

# Midterm report on Communication and Dissemination activities

## Deliverable D8.2



**Embedded Life-Cycle Management  
for Smart Multimaterials Structures:  
Application to Engine Components**



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## Deliverable D8.2

# Title: Midterm report on Communication and Dissemination activities

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**Lead partner:** FEUGA.

**Author List:** Ángela Muñiz (FEUGA)

Carmen Cotelo (FEUGA)

Esther Valiño (FEUGA)

Noelia Vilar (FEUGA)

**Reviewed by Leader and/or Co-leader of Work Package:**

Rafik Hadjria (SAFRAN), Asmaa Messaoudi (ENSAM)

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# ABSTRACT

The midterm report on Communication and Dissemination activities covers all the planned activities undertaken by the partners under a qualitative and quantitative perspective during the period from the 1st of April 2021 to the 31 of December 2022. The quantitative data is determined by the number of activities, their impact, and the amount of audience reached. The qualitative part is based on the analysis of the data collected linked to the different target groups of the project.

The Report gives an overview of all dissemination actions of the MORPHO project through traditional communication channels such as event attendance (conferences, workshops, etc.), project publications (brochures, press releases, articles in professional journals, etc.), social media posts (on LinkedIn and Twitter) and videos (YouTube).

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# 1. Introduction

This document responds to the Task 8.2: “Communication & Dissemination activities and material” [M01-M42], led by FEUGA. Its aim is to implement the communication and dissemination strategy linked to the initial communication and dissemination plan (D8.1). The task includes communication activities (social networks, communication campaigns, press releases & other), dissemination activities (infographics, newsletters, videos & scientific publications) and event participation, covered by subtasks 8.2.1, 8.2.2 and 8.2.3.

The communication and dissemination activities aim at raising public awareness and ensure maximum visibility of the project's key facts, objectives, activities, and findings. Dissemination activities will be focused on providing a reliable, smooth, and efficient knowledge transfer of the MORPHO development, its capabilities and business models to the targeted actors, users, and beneficiaries. Communication activities has to do with a strategically planned process that starts at the outset of the project and continues throughout its entire lifetime, aimed at promoting the project and its results between society, and show the impact and benefits of the project.

The Deliverable 8.2 contains information about the activities carried out in these fields until the project mid-term. Thus, the objective of this deliverable is to report the performed communication and dissemination actions and evaluate their efficiency. We will do so by analysing one by one the different communication and dissemination tools used and reflecting on their effectiveness.

As the work package leader, FEUGA was the partner in charge of the planning, implementation, and reporting of these activities. All of them have been carried out in line with the main work package objective, which is: defining and implementing the overall strategy to maximize the impact of MORPHO project (communication, dissemination, and exploitation) following project results and facilitating the participation and dialogue with stakeholders and existing networks.

## 1.1. Communication and Dissemination strategy

MORPHO's strategy in terms of knowledge transfer is based on a prioritization of dissemination activities, which will ensure the success of project impact. Nevertheless, the most significant dissemination activities will take place when final research results are available, from month 24 as foreseen in the Description of Action (DOA). At the time of delivery of this deliverable, dissemination actions are limited to collaboration with other projects and networks, attendance at events and scientific publications. Communication activities have therefore been the main focus of this period. We can see this in the following figure, which serves as a roadmap to maximise the impact of the MORPHO project:

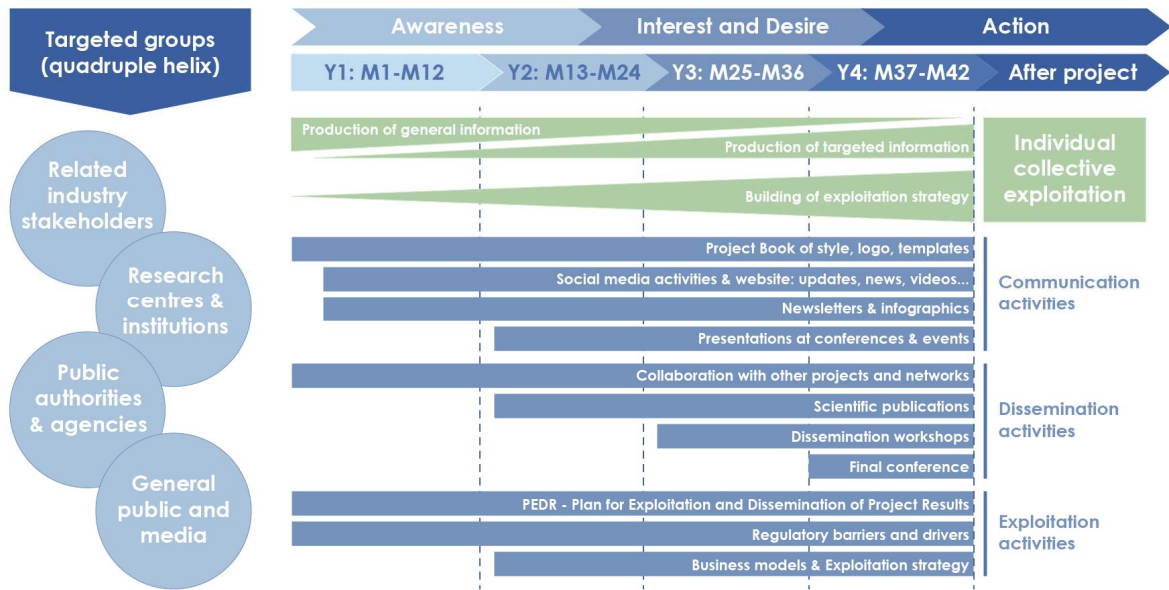


Figure 1. Roadmap of Communication, Dissemination & Exploitation activities

The activities we have taken have followed the main phases of the AIDA model: Awareness to attract the attention of the target audience, Interest of the target audience, Desire of the target audience to know more about the project, and Action to lead the target audience towards getting involved in the project and to promote its results to facilitate their exploitation. FEUGA plays a leading role in translating this idea into action. In the following sections, the different actions developed will be explained.

## 1.2. Objectives

In terms of qualitative objectives, MORPHO's communication and dissemination seek to have a two-way direction, guaranteeing not only that the project and its outcomes are outspread but also that the project receives relevant inputs from relevant stakeholders (policymakers, industry, research community, and other EC projects). This has been achieved by providing targeted information to multiple audiences, including the media and the general public.

During this period the project was able to build a strong brand image and a community of followers, increasingly growing.

Also, the communication and dissemination activities are aligned with the project objectives, which are:

- To raise public awareness about the project, its results, and progress within target groups using effective communication means and tools.
- To engage key players in the European aviation industry on the project activities.
- To ensure transparency and visibility of the project activities to acquire the necessary support from crucial stakeholders.
- To announce and promote MORPHO events, contributing to increasing its attendance and potential engagement.



- To involve a large number of stakeholders early in the discussion of the development of smart aeronautical parts in aviation, supporting the definition of requirements, specification, and barriers for the project.
- To disseminate the fundamental knowledge, methodologies, and technologies developed in the project.
- To establish links and synergies with other aeronautic-related projects.

Furthermore, to facilitate the monitoring and assessment of the impact, quantitative KPIs regarding the communication & dissemination activities were established in the proposal of the project and ratified in the previous deliverable 8.1. In each section to be reported, we will attach a table reflecting the quantitative objectives set for the end of the project, the current status at midterm and the percentage achieved, in order to facilitate the visualisation of the progress that has been made.

### 1.3. Target audience

Due to the multiple uses and the actors involved, the audience for the project's outputs is truly diverse. MORPHO project communications will extend from the most technical and experienced community working on innovative manufacturing, sensor technology, numerical simulation, bonded structures, hybrid twins, prognostics and health monitoring, structural health monitoring, laser disassembly, and recycling of multi-materials, to the general public. Thus, MORPHO will target four main stakeholders, as defined in D8.1 COMM&DISS plan, whose characteristics are:

- **General Public:** the general public is characterized by having a common environmental consciousness and a concern for sustainability. They are passengers of air transportation and will be the end beneficiaries of the improvements achieved. Therefore, even if this audience is considered not to have a scientific or technical background, it does have the capacity to judge the impact of the project in terms of increasing transport sustainability and achieving greener transportation. We reach this audience through the website, videos, Twitter, press releases addressed to the general media, and communication campaigns.
- **Scientific Community:** this community has a strong scientific background, enabling a critical assessment of the information provided. They have a big interest in the achievements made by the consortium as well as their future applications. We reach them through the publication of scientific papers, conferences, workshops, specialized media, the project website and newsletter, Research Gate, and LinkedIn.
- **Policy Makers:** although not necessarily have a technical background, this audience is knowledgeable about the impact of the developed technologies on the environment, the security, and the economic sustainability of the aeronautic industry. By engaging with policymakers and regulators and European aviation trade associations, MORPHO will bring to the project important inputs as well as influence future regulations in this area. This audience was reached through communication campaigns, press releases, and Twitter.
- **Industries:** Morpho is aiming at achieving different goals for the benefit of different industries and will be mainly being targeted to Airlines, Original Equipment Manufacturers (OEMs), Maintenance, Repair & Overhaul companies (MROs), Sensor, Manufacturers System and

Structures Suppliers, and IT suppliers, as they are the ones benefiting the most from the results achieved during the project. The impact on this audience is achieved by organising workshops or events and posting on Twitter and LinkedIn.

Tracking the audiences of the events in which we have participated, the contents we have published, and the media, platforms, and other loudspeakers that have echoed the project, we estimate that, halfway through the project, we have already met the final target outreach objectives. When we estimate the number of people reached by category among all dissemination and communication activities, we find a large reach of the scientific community (14.800), followed by industry (9.800). In the other categories the figures, although far exceeding the KPIs, are lower: 3.100 from the general public, 2.000 from policymakers, 1.300 from the media, 700 from civil society, and 600 from investors. More details about these numbers will be explained in the different sections of this document.

## 2. Overall communication & dissemination activities

The following chapter gives an overview of the communication and dissemination tools and instruments used by the project from its inception until month 22: December 2022. To present the updated information of the period the data presented has been revised on January 2<sup>nd</sup>, 2023.

### 2.1. Website

The MORPHO website, already presented and detailed in D8.3 “Website launching”, serves as a repository of the contents developed during the project, as a presentation and explanation of the project and as a news portal on the latest advances and actions carried out by the consortium.

The website is available at <https://morpho-h2020.eu/>. Since the launch of the website the efficiency is underpinned by the criteria of:

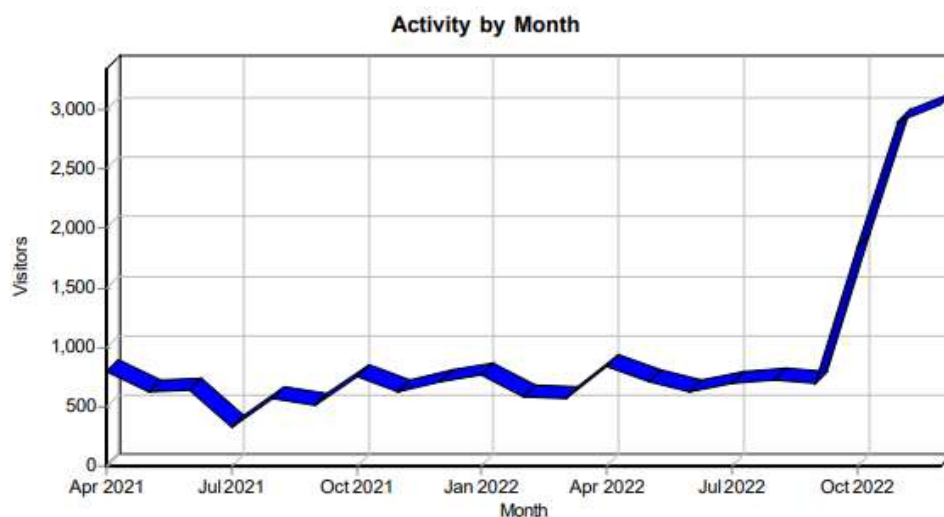
- Usability
- Clear and accessible structure
- Content updating

Halfway through the project, it has 13 downloadable contents: 3 scientific publications, 5 media appearances, 2 newsletters and 3 graphic materials: poster, logo and brochure. The sum of the news published for free consultation reaches 21 entries. These contents coexist with the tabs that from the beginning have provided information about the project, the consortium, the deliverables, the work packages, objectives and expected impact.

The metrics of the project website have been analysed using the program WebLog Expert. Since the launch of the website to date, the project has reached more than 19.000 visitors and 42.000 page views. The number of visits is continuously increasing, as the project gets more active and shares more content. The pages getting more views are the front page, followed by the news section, the page dedicated to the consortium members, the page containing an overview of the project, and the page where the

dissemination materials and scientific publications are shared. On average, the website gets 60 visits per day.

Table 1. Website activity



Activity by Month

Month	Hits	Page Views	Visitors	Bandwidth (KB)
Oct 2021	1,744	824	758	13,520
Nov 2021	1,496	1,025	620	6,903
Dec 2021	1,837	986	718	7,540
Jan 2022	2,033	1,394	765	19,276
Feb 2022	1,759	1,168	587	16,494
Mar 2022	1,713	1,052	570	17,100
Apr 2022	2,088	1,428	842	29,878
May 2022	2,183	1,442	705	27,590
Jun 2022	1,838	1,112	626	15,003
Jul 2022	2,089	1,401	699	14,733
Aug 2022	2,372	1,559	720	32,746
Sep 2022	2,172	1,496	704	22,517
Oct 2022	14,207	5,392	1,844	653,683
Nov 2022	22,304	6,265	2,895	1,482,411
Dec 2022	19,421	7,411	3,039	1,122,449
<b>Subtotal</b>	<b>79,256</b>	<b>33,955</b>	<b>16,092</b>	<b>3,481,848</b>
<b>Total</b>	<b>97,416</b>	<b>42,298</b>	<b>19,560</b>	<b>3,983,351</b>

Table 2. Website progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
<b>Website</b>	-10.000 visits with +2 min staying.	19.000 visits	199%
	-At least 30 news accumulated	21 news	70%
	-1000 visitors/month in	To be reported in the last year	0%

	the last year of the project		
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## 2.2. Newsletter

According to the schedule established at the project beginning, two newsletters have been released so far, one per year as established in the communication and dissemination plan.

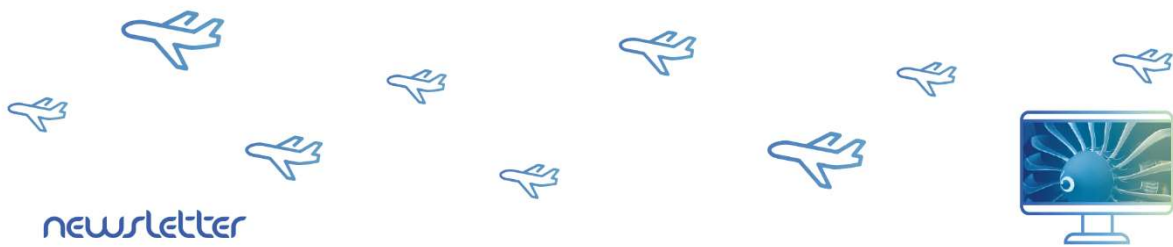


Figure 2. Newsletter header

The first one served to announce the launch of the project, the first explanatory videos, the press release, and the first collaborations and appearances at events.

The second, published on 19 December 2022, bids farewell to the year with a reminder of the project's progress, such as the creation of presentation videos for each partner, the launch of the #MorphoExplains campaign and the project's presence at various events and conferences, as well as a Christmas greeting.

As of today, 38 people are on the mailing list for future newsletters. Both newsletters can be consulted in Annex 1 of this deliverable and are also available in the project website: <https://morpho-h2020.eu/dissemination/newsletters/>

Increasing the number of subscribers to the newsletter will be one of the main objectives of the new period, as the newsletter is one of the most powerful tools for the dissemination of results it is important to increase the database and consequently, our reach.

Table 3. Newsletter progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
<b>Newsletter</b>	-4 newsletters	2 newsletters	50%
	-100 subscribers	38 subscribers	28%

### 2.3. Videos

Eighteen videos have been published and produced on the project's YouTube channel, which has 20 subscribers. The handle of the project on YouTube is @morphoH2020 and the profile can be consulted here: [https://www.youtube.com/channel/UC\\_h3JZ-HyGhA3I7AnhWkuNA](https://www.youtube.com/channel/UC_h3JZ-HyGhA3I7AnhWkuNA)

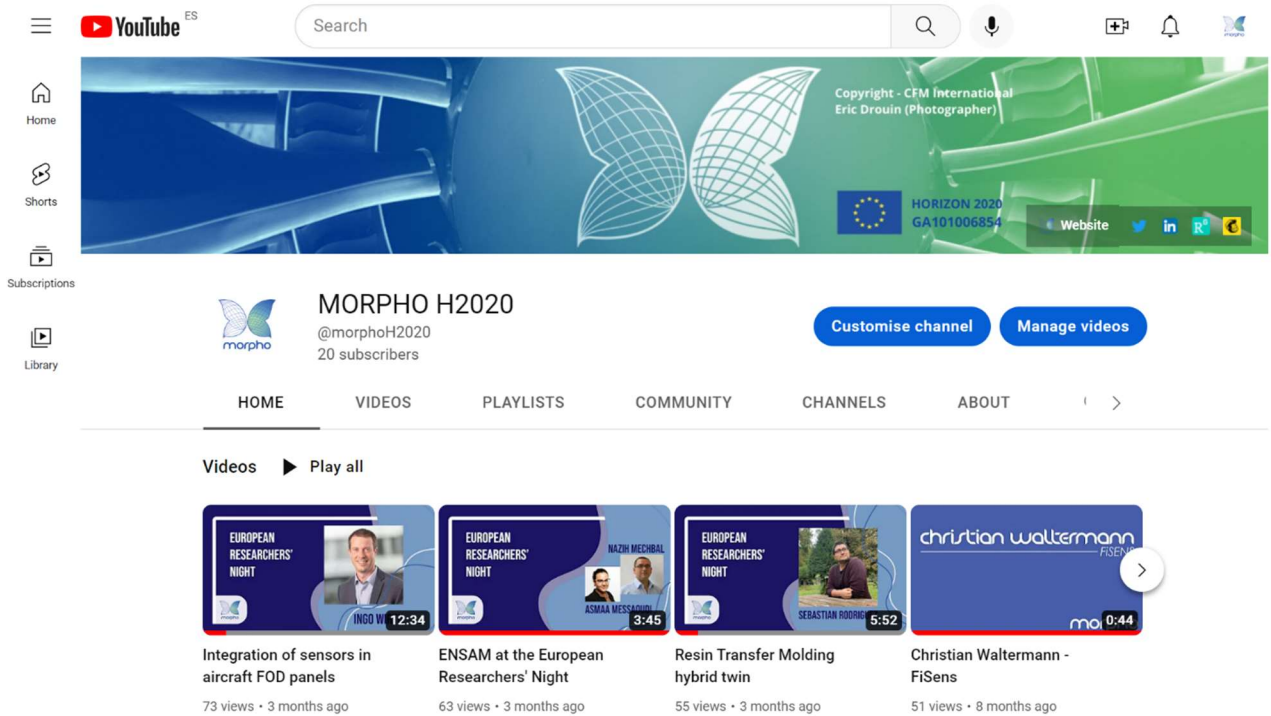


Figure 3. MORPHO's YouTube Channel

FEUGA has been the partner in charge of producing and publishing these videos. Most of the contents are the presentation of the different partners and their contributions to the project, as well as the functioning of MORPHO in general. There are also two videos of presentations made at events, a Christmas greeting, and the three talks made for European Researchers Night (ERN) 2022, described in their section. All of them are appropriately named and described for their correct understanding, and with a series of associated tags to facilitate their search in the platform's engine. They accumulate 1.569 visualisations, 33,5 hours of viewing time, and 4.869 impressions, which will be shown in 1.11.3 YouTube section.

Table 4. YouTube views in 2021

### Your videos got 140 views in 2021



Table 5. YouTube views in 2022

### Your videos got 1,429 views in 2022



Below is a table with all the videos published, their impact and their date as of 02/01/2023:

Table 6. MORPHO videos

Title	Visualisations	Date	Link
MORPHO H2020 - Circular Aviation for Green Growth	56	24/07/2021	<a href="https://youtu.be/2q5kaiVH5u4">https://youtu.be/2q5kaiVH5u4</a>
The MORPHO project	109	02/11/2021	<a href="https://youtu.be/2-dDuVixgCo">https://youtu.be/2-dDuVixgCo</a>
Happy Holidays!	41	22/12/2021	<a href="https://youtu.be/dJZbiLPSfSU">https://youtu.be/dJZbiLPSfSU</a>

Nazih Mechbal - ENSAM	148	27/12/2021	<a href="https://youtu.be/F-tFB85HKY4">https://youtu.be/F-tFB85HKY4</a>
Rafik Hadjria - SAFRAN - Foreign Object Damage (FOD) panel	39	27/12/2021	<a href="https://youtu.be/3E1YZLHSo_Y">https://youtu.be/3E1YZLHSo_Y</a>
Nikos Pantelelis - Synthesites	96	04/01/2022	<a href="https://youtu.be/pVATmilOHlo">https://youtu.be/pVATmilOHlo</a>
Christos Nastos - TU Delft	184	04/01/2022	<a href="https://youtu.be/uKddJyC5OpA">https://youtu.be/uKddJyC5OpA</a>
Roberto López - ESI	54	04/01/2022	<a href="https://youtu.be/iqQ-tYZiUQA">https://youtu.be/iqQ-tYZiUQA</a>
Ingo Wirth - Fraunhofer IFAM	91	05/01/2022	<a href="https://youtu.be/GzKZQY7akpM">https://youtu.be/GzKZQY7akpM</a>
Rafik Hadjria - SAFRAN	138	05/01/2022	<a href="https://youtu.be/7JJNvZlY6xQ">https://youtu.be/7JJNvZlY6xQ</a>
Noelia Vilar - FEUGA	93	24/01/2022	<a href="https://youtu.be/RSZ1yiV020s">https://youtu.be/RSZ1yiV020s</a>
Elena Martín - Universidade de Vigo	49	24/01/2022	<a href="https://youtu.be/zVWBG-CRNDI">https://youtu.be/zVWBG-CRNDI</a>
Eric Monteiro - ENSAM	102	24/01/2022	<a href="https://youtu.be/oYHJhAe2FNk">https://youtu.be/oYHJhAe2FNk</a>
Rafik Hadjria - Final Public Workshop of SuCoHS project	66	09/03/2022	<a href="https://youtu.be/sopyO6uQQig">https://youtu.be/sopyO6uQQig</a>
Christian Waltermann - FiSens	51	11/04/2022	<a href="https://youtu.be/dMzyhN8JFCQ">https://youtu.be/dMzyhN8JFCQ</a>
Resin Transfer Molding hybrid twin	55	30/09/2022	<a href="https://youtu.be/vH5EMXVD9Cs">https://youtu.be/vH5EMXVD9Cs</a>
ENSAM at the European Researchers' Night	63	30/09/2022	<a href="https://youtu.be/FAmou-VzpAo">https://youtu.be/FAmou-VzpAo</a>
Integration of sensors in aircraft FOD panels	73	30/09/2022	<a href="https://youtu.be/lvKfCehKb-M">https://youtu.be/lvKfCehKb-M</a>

Table 7. YouTube and video progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
<b>Videos</b>	At least 2: project launch and end of the project	1 of them. In addition, 17	50%
<b>Youtube</b>	1.000 visits	1.569	156%

## 2.4. Media communications and press releases

For the time being, a press release was sent from the project to different media announcing its launch. It was well received by specialised media in the aeronautical and technological sector. The project made its mark on French media platforms, but also in the United States and the United Kingdom, achieving international repercussions. Below is a list of the digital publications of the MORPHO press release.

Table 8. Publications of the MORPHO's press release.

Title	Media	Date	Language	Link
Developing next-gen, smart engine composite fan blades	Composites World	20/09/2021	EN	<a href="https://www.compositesworld.com/news/developing-next-gen-smart-engine-composite-fan-blades">https://www.compositesworld.com/news/developing-next-gen-smart-engine-composite-fan-blades</a>
Research Targets Embedded Fan Blade Sensor Manufacturing	Aviation Week	29/07/2021	EN	<a href="https://aviationweek.com/air-transport/aircraft-propulsion/research-targets-embedded-fan-blade-sensor-manufacturing">https://aviationweek.com/air-transport/aircraft-propulsion/research-targets-embedded-fan-blade-sensor-manufacturing</a>
Arts et Métiers coordonne un projet d'intégration de capteurs dans les aubes de soufflante des moteurs	Le journal de l'aviation	08/07/2021	FR	<a href="https://www.journal-aviation.com/actualites/46180-arts-et-metiers-coordonne-un-projet-d-integration-de-capteurs-dans-les-aubes-de-soufflante-des-moteurs">https://www.journal-aviation.com/actualites/46180-arts-et-metiers-coordonne-un-projet-d-integration-de-capteurs-dans-les-aubes-de-soufflante-des-moteurs</a>
Arts et Métiers coordonne un nouveau projet de recherche européen sur la fabrication de structures aéronautiques 4.0	TraMetal	09/07/2021	FR	<a href="https://trametal.fr/arts-et-metiers-coordonne-un-nouveau-projet-de-recherche-europeen-sur-la-fabrication-de-structures-aeronautiques-4-0/">https://trametal.fr/arts-et-metiers-coordonne-un-nouveau-projet-de-recherche-europeen-sur-la-fabrication-de-structures-aeronautiques-4-0/</a>
Arts et Métiers coordonne un projet d'intégration de capteurs dans les aubes de soufflante des moteurs	AeroContact	08/07/2021	FR	<a href="https://www.aerocontact.com/actualite-aeronautique-spatiale/62785-arts-et-metiers-coordonne-un-projet-d-integration-de-capteurs-dans-les-aubes-de-soufflante-des-moteurs">https://www.aerocontact.com/actualite-aeronautique-spatiale/62785-arts-et-metiers-coordonne-un-projet-d-integration-de-capteurs-dans-les-aubes-de-soufflante-des-moteurs</a>



Table 9. Progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
Scientific publications	-3 publications in sector-specific magazines	5	166%
Press release	-1 in each partners country	1 consortium's country	17%
	-1,000 people reached by country	1500 audience reached	150%

## 2.5. Communication campaigns

In D8.1 a target of 4 communication campaigns was planned throughout the project. Carrying them out is also one of the requirements of Subtask 8.2.1 "Overall communication activities" of the project, to which this deliverable responds. To date, we launched two campaigns, one of which will still have a long life in the second half of the project. They allowed and will allow us to reach the general public target. They are:

### 2.5.1. Project launching campaign

This consisted of sending out the press release mentioned above and publishing it in the media, platforms, other projects' websites, and MORPHO's own website. This campaign focused on communicating the project's objectives and expected results, as well as building an audience familiar with MORPHO's research. It was published in five specialised industry media.

At the same time, several efforts were made to showcase the project and make it known in as many areas as possible. To this end, different posts were launched presenting the different sections of the project website, a video presenting the project was created and a video was recorded with each of the partners.

The first newsletter and the poster and brochure were also part of this campaign. Thus, forming an arsenal of different tools that made it possible to publicise the project at its launch, which we will show in the corresponding sections.

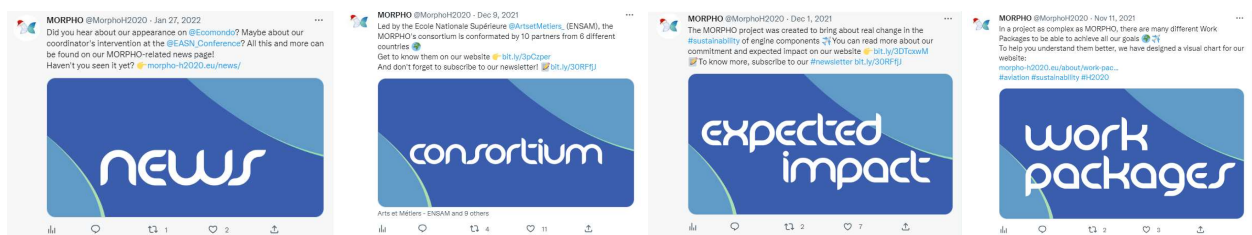


Figure 4. MORPHO's sections

### 2.5.2. #MorphoExplains

This involves the regular production of specific explanatory content focused on different concepts of the project, such as Structural Health Monitoring (SHM), Metal-Polymer composites materials, or Carbon fiber in aerospace applications. These contents enable an audience unfamiliar with the concepts of the aeronautical innovation industry to become familiar with the purposes and advances of MORPHO, as well as to become interested in the sector and understand other types of communications for which it is necessary to know these basic concepts. The different posts also explain the MORPHO innovative approach related to each term, so the prepared contents are also of interest to the scientific community.



Even if the first carbon fibers were produced by Thomas Edison and Joseph Swan as filaments in their incandescent lamps, only in recent years they are becoming an essential material for aerospace applications due to their mechanical properties which include high strength, low weight, and good durability. What is carbon fiber? Carbon fiber is a [...]



Environmental sustainability is one of the main challenges faced by today's aviation industry. Aerospace structures require high strength and stiffness; thus, they have traditionally been made from metals. However, composite materials are gaining increased use in aircraft and industry to reduce weight, contributing to a significant reduction in fuel consumption and carbon footprint. The use [...]



Structural Health Monitoring (SHM) technologies for damage detection, diagnosis, and prognosis in aerospace structures are recognized as a key solution to increase aviation safety and to simultaneously decrease operating, maintenance, and repair costs. SHM enables a novel maintenance approach based on the actual condition of the airframe, mitigating operating costs induced by scheduled inspections. The [...]

Figure 5. MORPHO explains.

This campaign also includes publications related to *Morpho influencer month*. On a monthly basis, each partner will provide information about their work in the project, which is published as a news item on the website and announced in our social media publications under the hashtag #MORPHOH2020. For the moment, two news items have been published within this initiative: one in which FEUGA explains the importance of Intellectual Property Management in European projects and the other in which ESI Group explains the Virtual Twin component.

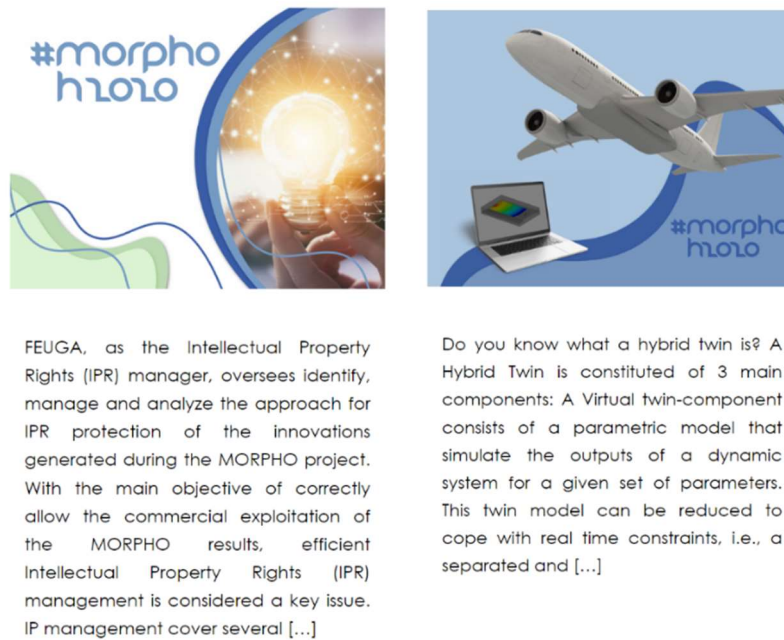


Figure 6. Articles written by FEUGA and ESI Group

As part of the campaign, other hashtags are used as #MorphoRecommends, to interact with major events related to MORPHO objectives and reach their audiences and #TeamMorpho, to present the members of the consortium and their contributions.

### 2.5.3. International days

International days can be of great help to reach different audiences and network with initiatives that have the same purpose. Using a common hashtag gives visibility to the planned content and allows the project to use a more informal tone to communicate the goals and objectives. To date the project has celebrated days designated by organisations like the United Nations, to raise public awareness about themes related to climate action, reduction of emissions, clean air, etc., and days designated by individuals or associations such as the Aviation Maintenance Technician Day. The picture below shows some of the campaigns launched to celebrate those days, together with the reached interactions.

## D8.2 – Midterm report on communication and dissemination activities



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101006854

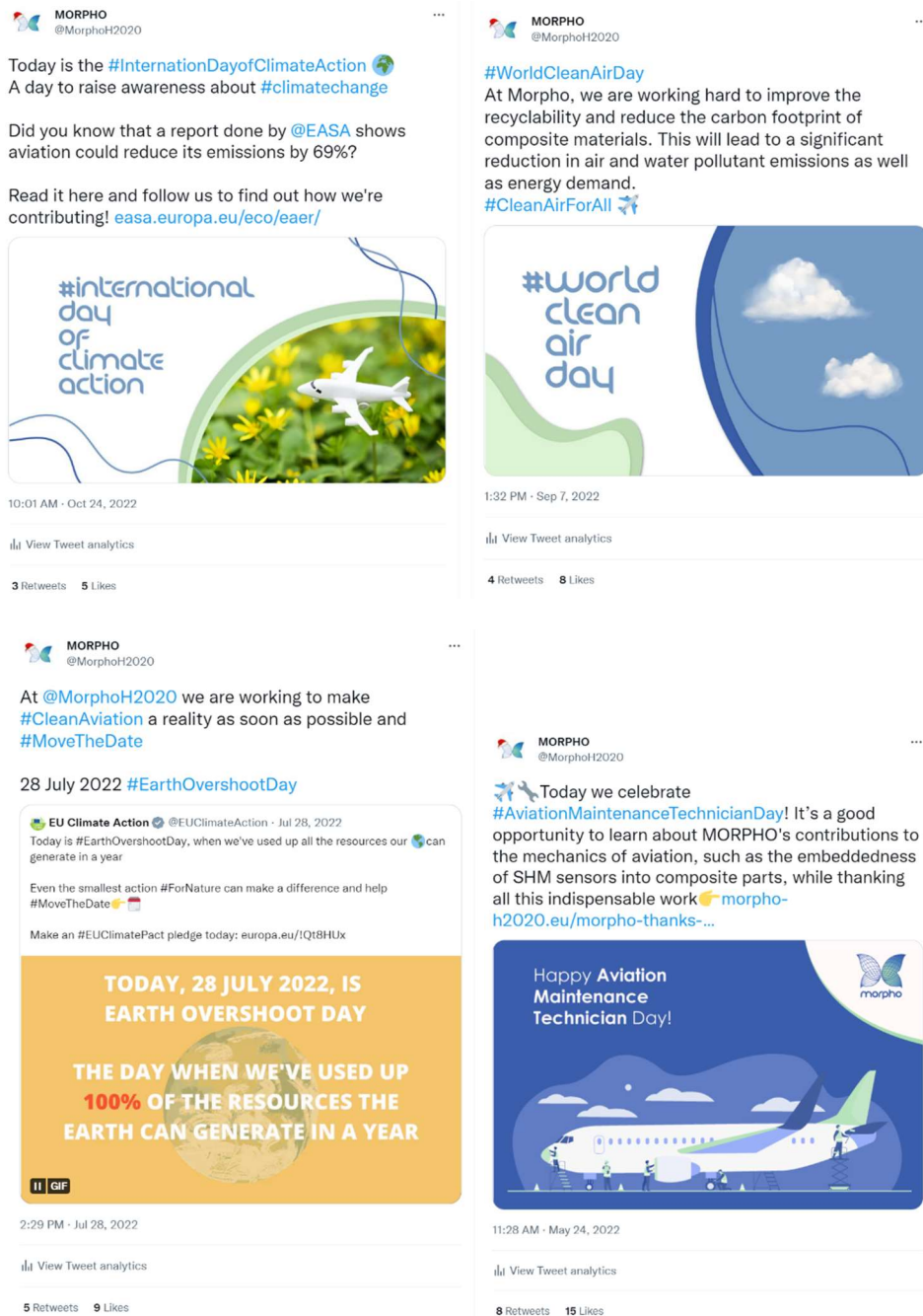


Figure 7. International Days posts

Table 10. Progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
Communication campaign	4	2	50%

## 2.6. Scientific publications

Like all dissemination activities, it will be developed with more weight in the second half of the project, with the scientific and technical results on the table. For the time being, the project's Zenodo community was created, which will serve as an open-access repository.

[https://zenodo.org/communities/morpho\\_h2020/?page=1&size=20](https://zenodo.org/communities/morpho_h2020/?page=1&size=20)

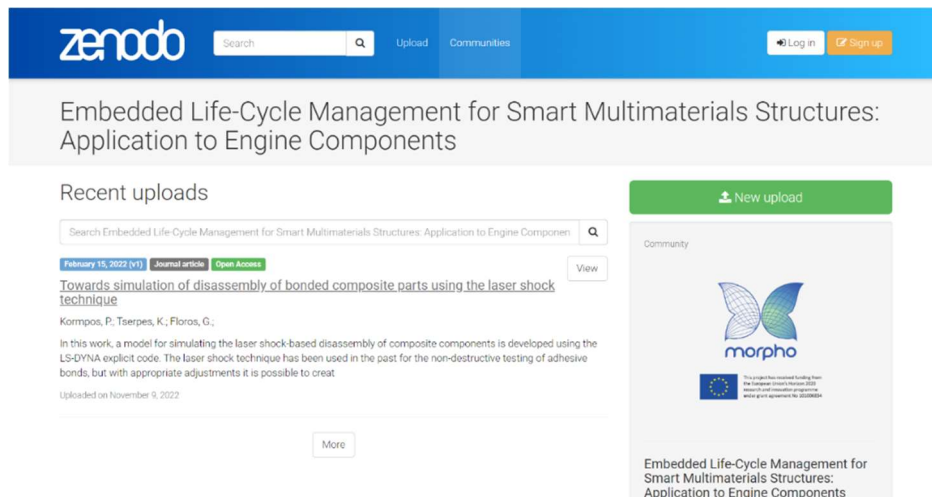


Figure 8. MORPHO's profile in Zenodo

All the scientific publications linked to the project will be shared in there as well as on the website of the project and linked to the ResearchGate profile of the project.

Only one paper, published on 15 February 2022 and entitled "Towards simulation of disassembly of bonded composite parts using the laser shock technique", is uploaded to the Zenodo community. It is published in the IOP Conference Series: Materials Science and Engineering, Volume 1226. The authors are Kormpos, P., Tserpes, K. and Floros, G., researchers from the partner University of Patras. In the article, they show a model for simulating the laser shock-based disassembly of composite components developed using the LS-DYNA explicit code. It can also be consulted in [the corresponding section of the MORPHO website](#).

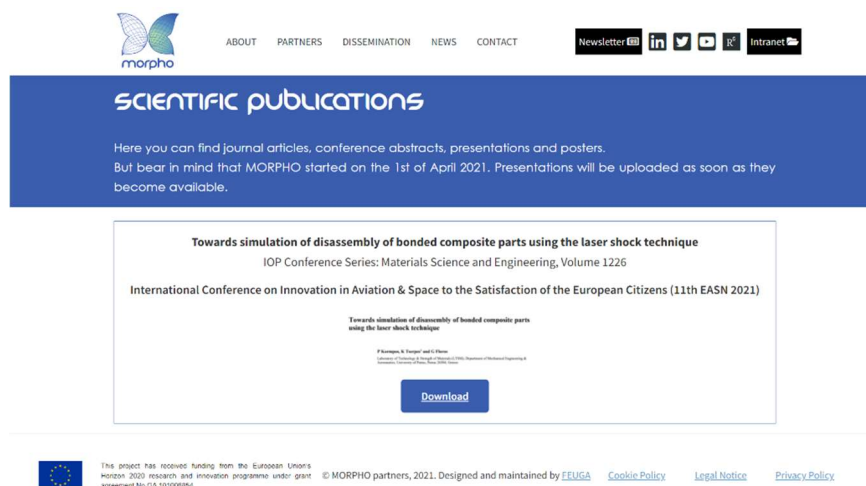


Figure 9. UPatras scientific publication



There is another validated article, but which has not yet been published. It is in process of. It was presented at the **12th edition of the EASN International Conference**, on 18 October 2022. It is entitled *Bird strike simulation on a bonded Ti/CFRP leading edge of an engine fan blade and numerical implementation of damage detection using FBGs*. The authors are Konstantinos Tserpes, Kosmas Papadopoulos and Ioannis Floros, all from the University of Patras. In the article, a parametric study on the effects of bird mass and impact energy was performed. The numerical results show that impact damage depends more on impact velocity than the bird mass. Aiming to assess the effectiveness of FBGs to detect debonding of the Ti layer due to bird strike, an FBG network has been modeled into the bondline and a study was performed on the correlation of the measured strains with impact damage.

The third article in the process of validation is entitled *A laser shock-based disassembly process for adhesively 2 bonded Ti/CFRP parts*. The main responsible authors are from the University of Patras.

Table 11. Publication progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
Scientific publications	-At least <b>12 publications</b> (min 1 per technical WP)	-2 validated publications. 1 in the process of validation	17%

## 2.7. Social Media

Social media has become a very popular means of disseminating information across heterogeneous target groups. These channels serve on-demand access to content anytime, anywhere, on any digital device. To extend the project target audience (specially to involve the great public and not only sector experts), the MORPHO project is integrating these media tools strategically in the communication activities.

Twitter, and LinkedIn have been selected as the most appropriate social networks to promote the project achievements, news, and outcomes. The project has performed well on social networks and the objectives set have been achieved and surpassed. A detailed description of the conducted work and the audience reached in each of the channels is explained below.

FEUGA is the partner in charge of managing the social networks.

### 2.7.1. Twitter

The Twitter profile of the project can be consulted here: <https://twitter.com/MorphoH2020> and is regularly updated.

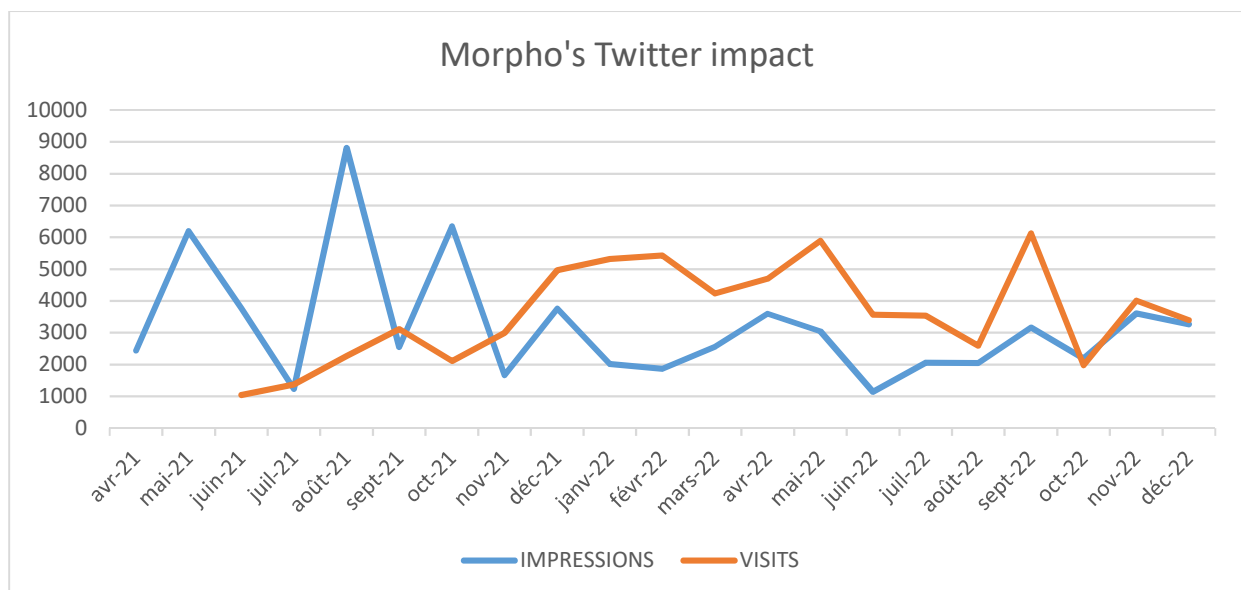


Figure 10. Twitter profile

The Project's account has accumulated a total of 67.320 impressions and 68.637 visits to the profile. With 217 followers and 160 tweets, the project reaches and engages progressively with different audiences.

The most successful months in terms of impressions, the number of times our tweets appeared on someone's board, were, in order of importance: August, October and May 2021. In terms of visits to our profile by external users, the most successful months were September, May and February 2022. In all these top months we found some collaboration or outstanding event: the European Researchers Night, ILA Berlin, JEC World, the Final Public Workshop of SuCoHs, the second meeting of the consortium, the publication in the Cordis news section or the EUGreenWeek. This shows that a good way to achieve impact is to join forces with other European actors and activities, as well as to strengthen the links between the different members of the consortium, as we have been doing.

Table 12. MORPHO's Twitter impact



### 2.7.2. LinkedIn

The LinkedIn profile of the project can be consulted here: <https://www.linkedin.com/company/morpho-h2020/>

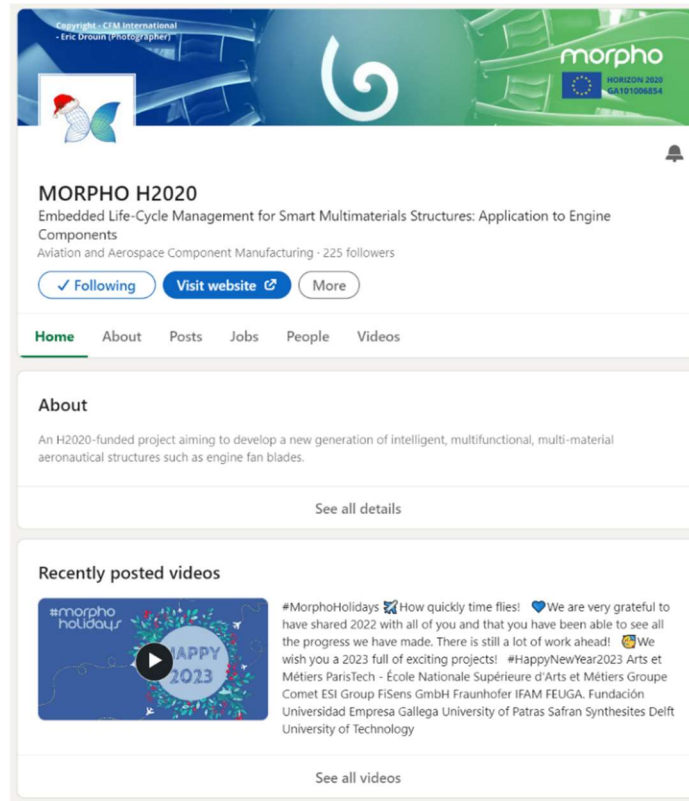


Figure 11. LinkedIn profile

Looking at the LinkedIn account, we can detect a substantial increase in the number of followers, which currently stands at 225, doubling the figure for December 2021. In this period, the project's publications achieved 45.346 impressions, were shared 73 times, had 1.195 reactions, 1.655 clicks and generated 887 profile views.

The impact measured as impressions had its best figures between January and May 2022. If we look at clicks, we see a notable peak between March and May 2022, as well as reactions and shared content. Thus, in this social network, we see a higher impact in the first two quarters of 2022 than in the other months. However, the rate of interaction with our content, as well as the number of followers, do describe upward trends that augur well health for the page.

As for the followers of the LinkedIn page, there is a predominance of profiles based in France and Spain, followed by the rest of the countries in which the project is present. Engineers (13.5%), researchers (12%), education-related personnel (9.4%) and Program and Project managers (8.5%) are the professional profiles with the greatest presence among MORPHO followers. The majority belong to industry (25%), higher education (24.7%) and other research institutions (14.3%). If we look at the visitors to the page, there are approximately the same proportions.



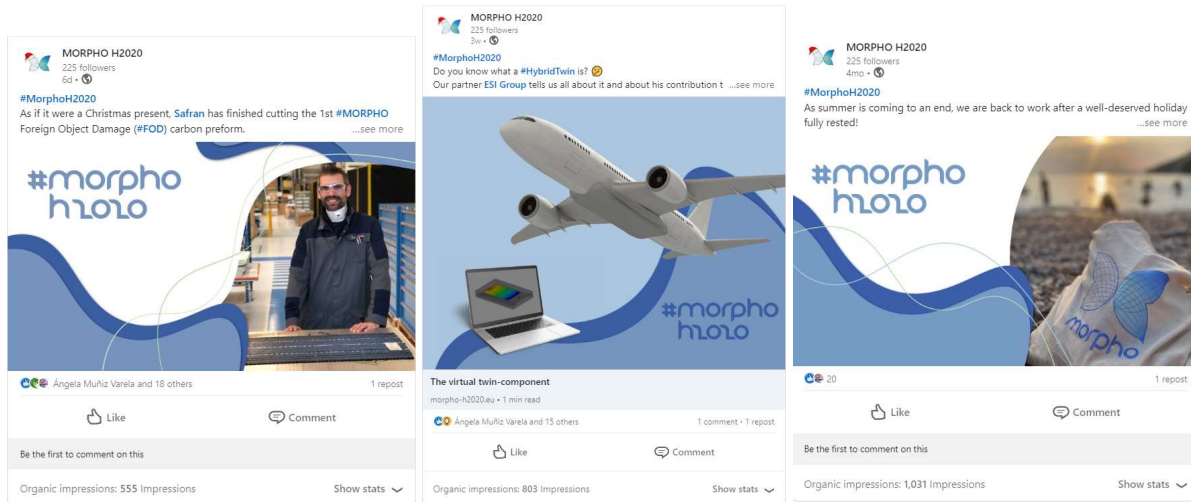


Figure 12. LinkedIn posts

### 2.7.3. ResearchGate

The profile of the project on ResearchGate can be consulted here: <https://www.researchgate.net/project/MORPHO-H2020>

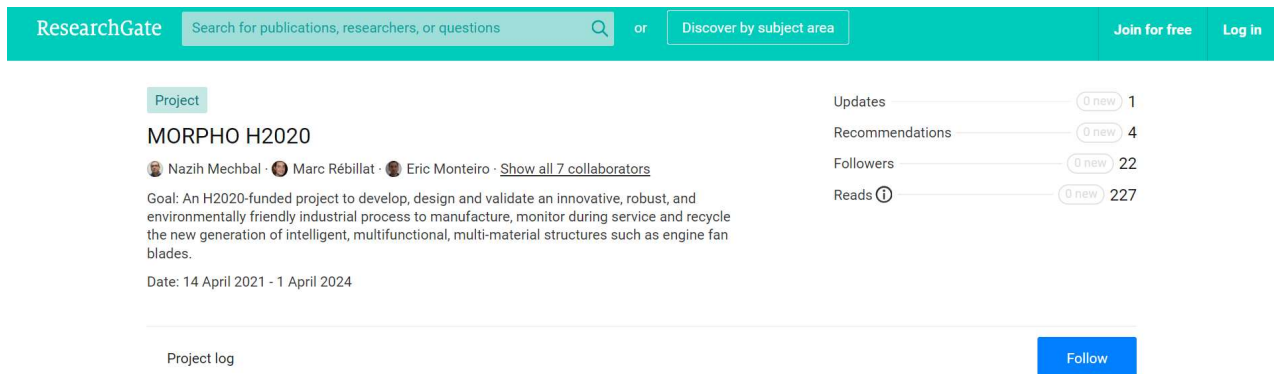


Figure 13. ResearchGate profile

MORPHO's profile on ResearchGate has 22 followers, 226 reads, and 4 recommendations. The numbers on this specialised social network will increase in the second half of the project when the scientific publications of the project gain prominence.

Table 13. Social media progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
<b>General Social Media</b>	400 followers in total.	480	120%
<b>Linkedin</b>	100 followers	223	223%
	200 posts	158	79%

Channel or activity	KPIs	Current state	Percentage achieved
Twitter	200 followers	213	107%
	1.000 tweets	223	22%
Youtube	1.000 visits	1.526	153%

## 2.8. Offline communication and dissemination tools

Physical supports are also important for effective communication at all levels of the project. In this sense, MORPHO has a roll-up, designed by FEUGA and kept by ENSAM, which has circulated at the different events where the project has been present. The image below shows the design of the roll-up.



Figure 14. MORPHO roll-up design

Brochures were also designed to facilitate the presentation of the project at a quick glance for the public at different events where a partner may have brought them. So far, 300 units have been printed and distributed with this design:



Figure 15. MORPHO brochure design

Finally in this section, two posters were also designed: one similar to the roll-up but in a less vertical format and the other one similar to the brochure, which are attached below.

All the materials are available for consultation on the website, here: <https://morpho-h2020.eu/dissemination/materials/>



Figure 16. MORPHO posters design

Table 14. Progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
Leaflets	2500 print units	300 printed and distributed	8,3%
Infographics	1	0	0%
Poster	1	2	200%

### 2.9. Internal communications

As already reported in D8.1., FEUGA created a mailing list to facilitate communications between the consortium and Safran provided the consortium with an internal management platform that allows access to key documents and information to all partners, with the idea of streamlining workflows.

FEUGA was also in charge of designing the logo and visual identity of the project, which was also reflected in the templates developed to unify all MORPHO documents in the main formats: .doc and .docx for documents and deliverables and .ppt for presentations. These materials are available on the shared intranet.



Figure 17. Corporate image of MORPHO.

## 3. Dissemination events & networking activities

Participation and presentations at international scientific conferences are also considered to be a core dissemination activity as they enable presenting the latest results of the project while networking with other members of the scientific, governmental, and industrial communities. Therefore, in subtask 8.2.3,

led by FEUGA, a series of requirements in terms of organisation and participation in events are set. Almost all the objectives are set for the second half of the project, with special importance being given to the Mid-term dissemination event that will take place on month 24 and the final event of the project.

The events in which the consortium members have participated until now are listed and described in the following sections.

The Project has also had a presence and repercussion on the websites of other European projects or European platforms that have served as a showcase for communicating the launch and development of the MORPHO project.

This networking was enhanced by the participation in workshops and events with DOMMINIO Project, SustainAir, or SuCoHs Project. Also, joining the Green Project Expo (GPE), an international platform created to connect and communicate innovative projects from different economic sectors that seek to build a more sustainable world. And the European Network for Transfer and Exploitation of EU Project Results (E.N.T.E.R. network); a versatile and initiative-taking networking website, specialising in the dissemination and implementation of EU projects.

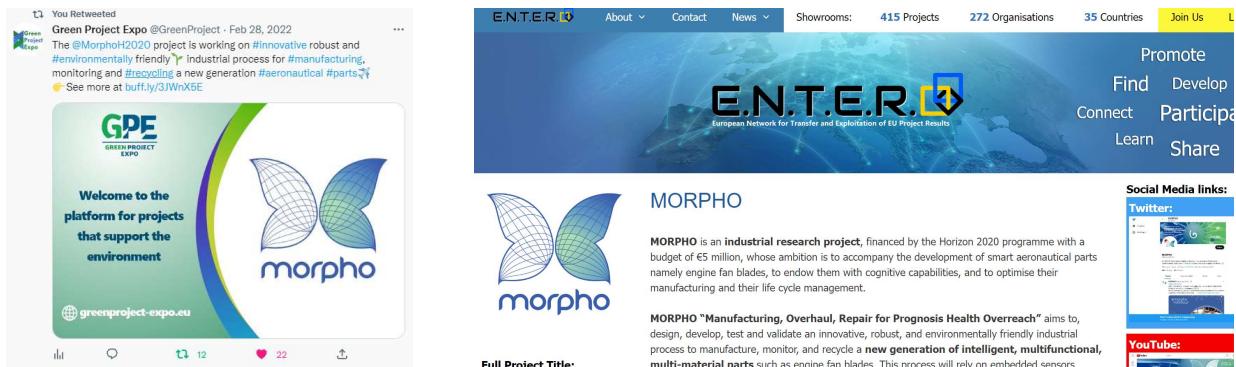


Figure 18. MORPHO at the Green Project Expo and E.N.T.E.R. platforms

In the table below can be consulted different pages summarising the networking activities carried out by the project during the period covered in this report.

Table 15. Presence in other European Platforms

Title	Media	Date	Language	Link
CIRCULAR AVIATION FOR GREEN GROWTH	SUSTAINair	21/04/2021	EN	<a href="https://www.sustainair.eu/2021/04/21/circular-aviation-for-green-growth-eu-green-week-partner-event-2021/">https://www.sustainair.eu/2021/04/21/circular-aviation-for-green-growth-eu-green-week-partner-event-2021/</a>
On June 8, SUSTAINair hosted an EU Green Week event to discuss solutions based on circular economy enabling aviation industry to reach zero waste and zero pollution of the sector.	SUSTAINair	22/07/2022	EN	<a href="https://www.sustainair.eu/2021/06/22/1st-fully-circular-flight-by-2050/">https://www.sustainair.eu/2021/06/22/1st-fully-circular-flight-by-2050/</a>

Title	Media	Date	Language	Link
Developing next-gen, smart engine fan blades	CORDIS	13/08/2021	EN	<a href="https://cordis.europa.eu/article/id/430558-developing-next-gen-smart-engine-fan-blades">https://cordis.europa.eu/article/id/430558-developing-next-gen-smart-engine-fan-blades</a>
<b>Final Public Workshop</b> Dissemination material from the Final Public Workshop of the SuCoHS project	SuCoHS	22/02/2022	EN	<a href="https://www.sucohs-project.eu/final-public-workshop">https://www.sucohs-project.eu/final-public-workshop</a>
MORPHO - "Manufacturing, Overhaul, Repair for Prognosis Health Overreach"	Green Project Expo	28/02/2022	EN	<a href="https://greenproject-expo.eu/projects/62165955b-bcb157f8ea55979">https://greenproject-expo.eu/projects/62165955b-bcb157f8ea55979</a>
MORPHO	E.N.T.E.R. network	21/12/2022	EN	<a href="https://www.enter-network.eu/project/morpho/">https://www.enter-network.eu/project/morpho/</a>

Table 16. Networking progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
<b>Joint actions with other European projects</b>	5	2	40%
<b>Articles published in EC's media channels</b>	3	1	33%

### 3.1. Consortium-organised

#### 3.1.1. TU Delf Summer School

Organized by TU Delf University, *TU Delf Summer School* was a course that aimed to provide the fundamental knowledge for enabling these key technologies to transform conventional structures into cyber-physical assets.

It took place at the Aerospace Engineering Faculty of TU Delft from 14th to 16th of June 2022. The theme of this edition was 'The era of Digitalization and Artificial Intelligence for Structural Applications'. Other important researchers from the University of TU Delf, the Rensselaar Polytechnic Institute, the Politecnico di Milano and the University of Sheffield also participated with their own sessions.

The course was aimed at young researchers and attended by 100 people, all from the scientific community. The leaflet of the project got distributed among the participants.

### 3.1.2. European Research Night 2022

The European Researchers' Night (ERN) is a Europe-wide public event that displays the diversity of science and its impact on citizens' daily lives in fun and inspiring ways. The date aims to bring research and researchers closer to the public, promote excellent research projects, increase the interest of young people in science and enhance the public recognition of researchers in general.

For the 2022 edition, FEUGA launched on 30 September a series of videos presenting the work of different researchers involved in the project. They were made from the Laval Virtual platform, resulting in more informal presentations, with customisable avatars of each speaker who could move, talk or even dance, in front of an attentive audience.

The chosen speakers were:

- Nazih Mechbal and Asmaa Messaoud from ENSAM, who presented their institution and the MORPHO-focused working group, clarifying the areas of the project in which they are involved.
- Sebastián Rodríguez, from ENSAM, who focused on ENSAM's research on MORPHO WP3, with the perspective of performing a control example of RTM (by using the hybrid twin) and the main subject of proposing a mix between numerical simulation and experience.
- Ingo Wirth, researcher at Fraunhofer IFAM, that displays the research they have done on the MORPHO project. Integration of fiber optical sensor in preform printed piezo sensor on fiber composite and printed thermocouple on fiber composite were the key to his explaining.



Figure 19. ERN image

During the week prior to the launch, a campaign was run on social networks announcing the campaign and showing the Laval Virtual world. The three videos are available on the MORPHO YouTube channel and were publicised on the web and social networks. The videos can be consulted in the following link: <https://www.youtube.com/watch?v=FAmou-VzpAo&list=PLUqLAMz1MVTvR0I6CGi2rw-FrMxrkJMU>

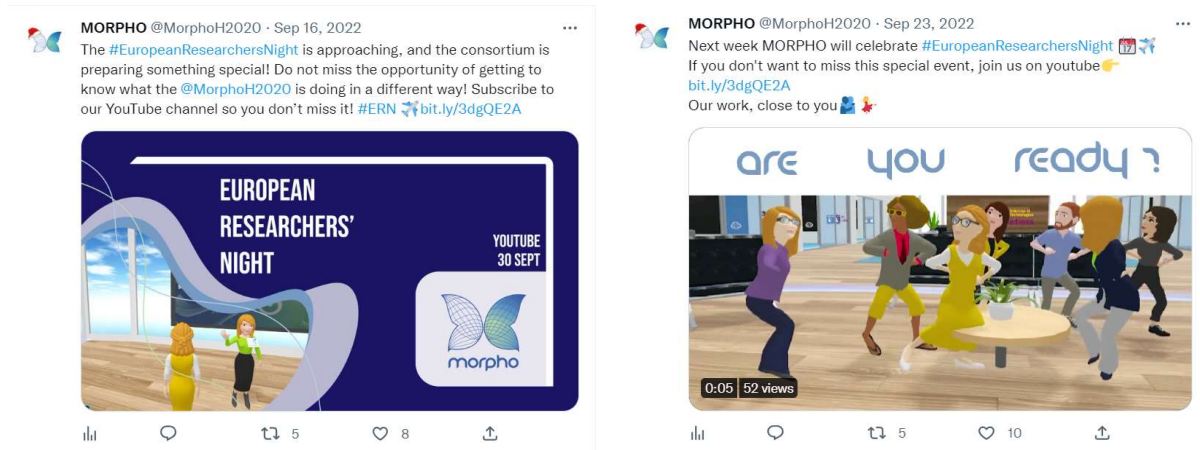


Figure 20. ERN posts

The three resulting conferences reached a repercussion of 191 views on YouTube, mostly audience framed in the scientific community and general public.

Videos ▶ Play all



Figure 21. ERN final videos



## 3.2. Participation in external events

### 3.2.1. Circular aviation for green growth

This was a partner event that was part of the EU Green Week 2021 "Zero pollution for healthier people & planet", on 8 June 2021, via the online platform Zoom. Organised by SUSTAINair, it was a webinar focusing on circular aviation and research and innovation in the sector. It discussed the past, present, and future of circular approaches in aviation with the intention of reducing environmental impact without harming economic growth. The event hosted a networking session in which projects related to this topic, including MORPHO, were presented. Nazih Mechbal (Project coordinator, ENSAM), was in charge of giving the presentation.



Figure 22. MORPHO's participation in the Circular Aviation for Green Growth event

The recording of MORPHO presentation was uploaded to our YouTube channel after the event, reaching a delayed audience of 56 views. If we add this number to the audience reached on the complete event, uploaded to the SUSTAINair channel, together with the participants attending live, we reach a total audience of 421 viewers, mostly from the industry and policy makers target. The PDF of Nazih's presentation is also available on the "scientific publications" tab of the MORPHO website: [https://morpho-h2020.eu/wp-content/uploads/2021/06/MORPHO\\_vl.pdf](https://morpho-h2020.eu/wp-content/uploads/2021/06/MORPHO_vl.pdf)

MORPHO's participation in this event also had media repercussions, as it is published in some specialised magazines, for example, Aerospace TechReview: <https://www.aerospacetechnology.com/aviation-needs-data-to-close-the-loop-for-aerospace-materials/>

### 3.2.2. 11th International Conference of the European Aeronautics Science Network (EASN)

The 11th International Conference of the European Aeronautics Science Network (EASN) was developed under the title: "Innovation in Aviation & Space to the Satisfaction of the European Citizens", and it was held, in an online format, from the 1st until the 3rd of September 2021. It was a conference in which the MORPHO project did a presentation in a joint session, entitled "Next-generation multifunctional & intelligent airframe & engine parts: manufacturing, maintenance, recycling", where the projects DOMMINIO and SUSTAINair were also introduced. Each project had 20 minutes to be presented after which an open discussion on the challenges of the next-generation multifunctional and intelligent

airframe and engine parts was held for 30 minutes. The different participating projects had the opportunity to establish cooperation links that will help them through all the stages of their development. The presentation of the project at the conference was the responsibility of ENSAM. Konstantinos Tserpes, associate Professor at the University of Patras, gave also a presentation linked to the research they are conducting within the MORPHO project under the title “Towards simulation of disassembly of bonded composite parts using the laser shock technique”, presenting one of the scientific articles published by the project.



Figure 23. MORPHO's participation in the EASN International Conference



Figure 24. EASN International Conference. Domminio's post with the participation of MORPHO

The conference was attended by more than 420 participants from 31 countries worldwide and various disciplines, especially industry and scientific community. Only registered participants could follow the session and the presentations remain private. More information about the assistance and data of the conference can be found in the infographic above and here: [https://easn.net/?q=events\\_view\\_event&id=36](https://easn.net/?q=events_view_event&id=36)

### 3.2.3. ECOMONDO

The 24th edition of the ECOMONDO trade fair took place in Rimini, Italy, from 26-29 November 2021. It is the foremost international exhibition for technologies and solutions to the management of waste, environmental protection and restoration, recycling, valorisation of waste and materials, solar energy solutions, sustainable transportation, green building, and technological priorities of smart cities. This international event aims to bring together projects on circular economy and sustainability.

The MORPHO project was showcased at the European Commission's stand together with other EU-funded projects such as the ALMA project, REVOLUTION Project and LIBERTY project.

It reunited one thousand exhibitors from 35 countries. More than 1,080 brands exhibiting throughout the Expo Centre, 500 hours of conferences and seminars, 8600 foreign buyers, 116.000 visitors and around 1000 attendees to EC stand, are numbers that confirm the commitment towards ecological transition and the relevance of this event.

The conference, given its breadth, involves all kinds of audiences, helping us to reinforce the cross-cutting nature of our different targets.



Figure 25. MORPHO's participation at ECOMONDO

### 3.2.4. Final Public Workshop of SuCoHS project

The consortium of the SuCoHS project organized the Final Public Workshop entitled “**High-Performance Composite Structures Demanding Temperature and Fire Resistance**” on February 22 and 23 of 2022. It took place virtually.

Both projects shared a common issue to deal with: the research on new material solutions, manufacturing technologies, sensor systems, simulation methods and physical testing to enable novel robust composite structures with high resistivity against thermal and mechanical and loading. In addition, both projects share a common partner in their consortium: Synthesites. Due to the link between the two projects, the MORPHO project was also invited to join the programme. Rafik Hadjria, Structural Health Monitoring

Specialist member of Safran's team, made a presentation about "Perspective On Integrated Aircraft Health Monitoring" explaining the goals of MORPHO in the field of maintenance, repair, and overhaul. The recording of his presentation is available on the YouTube channel of the project: <https://www.youtube.com/watch?v=sopyO6uQQig>. The complete recording of the second day of the workshop, uploaded by SuCoHS project, in which MORPHO's participation is included can be consulted here: <https://www.youtube.com/watch?v=T2LkoeZ7Eyg>

Visiting the SuCoHS website, more information can be found about the event: <https://www.sucohs-project.eu/news/save-date-final-public-workshop-sucohs>

If we add the audiences of both videos together, this action reached an audience of 178 people, mostly from the industry target group. The presentation used by Rafik was also uploaded to the project website and is available under the Scientific Communications tab: [https://morpho-h2020.eu/wp-content/uploads/2022/03/SuCoHS\\_Final-Public-Workshop\\_MORPHO-Project\\_Safran-Tech\\_20220223.pdf](https://morpho-h2020.eu/wp-content/uploads/2022/03/SuCoHS_Final-Public-Workshop_MORPHO-Project_Safran-Tech_20220223.pdf)



Figure 26. MORPHO's participation at SuCoHS final workshop

### 3.2.5. JEC World 2022

JEC World is the global trade show for composite materials and their applications. Held in Paris, JEC World is the industry's leading event, hosting all the major players in a spirit of innovation, business, and networking. Hundreds of product launches, awards ceremonies, startup competition, conferences, live demonstrations, innovation planets and networking opportunities are some of the sections displayed at the fair.

The 2022 edition, in which MORPHO took part, was held between 3 and 5 May 2022. Overall, the event welcomed 32,000+ professional visits, in Paris and online, from more than 115 countries and featured 1,201 exhibitors and 26 pavilions.

Our partner Synthesites, the world leader in intelligent process monitoring and control systems for advanced composites manufacturing, took part in this trade show. Nikos Pantelelis, Director of Synthesites, was one of the speakers in the May 05 journey. Under the heading of "Using sensors to improve sustainability in composites manufacturing, design and life cycle", Nikos shared a talk with Eli

Voet, from Com&Sens, Thomas Schlech, from the University of Augsburg, Tuuli Potila, from ColloidTek Oy, and Rastislav Varga, from RVmagnetics, all moderated by Ginger Gardiner, senior editor of CompositesWorld. This facilitated excellent networking for the project.



Figure 27. MORPHO's participation at JEC World

This roundtable, which was attended by around 500 people, covered the **sustainability of the composites industry**. The speaking brings together companies leading the way in developing sensors for more sustainable composites manufacturing and design, as well as **possibilities for self-sensing and monitoring structures**, in the MORPHO research field. All markets were represented in this meeting of composites solutions and innovations, from aerospace to renewable energy. However, industry and investors dominated the audience.

More information about the event can be found in here: <https://cutt.ly/h0zEtwl>

### 3.2.6. AISC-SHM Committee SAE International

Within the scope of standardization, Safran has hosted and sponsored the meeting related to the Aerospace Industry Steering Committee on Structural Health Monitoring (AISC-SHM): May 16-19<sup>th</sup> 2022. AISC-SHM is a team comprised of industrial, government, and academic participants with a collective vision to efficiently and effectively implement structural health monitoring for a wide variety of commercial and military applications through the development of standards, procedures, processes and guidelines for implementation and certification of SHM technologies.

Within this meeting, Rafik HADJRIA (Safran) took the opportunity to thank the Europe for funding MORPHO project and highlighted the scope of MORPHO to AISC-SHM team, composed by Delta TechOps, Airbus, Boeing, Embraer, BAE Systems, Raytheon Technologies, and FAA & EASA. The team has appreciated the fact that SHM techno is being developed within the scope of engine R&T; and the effort made to test SHM techno on complex geometry such as FOD panels. Rafik HADJRIA has taken the action to keep informing the AISC-SHM about MORPHO progress.

### 3.2.7. ILA Berlin

The ILA Berlin event was the largest and most important air exhibition in Europe in 2022. It took place from 22-26 June at the Berlin Expo Center Airport. It showcased the future of aerospace innovation, focusing on new technologies and sustainability. Environmentally neutral aviation was one of the key topics. That's why MORPHO landed at the event, thanks to the strategic partnership that the European Commission and ILA Berlin built, called "Airborne in Europe". The EC had a stand where the video presentation of MORPHO was shown alongside those of other related European projects.



Figure 28. MORPHO's participation at ILA Berlin

The focus of the audience was on trade visitors, gathering representatives of international industry, politics, armed forces, business, and science, while an open weekend for the general public was planned on 25 and 26 June. Over two days, visiting aerospace fans could experience the innovations and fascination of the aerospace displays close up and found out about aerospace projects at various trade fair stands. There were over 1000 exhibitors, which attracts up to 200.000 visitors. We estimate the audience reached approximately 1,000 people, from all kinds of targets, predominantly investors, industry, and policymakers. These figures provide wonderful visibility for the project.

The piece of news we prepared about the exhibition for the project website can be found here: <https://morpho-h2020.eu/morpho-will-fly-over-ila-berlin-2022/>

### 3.2.8. 20th European Conference on Composite Materials (ECCM20)

The 20th European Conference on Composite Materials (ECCM20) was held in Lausanne, Switzerland, June 26-30, 2022. The event is organized by the Composite Construction Laboratory (CCLab) and the Laboratory for Processing of Advanced Composites (LPAC) of the Ecole Polytechnique Fédérale de Lausanne (EPFL). ECCM brought together participants from academia and industry who share an interest in Composite Materials, for knowledge exchange on recent accomplishments and future trends. The Conference Theme this year was “Composites meet Sustainability”.

The team from the University of Patras participating in MORPHO attended the event.

ECCM20 was the biggest and more prestigious European event on composite materials bringing together more than 1000 participants, 500 of them attended morpho's presentation, mostly from the scientific community and industry. It included plenary talks, keynote lectures, oral and poster presentations, an exhibit area for industry partners and sponsors, and an entertaining social program. Therefore, the event layout and schedule provided many opportunities to network and share with colleagues from around the world.

### 3.2.9. 10<sup>th</sup> European Workshop of Structural Health Monitoring

This Workshop represented a forum where international experts discuss the latest advancements and breakthroughs in the field of SHM and more broadly in the fields of non-destructive evaluation, smart materials, and intelligent systems. The Workshop fostered the discussion and identification of key and emerging challenges and opportunities in research, development, and field applications.

Organised by the Università degli studio di Palermo and the University of Pittsburgh on 4-7 July 2022, it hosted about 500 oral presentations are confirmed form nearly 50 different countries. The partners TU Delf and University of Patras participated in it, sharing their knowledge on SHM in the sessions “Robust Statistical and Probabilistic Methods for SHM”, “Guided Waves in Structures for SHM”, “Space-borne health monitoring for civil infrastructure” and “Integrated approaches for SHM: models, data and experiments”.

The programme of the event can be consulted in the following link: [https://www.ewshm2022.com/wp-content/uploads/2022/07/Technical-Program\\_04072022.pdf](https://www.ewshm2022.com/wp-content/uploads/2022/07/Technical-Program_04072022.pdf)



Figure 29. MORPHO's participation at the 10th European Workshop of SHM

### 3.2.10. 12th EASN International Conference on Innovation in Aviation and Space for opening New Horizons

This is the second consecutive edition in which the project participated in the EASN International Conference, after the 11th edition in 2021 previously described. This edition took place between 18 and 21 October in Barcelona, Spain. The theme was **Innovation in Aviation and Space for opening New Horizons**.



Figure 30. MORPHO's participation at the 12th EASN International Conference

On this occasion it was Konstantinos Tserpes (University of Patras) who presented, on the opening day of the conference, a paper co-authored with Kosmas Papadopoulos and Ioannis Floros, both from the University of Patras. The title of the paper presented is "**Bird strike simulation on a bonded Ti/CFRP leading edge of an engine fan blade and numerical implementation of damage detection using FBGs**". The presentation focused on Bird strikes as a critical loading scenario for aeronautical structures, especially for engine fan blades, and the importance of protecting the leading-edge fan blade and being able to detect impact damage in time, with the assistance of Smart Materials Structures. The estimated audience was 500 people, mostly from the scientific community.

Other research along the same thematic lines was presented in a session entitled "**Aerostructures Part II**", moderated by Professor Konstantinos Tserpes.

The EASN Association and the Universitat Politècnica de Catalunya – BarcelonaTech (UPC) were the organisers of the Conference, with the support of Clean Aviation, Sesar, CDTI, and Fraunhofer. It included a number of **Plenary Talks** by distinguished personalities of the European Aviation and Space sectors from the academia, industry, research community, and policymakers. It also included **Thematic Sessions**, along with Technical Workshops where innovative ideas, breakthrough concepts, and disruptive technologies were presented and discussed with the aim to establish new research partnerships and possible synergies.

Table 17. Events progress on the quantitative objectives by the end of the project

Channel or activity	KPIs	Current state	Percentage achieved
Participation in events (presentations and posters)	20	10	50%
IPR workshops to create awareness on IPR & Exploitation	3	1	33%
Channel or activity	KPIs	Current state	Percentage achieved



<b>Dissemination events</b>	-1 mid-term dissemination events with at least 40 stakeholders attending.	The mid-term dissemination event will take place in 2023	0%
	-Final conference with at least 1000 stakeholders attending.	At the end of the project	0%
	-At least 3 workshops at partners' level.	0	0%
	-At least 3 activities related with RRI.	1 (ERN)	33%
<b>Joint actions with other European projects</b>	5	3	60%

## Conclusions

This report detailed the main dissemination and communication activities implemented during the first half of the MORPHO project.

There were two main types of communication & dissemination activities implemented in this period: online (using social networks, Twitter and LinkedIn, and the project webpage) and face-to-face, where stakeholders had the opportunity to receive information and interact with Consortium members more directly.

At the beginning of project execution, FEUGA prepared a set of project templates and other dissemination materials (such as the project logo, brochure, poster) that all Consortium members used to present the project and communicate with stakeholders. Indeed, all institutions deployed all necessary efforts to achieve a relevant number of stakeholders from the different target groups.

Evidence of dissemination and communication activities provided above allow us to conclude that MORPHO is positioning itself to comply the impact indicators defined in the proposal, despite the difficulties found in that sense regarding the COVID-19 and the need to delay the execution of onsite dissemination activities.

Dissemination would be key in the following months of the project.

# Annex 1. Newsletters

First newsletter published on 27 December 2021:



## The moment has arrived!

After a year of hard work, you are finally reading our first ever newsletter, **with all the information and news about the MORPHO project!**

We are continuously working on new things and next year will be full of **interesting events, promising innovations**, and even more and even more willingness to share the **knowledge generated!** Until then, we leave you with a summary of what has happened so far.

Let's get started!

## videos

**By way of introduction, three videos to and a press release to discover what the MORPHO project is about!**

Sit back, press play, and enjoy the content!

First things first, to get to know our project we bring you our project coordinator: Nazih Mechbal - Arts et Métiers (ENSAM) professor. As he explains, MORPHO will boost the development of smart aeronautical structures from manufacturing to the end of life!



And, if you have a minute we can tell you even more! The project comprises 10 partners from six countries and takes on board different innovative technologies such as embedded sensors, data-driven hybrid twins, and machine learning to increase RTM yield.

MORPHO will deal with developing and testing technological bricks on a demonstrator named Foreign Object Damage (FOD) panel. But do you know what a FOD panel is? It represents the chord of a fan blade. If this has piqued your interest, watch the full explanation provided by Safran.



And, if you feel like reading, just click on the buttons below!

Press release

Website

## NEWS

Hosted by the SUSTAINair project, we participated in the "Circular Aviation for Green Growth" event, which gathered 170 registered participants. Our project coordinator, Nazih Mechbal, presented MORPHO in the session "Research and innovation projects for circular aviation", press play!



MORPHO participated in two conferences as part of the 11<sup>th</sup> International Conference of the European Aeronautics Science Network (EASN).

Read more!



We could not miss Ecomondo either, the reference event in Europe for the ecological transition and the new models of circular and regenerative economy.

Read more!



Our kick-off meeting was all an experience! We couldn't meet physically but we saw our virtual faces.

Read more!



But luckily, in October, we could celebrate our first in-person meeting, hosted by our partner FEUGA, in Santiago de Compostela (Spain).

Read more!

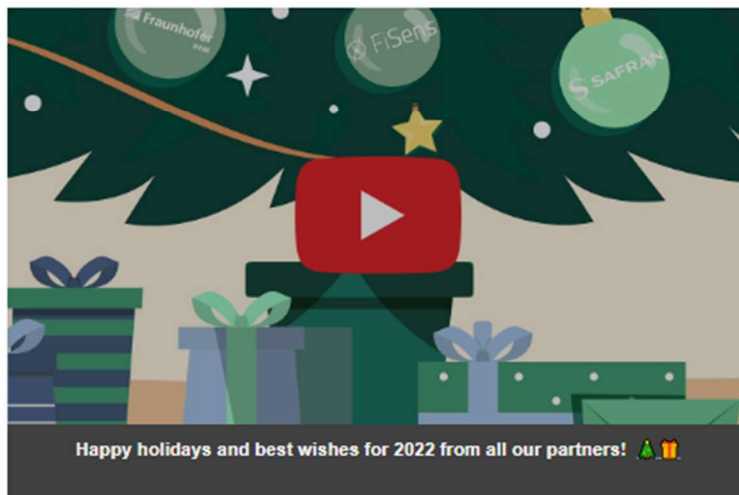
## more

You can't afford to miss:

- Our media appearances section. Which media spotted the MORPHO project? [Find it here!](#)
- Do you need some decoration for your office? [Check out our promotional poster!](#)

Our social media is full of interesting content! Don't miss the opportunity to follow us on [LinkedIn](#), [Twitter](#), [ResearchGate](#), and [Youtube](#) to keep up to date with our upcoming events or our latest news!

See you around! ✈️







This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101006854

in LinkedIn    t Twitter    y YouTube    w Website    R ResearchGate

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*Stay up-to-date on MORPHO's development and get informed about relevant breakthroughs, projects and events.*

Our mailing adress is:  
FEUGA (Communication manager)  
Avenida Lope Gómez de Marzoa, s/n Santiago de Compostela  
A Coruña 15705 - España

[You can unsubscribe from this newsletter here.](#)

[www.morpho-h2020.eu](http://www.morpho-h2020.eu)

Second newsletter published on 19 December 2022:



## What better way to end the year than remembering its best moments?

This year **2022** has given us **many good things**, events where we have met very **interesting people**, new activities and **challenges**, and **important advances** in our project!

We have collected with great enthusiasm the **best moments** so that you can have them **all in one place**.

Let's get started!

## videos

### Get to know us!

Here is a collection of videos in which our partners talk about their role in the project. Short and to the point. Enjoy!

Eric Monteiro, Associate Professor at ENSAM, explains how the consortium is developing a hybrid twin platform, merging physics-based and data-driven models for monitoring the in-service life of a smart fan blade.





Intellectual property rights management is key to the successful implementation of collaborative projects and to maximising the impact of their results. In the MORPHO project, FEUGA is in charge to find the best exploitation strategy for the results obtained and here Noelia Vilar explains the different steps!

Christian Wallermann presents in this video FiSens, a German SME partner in the consortium specialising in fiber optic sensors systems. With their involvement and expertise, we aim to achieve the optimal integration of these sensors into the engine components.



Elena Martín, Associate Professor of Fluid Mechanics at the Department of Mechanical, Thermal, and Fluids Engineering at the University of Vigo, is one of the members of the MORPHO's advisory board. Do not miss her opinion on the project!

You can watch more videos on our YouTube channel!

YouTube

Read more!

## morpho explains

### Time to read!

Do you have doubts or are you confused by some of the terms most commonly used by the Morpho project? Here we explain some of the most important ones!





Structural Health Monitoring (SHM) technologies for damage detection, diagnosis, and prognosis in aerospace structures are recognized as [a key solution to increase aviation safety and to simultaneously decrease operating, maintenance, and repair costs.](#)

Read more!



Environmental sustainability is one of the main challenges faced by today's aviation industry. Aerospace structures require high strength and stiffness.


Composite materials are gaining increased use in aircraft and industry to reduce weight, contributing to a significant reduction in fuel consumption and carbon footprint.

Read more!



Do you know what a hybrid twin is? **ESI-Group** told us all about it and its implications to the Morpho project in this article.

Rafik Hadjria, Structural Health Monitoring Specialist member of Safran's team, was present in the Final Public Workshop of SuCoHS project. Press play and enjoy his presentation: "Perspective On Integrated Aircraft Health Monitoring".



PARIS-NORD VILLEPINTE  
May 3-5, 2022

**JEC  
WORLD**  
The Leading International Composites Show



MORPHO was present in JEC World 2022, the global trade show for composite materials and their applications.

[Read more!](#)

**ILA BERLIN**  
PIONEERING AEROSPACE



And our project was also on the European Commission's stand at ILA Berlin, an event covering the entire aerospace value chain.

[Read more!](#)

12th EASN International Conference  
Innovation in Aviation and Space for opening New Horizons  
18 October to 21 October 2022  
Barcelona, Spain

#morpho h2020



Within the 12th EASN International Conference, partners from the University of Patras presented the article: "Bird strike simulation on a bonded Ti/CFRP leading edge of an engine fan blade and numerical implementation of damage detection using FBGs".

EUROPEAN RESEARCHERS' NIGHT  
YOUTUBE 30 SEPT




To celebrate one of our favourite dates of the year - the European Researchers' Night - we prepared some very different sessions to explain the progress of the project. Find out all about it here!

Read more!


Read more!

Meet our project coordinators **Nazih Mechbal** and **Asmaa Messaoudi**, presenting the Ecole Nationale Supérieure d'Arts et Métiers (**ENSAM**), on this special occasion, and of course, dance with us!



**Ingo Wirth**, from Fraunhofer IFAM, explains how their entity is working on the integration of printed piezo sensors and fiber optical sensors for the MORPHO project. And, more important, you will be able to watch how these sensors are manufactured.

**Sebastián Rodríguez**, pos-doc researcher at **ENSAM**, explains in this video how they are working on the implementation of a hybrid twin model applied to the smart manufacturing of airplane composite materials using a Resin Transfer Molding process.



FEUGA told us all about the importance of IPR and its implication on the project.

Read more!



And we have the opportunity to visit our partners from the **Comet Groupe** and their facilities! It was a great day!

Read more!

## more

Our social media is full of interesting content! Don't miss the opportunity to follow us on [LinkedIn](#), [Twitter](#), [ResearchGate](#), and [Youtube](#) to keep up to date with our upcoming events and our latest news!

See you around! ✈️



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