HORIZON-CL5-2023-D5-01
Clean and competitive solutions for all transport modes

TRIATHLON
Thermodynamics-dRIven control mAnagemenT of Hydrogen powered and electrified propuLsion for aviatiON

Starting date of the project: 01/01/2024
Duration: 48 months

=Deliverable D5.5=
Project videos version 1

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Task Leader: Cristina Dinca (AMIRES), WP5
Revision: 1.0

Dissemination level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Funded by the European Union

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AUTHOR

Author	Institution	Contact (e-mail, phone)
Cristina Dinca	AMIRES	dinca@amires.eu

DOCUMENT CONTROL

Document version	Date	Change
V0.1	09/08/2024	First draft of script created and send to partners
V0.2	01/10/2024	Feedback incorporated; second version of the script created; collection of materials from partners initiated
V0.3	05/11/2024	Third version created (script shortened) and reviewed by partners
V0.4	15/11/2024	Final version of the script recorded and marched with visual material
V0.5	07/01/2025	First version of the video shared with partners
V0.6	07/02/2025	Feedback incorporated; second version shared with partners
V1.0	10/03/2025	Feedback incorporated, video finalised and published; deliverable finalised

VALIDATION

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Point of Contact	Name: Cristina Dinca Partner: AMIRES Address: Na Okraji 335/42, 162 00 Praha 6 Phone: +420 733 685 951 E-mail: dinca@amires.eu
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DISTRIBUTION LIST

Date	Issue	Recipients
10/03/2025	V0.1	Project Coordinator & Project Manager
18/03/2025	V1.0	EC + project partners

Executive Summary

Deliverable D5.5 “Project Videos Version 1” is part of Task T5.1: “Dissemination and Communication Activities” under Work Package WP5: “Dissemination, Communication, and Exploitation” of the TRIATHLON project. This deliverable presents a professionally produced video that highlights the project’s mission to develop innovative hydrogen-powered hybrid-electric powertrains for next-generation aviation.

The video illustrates the urgent need for low-emission aviation solutions in light of global climate goals, particularly the European Union’s Green Deal target for carbon neutrality by 2050. It explains how hydrogen-based powertrain technologies—including fuel cells and advanced storage systems—will play a crucial role in reducing fuel consumption and emissions in megawatt-class aircraft. By addressing key technological challenges, TRIATHLON aims to revolutionize aircraft design, making aviation more efficient, sustainable, and future-ready.

As one of the main dissemination assets, the video will be leveraged across multiple media channels and showcased at industry events, reaching a broad audience to communicate the project’s objectives and ambitions. It aims to engage key stakeholders, including policymakers, industry leaders, and potential collaborators, by clearly outlining the project’s benefits and providing essential contact points for further interaction.

Additionally, this deliverable details the content and dissemination strategy of the video, along with the performance metrics that will be used to evaluate its reach and effectiveness in engaging target stakeholder groups.

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1. Introduction

As outlined in T5.1 "Dissemination and communication activities," this deliverable presents the contents of the TRIATHLON project video and its role in promoting the project's mission and innovations. The primary objective of the video is to showcase the TRIATHLON project and its contributions to the development of hydrogen-powered hybrid-electric powertrains for sustainable aviation, while also highlighting the core technological advancements and benefits of the project.

The video begins by addressing key global challenges, such as the urgent need to reduce aviation-related carbon emissions and the role of innovative technologies in achieving carbon neutrality. It emphasises the importance of hydrogen as a clean energy source for aviation and introduces the TRIATHLON project as a pioneering effort to overcome the technological barriers to widespread hydrogen adoption in aerospace. The video also provides an overview of the project's specific objectives and the advanced technologies being developed, including lightweight multi-state hydrogen storage systems, efficient hydrogen conditioning, and improved thermodynamic management for powertrains.

In addition to presenting the project's core innovations, the video highlights the collaboration of the partners involved in the TRIATHLON consortium and their contributions to the overall success of the project. It concludes by emphasizing the potential benefits of TRIATHLON's technology for the aviation industry and the broader goal of advancing sustainable air travel.

The video is publicly available for viewing at the links:

- Project official website: https://triathlon-project.eu/
- Project LinkedIn page: https://lked.in/9QDfqa
- AMIRES YouTube channel: https://www.youtube.com/watch?v=yihemGuQpfc&t=14s

2. Content of the project video

2.1. Textual content

The TRIATHLON project video conveys several key messages designed to highlight the project's importance and vision for the future of aviation:

Key message	Description
Aviation's role in climate change	The video sets the stage by acknowledging the environmental challenges posed by the aviation industry and the need to address its carbon footprint.
	Video script "Every day, tens of thousands of airplanes cross our skies, a remarkable feat of modern engineering. Yet, this comes with significant carbon emissions." *Est. time: 00:00-00:10s*
Aiming for carbon neutrality by 2050	It presents the ambitious goal of reducing aviation-related emissions by 50% by 2050, in line with EU climate targets.
	"In response, the aviation industry aims to cut these emissions by 50% by 2050, aligning with the European Union's Green Deal target for carbon neutrality." *Est. time: 00:10-00:22s*

The role of hydrogen technologies	The video emphasizes the importance of innovative hydrogen-powered technologies in the transition toward sustainable aviation and acknowledges the technical challenges that need to be overcome.
	"New powertrain technologies, such as hydrogen-powered fuel cells and combustion, are crucial for this transition. Green hydrogen, produced via renewable energy sources, holds great potential. However, significant technological challenges remain before hydrogen can be the main fuel for aerospace." *Est. time: 00:23-00:42s*
TRIATHLON's contribution to the aviation industry and its main technological innovations	The video introduces the TRIATHLON project as a solution to these challenges, aiming to advance hydrogen-powered hybrid-electric powertrains for megawatt-class aircraft. The video explains the project's focus on developing innovative, low-emission powertrains.
	"This is where the European project TRIATHLON comes into play. It will develop new ways of designing robust, low-emission, low-maintenance, highly responsive hydrogen-powered hybrid-electric powertrains for megawatt class aircraft." *Est time: 00: 43 - 00:59s*
Project impact	The video outlines the expected impact of the TRIATHLON project.
	"The technologies TRIATHLON will develop are going to improve the aviation industry through: - Reducing fuel consumption and emissions - Simplifying aircraft design by eliminating complex cryogenic systems - Enhancing hydrogen conditioning efficiency, and - Introducing lighter, more compact hydrogen tanks" *Est. time: 00:59 – 01:01:20s*
Project's four key objectives	The video goes into detail about the four specific technological advancements that TRIATHLON will focus on.
	"TRIATHLON will achieve this goal through four specific objectives. First, the project will enhance component interaction while recycling waste heat and water from fuel cells to improve combustion control and reduce NOx emissions. Second, a lightweight multi-state storage system design based on advanced composite materials will be developed. This will eliminate the need for cryogenic hydrogen fuel pumps and significantly enhance powertrain efficiency, thereby reducing emissions. Third, the focus will be on improving thermodynamic efficiency by exploiting the heat sink potential of the

	hydrogen flow for the thermal management of cooling components. Fourth, TRIATHLON will develop the system as a whole, focusing on how the components interact, which will significantly advance hybrid-electric powertrain technology." *Est. time: 01:20 – 02:14s*
Project timeline, founding and partners	The video informs viewers about the project's funding, timeline, and the involved partners.
	"Funded by the European Union's Horizon Europe programme, TRIATHLON is a 48-month project, running from January 2024 to December 2027, with a €4M budget. Coordinated by the Materials Innovation Institute and Delft University of Technology, the consortium includes 8 partners from 6 European countries, and benefits from an External Advisory Board of experts." *Est. time: 02:15-02:42s*
TRIATHLON's vision for the future	The video concludes by reinforcing the TRIATHLON project's role in shaping the future of aviation, positioning it as a critical step toward a sustainable, low-emission aviation industry.
	"TRIATHLON is more than just a project. It's a step towards a cleaner, more sustainable future. This is the future of aviation. This is TRIATHLON." *Est. time: 02:43-03:02s*

2.2. Visual highlights from the video

The project logo and visual identity, which have been consistently utilised across all dissemination activities, have been also used as the base for the visual aspect of the video. This approach aligns with the goal of establishing the TRIATHLON brand identity, ensuring cohesion across all communication materials and enhancing the project's visibility among target audiences.

Additionally, the funding statement, along with the grant agreement number have been included: "This project has received funding from the European Union's Horizon Europe Research and Innovation programme under grant agreement No 101138960, TRIATHLON project."

To provide a more detailed understanding of the key elements featured in the TRIATHLON project video, the following screenshots and images from the video have been included. These visuals are intended to highlight specific aspects of the project, such as the technological innovations, core objectives, and the overall message of sustainability in aviation.

Figure 1: Introduction to aviation's carbon emissions

Figure 2: Green hydrogen as a sustainable solution

Figure 3: TRIATHLON's main technological innovations

Figure 4: TRIATHLON's impact

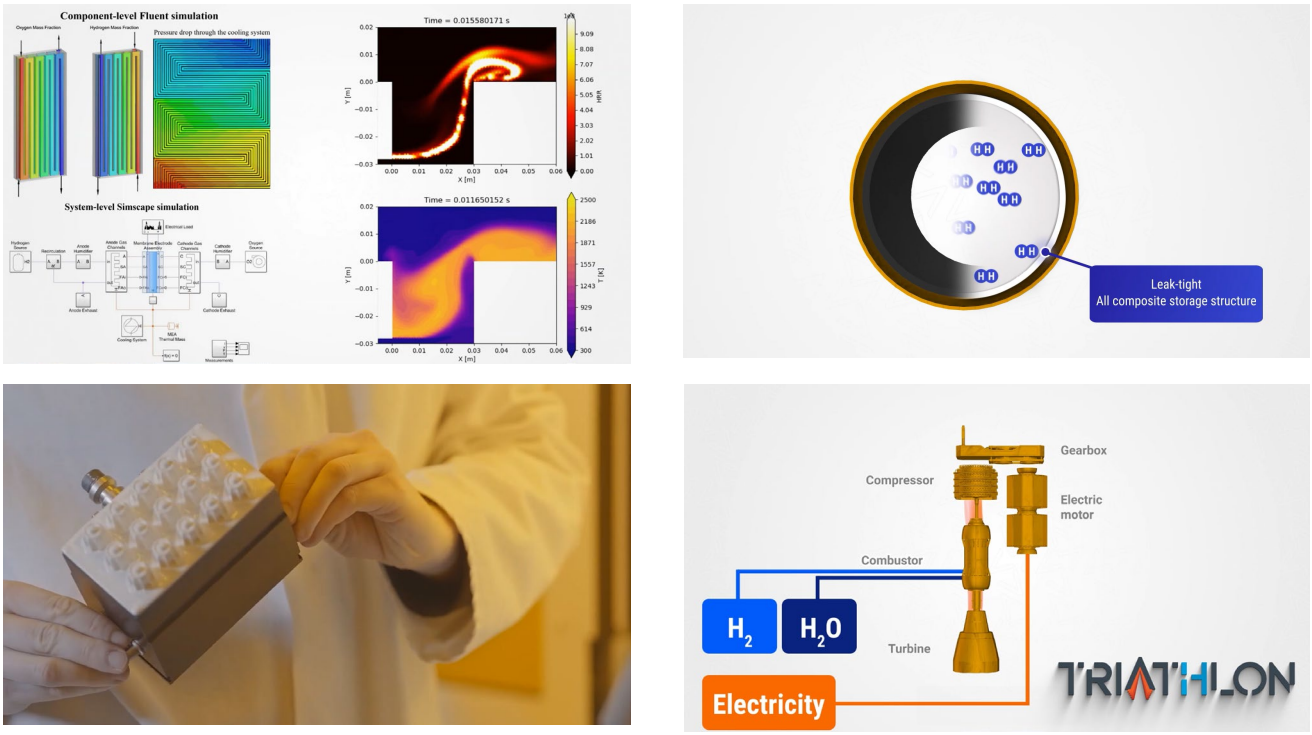

Figure 5: TRIATHLON's four key objectives

Figure 6: EU funding statement and GA number

Figure 7: TRIATHLON Consortium

3. Dissemination of project video

3.1. Media channels and dissemination strategy

To maximise the reach and impact of the TRIATHLON project video, the following media channels will be utilised for its dissemination:

- **Project website:** The TRIATHLON project video will be prominently featured on the project website (https://triathlon-project.eu/), serving as the primary entry point for all target audiences. The video will be available for direct viewing on the homepage, ensuring easy access for visitors seeking more information about the project and its objectives.
- **LinkedIn:** LinkedIn (https://www.linkedin.com/company/triathlon-project/) will be a key platform for promoting the video due to its extensive reach within professional networks. Posts featuring the video will be strategically shared to expand visibility and encourage engagement within the project partners' network.

- **Events**: The video will be showcased at dedicated booths at events related to the TRIATHLON project or at partner booths. Additionally, it will be used as an introduction during online events, such as webinars, and will be linked as follow-up material to reinforce the project's message and objectives.
- EAB members: The External Advisory Board members within the project can also support the dissemination of the video by spreading the material through their professional and personal networks.

3.2. Monitoring and impact assessment

To ensure the video reaches its full potential as a key dissemination asset, various matrix and indicators will be tracked and closely monitored:

- **YouTube Analytics** – Video views, likes, and engagement will be tracked on the AMIRES channel, as well as on the embedded video on the project website.
- **LinkedIn Engagement** – Interactions such as shares, comments, and engagement levels with posts featuring the video will be analysed to optimise its presentation and maximise its reach.
- **Website Performance** – Google Analytics will be used to assess the video's effect on visitor behaviour, measuring its impact on page views, web traffic, and conversion rates.

4. Conclusions

In this deliverable, we have outlined the contents of the TRIATHLON project video and its role in promoting innovative hydrogen-powered hybrid-electric powertrains for sustainable aviation. Furthermore, we have identified the media channels through which the video will be disseminated to reach specific stakeholder groups, ensuring broad engagement and impact. Lastly, we have detailed the metrics that will be used to assess its effectiveness as a professional marketing and dissemination tool, maximising its potential to communicate the project's vision and objectives.

5. Degree of progress

Deliverable D5.5 is considered 100% fulfilled. An update will be made at the end of the project, in month 46 (M46), as part of deliverable D5.6 "Project Videos version 2."

6. Dissemination level

This deliverable is Public.