

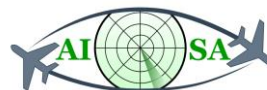


Project's website and factsheet

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Founding Members





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00.01.00	25/11/2020	First issue	Roland Guraly	First issue

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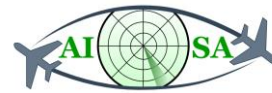
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AISA

AI SITUATIONAL AWARENESS FOUNDATION FOR ADVANCING AUTOMATION

This deliverable is part of a project that has received funding from the SESAR Joint Undertaking under grant agreement No 892618 under European Union's Horizon 2020 research and innovation programme.



Abstract

AISA (AI Situational Awareness Foundation for Advancing Automation) is a SESAR Exploratory Research project investigating how to increase automation in air traffic management. The project will explore domain-specific application of transparent and generalizable artificial intelligence methods.

The AISA website is obviously the main tool for communication, a central reference for the project and a data repository of all the main results. It is also a dissemination tool, e.g. the technical deliverables, papers will be accessible there, but the main purpose is to support communication, either indirectly or directly. Indirectly, it means that there are and will be information there, other communication tools can refer to and directly, when there is an events page for example where participants can register for a workshop.

This document describes the website structure and shows examples of the various pages.

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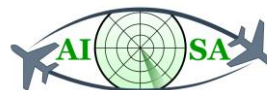


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1 Introduction

1.1 Website vs. the report

This document relates to the AISA website which is a living online deliverable. The AISA consortium considers that the website is the main deliverable while the report is only a written summary of its current content and structure. Therefore – unless stated otherwise – by deliverable in this document we mean the website itself and not the current document - report.

1.2 Purpose

This report, i.e. the AISA Deliverable 6.2, describes the website created for external communication about and on the project. This deliverable relates to the AISA work package (WP) 6 ‘Exploitation and Dissemination Plan’ which includes the following objectives:

- To support the exploitation of the project outputs by consolidating the project visibility among stakeholders at EU level and towards users through a project website and additional dissemination and communication tools and materials, and
- To enable smooth communication and knowledge sharing among the targeted stakeholders at EU level.

The website serves as an information hub for the project and provides a tool to support the communication, dissemination and exploitation activities of the project as mentioned in the D6.1 Dissemination and Exploitation Plan [1].

The website was due to be activated T0+06, but that webpage was activated earlier than planned (on Jul 13 2020) so that all project activities can be promoted on it in time. It was especially important to activate the website as the AISA ConOps WS was due much earlier than the activation time for the website and the consortium used the website for promoting the project and the workshop also for accepting registration of the interested parties.

1.3 Intended audience

In terms of the audience, two different categories should be mentioned:

- The website itself
- The report.

It is considered that the main deliverable is the website itself as can be found online and as the website itself is public, it is basically created for everyone.

The report is a written summary of the website, a representation of the structure, etc. In this manner it is secondary to the website itself and the main audience is the SJU, although as it is a public

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document, it might be interesting for those who would like to understand the reasons for the AISA website structure as well.

1.4 Associated documentation

The website and consequently this document are linked to the D6.1 Exploitation and Dissemination Plan [2].

1.5 Structure of the document

First, this document provides the structure of the website with a brief description of the subpages, then it provides examples (screenshots) of the website. It is worth mentioning that the website is constantly evolving as the project reaches more mature stages. Another reason for changes on the website is communication needs, for example when organising a workshop, the “Events” page is changing over the different steps: when organising a workshop, the communication is focusing on promoting the workshop and enabling registration, after the workshop the website changes and serves rather to promote the results of the workshop.

1.6 Used acronyms

The following table contain acronyms used in this deliverable:

Acronym	Meaning
AISA	AI Situational Awareness Foundation for Advancing Automation
ATM	Air Traffic Management
ATC	Air Traffic Control
ConOps	Concept of Operations
FAQ	Frequently asked questions
SESAR JU	SESAR Joint Undertaking
WP	Work Package
WS	Workshop

Table 1 Acronyms





2 The project's website structure

The website of the SESAR JU AISA project is available at <https://aisa-project.eu/> and is responsive to the browser, making it also readable from mobile devices.

All sections of the website have on top the AISA logo and on the bottom a reference to the SESAR JU funding. Also, a link to the main home page and the other tabs is included and accessible from all sub-pages.

The website structure is the following:

Home

The "Home" (Figure 1 Home page of the AISA Consortium website) section of the website provides a short high-level description of the project activities and goals. The text is written in easy to read way not delving into deeper scientific discussion. The goal is to start some kind of communication and raise the interest of the public and especially the interest of the experts or end-users to the topic.

- *More*

Section "More" (Figure 2 Extension of the Home page of the AISA Consortium website (section 'More')) should provide more details about the project's research work and will be enriched as more result will be available. This page also contains the link to the FAQ section. As the project dealing with various fields of knowledge one can expect that some terms would be new even to the experts.

- *FAQ*

This section (Frequently Asked Questions Figure 3) is simply showing short explanations of the terms used either on the website, in published deliverables or in published articles/papers. We consider it useful as experts from different areas usually know the vocabulary of their own area and the project delves into at least three different research areas.

Events

The consortium plans to organise at least two own events, so this sub-page is the placeholder for the relevant information.

The first event - the AISA ConOps workshop has been successfully held. The 'Events' page (Figure 4) now contains a brief description of the event and the presentation delivered at the event in pdf and in video formats.

Before that it contained information on the event (Figure 4) and the link to the registration page (Figure 6).

Subsequent events (at least one) will be handled similarly as the first event was a major success with around 60 participants and the lively interaction with them.

Publications

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At “Publications” page (Figure 7) all the public deliverables and the approved scientific papers will be shown.

Consortium

The “Consortium” section (Figure 8) all the consortium members are listed along with their short description and links to their websites.

Contact Us

The “Contact Us” section (Figure 9) provides the audience with the basic contact information - name and the email address of the project coordinator.

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3 Status of the website

The following images are screenshots from the website serving as examples, showing the current status of the deliverable (during the period when this report was created).

Home **Events** **Publications** **Consortium** **Contact Us**

AI Situational Awareness Foundation for Advancing Automation

About AISA

AISA (AI Situational Awareness Foundation for Advancing Automation) is a SESAR Exploratory Research project investigating how to increase automation in air traffic management. The project will explore domain-specific application of transparent and generalizable artificial intelligence methods.

Adoption of higher levels of automation is slow because of the fears of the out-of-the-loop effects where air traffic controllers lose situational awareness due to complacency caused by automation. In the worst-case scenario neither the human is completely aware of the traffic situation nor the machine is able to guarantee that the situation is being handled appropriately. Our approach to this problem aims to solve the problems by introducing artificial situational awareness into the, usually only human, team situational awareness.

AISA will present a vision of automation in a specific ATM operational environment (en-route ATC) and address the challenges of transparency and generalization. During the project, a strategy for providing the necessary information to air traffic controllers in order to make them trust the automated system will be devised. Methods to increase the ability of an automated system to adapt to novel circumstances will be explored.

[More>>>](#)

Consortium	Funded by	Contact information
FTTS JKU SLOT TUBS UPM ZHAW SKYGUIDE	SESAR Exploratory Research HORIZON 2020	Prof. Tomislav Radišić University of Zagreb tradisic@fpz.unizg.hr

This project has received funding from the SESAR Joint Undertaking under Grant Agreement No. 892618, under European Union's Horizon 2020 Research and Innovation programme.

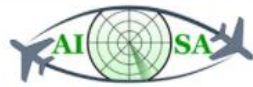
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Figure 1 Home page of the AISA Consortium website

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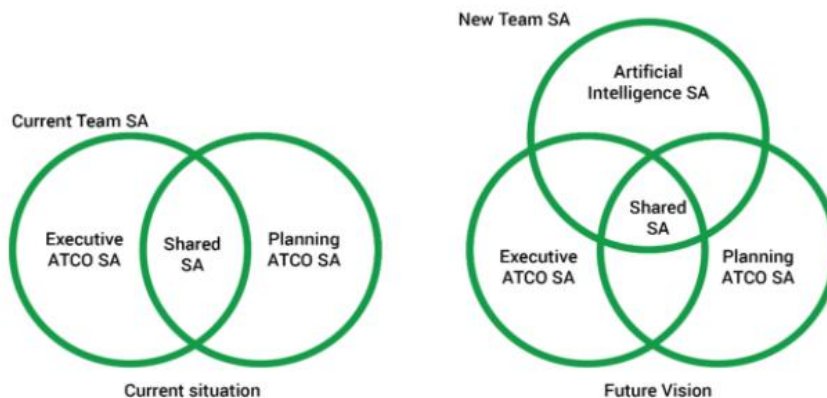


The specific objectives of AISA are the followings:

- Explore the effects of human-machine distributed situational awareness and opportunities for automation of monitoring tasks in en-route operations.
- Identify the data needed by air traffic controller (ATCO) to ensure that the proposed solution is correct and develop the method to provide that data.
- Investigate methods for adaptation of the automated system to changes of the environment ensuring business continuity and safety

Instead of automating isolated individual tasks, such as conflict detection or coordination, we propose building a foundation for automation by developing an intelligent situation-aware system. Sharing the same team situational awareness among air traffic controller members and AI will enable the automated system to reach the same conclusions as ATCOs when confronted with the same problem and to be able to explain the reasoning behind those conclusions. This system will at first be able to automate some of the monitoring tasks, because machines cannot currently reach the same level of awareness as humans, but as the development progresses it will be able to take over more complex tasks.

Concept of Distributed Situational Awareness for Future Automated Systems



FAQ

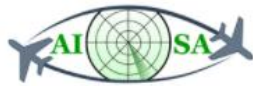
Consortium Funded by Contact information

Figure 2 Extension of the Home page of the AISA Consortium website (section 'More')

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What is Artificial intelligence?

An intelligence demonstrated by machines.

What is Aeronautical Information Management?

AIM is dynamic, integrated management of aeronautical information services – safely, economically and efficiently – through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.

What is Air Traffic Complexity?

Air traffic complexity is defined as difficulty of monitoring and managing a specific air traffic situation.

What are the Aeronautical Information Services?

AIS is a service established in support of international civil aviation, whose objective is to ensure the flow of information necessary for the safety, regularity, and efficiency of international air navigation.

What is Aeronautical Information Exchange Model?

The objective of the AIXM is to enable the provision in digital format of the aeronautical information that is in the scope of Aeronautical Information Services (AIS).

What is Air Traffic Control?

Air Traffic Control's principal purpose is to maintain sufficient separation between aircraft and between aircraft and obstructions on the ground to avoid collisions.

Who is Air Traffic Controller?

Air traffic controllers manage aircraft through all phases of flight, with a stress on safety, orderliness and efficiency. In their doing so, they use various means of communication, navigation and surveillance in order to give information, instructions and clearances to pilots.

What is Air Traffic Flow Management?

ATFM regulates the flow of aircraft as efficiently as possible in order to avoid congestion of certain control sectors.

What is Air Traffic Management?

ATM is covering all the activities involved in ensuring the safe and orderly flow of the air traffic. It comprises three main services – Air Traffic Control (ATC), Air Traffic Flow Management (ATFM) and Airspace Management (ASM).

What is Automation?

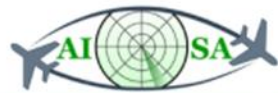
Automation refers to systems or methods in which many of the processes of production are automatically performed or controlled by autonomous machines or electronic devices.

Figure 3 FAQ page of the AISA Consortium website

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Events

AISA CONOPS Workshop

16 September 2020

The AISA project will organize its first workshop on the 16th of September 2020. During the online event, the consortium will present the draft Concept of Operations for the proposed new ATM Artificial Intelligence Situational Awareness System.

Download the [e-leaflet](#) related to the workshop.

Please note that the CONOPS workshop will be repeated in different time slots to increase the possibility for interactive discussion with a limited number of participants in one slot. After registration an email will be sent to participants where there will be a possibility to choose the time slot best suitable for the participant. Each slot will be approximately one and half hour, starting with the presentation of the AISA CONOPS and then continues with an interactive discussion. To ensure an even distribution of participants, choosing of the preferred slot is available only for those who register in time, so an early registration is recommended.

We encourage you to participate and share your thoughts and feedbacks with us!

The participation at the workshop is free of charge but registration is mandatory.

Please register.

Register

Consortium


- FTTS
- JKU
- SLOT
- TUBS
- UPM
- ZHAW
- SKYGUIDE

Funded by

SESAR Exploratory Research
HORIZON 2020

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Figure 4 Events page of the AISA Consortium website before the event





Events

AISA CONOPS Workshop

16 September 2020

The AISA project organized its first workshop on the 16th of September 2020. During the online event, the consortium presented the draft Concept of Operations for the proposed new ATM Artificial Intelligence Situational Awareness System.

The AISA workshop was repeated in three time slots to ensure better interactivity. The workshop session had more than 50 participants. All the sessions had good discussion sections, questions and comments arrived on several issues.

The workshop was provided by WebEx and several SJU and EUROCONTROL experts were also participating.

All three sessions started with the presentation of the AISA concept of Operation presented by Tomislav Radisic. The presentation took about 45 minutes and followed by the 45 minutes Q&A sessions.

The presentation is available for [download](#) in pdf format.

Download the [e-leaflet](#) related to the workshop.

Please follow the AISA activities on LinkedIn to be informed in time on next events and developments.

The video recording of the presentation is now available below:



Figure 5 Events page of the AISA Consortium website after the event (only relevant parts are visible due to the size)

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Registration form for the AISA ConOps Workshop

Please register for the workshop participation using the following form:

Title:

First name:

Last name:

E-mail:


Website:

Register:

After registration you will receive an email that will confirm that the system has accepted your registration. Please check the spam folder as well as it may end-up there. Later on you will receive a message on the possible time slots to select from. If for any reason you don't find the related messages, or have a question regarding the event, please contact Andrej Kocsis dissemination manager directly at andrejkocsis@slotconsulting.hu

You will receive invitation to the workshop with actual link for the participation later on.

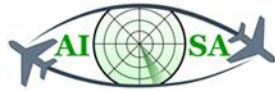
Consortium FTTS JKU SLOT TUBS UPM ZHAW SKYGUIDE	Funded by SESAR Exploratory Research HORIZON 2020	Contact information Prof. Tomislav Radišić University of Zagreb tradisic@fpz.unizg.hr
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Figure 6 Registration page for the AISA ConOps Workshop (no longer available)





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Publications

Please come back later. First publications are expected to be presented by the end of 2020.

Previous related work can be found at the website of the BEST project: www.project-best.eu

Consortium

FTTS
JKU
SLOT
TUBS
UPM
ZHAW
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Figure 7 Publications page of the AISA Consortium website





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AI Situational Awareness Foundation for Advancing Automation

Consortium

Faculty of Transport and Traffic Sciences at University of Zagreb

Faculty of Transport and Traffic Sciences is part of University of Zagreb and the leading higher education and research institution in the field of aeronautics and air transport in Croatia. Aeronautical Division, a part of the Faculty, is operating an Approved Training Organization for pilots according to EASA standards for Commercial Pilot Licence level. Also, an ATCO Training Organization Certificate for air traffic controllers training was issued.

Johannes Kepler University Linz / Institute of Business Informatics

The Institute of Business Informatics – Data & Knowledge Engineering (IKE) at the Johannes Kepler University Linz carries out theoretical and applied research in the areas of knowledge representation, data engineering, business intelligence, and business process management. In recent cooperative research projects with industry partners, funded through EU Horizon 2020/SESAR Joint Undertaking and national research programs, IKE has applied its know-how to solve knowledge representation problems in the domain of air traffic management.

Slot Consulting Ltd.

Slot Consulting is a research and innovation focused consulting company. The company has an aeronautics and air transport related focus but provides service to other innovation intensive industries as well. Besides research activities, Slot Consulting performs handling arrangement for airlines, is involved in system developments and provides consulting service for aviation stakeholders.

Technische Universität Braunschweig, Institute of Flight Guidance

The Institute of Flight Guidance of TU Braunschweig has acknowledged expertise in Air Traffic Management processes. In recent years several projects on national and European level have been accomplished where different enabling technologies (like satellite navigation, novel cockpit displays for taxi guidance or wake vortex awareness, air traffic controller working positions, airport optimization tools etc.) have been developed.

Universidad Politécnica de Madrid

Universidad Politécnica de Madrid (UPM) is the oldest and largest technical university in Spain. It consists of twenty Engineering Schools plus two Faculties that cover most engineering disciplines as well as Architecture and Sports Science. At the UPM, the activity related to the aeronautical science and engineering is developed through the Technical School of Space and Aeronautics Engineering (ETSIAE). Teaching and research on ATM and Aviation Safety is performed by the Air and Space Systems, Air Transport and Airports Department, and, particularly, the Air Navigation Research Group (GINA) research the development and implementation of air navigation, air traffic, airspace design, safety and human factors.

Zurich University of Applied Sciences (ZHAW), School of Engineering

The Centre for Aviation is the leading scientific research facility for aviation in Switzerland and was founded in 2008 to support the Swiss industry with applied research and development in the field of engineering. The Centre for Aviation focuses on Aerodynamics, Flight Mechanics and Control System, Human Factors and Aeronautical Communication, Meteorology and Air Traffic Management, Structural Integrity and Systems Integration and applies cutting edge technologies, state-of-the-art methods, and contemporary knowledge to find new and efficient ways to bring global aviation a step further.

Skyguide Swiss Air Navigation Services Ltd

Skyguide provides air navigation services for Switzerland and certain adjacent parts of neighbouring countries. With its 1500 employees at 14 locations in Switzerland, the company guides some 1.2 million civil and military flights a year safely and efficiently through Europe's most complex airspace.

Skyguide is well integrated into the international air navigation services community and, with its innovative and customer-minded solutions, helps enhance Switzerland's appeal as a place to live, work and do business. The company is majority-owned by the Swiss Confederation, and is headquartered in Geneva.

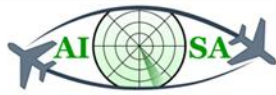
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Figure 8 Consortium members' description page of the AISA Consortium website





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AI Situational Awareness Foundation for Advancing Automation

For any further information about the AISA project, please contact the Project Coordinator.

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Consortium

- FTTS
- JKU
- SLOT
- TUBS
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Figure 9 Contact page of the AISA Consortium website





4 References

[1] S. S. C. a. M. R. O. Triona Keaveney, *SESAR 2020 Communications*, SJU, 2020.

[2] AISA Consortium, "D6.1 Exploitation and Dissemination Plan," 2020.





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