TRUSTY

Trustworthy intelligent system for remote digital tower

Inside TRUSTY

Dear readers,

We're pleased to introduce you to the first edition of the TRUSTY newsletter!

TRUSTY is an **exploratory research project** funded by the Single European Sky ATM Research (SESAR) project, focused on utilizing **artificial intelligence** (AI) to enhance the capabilities of **remote digital towers** in terms of resilience, capacity, and efficiency. Launched in September 2023, the project aims to complete its research and achieve these objectives over a 30-month period, with a particular emphasis on improving the reliability and acceptance of AI support for critical decisions and specific tasks such as runway and taxiway monitoring.

This newsletter will keep you updated on our **progress** as we achieve key **milestones**, take **significant actions**, and hold **project meetings**.

We encourage you to **follow our updates** to see how this research evolves and contributes to advancements in **AI-driven air traffic management**. **Stay tuned!**

Overview

The TRUSTY project is driven by a dedicated consortium of organizations, each bringing unique expertise to the table. Discover the **strengths** and **roles of our partners** and their **significant contributions** to the project by clicking the links below.

Leading research in Future Energy and Embedded Systems for societal solutions.

[Learn more]

Analyzes complex interactive systems and human interactions.

[Learn more]

Evaluates mental states of ATCOs with XAI solutions.

[Learn more]

Specializes in human-machine interaction in Aeronautics.

[Learn more]

Latest news

Over the past year, the TRUSTY project has actively engaged in communicating and disseminating its results through various channels. This includes participating in conferences, events, workshops, and face-to-face meetings. Below, we highlight some **key milestones** in our **dissemination journey**.
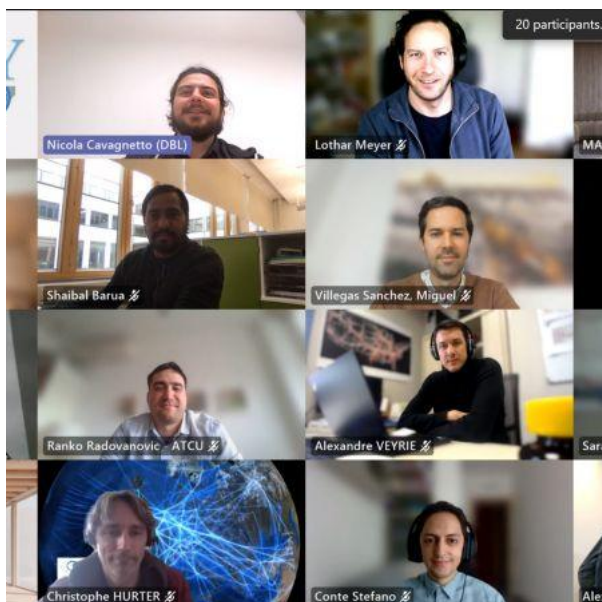
Workshop with TRUSTY Advisory Board: Key Takeaways

On January 25th, TRUSTY held an online workshop featuring advisory board representatives from the ATCO community, industry, academia, and regulatory bodies. This milestone event focused on generating trust in novel technologies within the ATC sector and the involvement of artificial intelligence. Key topics discussed included perceptions of AI, liability, safe system provisions, AI output delivery, shared mental models, and support in stressful ATC situations. This workshop was a significant step in deepening our understanding of AI's potential to assist air traffic controllers and shape future ATM strategies.

For a detailed summary of the workshop and TRUSTY's progress:
[Read more]

The Trustworthy AI Seminar held at [Mälardalen University](#)

Late January saw TRUSTY hosting a seminar on Trustworthy AI at Mälardalen University, led by Mobyen Uddin Ahmed, the project coordinator from MDU. The seminar focused on enhancing transparency and trust in AI systems, covering: AI's role across sectors, ethical considerations, and system reasoning. The event featured diverse and notable contributions from various speakers.

For an in-depth overview of the seminar and its impact:

 [[read more here](#)]

TRUSTY at Airspace World

During the Airspace World event in March 2024, TRUSTY shared key findings as part of the SESAR Joint Undertaking tour with Christophe Hurter, partner from ENAC, leading the discussion. The focus was on Remote Digital Towers (RDTs), where TRUSTY highlighted advancements in improving the transparency and functionality of AI-driven decision support systems.

[[Discover more here](#)]

FLY AI Forum: TRUSTY's Impact

In late April, TRUSTY took part in the second edition of the Fly AI Forum, hosted by EUROCONTROL. This key event, organized with leading industry partners, focused on AI innovations in aviation. TRUSTY presented its AI-based solution for airfield management, highlighting its role in improving Air Traffic Management (ATM) and advancing aviation technology.

For more on TRUSTY's contribution:

[[read the full article](#)]

Participating in DATS Workshop

In early May, the DATS Workshop on Digital Air Traffic Services gathered experts from air traffic management, human factors, and digital technology. Prof. Pietro Aricò, from Sapienza University, presented project goals, focusing on workload, safety, and the integration of AI in aviation. The event fostered discussions on best practices for implementing digital tools in air traffic services.

[Read more]

MDU's Contributions to International Conferences on TRUSTY Research

From May 24th to 26th, 2024, MDU members presented their paper "Balancing Fairness: Unveiling the Potential of SMOTE-Driven Oversampling in AI Model Enhancement" at the **International Conference on Machine Learning Technologies (ICMLT 2024)**, showcasing advancements in AI model performance. Subsequently, from August 25th to 27th, they presented "Research Issues and Challenges in the Computational Development of Trustworthy AI" at the **IEEE International Conference on Artificial Intelligence in Engineering and Technology (IICAIET 2024)**, highlighting critical insights into developing trustworthy AI systems for aviation.
[DIscover more]

Enhancing Decision-Making in ATC: ICAART 2024

From February 24th to 26th, ENAC presented the joint paper titled "Examining Decision-Making in Air Traffic Control: Enhancing Transparency and Decision Support Through Machine Learning, Explanation, and Visualization: A Case Study" at the **16th International Conference on Agents and Artificial Intelligence (ICAART 2024)**. The paper, co-authored by TRUSTY partners, showcased advancements in decision-making processes within air traffic control, emphasizing the role of machine learning and visualization in enhancing transparency and support for controllers. This work contributes to the ongoing ARTIMATION project and the broader TRUSTY objectives.
[Read more]

Collaborative progress: TRUSTY partners meet at Sapienza

June 2024 saw TRUSTY partners gathered at the University of Rome, Sapienza, for their thrice-project length, first in-person consortium meeting. Over two days, discussions and workshops focused on advancements in trustworthy AI, addressing challenges in transparency, explainability, reliability, and AI integration in Air Traffic Management.

For a comprehensive overview of the meeting's outcomes and discussions: [read the full article here].

Trust and Performance in ATC: Insights from NUS Media Talk

On August 27th, 2024, the National University of Singapore (NUS) hosted a Media Lunch Talk featuring Christophe Hurter, who presented insights from the TRUSTY project on enhancing human performance and trust in air traffic management. The discussion focused on the role of data visualization, cognitive workload, and AI integration in improving decision-making processes for air traffic controllers. By leveraging these innovative approaches, the presentation highlighted how TRUSTY aims to foster a more reliable and efficient air traffic management system, emphasizing the importance of trust in technology.

Keynote at VizTIG Symposium 2024

At the VizTIG Symposium 2024 at Newcastle University, Christophe Hurter from ENAC presented his work on explainable AI and visualization, highlighting two European projects: CODA and TRUSTY. CODA focuses on developing a collaborative human-machine system using predictive models and neurophysiological assessments. TRUSTY utilizes AI to enhance efficiency and safety in the global deployment of Remote Digital Towers (RDT), showcasing advancements in air traffic management.

[discover more]

Upcoming events

SIDs 2024

TRUSTY will be present at the SIDs 2024 with a joint demo alongside the CODA project, showcasing innovative AI-driven solutions for air traffic management.

For more information on the event, [click here].

Upcoming Technical Review Meeting

TRUSTY is excited to join the **Technical Review Meeting** with SESAR in Brussels on **9-10th October**! This will be a key moment to showcase our progress and explore how our AI-driven solutions can shape the future of air traffic management, bringing greater safety and efficiency to the industry.

Stay in touch with TRUSTY

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