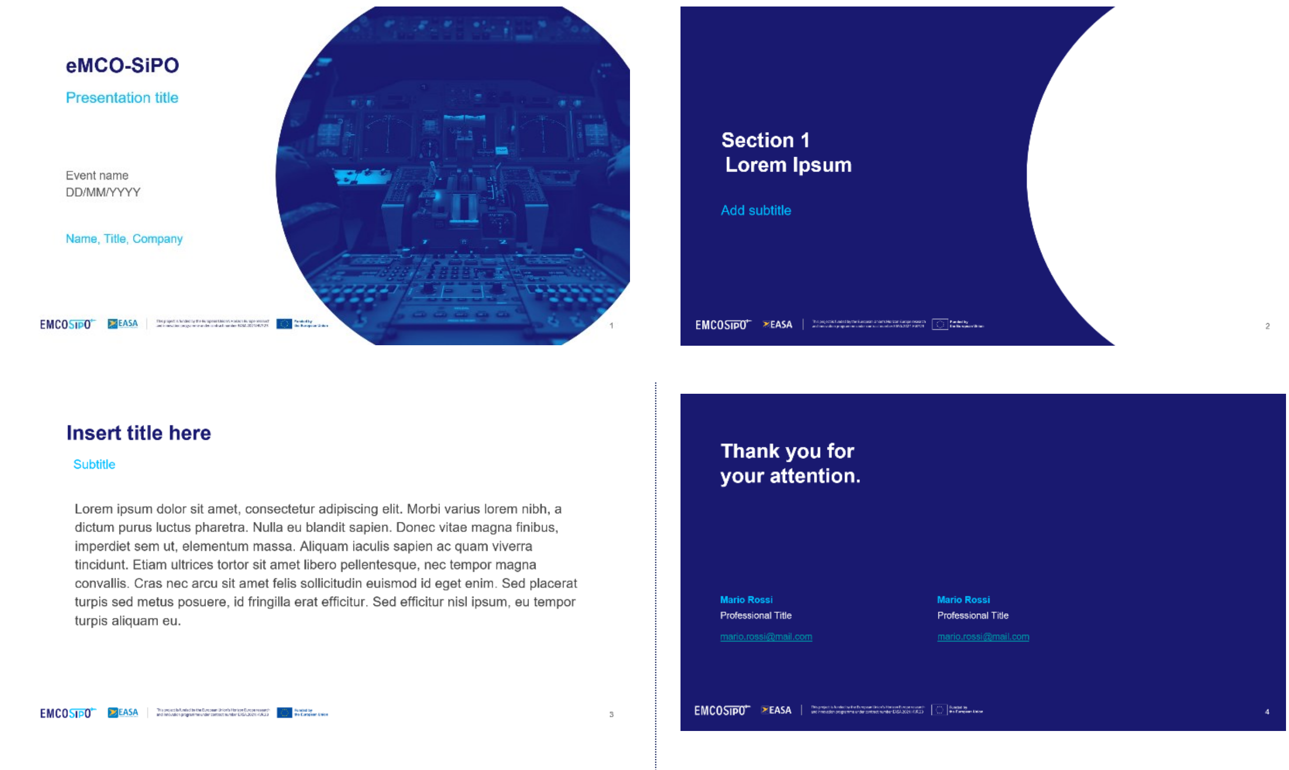
An elegant, simple **typographic** style, for a logo that stands out without excessiveness of elements.
The **plane** is the detail that refers to the aviation theme, including the colors: **light blue** for the day sky, **dark blue** for the night.
The **S** and **P** are highlighted to underline the key concept of **Single Pilot**.

LOGO

HORIZONTAL VERSION

Based on the logo and the project mood board, a PowerPoint template was developed for internal and external usage. A Word document template was also developed for official project documents.

Figure 3: PowerPoint template



3.2 Graphic Materials

Objectives: Raise Awareness, Generate Understanding.

Graphic materials were planned to be developed on occasion to present the concept of the project and the most relevant findings to be disseminated within the different stakeholders' clusters.

In accordance with EASA, a project leaflet was produced in the context of the EASA communication activities.

Figure 4: eMCO-SiPO leaflet

EASA

eMCO – SiPO

Extended Minimum Crew Operations and Single Pilot Operations Safety Risk Assessment Framework

Contractor

NLR

Consortium Members

DLR, ADSE, Ries Simons and Deep Blue

Contract period

30/08/2022 – 29/08/2024

Budget

930 000€

Scan the QR code or click here to visit the webpage of this project

Main objectives:

The main objective of the project is to develop a reference risk-assessment framework and a knowledge base to characterize the impact on flight safety of the introduction of the **Extended Minimum Crew Operations (eMCO)** and the **Single Pilot Operations (SiPO)** concepts. The analysis will focus on the human factors in both normal and abnormal operations during single pilot segments and on specific issues, such as sleep inertia, fatigue risk management, or pilot incapacitation. The specific objectives of the project are to:

- → assess the feasibility and relevant issues of the implementation of eMCOs in the EU regulatory framework by developing a reference risk-assessment framework and investigating a series of key safety hazards and mitigations;
- → assess the feasibility and relevant issues of the implementation of SiPOs in the EU regulatory framework through a preliminary analysis of the related main safety hazards.

Impacts & benefits

The impacts on the safety of flight of single-pilot operations in the cruise phase in normal and abnormal conditions and the identification of mitigating measures to be introduced to maintain a level of safety at least equivalent to current multi-crew operations.

This project has been funded from the European Union's Horizon Europe research and innovation programme.

EASA

eMCO - SiPO

Extended Minimum Crew Operations and Single Pilot Operations Safety Risk Assessment Framework

Further reading

Continued technological developments as well as the development of autonomous unmanned aircraft, bearing the potential for safety and efficiency gains, and the consequent aviation industry needs are the reasons to explore the technical and regulatory feasibility of further reducing the number of pilots on board of commercial air transport (CAT) aircraft, either limited to specific portions of the flight or, at a later stage, end-to-end. In this context,

Extended Minimum-Crew Operations (eMCO) are defined as operations in which there are extended periods of the cruise phase with a minimum flight crew of one pilot at the controls while the other pilot(s) is (are) resting. For CAT operations where the Air Operations regulation requires today two pilots at the controls, eMCO must ensure a level of safety as that granted by these operations.

Single-Pilot Operations (SiPO) are defined as end-to-end single-pilot operations. PART-ORO already foresees conditions and limitations under which these types of operations are allowed. In the future, it is foreseen that these conditions and limitations will need to evolve in order to extend to large aeroplanes the possibility to be operated by a single-pilot, provided that compensation means (e.g. ground assistance, advanced cockpit with workload alleviation means, capability to cope with an incapacitation, ATM, etc.) are in place in order to offer an overall equivalent level of safety.

Over the past few years, the main **European Union original equipment manufacturers (OEMs)** have been working independently on the feasibility of such concepts, and are confident that the objective in terms of safety is achievable. They are working, under the auspices of EASA, on developing their individual safety cases. However, the reduction of the flight crew below the current two-pilot requirement for certain type of operations requires a robust assessment of the safety impact at all levels to support and develop both the safety case and the appropriate amendments to the existing regulations.

The scope of the project encompasses the generic risk assessment of the main changes induced by the eMCO and SiPO operations while considering a series of changes to aircraft cockpit configuration identified for large CAT aircraft and including new flight management applications.

The safety risk assessment covers the analysis of potential failure cases, the characterisation of their potential impact on flight operations while evaluating the main mitigations at the level of flight crew working methods, operational procedures, and training.

The project should provide the relevant quantitative and qualitative input for the future impact assessment exercise(s) launched for the development of the eMCO intially and, later, SiPO rulemaking actions. More precisely, it should provide input to estimate the operational benefits and cost elements associated to the introduction of eMCO and SiPO considering different types of aircraft operators and air operations.

As the eMCO concept is meant to be implemented in a shorter time frame, this project focuses on this specific topic while performing an initial hazard analysis for SiPO. Bearing in mind that some of the the results of the eMCO risk assessment may be reused for the assessment of the SiPO concept, it is foreseen that the project will contribute to support additional research for the end-to-end risk assessment for single-pilot operation concepts.

EASA is currently working with its stakeholders to explore the feasibility of such operational concepts, while maintaining the current safety level in passenger air transport.

This project has been funded from the European Union's Horizon Europe research and innovation programme.

3.3 Project Website

Objectives: Inform and Raise Awareness.

A project website was developed at M6, to become the fundamental point of contact for the external audience and to contain relevant information on the project and its objectives, expected outcomes, and consortium and also to provide downloadable content.

Figure 5: project website – home page


EMCOSIPO
Consortium
Outcomes
Download
Extended Minimum Crew Operations – Single Pilot Operations
Safety Risk Assessment Framework
Welcome to eMCO-SiPO, a project dedicated to exploring the technical and regulatory possibilities of reducing the number of pilots in large aircraft for Commercial Air Transport, while maintaining current safety levels. We focus on two different concepts of operation: extended Minimum-Crew Operations and Single-Pilot Operations.
Our independent analysis, funded by EASA, aims at developing a reference risk-assessment framework and knowledge base for these concepts' safety analysis, considering both normal and emergency situation.
Project duration: September 2022 – December 2024.
Read more to explore new possibilities in aviation safety
Expected Outcomes
Safety Risk Assessment & Monitoring
Read more
Human Factors and Performances Analysis Applied to Aviation
Read more
Air Operations
Read more
Fatigue Risk Management
Read more
Flight Training
Read more
Maps of partners involved
More info
ACKNOWLEDGEMENT
This project is funded under the Horizon Europe Work Programme 2021-2022. In that Work Programme, the European Commission has entrusted EASA with the management of six research actions with a budget of EUR 14.2 million. The eMCO/SiPo project addresses chapter 2 entitled 'Safety standards for the introduction of key concepts and technologies' under the category of indirectly managed actions.
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EASA
CONTACT
info@emco-sipo.eu
Privacy Policy
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In September 2023, the EASA communication team requested the project to stop updating and promoting its website, so as to provide only one official website channel for the project updates: the eMCO-SiPO webpage on EASA's website[1].

In May 2024, the website underwent a textual update to align it more with the EASA's project webpage; in order to tackle rising criticism to the concept, the project also offered to develop a series of Frequently Asked Questions (FAQ) meant to clarify several crucial aspects of the project in a concise manner, to the benefit of the public. EASA agreed on this action and the project developed and validated internally a list of nine FAQ. Currently, the FAQ list is waiting for approval by EASA before being implemented on the project website.

3.4 Social Media

Objectives: Inform and Raise awareness.

eMCO-SiPO planned on using LinkedIn to connect with its stakeholders, to ensure a broader dissemination of its findings and results, and to maintain a constant connection with key stakeholders.

Following discussion with the EASA communication team in September 2023 and as per their request, due to the critical topics dealt within the project, eMCO-SiPO opted not to open a LinkedIn account and focused instead on developing and maintaining a closer connection with its stakeholder via other channels, such as email communications and most of all dedicated meetings (see paragraph 6.2).

3.5 Scientific articles

Dissemination objectives: Raise awareness, Engage, and Ensure Impact.

Due to the critical nature of both eMCO and SiPO, within eMCO-SiPO project no KPIs for scientific articles were stated.

3.6 Articles and Press

Dissemination objectives: Inform, Raise Awareness, Engage.

As stated at the beginning of the project, eMCO-SiPO planned not to be directly involved in media relationships due to the sensitive nature of its topic and to direct any press inquiries to EASA and the EASA webpage instead.

It was left up to EASA to decide if and when to share the project results with specialised magazines and media.

3.7 Dissemination Reports

Dissemination objectives: Raise Awareness, Engage, Ensure Impact.

The production of dissemination reports was planned, to summarise the implemented dissemination activities and the main results obtained for evaluation by EASA. eMCO-SiPO produced two different reports:

- **D-COM.3 (a, b, c)**, i.e., a set of reports on the development, outcomes and lessons learned from the three main workshops (see paragraph 6.2). Produced after each workshop, these reports collect the presentations delivered by project members, the feedback of participating stakeholders in the form of Q&A (as discussed in the meeting), and take-home messages for each project Task, to orient its future work and research on the topic in general. Following EASA's approval, the reports are available for public download on the EASA webpage and on the project website.
- **D-COM.4**, i.e., the present document, constituting a complete reporting on the whole dissemination and stakeholders' engagement activities.

[1] https://www.easa.europa.eu/en/research-projects/emco-sipo-extended-minimum-crew-operations-single-pilot-operations-safety-risk

3.8 Presentation at conferences and key third-party events

Dissemination objectives: Inform, Raise Awareness, Engage, and Ensure Impact.

National and international conferences, workshops, invited speeches and other dissemination events were identified as an important opportunity for eMCO-SiPO to present the project work. However, due to the sensitivity of eMCO-SiPO topics, it was established that the participation in conferences would be decided together with EASA, which opted for the project not to take part in public events.

3.9 Workshops

Dissemination objectives: Inform, Raise Awareness, Engage, and Ensure Impact.

A main part of the communication, dissemination, and stakeholder engagement activities is the involvement of the stakeholder in a series of eMCO-SiPO-organised workshops on specific topics linked to the project tasks. This ensures that the proposed solutions consider all relevant information and points of view and are agreed upon as much as possible. The workshop topics and planning were outlined in D-COM.2; their implementation is reported in paragraph 6.2.

3.10 Final Dissemination Event

Dissemination objectives: Inform, Raise Awareness, Engage, and Ensure Impact.

eMCO-SiPO was to organise a final public dissemination event at the end of the project to present its results, coinciding with Workshop 3. The implementation of the Final Dissemination Event is reported in paragraph 6.3.

4. Communication and Dissemination Success Criteria

To monitor the effectiveness of the communication activities, several indicators have been identified at the beginning of the project.

Table 1 KPIs and Success Criteria

Product	Description of KPI	Numeric Targets	Achieved
Social media	# of posts on social media platforms (per month)	4 (including reposts)	KPI deprecated
	# of followers (LinkedIn)	150	KPI deprecated
Website	# of visits	1200 1:30 minutes/visit	KPI deprecated
Materials	# of brochure/posters/infographics	50 copies (printed and digital distribution)	50+
	# of dissemination reports	2 (D-COM.3 3 iterations D-COM.4 Final)	2
Events	# of participants to the eMCO-SiPO workshops	10 experts, representatives of 5 types of key stakeholders	Achieved partially (achieved for the 1st and 2nd workshops; not achieved for the 3rd workshop)
	# of external participants to the eMCO-SiPO final dissemination event	At least 50	N/A

5. Stakeholder Management Strategy

eMCO-SiPO was a safety practitioner driven project, fostering the communication and cooperation among associations representing Air Traffic Controllers (ATCOs), Pilots, Airlines, Air Navigation Service Providers (ANSPs), and rule-makers, regulators, policy makers such as EASA, EUROCONTROL, ICAO, and EUROCAE. The project devised a plan (the Stakeholder Management Plan, D-COM.2) to engage the stakeholders in assessing the safety of eMCOs and SiPOs.

D-COM.2 identified two specific target groups as most relevant to the project, due to the benefits that they would have from it:

- **Stakeholders as the ultimate beneficiaries of eMCO-SiPO results** (**key stakeholders**, see 5.1)

  This category includes all the key stakeholders who have the potential to make use of the project results in their business areas and/or to affect adoption and usage of these results, and whose close involvement is crucial in the risk assessment produced by eMCO-SiPO.

- **Stakeholders impacted by eMCO-SiPO results** (**secondary stakeholders**, see 5.2)

  This category includes stakeholders in the aviation sector still impacted by the outcomes of the project, whose involvement in the project initiatives is less tight.

5.1 Key stakeholders

These stakeholders are directly affected by the outcomes of the project and their close involvement and collaboration was a **critical success factor for the eMCO-SiPO project**. Therefore, the project ensured to be able to communicate towards them its objectives, progress, and achievements, as well as to transfer knowledge both ways and consult them on key issues, in a timely manner.

The main categories of stakeholders identified for the eMCO-SiPO project are as follow:

- Rule-makers, regulators, policy makers (EASA, ICAO, EUROCAE, EUROCONTROL, FAA)
- Pilots (IFALPA, ECA)
- Airlines (IATA)
- Air Traffic Controllers (IFATCA)
- Air Navigation Service Providers (CANSO)
- Aerospace industry (Embraer, Airbus, Dassault).

A precise choice was made to involve those categories of stakeholders via their main international associations, and to seek the involvement of relevant representative within them. Thanks to the extensive network contacts of each partner, the project managed to do this since the early stages of the project. All the stakeholders listed **joined the eMCO-SiPO Stakeholder Consultation Group (SCG** - see 6.1).

5.2 Secondary stakeholders

In addition to the key stakeholders more closely involved in the project activity, eMCO-SiPO planned also on targeting a broader set of stakeholders, i.e., **the European R&D Community**, to be invited to take part in the project-organised workshops and final dissemination event. Following discussion with EASA, it was decided not to engage this secondary stakeholder group, and to focus only on the key stakeholders.

5.3 Stakeholders’ engagement objectives

The main objective of the stakeholders’ engagement process was the **collection of the input necessary to steer and inform the technical work of the project**. Overall, the involvement of the stakeholders’ groups identified served to **set-up, develop, and validate all the project technical activities**.

6. Stakeholder Management Activities

The key stakeholders were approached and involved throughout the project lifecycle in two ways:

- **direct involvement in the project** (i.e., involvement in the Stakeholder Consultation Group, and participation in workshops and public events organised by the project),
- **access to project results**.

In this way, the stakeholders were able to provide key contributions towards the development and validation of the project outputs at different key moments of the project implementation, shaping the project and ensuring its right direction.

6.1 Establishment of the Stakeholder Consultation Group

At the beginning of the project, a Stakeholder Consultation Group (SCG) was set-up, intended to be **the main engagement means of the project**. Its experts complemented the expertise already included in the Consortium and represented the interest and points of view of different categories of stakeholders. They acted as an independent consultation body to support the work of the project, providing review, recommendations, and feedback on project activities and findings, allowing the project to develop assessment protocols as agreed upon as possible by all the categories of stakeholders impacted.

To this end, eMCO-SiPO invited the SCG to **participate in the relevant project-organised workshops** (see 6.2) to directly contribute to the progress of the project, and in the appropriate round of interviews and technical workshop organised by the project.

6.2 eMCO-SiPO workshops

The eMCO-SiPO project had three workshops with the purpose to disseminate the results of the research activities to the Stakeholder Consultation Group and to collect feedback from this qualified audience of experts.

Dedicated actions took place in between workshops to facilitate the stakeholders' engagement before, during and after each workshop. Specifically, SCG members had the opportunity to engage in 1:1 calls with the project team before each workshop to discuss expectations; and the SCG received copy of the workshop minutes after they were approved by EASA.

6.2.1 1st workshop

The first Stakeholder Engagement Workshop of the eMCO-SiPO Project was held on the 19th of June 2023 (09:30–12:30 CEST), on the web app Google Meet.

The agenda comprised a presentation of the consortium and SCG members; of the project and its objectives and structure; and of the risk and safety assessment methodology.

In addition to the project consortium, 11 experts from the SCG, representatives of 6 categories of key stakeholders (specifically CANSO, Dassault, EASA, ECA, EUROCONTROL, EUROCAE, IATA, ICAO, IFALPA, and IFATCA) attended the meeting.

More details about this workshop are available in ‘D.COM-3a First Stakeholder Engagement Workshop Minutes of the Meeting’.

6.2.2 2nd workshop

The second Stakeholder Engagement Workshop of the eMCO-SiPO Project was held on the 28th of February 2024 (13:00–16:00 CET), on the web app Google Meet.

The agenda comprised a brief introduction, the presentation and discussion of the progress of the project activities and the intermediate results obtained with regards to Task 2, Task 4, Task 5, and Task 6, and the next steps for the project.

In addition to the project consortium, 10 experts from the SCG, representatives of 4 categories of key stakeholders (specifically Dassault, EASA, ECA, Embraer, EUROCAE, FAA, IATA, and IFALPA) attended the meeting.

More details about this workshop are available in 'D.COM-3b Second Stakeholder Engagement Workshop Minutes of the Meeting'.

6.2.3 3rd workshop

The third and final Stakeholder Engagement Workshop of the eMCO-SiPO Project was held on the 9th of January 2025 (15:00–18:00 CET), on the web app Google Meet.

The agenda comprised a brief introduction, the presentation and discussion of the experiments set up and results obtained with regards to Task 2, Task 3, Task 4, Task 5, Task 6, and Task 7, and the next steps for the project.

In addition to the project consortium, 8 experts from the SCG, representatives of 5 categories of key stakeholders (specifically AIRBUS, Dassault, ECA, Embraer, Eurocontrol, FAA, IATA, ICAO, IFALPA) attended the meeting.

More details about this workshop are available in 'D.COM-3c Third Stakeholder Engagement Workshop Minutes of the Meeting'.

6.3 eMCO-SiPO final public event

A **key event to share information, knowledge** and **the project results** was the final dissemination event. As planned, the event was organised in strict coordination with EASA and in accordance with their objectives (discussion with EASA about the final dissemination event started in July 2024 and went on in the following months).

The event took place online on the 12th of June 2025 (15:00–17:30 CEST), at the presence of key EASA representatives and the SCG. In total, 28 people participated in the event.

The topics covered were as follows:

- Introduction
- Risk Assessment
- Nominal and non-nominal flights reports and experiment
- Fatigue, Boredom and Performance
- Duration of Sleep Inertia
- Solutions in Relation to Breaks Due to Physiological Needs
- Pilot Incapacitation Monitoring
- Key Results & Conclusions
- Q&A

Link to the presentation given, the complete set of Q&A and take-home messages for each Task leader are available, along with further details about this event, in ‘D-COM.3-4 Final Dissemination Event Minutes of the Meeting’.

7. Stakeholder Management Success Criteria

Constant monitoring of the results of stakeholders' engagement actions is fundamental to pinpoint actual strengths and weaknesses of the strategy pursued, to identify and implement corrective actions, to measure the effectiveness of the engagement, and to report results.

eMCO-SiPO identified a **preliminary set of indicators to keep track of the progress** of the activities carried out at project level. The indicators to be reached by the end of the project are reported below.

Table 2 - Success criteria for stakeholders' engagement

Activity	Indicator	Target	Achieved
Stakeholder Consultation Group (SCG) involvement	Stakeholders included by the SCG	At least 10 experts, representatives of 5 types of key stakeholders[2]	Achieved
	Average attendance to SCG Meetings	50%[3]	Achieved
	Average SCG meetings attended by each member	50%[4]	Achieved partially (achieved except for representatives of IFATCA, CANSO, EUROCONTROL, and EUROCAE)
Workshops	N° of participants to the eMCO-SiPO workshops	10+	Achieved partially (achieved for the 1st and 2nd workshops; not achieved for the 3rd workshop)
Final event	N° of participants to the eMCO-SiPO final event	50+	28[5]
Sharing of results	On the project website	100%	Achieved

[2] As reported in paragraph 2.4 of D-COM.1.

[3] At least 50% of the Stakeholder Consultation Group members attend each meeting.

[4] Each member attends at least 50% of the Stakeholder Consultation Group meetings they are invited to.

[5] This is due to the final event taking place as a restricted, instead of public, event.

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