Project no.: ***CfP08-AIR-03-02-831882***

Project acronym: **SealedwithoUTaKiss - *SWAK***

Project title: ***Non-destructive testing (NDT) of bonded assemblies***

Instrument: ***Cleansky 2 JTI***

Listing of Dissemination Activities from M1-M18

Start date of project: ***01 April 2019*** Duration: ***36 Months***
Deliverable Lead Partner: **GMI**
Contributions made by: **TWI, BRU**

Revision **Final**

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)	

Table of Contents

1. Introduction

As detailed in SealedwithoUTaKiss (SWAK) Description of Work (DoW), **WP6** encompasses the dissemination and exploitation activities of the project as well as actions related to maximisation of its impact. Task 6.1 addresses dissemination of outputs in the specialist industrial and academic communities that can benefit from the developments in SealedwithoUTaKiss project. The exploitation potential of the NDT solutions will be examined. The task will run as soon as WP1 is completed when the specifications are established. GMI has been assigned responsibility for project dissemination, exploitation and IP management. Activities will be in line with the outcome of IP management (Task 6.2) focusing on market potential and future actions required. The Innovation manager will coordinate the definition of the exploitation plans and will streamline activities with the help and agreement of the Topic Manager. A dedicated SealedwithoUTaKiss project dissemination seminar will be organised at the end of the project and all relevant stakeholders will be invited to present the project outcomes.

The outcomes of this task will be summarized in two deliverables: D6.1 which will list the publications and conference presentations and Deliverable 6.2 which will report the market potential and potential commercialization actions related to developments in WPs 1-5.

In a similar manner, Task 6.2 deals with Intellectual Property generated in the technical WPs. The IP team will perform preliminary steps to identify and capture any IP produced in these work packages (foreground IP). The patent searches and review will take place at month 9 and at the end of the project. The results of these searches will be reported in project meetings.

GMI will appoint an Innovation Manager who will lead the task. The Innovation Manager will:

- Review any project results as potential protectable foreground IP capable of commercial exploitation.
- Be responsible for drafting agreements that safeguard the consortium partners rights when a decision is made to proceed with protection of foreground IP.

The outcome of this work package will be reported in deliverable ‘D6.2. IPR assessment and management of knowledge’ and will be fed to the exploitation activities within Task 6.1. In addition, Deliverables 6.3 and 6.4 will summarize the dissemination activities performed from M1-M18 and M19-M36, respectively.

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2. General

Dissemination, communication and exploitation activities are of paramount importance in SealedwithoUTaKiss project, to maximize its impact and trigger effects across the project's entire range of target audiences, the SealedwithoUTaKiss consortium, by fully recognizing the above, will implement a dedicated dissemination and exploitation strategy, predominantly aiming at ensuring:

- The effective and sustainable dissemination of the SealedwithoUTaKiss project generated knowledge and technologies within the entire community, and through the implementation of *suitable* and *specialized* dissemination and communication activities for each of the project's identified target groups and end users.

- The exploitation of the project's results by the European Aerospace Industry to maintain and reinforce technological advantage over the competition from outside Europe.

- The interconnection with other industrial sectors with the potential to exploit the findings and outcomes of the project.

- The conveyance of new knowledge into the engineering education base provided by the University partners to meet the evolving skill needs of the sector.

- The possible exploitation of the SealedwithoUTaKiss project results and foregrounds in other sectors, e.g. electronics, communication and industrial systems.

The dissemination of the SealedwithoUTaKiss project results will be made through the classical methods: publication in specialized magazines like Aeronautical, Advanced Avionics systems, Aerospace Journals, Aviation Week, Aviation Safety Magazine, etc. and through participation in aeronautic events like: Aero days, Paris Air Show, Toulouse Air Show, JEC, Singapore Airshow, MRO Dubai, RO Uk etc. Partners will take advantage of the periodical project reunion uniting representatives of the European Aeronautic Industry, to present the progress made within SealedwithoUTaKiss project. It could be also being exploited the existing e-dissemination channels and web platforms of relevant organizations for the use and spreading of the research results, as the existing aeronautic clusters.

The results of the project SealedwithoUTaKiss will be also presented at different events (workshops, technical conferences, fairs and exhibitions) organized by the members of the consortium and in other potentially interesting events that could be aeronautical sector, advanced materials bonding and manufacturing and in relation to the dissemination workshops organized by the consortium members, the aim will be to spread the goals, expected results and achieved progress to the scientific and industrial communities.

A dedicated SealedwithoUTaKiss dissemination seminar (in WP6) has been planned at the end of the project for the stakeholder and industries which are dealing with aircraft bonded structures and NDT to present the achievements of SealedwithoUTaKiss.

At the end of the project, information about the major technical achievements and outcomes will be presented and will be sent to the relevant organizations and trade associations. Partners will take advantage of the provided possibilities of EASN platform (where consortium members have associated member) for the dissimilation of the project. The technology generated within the project scope will also be available for dissemination using relevant case studies.

3. Plan for the dissemination and exploitation of the project's results

The primary objective of the SealedwithoUTaKiss dissemination and exploitation plan is to prudently and timely identify and organize the activities to be performed (during and after the project), in order to maximize its influence and while taking into account the dissemination needs of the project at each stage of its lifecycle, as well as the specific technical, market, organisational issues and interests of each of the various pre-defined SealedwithoUTaKiss target groups/end users. Consequently, the **main aims** of the planned dissemination and exploitation approach can be summarized as follows:

- **Inform** about the SealedwithoUTaKiss activities to stimulate the participation of SMEs, academia, industry, research establishments, civil society and their networks. Organization *of (and participation in) events, workshops and seminars;*

- **Raise Awareness** - Present the project, its main objectives and expected impact (e.g. SealedwithoUTaKiss public website, project leaflet, poster and newsletter, etc.)

- **Networking** - Exchange experience with other projects related to SealedwithoUTaKiss to join efforts, minimise duplication and maximize exploitation potential

- **Disseminate Knowledge** - Regularly provide information about the SealedwithoUTaKiss outputs through several channels (e.g. Horizon the EU Research and Innovation Magazine, Clean Sky 2 newsletter, etc.)

- **Support SealedwithoUTaKiss Exploitation** - Pave the way for a successful exploitation of the project results by addressing the full range of potential users and uses, including research, commercial, investment, social, environmental, policy making, setting standards, skills and educational training.

Proposed events for dissemination	**Proposed journals for publications**
□ Greener Aviation Clean Sky 2 Conference □ ECOMONDO fair and Conference □ 255th ACS National Meeting & Exposition □ Aero days 2021 □ Paris Air Show □ Toulouse Air Show □ EASN Platform public events □ Aviation Electronics Europe (AEE) □ Avionics & Space Testing Expo (AST) □ ARC-Digital Avionics Systems Conference	□ Journal of Aeronautics & Aerospace Engineering □ Aerospace Science and Technology □ IEEE Transactions on Aerospace and Electronic Systems □ International Journal of Aerospace Engineering □ International Journal of Aerospace System Science and Engineering

4. Communication activities

Activities to disseminate information and exploit research and innovation results as well as carry out communication activities will be an important and integral part of Clean Sky 2. The following communication measures and strategies will be adopted for promoting the project at European level and to reach the largest possible audience, including groups beyond the project's own community. Communicating relevant knowledge about the project's latest activities and achievements to the relevant identified SealedwithoUTaKiss target audiences is certainly a way to keep all partners actively involved in the project and the SealedwithoUTaKiss consortium accordingly realizes that communication is not something that should be dealt as a side task; on the contrary, it is one of the topmost aspects, priorities, and prerequisites of running a successful research project. In this context, the draft communication plan for promoting this project and its results, include an efficient and effective mix of both interpersonal and mass communication tools. Moreover, it shall be strongly emphasized, that for each targeted audience, a distinct strategy using targeted messages, means and language has been planned.

Direct proactive communications and physical demonstrators: *Attendance at seminars and conferences, one-to-one communication, e-mailing stakeholders, periodic newsletters, etc.;*

- **Clustering activities:** *Contacting parallel related projects, cross-field events;*
- **Mass and general communication:** *Project website, press releases, posters and leaflets;*
- **Scientific excellence:** *Publications in highly-ranked journals, presentations at conferences;*
- **Academic:** *Conveyance of the new knowledge into University curriculums, publications of MSc and Ph.D. theses.*

Below, specific audiences and communication methods have been defined for promoting SealedwithoUTaKiss and its main results:

Dissemination Tools	**Target Audience**		
	Scientific Community	**Industry and SMEs**	**Public at large**
Project page in coordinator website	X	X	X
Project material (leaflets/brochures/audio-visual publications that will be distributed at topical events)	X	X	X
Newsletters (via project webpage)	X	X	X
Scientific Publications	X	X	-
Participation in topical national/international scientific conferences, technical workshops, industrial fairs, Greener Aviation: Clean Sky and other relevant events	X	X	-
General audience articles (EU portal news, specialized magazines, etc.)	-	X	X

5. Listing of Dissemination Activities from M1-M18

The main events where SealedwithoUTaKiss concept and scope of work together with some preliminary results have been presented are listed below:

- SAMPE Europe, Nantes, 17-19 September 2019

- International Symposium on Aircraft Technology, MRO and Operations (ISATECH), Amsterdam 9-11 October 2019

Amsterdam University of Applied Sciences

SARES

- Colloque Aerotechnique. Montreal, 16 October 2019

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ÉNA ÉCOLE NATIONALE D'AÉROTECHNIQUE © UNE ÉCOLE AFFILIÉE AU CÉGEP ÉDOUARD-MONTPETIT

- Composite Technology seminar & Expert Forum, Singapore, 10 February 2020

GMI AERO MELCHERS REPUBLIC POLYTECHNIC

- Singapore Airshow, Singapore, 11-16 February 2020

6. Papers – Presentations in Scientific Conferences

1st International Conference on Industrial Applications of Adhesives 2020 – IAA2020
Funchal, Madeira – Portugal
5-6 March 2020

Friday 6 March 2020
Session 7 – Various Industries
15:40 Indirect determination of adhesive bond properties – an industrial review (IAA20_60)
EJC Kellar (TWI, UK)

Dr Ewen Kellar attended IAA2020 in March to deliver a talk entitled 'Indirect determination of adhesive bond properties – an industrial review'. The talk gave an introduction on the issues surrounding adhesive bonding with a particular emphasis on bond quality. Key areas such as strength determination, durability and overall performance were discussed and the ways in which current technology can provide quantitative information on such areas were introduced. Conventional NDT methods and the associated limitations with regards to evaluating joint quality and kissing bonds was discussed which led on to introducing the Sealed Without a Kiss project (SWAK). An overview of the work plan and the intended methods was presented.
The talk then went on to describe some other 'Enhanced or Extended NDT' approaches including FTIR before concluding with some final thoughts on kissing bonds, their modes of origin, their effect on adhesive bond function and possible ways to investigate them.

The talk concluded with a short Q&A session where interest was expressed in the SWAK project and how the work might progress. It is hoped that a follow-up presentation at a later conference will be possible to report on project progress and outcomes.

There were a total of 93 registered attendees of which approximately one third did not attend in person due to the emerging threat of the coronavirus pandemic. In response, a number of presentations were given and received virtually using the centre's videoconferencing facilities.

7. Continuous Professional Development Seminar

Based on the innovations developed with the NEWOCRT project, together with the R&D results deriving from a variety of EU projects, GMI has organized in cooperation with EASN a Continuous Professional Development seminar in Paris, from 18-20 June 2020.

The CPD Seminar was focused on the contemporary repair challenges and the latest innovations in equipment and methodologies, taking into consideration the fact that the recent venue of all - composite fuselage aircraft (A350 –B787), together with the expansion of older aircraft fleets, introduces new requirements in bonded composite repair.

Experienced industrial personnel, together with academic experts, provided an insight of recent R&I developments and critical issues in the field of bonded composite repair, ensuring that seminar participants acquire a full "process understanding", including a demonstration workshop, to support reliable application of bonded repairs, even on Class I (safety critical) structures.

Two distinguished personalities from the community of the major aircraft manufacturers and MROs have confirmed their participation as key-note lecturers during the course. More specifically, the organizers of the CPD Seminar have the honour to welcome:

- **Mr. Guillaume FERRER**, Embodiment Industrialization Manager, Composite Repair Process Development, Airbus Customer Services, who will give a lecture on the topic of "**New Aircraft, New Materials, New Repairs**" and

- **Mr. Philippe SERVANT**, Responsible for Engineering, Research and Development of Aerostructures, AFI KLM E&M who will share his viewpoint on the "**Technical Challenges and Innovations in Bonded Composite Repair of Commercial Aircraft**".

The course was offered to a strictly limited number of participants so as to make a condensed and intensive course manageable and at same time ensure interaction between the trainers and the attendees and an in-depth understanding of the matter of the course. Participants had the opportunity to join an optional visit to Le Bourget Air Show on a Date reserved for Professionals (20/6).

Continuous Professional Development

GMI AERO

EASN & GMI Aero CPD Seminar on

Bonded Composite Repair of Aircraft Structures: Contemporary Challenges and Latest Innovations

When: 18-20.06.2019

Where: Paris, France

Programme Content

*The recent venue of all - composite fuselage aircraft (A350 – B787), together with the expansion of older aircraft fleets, introduces new requirements in bonded composite repair. These contemporary repair challenges and the latest innovations in equipment and methodologies to address them, will be the subject of a **2-Day CPD Seminar**, organized by EASN Association in cooperation with GMI Aero, the lead European composite repair equipment manufacturer.*

Key Benefits

*Experienced industrial personnel, together with academic experts, will provide an insight of recent R&I developments and critical issues in the field of bonded composite repair, ensuring that seminar participants acquire a full "process understanding", including a **demonstration workshop**, to support reliable application of bonded repairs, even on Class I (safety critical) structures.*

Key Note Speakers

Two key-note speeches will be presented by experienced engineers from major aircraft manufacturers and MROs.

*The participants will receive a **Certificate of Attendance** highlighted by the added value of the EASN Association quality label.*

Practical Information

Technical Visit

Participants will have the opportunity to join an optional visit to Le Bourget Air Show on a Date reserved for Professionals (20/6)

https://www.siae.fr

Fees

EASN members	€ 500,00
Non-EASN members	€ 600,00
Students	€ 350,00

Amounts are VAT excl. (21% VAT will be added, where applicable)

Contact & Registration Details

For further information on CPD seminars please visit our website:

www.easn-is.com/cpd

EASN Association: www.easn.net • GMI Aero: www.gmi-aero.com
GMI Aero YouTube channel: https://www.youtube.com/channel/UCLLwy2OsLcr85rgvkHJBdAA/videos

CPD Brochure

easn

Continuous Professional Development

GMI AERO

EASN Association teams up with GMI Aero and organize a **SEMINAR** on

Bonded Composite Repair of Aircraft Structures: Contemporary Challenges and Latest Innovations

When: 18-20.06.2019

Where: Paris, France

AGENDA

Day 1• Tuesday, June 18th 2019

Time	Subject	Instructor
08:30 - 09:00	Registration	
09:00 - 09:15	Official Welcome	Prof. Spiros Pantelakis *EASN Association*
09:15 - 09:45	Aircraft Composite Repair – Evolution and Challenges	Mr. Roland Chemama *GMI Aero*
09:50 - 10:35	Main composite repair types and application procedures	Dr. George Kanterakis *GMI Aero*
10:35 - 11:00	Coffee Break - Networking	
11:00 - 12:00	Key Note Lecture New Aircraft, New Materials, New Repairs	Mr. Guillaume Ferrer *Airbus Customer Services*
12:00 - 12:45	Numerical design and virtual testing of bonded composite repairs	Prof. Konstantinos Tserpes *University of Patras*
12:45 - 14:00	Lunch Break - Networking	
14:00 - 14:45	Basic composite repair equipment – Description & Demo	Mr. Konstantinos Kitsianos *GMI Aero*
15:00 - 15:45	Composite repair advanced solutions & innovations	Dr. George Kanterakis *GMI Aero*
16:00 - 16:45	Complex Composite Repair Case studies	Mr. Konstantinos Kitsianos *GMI Aero*
16:45 - 17:30	Q&A session – Open Discussion – Demonstration of Innovative Composite Repair Equipment and Methodologies	All
21:00	Official CPD Seminar Dinner	All

With the participation of distinguished speakers from:

AIRBUS AIRFRANCE INDUSTRIES KLM Fraunhofer IFAM UNIVERSITY OF PATRAS

CPD Programme (p1)

EASN Association teams up with GMI Aero and organize a **SEMINAR** on

Bonded Composite Repair of Aircraft Structures: Contemporary Challenges and Latest Innovations

When: 18-20.06.2019

Where: Paris, France

AGENDA

Day 2 • Wednesday, June 19th 2019

Time	Subject	Instructor
09:00 - 09:45	Bondline quality challenges and inspection methods	Dr. Kai Brune, Fraunhofer IFAM
09:45 - 10:30	NDT of bonded composite repairs	Dr. Kai Brune, Fraunhofer IFAM
10:30 - 11:00	Coffee Break – Networking	
11:00 - 12:00	Key Note Lecture: Technical Challenges and Innovations in Bonded Composite Repair of Commercial Aircraft	Mr. Philippe Servant, AFI KLM E&M
12:00 - 12:45	Mechanical Testing of Bonded Composite Repairs	Prof. Konstantinos Tserpes, University of Patras
12:45 - 14:00	Lunch Break - Networking	
14:15 - 15:00	The effect of pre-bond contamination and ageing on the strength of the bondline	Prof. Konstantinos Tserpes, University of Patras
15:00 - 15:45	SHM of bonded composite repairs	Dr. Aggelos Christopoulos, GMI Aero
15:45 - 17:00	Q&A session – Closing Remarks – Demonstration of Innovative Composite Repair Equipment and Methodologies	All

Day 3 • Thursday, June 20th 2019

Time	Subject
10:00-16:00	Visit to selected Aeronautical Stakeholders (Cleansky 2, IPSA etc.) inside Le Bourget Air Show

With the participation of distinguished speakers from:

AIRBUS, AIRFRANCE INDUSTRIES KLM, Fraunhofer IFAM, UNIVERSITY OF PATRAS

More information www.easn-dis.com/cpd

CPD Programme (2)

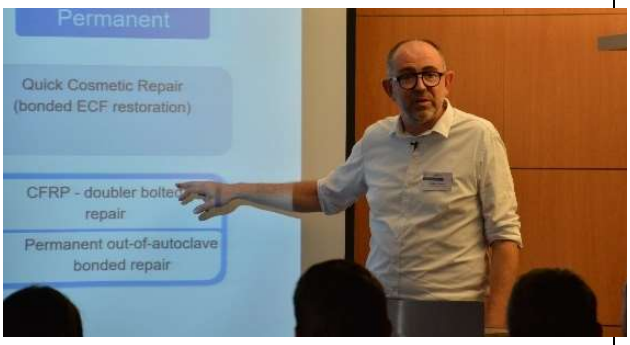
CPD Advertisement at Air & Cosmos Magazine

*The **Continuous Professional Development (CPD)**seminar on **"Contemporary Challenges and Latest Innovations of Bonded Composite Repair of Aircraft Structures"**https://easn-tis.com/cpd has been successfully organized by **EASN** and **GMI Aero** last June in Paris. During two full days **30 composite repair professionals** from **11 countries** attended high level lectures from scientists and experts coming from **GMI Aero**, **University of Patras** and **Fraunhofer IFAM**.*

CPD Participants, Organizers and Speakers in action, during the Seminar

*A balanced distribution of the **14 CPD lectures& demonstrations**has been achieved, to cover both theoretical & practical topics.Participants had also the opportunity to **exchange experiences and ideas** in their area of interest, while **meeting the actual people that develop and manufacture the composite repair equipment** that they are using! **A seamless communication among composite repair experts, end-to-end…***

*Definitely the **highlights** of the CPD Seminar were the **two key note speeches**:*

"New Aircraft, New Materials, New Repairs"	***"Technical challenges and innovations in bonded aircraft composite repair"***
	
Guillaume FERRER *Embodiment Industrialisation Manager* *Composite Repair Process Development* ***Airbus Customer Services***	***Philippe SERVANT*** *Responsible for Engineering, Research and Development of Aerostructures,* ***AFI KLM E&M***

*On the other hand, the most enjoyable moments of the CPD were the **visit to Musée Grévin** and the following **cocktail at Café Grévin**, where all the CPD contributors could relax, exchange ideas and brainstorm on the future of composite repairs...*

CPD Participants, Organizers and Speakers at Musée Grévin and Café Grévin

*The CPD seminar concluded with a **daily visit at the biggest Air Show worldwide: Le Bourget!***

*Reviewing the CPD satisfaction questionnairesit is worth noting that **everyone agreed**that**The CPD Seminar on Bonded Composite Repair should be repeated!**It is, thus, our commitment to come back to you promptly with the place and time where the **CPD2020** will be organized…*

CPD Newsletter, following the event.

Indeed, based on the success of this event, two new seminars, to disseminate SealedwithoUTaKiss and other R&D projects results have been scheduled to be organized, as follows:

However, due to COVID-19 pandemic, the Berlin event has not been performed and will be rescheduled at a more appropriate date, so that all SealedwithoUTaKiss achievements so far will be presented.

8. Conclusions

As detailed in SealedwithoUTaKiss (SWAK) Description of Work (DoW), **WP6** encompasses the dissemination and exploitation activities of the project as well as actions related to maximisation of its impact. Task 6.1 addresses dissemination of outputs in the specialist industrial and academic communities that can benefit from the developments in SealedwithoUTaKiss project. The exploitation potential of the NDT solutions will be examined. The task will run as soon as WP1 is completed when the specifications are established. GMI has been assigned responsibility for project dissemination, exploitation and IP management. Activities will be in line with the outcome of IP management (Task 6.2) focusing on market potential and future actions required. The Innovation manager will coordinate the definition of the exploitation plans and will streamline activities with the help and agreement of the Topic Manager. A dedicated SealedwithoUTaKiss project dissemination seminar will be organised at the end of the project and all relevant stakeholders will be invited to present the project outcomes. Deliverable 6.3 summarizes the dissemination activities performed from M1-M18. Such activities have been partially affected by the COVID-19 pandemic and are expected to re-start when the circumstances become more appropriate.