



EXAELIA

Flying Testbeds for Novel Long-Range Aircraft

WD1.4 EXAELIA Academy Handbook Working Document

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1. Introduction

1.1. Academy Purpose

The EXAELIA Academy is an initiative developed within the EXAELIA project to support MSc students and early-career engineers by creating structured opportunities for interaction with experts from academia, research organisations, and industry. The EXAELIA Academy is designed to complement formal academic education by offering exposure to real-world research challenges, practical perspectives, and collaborative working practices related to future aviation systems.

The EXAELIA Academy builds on the technical scope and ambitions of the EXAELIA project, with a particular focus on advanced aircraft design concepts, flying testbeds, and next-generation propulsion systems. Through these themes, the EXAELIA Academy aims to bridge academic research and applied engineering, enabling participants to better understand how theoretical work is translated into concepts, experimental results, and exploitation outcomes.

Participation in the EXAELIA Academy is voluntary and does not replace or interfere with the students' academic programmes or supervision arrangements at their home institutions. Instead, the EXAELIA Academy act as an additional mentoring and interaction, allowing students to place their work in a broader European research and innovation context. Students retain full ownership of their academic work while benefiting from technical guidance, feedback, and peer exchange within EXAELIA's project supportive environment.

The EXAELIA Academy is organised around thematic groups, each supported by selected mentors from the EXAELIA consortium. Activities are primarily delivered through regular webinars, creating continuity over time while remaining compatible with academic schedules. These activities encourage students to present their work, exchange ideas, and progressively refine their understanding as their studies evolve.

Beyond individual learning, the EXAELIA Academy aims to foster a network of early-career professionals with shared interests in future aviation technologies. By bringing together students, researchers, and engineers across institutions and disciplines, the EXAELIA Academy contributes to building long-term connections that extend beyond the duration of the project itself. In this way, the EXAELIA Academy supports both the technical objectives of EXAELIA and the broader goal of preparing the next generation of professionals for the evolving needs of the aviation sector.

1.2. Academy Objectives

The EXAELIA Academy has been established to support the technical and educational ambitions of the EXAELIA project by engaging MSc students and early-career engineers in focused learning and collaboration activities. Its objectives are aligned with the project's research priorities and with the broader need to prepare future professionals for the evolving challenges of the aviation sector.

A primary objective of the EXAELIA Academy is to support students working on topics that are directly related to the EXAELIA scope. By linking academic work to ongoing project activities, the EXAELIA Academy helps students better to understand how research is addressed and validated within a large collaborative European project. This approach enables students to place their studies in a realistic research and innovation context while maintaining academic independence.

Another key objective is to facilitate structured interaction between academia, research organisations, and industry. Through regular webinars, and internal discussions, the EXAELIA Academy creates opportunities for students to engage with experienced researchers and engineers, exchange ideas, and gain insight into different perspectives and approaches. These interactions are intended to complement academic supervision by exposing students to applied research practices and system-level thinking.

Finally, the EXAELIA Academy seeks to build and sustain a network of early-career professionals with shared interests in advanced aircraft concepts, flying testbeds, and next-generation propulsion technologies. By fostering connections among students, mentors, and project partners, the Academy contributes to long-term knowledge exchange and collaboration beyond the lifetime of the project, supporting the development of a skilled and connected European aviation research community.

1.3. Academy Topics

For the first phase of the Academy, and based on partners' input, the following topics have been proposed:

- **Design Concept (supported by TUD, CRAN and UPAT):**
Covering aircraft configuration, emerging technologies, engine concepts, and design methods relevant to future aviation concepts.
- **Flying Testbeds (supported by NLR):**
Addressing both theoretical and practical aspects of developing and operating flying testbeds for the validation of next-generation propulsion systems.
- **Engine Integration & Thermal Management (supported by AUTH):**
Focusing on how future propulsion technologies affect the airframe (in terms of weight, aerodynamics, and installation trade-offs) and developing thermal management strategies for next-generation propulsion architectures.

Each topic is supported by designated mentors and may involve contributions from multiple consortium partners.

2. Academy application Guidelines

Participation in the EXAELIA Academy is open to selected MSc students (or equivalent) whose academic background and interests align with one of the defined EXAELIA Academy topics. Participation is voluntary and complementary to the students' academic programmes. Students retain full ownership of their work, including thesis content and results.

The EXAELIA Academy **does not replace or interfere with formal academic supervision provided by the students' home institutions**. Students are expected to actively engage in Academy activities according to their availability during the EXAELIA Academy implementation period and to contribute to knowledge exchange within their topic group.

2.1. ACADEMY Committee

The EXAELIA Academy Committee will consist of representatives from the EXAELIA Consortium, including NLR, AUTH, UPAT, CRAN, and TUD. The Committee is responsible for establishing, overseeing, and refining the overall concept and structure of the EXAELIA Academy. Its role includes defining the Academy's objectives, selecting topics, coordinating mentors, and ensuring that the program aligns with the strategic goals of the consortium.

Additionally, the Committee monitors the Academy's progress, supports the resolution of any organizational challenges, and ensures the quality and consistency of the learning experience for all participating students. By acting as the central coordinating body, the Committee ensures that the Academy operates smoothly and effectively, fostering collaboration and knowledge exchange across all partners.

2.2. ACADEMY participants' selection criteria

Applications will be evaluated using weighted selection criteria summing up to a maximum of 100 points. The evaluation will consider academic background, relevance to Academy topics, motivation, technical readiness, availability, language skills, and institutional support.

Applications will be reviewed by the EXAELIA Academy Committee, and final selection will ensure both technical quality and balanced representation across EXAELIA Academy topics. The proposed weighted scoring system is presented in the table below (Table 1)

Table 1: Proposed weighted scoring system (Total = 100 points)

Criterion	Description	Max Points
Relevance to Academy topics	Alignment with Design Concept / Flying Testbeds / Engine Integration themes	25
Academic background	Relevance of MSc programme, year of study, grades (if provided)	20
Technical skills & readiness	Relevant tools, methods, or prior coursework	15
Language skills (English)	Ability to communicate effectively in technical discussions	15
Motivation & engagement	Clarity, realism, and commitment expressed in motivation statement	10
Availability during Academy period	Ability to participate during first Academy implementation period	10
Institutional support	Confirmation from academic supervisor	5
Total		100

- Ideal candidate score: 85–100
- Acceptable candidate score: 70–84
- Below 70: reserve list or rejection

The EXAELIA Academy Committee will be consisted of representatives coming from EXAELIA Consortium including: NLR, AUTH, UPAT, CRAN and TUD. It is responsible for establishing and set up the whole concept of the EXAELIA Academy.

2.3. Criteria explanation

Each criterion is scored from 0 up to its maximum weight. Evaluators should not only check if a requirement is met, but how well it is met.

2.3.1. Suggested Scoring Interpretation

Use the following scale for each criterion, adapted to its maximum points:

A. Excellent (80–100% of max points)

- Clearly exceeds expectations
- Strong evidence provided
- Highly relevant to EXAELIA objectives

B. Good (60–79% of max points)

- Fully meets expectations
- Minor gaps but no major weaknesses

C. Acceptable (40–59% of max points)

- Meets minimum requirements
- Limited depth or clarity

D. Weak (1–39% of max points)

- Significant gaps
- Poor alignment or insufficient evidence

E. 0 points

- Criterion not addressed or not met

2.3.2. Corrective Measures Implemented

Each application is reviewed by at least two committee members. The final score per participant will be evaluated as the average of reviewers' scores. For borderline cases or ties, the evaluation committee will discuss and commonly decide. Particularly, in case of equal scores, the committee may prioritize:

- Topic balance (ensuring all Academy themes are covered)
- Geographic or institutional diversity
- Students whose work directly supports ongoing EXAELIA technical WPs

These should be decision rules, not scored criteria.

2.3.3. Required Registration Documents***Mandatory Documents (A to E)*****A. Curriculum Vitae (CV / Resume)**

Purpose: Assess academic background, technical skills, and overall profile.

- Maximum 2 pages
- Should include:
 - Education (current MSc programme)
 - Relevant coursework
 - Technical skills and tools

- Any relevant research or project experience

B. Motivation Letter

Purpose: Evaluate motivation, engagement, and alignment with Academy topics.

- Maximum 1 page
- Should clearly address:
 - Chosen Academy topic
 - Relevance of studies or thesis to the topic
 - Motivation for joining the EXAELIA Academy
 - Expected learning outcomes and contribution

C. Proof of Enrolment in an MSc (or equivalent) Programme

Purpose: Verify eligibility.

- Simple document issued by the university
- No transcripts required at this stage

D. Supervisor Endorsement (Short Confirmation)

Purpose: Ensure institutional awareness and support.

- Short statement or email confirmation from the academic supervisor
- No formal recommendation letter required
- Confirms:
 - Awareness of the student's participation
 - No conflict with academic obligations

E. Student Participation Agreement

Purpose : Agree to the defined rights and obligations linked to participation in the Academy

Optional (Strongly Encouraged) Documents

F. Brief Description of Intended Thesis Topic or Research Focus

Purpose: Assess topic alignment and maturity.

- Maximum ½–1 page
- Can be:
 - A short concept note
 - A thesis proposal summary (if available)

Portfolio or Supporting Material (If Applicable)

Purpose: Support technical readiness.

- Examples:
 - Design projects

- Simulation work
- Publications or conference posters
- Optional upload or link

2.3.4. Student Evaluation Form

The corresponding student evaluation form that will be used by the evaluators is attached in Annex section.

2.4. Students – Rights and Obligations

Participation in the EXAELIA Academy is voluntary and does not affect students' academic supervision. Students will benefit from mentoring, knowledge exchange, and visibility within the EXAELIA project. Certificates of participation will be issued to students who actively engage throughout the Academy cycle.

2.4.1. Students' Rights

Selected students participating in the EXAELIA Academy should have the right to:

- Participate in all Academy activities related to their selected topic (webinars, workshops, discussions).
- Receive mentoring and feedback from designated EXAELIA mentors.
- Present their work in Academy webinars and workshops.
- Be acknowledged as EXAELIA Academy participants in public events and communication material.
- Receive a certificate of participation at the end of the Academy cycle.

2.4.2. Students' Obligations

Selected students are expected to:

- Actively participate in EXAELIA Academy activities during its first implementation period, according to their availability.
- Prepare and present their work during scheduled webinars, respecting agreed timelines.
- Engage constructively with mentors and fellow participants.

Acknowledge EXAELIA project when presenting Academy related work in external events or publications (where applicable and agreed with supervisors).

2.4.3. Certification at the End of the Academy

A certificate of participation in the EXAELIA Academy will be issued by:

- EXAELIA Project Coordinator (NLR)
- in collaboration with EASN-TIS

it will be signed by the:

- Project Coordinator and,
- Topic mentor(s)

To receive the corresponding certificate, the candidate student has to be active in matter of participation for:

- at least 4 webinars
- final workshop (or justified absence)
- presentation of work at least once

Certificates should not grade performance, only confirm participation.

2.4.4. Additional Issues Related to the Students

A. Number of students per topic

4 to 6 students per topic is ideal.

Advantages:

- Allows interaction without overcrowding webinars.
- Enables meaningful feedback from mentors.
- Keeps workload manageable.

Recommended Limits:

- Minimum: 3 students
- Optimal: 4–6 students
- Maximum: 8 students (only if mentor agrees)

In case there are few or no participants then:

(a) If only 1–2 students apply:

- Topic can still proceed if mentor agrees.
- Students may join selected joint webinars with another topic.

(b) If no students apply:

- Topic is:
 - Postponed
 - Integrated into another related topic (if suitable).
- No negative impact on the project.

This decision should be taken by the Academy Committee, in consultation with the mentor.

B. Student Dropout

- Allow students to withdraw with notification.
- No penalty, but certificate requires minimum participation.

C. Time Commitment Transparency

- Clearly state:
 - ~1 webinar every 3 months. The exact date will be decided between the mentor(s) and the participant students
 - Preparation time flexible and aligned with thesis work

D. Equality & Fairness

- Ensure fair access across institutions and countries.
- Avoid over-representation of a single partner.

3. Mentors and their roles

Each Academy topic will be supported by a designated mentor and a deputy mentor from the EXAELIA consortium. The mentors' role is to facilitate learning, encourage interaction, and ensure alignment, without replacing the students' academic supervisors. For each topic, both a primary and a substitute mentor will be assigned and will oversee the webinars held during the first phase of the EXAELIA Academy.

3.1. Mentor(s) Responsibilities

Mentors within the EXAELIA Academy have several key responsibilities. They are expected to organize and lead topic-specific webinars, holding one session every three months for their assigned topic. The first webinar serves to introduce the topic, its scope, and the expected directions, while subsequent webinars focus on discussion, feedback, and exchange rather than formal lecturing. Mentors also provide guidance and direction to students by suggesting reference materials, methods, or perspectives, helping them frame their work within the broader EXAELIA context, and proposing small tasks or points when useful. This guidance is intended to be advisory rather than prescriptive.

In addition, mentors review student progress during the webinars, offering constructive feedback on technical clarity, relevance to the topic, and potential next steps. Mentors are not responsible for grading or formal assessment. They also play a coordination and communication role, acting as the link between the student group and the Academy Committee. This includes providing short updates to the Committee when needed such as on participation levels, potential risks, or good practices and ensuring continuity within the topic group by keeping students engaged over time.

3.2. First Webinar – Topic Introduction

It is strongly recommended that each mentor conducts an initial introductory webinar at the start of the EXAELIA Academy activities. The purpose of this first webinar is to present the topic's scope and boundaries in a clear, simple, and accessible manner, ensuring that all students have a shared understanding of the subject. During the session, mentors should explain why the topic is important within the EXAELIA context, how students' work may contribute to the broader goals, and what forms of interaction and collaboration are expected within the group. The webinar also provides an opportunity for students to introduce themselves and share their initial interests, fostering early engagement and group cohesion.

The recommended format for this webinar is a 60-minute session, featuring a concise presentation of no more than 10–20 slides, followed by an interactive Q&A. At this stage, students are not required to present their own work. This introductory webinar serves as a foundation for the EXAELIA Academy cycle, establishing the topic framework, setting expectations, and creating a collaborative atmosphere that will guide the subsequent activities.

4. Proposed Webinar Plan

The EXAELIA Academy’s webinars and workshops are planned to take place over the period from May 2026 to October 2027. Webinars will be held every three months and will be coordinated by the assigned mentors, ensuring alignment with each topic’s objectives and progression.

These sessions will be supported by EASN-TIS using the Webex platform, providing a reliable and accessible environment for interaction, discussion, and knowledge exchange. This regular schedule is designed to maintain continuity, foster engagement among students, and allow for ongoing feedback, collaboration, and development of the EXAELIA Academy topics throughout the program’s duration. Below a proposed webinar plan is presented.

Table 2: Proposed webinar plan for the EXAELIA Academy

Period	Activity	Lead
May 2026	Academy Kick-off & Topic Introduction Webinars	Mentors
Sep 2026	Student Initial Work Presentations	Students + Mentors
Dec 2026	Technical Focus Webinar	Mentors
Mar 2027	Progress & Cross-Issues Discussion	Mentors
Jun 2027	Pre-Final Review Webinar	Students + Mentors
Oct 2027	Final Workshop @ EASN Conference	All

Detailed Plan per Webinar

Webinar 1 – Topic Introduction (May 2026)

- Mentor presents topic scope and context
- Students introduce background and interests
- Alignment on ACADEMY expectations

Webinar 2 – Initial Work & Ideas (September 2026)

- Short student presentations (5–10 min each)
- Feedback from mentor
- Identification of common challenges

Webinar 3 – Technical Deep Dive (December 2026)

- Mentor-led discussion on:
 - Methods
 - Design choices
 - Trade-offs

Webinar 4 – Progress & Integration (March 2027)

- Students present updated work of them
- Mentor supports cross-topic thinking
- Preparation for final phase

Webinar 5 – Pre-Final Review (June 2027)

- Focus on consolidation of the students' work
- Mentor helps students frame results clearly
- Guidance for final presentations

Final Workshop – EASN Conference 2027 (October 2027)

- Physical event
- All Academy topics presented
- Students showcase final outcomes
- Mentor(s) moderate sessions
- Academy cycle officially concluded

5. Annex

5.1. EXAELIA Academy – Student Evaluation Form

Applicant Name:

University / Institution:

Proposed Academy Topic:

Design Concept Flying Testbeds Engine Integration & Thermal Management

Criterion	Max Points	Score	Comments
Relevance to Academy topics	25		
Academic background	20		
Technical skills & readiness	15		
Language skills (English)	15		
Motivation & engagement	10		
Availability during Academy period	10		
Institutional support	5		
TOTAL SCORE	100		

Eligibility Check (Yes / No):

Alignment with Academy timeline

All required documents submitted

Evaluator Name:

Date:

Signature:

5.2. Code of Conduct

This annex contains the EXAELIA Academy Code of Conduct, outlining expected behaviour, confidentiality principles, and academic integrity requirements for all participants.

Code of Conduct

The EXAELIA Academy is built on collaboration, respect, openness, and academic integrity. All participants such as students, mentors, and committee members are expected to contribute to a constructive and inclusive environment.

Expected Behaviour

Participants shall:

- *Treat all members with professionalism and respect.*
- *Encourage open discussion and knowledge sharing.*
- *Provide constructive and respectful feedback.*
- *Respect cultural, academic, and professional diversity.*

Confidentiality

- *Academy webinars are considered internal project activities unless stated otherwise.*
- *Participants must not share materials, recordings, or sensitive information outside the Academy without permission.*
- *Students decide the level of detail they disclose when presenting their work.*

Academic Integrity

- *Students are responsible for ensuring the originality of their work.*
- *Proper acknowledgement of sources and collaborators is expected.*
- *EXAELIA-related content should be acknowledged when appropriate and agreed with supervisors.*

Non-Compliance

Failure to comply with this Code of Conduct may result in exclusion from Academy activities, following review by the Academy Committee