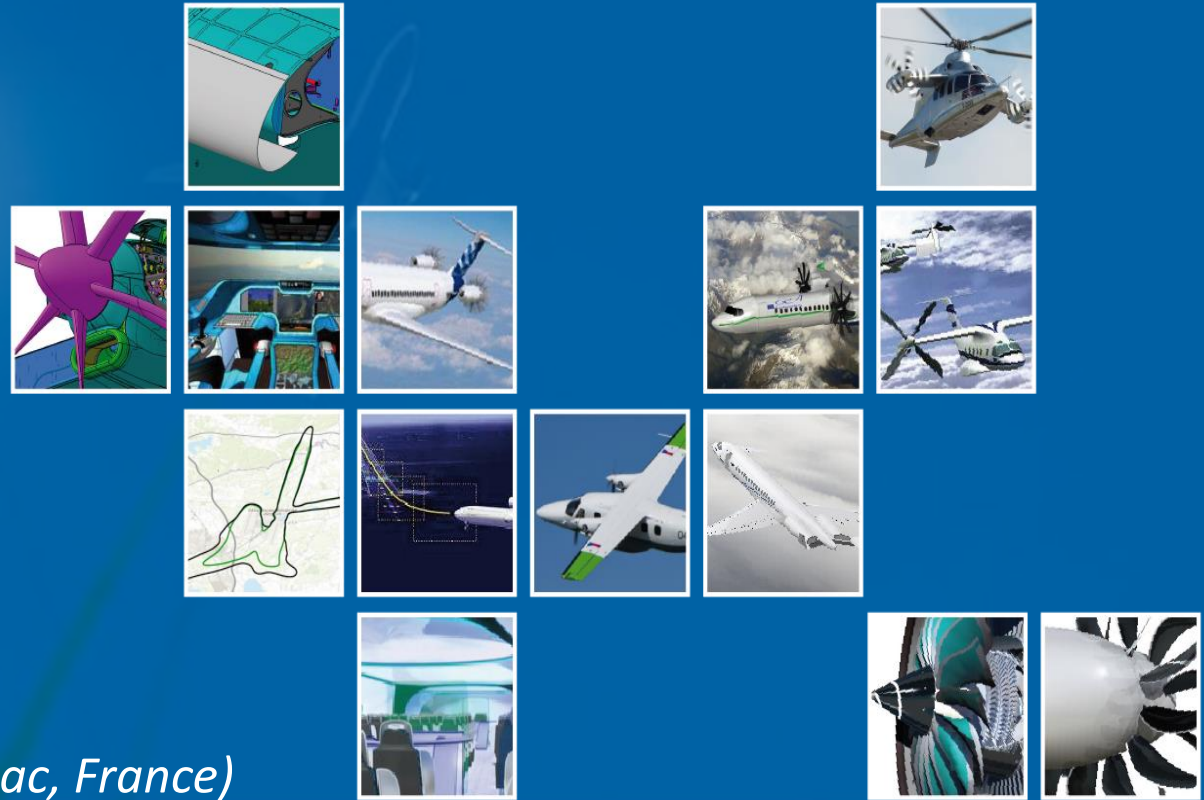


# CfP10 Info Day: Technical Session



7<sup>th</sup> May 2019

Location: CCI Occitanie (Blagnac, France)



# JTI-CS2-2019-CFP10-AIR-02-86

**Title:** Development of equipment for composite recycling process of uncured material

**WP Location:** AIR ITD - WP B-4.3 (linked to activities in WP C-2.1.4)

## **Objectives:**

The scope is to develop a key process for recovery and recycling of CFRP uncured scraps, coming from lamination activity. In particular activities to be performed are: design, feasibility study, development and validation of an equipment that is able to cut and distribute the CFRP wet scraps in such a way to generate a new pre-impregnated material.



## Tasks description:

- **Task 1.1: Feasibility studies for overall recycling equipment**

Identification of different methods/mechanisms for chips cutting and distribution; i.e. blades geometry, knives and counter knives, mat belts and rollers, air stream, vibrating tables etc.

For each method, the key parameters and components shall be identified.

- **Task 1.2: Trade-off between different approaches**

Comparison of different methods/mechanisms in terms of compliance with the requirements described above and costs, and selection of most suitable for implementation.

- **Task 1.3 - Main parameters and key components definition for the selected process**

Full definition of the parameters and key elements of the equipment for the selected approach.

- **Task 1.4 - Definition of suitable method for fiber areal weight and fiber orientation distribution measurement for recycled material**

Definition of suitable methods to measure fiber areal weight and fiber orientation distribution into the resulting CFRP sheet after material recycling.



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## Tasks description:

- **Task 2.1 - Detail design of recycling equipment (cutting and distribution modules)**

Detailed design of the recycling equipment (cutting and distribution modules) with the issuing of the related drawings.

- **Task 2.2 - Fabrication of equipment modules**

Fabrication of the prototypal modules (working cutting and distribution modules) in order to assess process parameters.

- **Task 2.3 - Integration of recycling equipment modules (cutting and distribution systems)**

Integration of the longitudinal/transversal cutting module with the distribution module.

- **Task 2.4 - Feasibility tests for recycling equipment validation**

Execution of functional and operative tests in order to verify the feasibility of the recycling equipment and compliance with all the identified requirements. In addition, it is necessary to verify the production rate based on the described requirements. After completion of this task, the overall equipment shall be transferred and installed at Topic Manager plant and 500 sqm of recycled material will be produced with this equipment under applicant supervision.



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## Tasks description:

- **Task 2.5 - Recycled material basic structural characterization**

Once the correct functioning of the system has been verified in terms of repeatability of the production of the recycled material, a preliminary mechanical characterization of the recycled material is required.



# JTI-CS2-2019-CFP10-AIR-02-86

## Major Deliverables:

| Deliverables    |   |              |                 |
|-----------------|---|--------------|-----------------|
| <i>Ref. No.</i> | <i>Title - Description</i>  | <i>Type*</i> | <i>Due Date</i> |
| <b>D1</b>       | Definition of possible approaches   | R            | T0 + 6          |
| <b>D2</b>       | Selection of most suitable approach and definition of key parameters/components | R            | T0 + 9          |
| <b>D3</b>       | Measurement of fibre areal weigh and fibre orientation module definition        | R/D          | T0 + 18         |
| <b>D4</b>       | Detail design of recycling equipment (cutting and distribution modules)         | R/D          | T0 + 21         |
| <b>D5</b>       | Fabrication of equipment modules and integration of recycling equipment module  | R/D/HW       | T0 + 27         |
| <b>D6</b>       | Functionality and feasibility tests of recycling equipment                      | R/D          | T0 + 33         |
| <b>D7</b>       | Material basic structural characterization activities and final assessment      | R            | T0 + 36         |

\*Type: R=Report, D=Data, HW=Hardware

## Milestones:

| Milestones (when appropriate) |  |              |                 |
|-------------------------------|--|--------------|-----------------|
| <i>Ref. No.</i>               | <i>Title - Description</i>   | <i>Type*</i> | <i>Due Date</i> |
| <b>M1</b>                     | Definition of equipment components                                 | R            | T0 + 9          |
| <b>M2</b>                     | CDR of cutting and distribution module                             | R/D          | T0 + 21         |
| <b>M3</b>                     | Cutting and distribution modules on site at Topic Manager facility | R/HW         | T0 + 33         |
| <b>M4</b>                     | Structural recycled material characterization                      | R            | T0 + 36         |

\*Type: R=Report, D=Data, HW=Hardware



# JTI-CS2-2019-CFP10-AIR-02-86

## Special Skills:

- Competence in management of complex projects of research on manufacturing technologies.
- Experience and skills learnt from projects focused on similar tasks.
- Quality and risk management capabilities demonstrated through applications on international R&T projects and/or industrial environment.
- Proven experience in the use of design, analysis and configuration management tools.
- Proven competence in drawings and realization of mechanical device for uniform distribution of chips in any other fields and/or have a know-how on specific technique useful for the above application.
- General knowledge of uncured composite material storage and handling conditions.
- Proven experience in experimental testing.
- Proven experience in the Industrial Automation field.
- Proven experience in the detection field.
- Competence in measures and data analysis with statistical approaches.
- Testing skills to allow mechanical and chemical characterization of samples made by new technologies.

**Indicative Funding Topic Value: 800 K€**

**Duration of the action: 36 Months**



Any questions?

[Info-Call-CFP-2019-01@cleansky.eu](mailto:Info-Call-CFP-2019-01@cleansky.eu)

Last deadline to submit your questions:  
5<sup>th</sup> July 2019 (17.00 Brussels Time)

