



ESTONIAN AVIATION ACADEMY

SELF-EVALUATION REPORT

FOR INSTITUTIONAL ACCREDITATION

2023



Eesti Lennuakadeemia
Estonian Aviation Academy

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Abbreviations

AM	Aviation Management
AMC	Acceptable Means of Compliance related to European Union Commission Regulations
ATAERA	Air Transport and Aeronautics Education and Research Association
ATO	Approved Training Organisation
ATSTO	Air Traffic Services Training Organisation
ATSEP	Air Traffic Safety Electronics Personnel
AZEA	Alliance for Zero-Emission Aviation
DIANA	Defence Innovation Accelerator for the North Atlantic
CAM	Commercial Aviation Management
CAMO	Continuing Airworthiness Management Organisation
CATP	Commercial Air Transport Pilot
EACP	European Aerospace Cluster Partnership
EASA	European Union Aviation Safety Agency
EAVA	Estonian Aviation Academy (also Academy)
ECAA	Estonian Civil Aviation Administration
EBIA	Estonian Business and Innovation Agency
EHIS	Estonian Education Information System
EKIS	Estonian School Administration Information System
EKKA	Estonian Quality Agency for Higher and Vocational Education
EURASHE	European Association of Institutions in Higher Education
EUROSIM	Federation of European Simulation Societies
ETA	Estonian Transport Administration
ETIS	Estonian Research Information System
EST	Estonian language
FEAST	First European Air Traffic Controller Selection Test
FTO	Flight Training Organisation
GM	Guidance Material related to European Union Commission Regulations
Haridussilm	State Educational Data Portal
IATA	International Air Transport Association
ICAEA	International Civil Aviation English Association
Juhan	Information System for Continuing Education
MoER	Ministry of Education and Research
MTO	Maintenance Training Organisation
NATO	North Atlantic Treaty Organisation
PIL	Aircraft Piloting
RCUAS	Estonian Rector's Conference of Universities of Applied Sciences
RPAS	Remotely Piloted Aircraft System
RPTO	Remote Pilot Training Organisation
R&D	Research and Development
RTIP	State Employee Self-service Portal
SAP	State Financial, Personnel and Payroll System
SIS	Study Information System (Tahvel)
TO	Aviation Training Organisation
UAS	Unmanned Aerial System

1 GENERAL INTRODUCTION

1.1 OVERVIEW OF THE ESTONIAN AVIATION ACADEMY

1.1.1 Brief introduction of the higher education institution

The Estonian Aviation Academy (EAVA or the Academy) is a professional higher education institution which acts within the governance area of the Ministry of Education and Research (MoER). The EAVA's structure is divided into academic and support departments (see Figure 1). EAVA provides formal aviation education, including undergraduate education, continuing education, and vocational studies in aircraft maintenance, as well as carrying out research and development (R&D) activities. EAVA brings together professional competencies corresponding to the real needs of the aviation sector, and therefore offers a unique combination of education, applied science and aviation. EAVA does not directly compete with any other higher education institutions in Estonia, whether in specialist studies or in research and development. Three certified aviation training organisations (TOs) have been integrated into the structure of EAVA as a higher education institution: an air traffic controller's training organisation (ATSTO), a pilot training organisation (ATO), and an aircraft maintenance technician's training organisation (MTO), each of which have training rights under certificates issued by the Estonian Transport Administration (ETA). The overall responsibility for training organisations lies with the Rector, who then authorises the heads of the relevant speciality departments to ensure that speciality training modules meet the formal requirements of the aviation industry. Each head of a training organisation is responsible for the relevant curricula, as well as for organising instruction and training on a day-to-day basis. Heads of training organisations are also responsible for ensuring that the lecturers / instructors and trainees follow all relevant regulations and guidelines relating to training activities and safety assurance. In their activities, the training organisations follow the European Commission implementing rules, the European Union Aviation Safety Agency (EASA) guidelines, and the manuals approved by the ETA.



Figure 1. Structure of the Estonian Aviation Academy.

The process of developing the Academy's ambitious new Strategic Plan of the Estonian Aviation Academy 2021-2025 ('Strategic Plan') gave new impetus and added weight to the updating of our core values, with a view to ensuring greater awareness and recognition of these values throughout the organisation. Indeed, defining values that would take both internal and external parties into account formed part of the process of drafting the new strategic plan. Internal parties (i.e., EAVA employees) were directly involved in defining **our core values** (see Figure 2). EAVA employees were involved during a general meeting / seminar in the summer of 2020, although due to the COVID-19 pandemic, involvement then continued by means of electronic communication. The final version of our core values was drawn up within the development programme for managers organised during the same period (2020-2021), one of the aims of which was to support structural change. EAVA's core values are made available on both the internal and public website, and are communicated regularly at general meetings and other events which bring together the members of the organisation. An example of the practical implementation of our values is the work of the Rectorate, the meetings of which may be participated in, on a basis of trust and mutual cooperation, by all EAVA employees. At the general meeting held in the autumn of 2021, it was recognised that the core values had become part of everyday activities. Furthermore, no conflicts of value have been reported amongst EAVA employees. Finally, those who embody our values are openly acknowledged (see section 3.2.2).

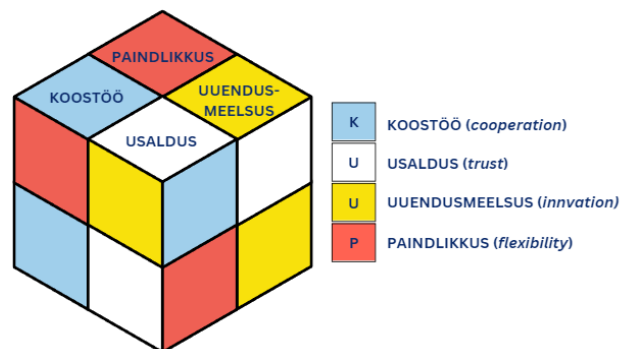


Figure 2. Core values ("KUUP" in Estonian is "cube" in English).

EAVA milestones

The most significant milestones of the Academy's history are listed below.

1993	Establishment as Tartu Aviation College under the Ministry of Transport and Communications in accordance with the Outline for the Development of Estonian Aviation for 1993–1996, which envisaged the creation of a modern system for the training and certification of aviation specialists.
1994	Commencement of professional training (Air Traffic Services, Aircraft Maintenance), with curricula approved by the Estonian Civil Aviation Administration (ECAA).
1997	Commencement of cooperation with the Estonian Air Force for training the military.
2000 – 2002	Launch of internationally approved aviation training organisations (MTO, FTO and ATSTO).
2008	Approval by the Estonian Government of the Statutes of the Estonian Aviation Academy pursuant to which Tartu Aviation College was renamed the Estonian Aviation Academy.
2009	Adoption of a learning outcomes based curricula.
2011	Opening of the new Academy building at Ülenurme, and winning of 'Accomplishment of the Year in Estonian Aviation' for the completion and implementation of the new study centre.
2013	Achievement of institutional accreditation for a 7-year period.
2018	Commencement of the first group of workplace-based vocational education for aircraft maintenance technicians.
2020	Achievement of institutional accreditation for a further 3-year period.
2021	Attainment of IATA Accredited Training Centre status (an international training partnership to support professional continuing education and study programmes).
2022	Opening of the first two international curricula (CAM and CATP) and successful completion of student admissions.
2023	Projected establishment of Remote Pilot Training Organisation and Unmanned Aerial Systems (UAS) Operations Organisation.

1.1.2 Overview of the Strategic Plan and its development process

The Strategic Plan, which is endorsed by EAVA's Advisory Board, coordinated with the MoER, and approved by the EAVA Council, is an internal agreement on future trends, and a central document for strategic planning. The drafting and implementation of the Strategic Plan is organised by the Vice Rector for Development and spans a period of five years. The plan and its metrics are reviewed each year by the Rectorate and the Advisory Board. In drafting the Strategic Plan, other national strategies are taken into account, especially those in the fields of education and transport. Various horizontal themes are also taken into consideration, such as digital solutions and the environment. The Strategic Plan is available in Estonian and English on EAVA's intranet, and a summarised version is also available on EAVA's public website.

The current Strategic Plan relates to the period between 2021–2025. It sets out EAVA's goals for this period and contains relevant metrics across organisational levels, and by thematic areas. The format of the Strategic Plan has been realised as strategy maps, with each map indicating the links between sectoral goals and strategic objectives, as well as detailing the activities carried out in order to achieve these goals. In addition, the Strategic Plan provides an overview of the process of

strategic planning and outcome assessment. In 2020, during the drafting of the Strategic Plan, external experts, EAVA employees and student representatives were all involved. Furthermore, ideas for the Strategic Plan were collected from the members of the Advisory Board, members of the Student Council, and members of the Estonian Aviation Cluster, all of whom participated in a special involvement seminar. The preparation of sectoral strategy maps, based on EAVA's overarching strategy map, involved joint brainstorming activities across all structural units, during which the appropriate metrics were also agreed upon. Ongoing feedback on the Strategic Plan may be given through EAVA's public website.

A crucial aspect of the activity and development of EAVA is sustainability (see section 3.2.5), as endorsed by the Vice Rector for Administration. Members of the EAVA community display values and attitudes which give priority to the optimal use of resources and the preservation of the environment. Furthermore, members of the EAVA community are competent in the use of future aviation energy sources and are therefore comprehensively and efficiently prepared to contribute to the implementation of green technologies across the entire aviation sector.

1.1.3 Brief description of the drafting of the self-evaluation report

Preparations for the institutional accreditation commenced in August 2021. The self-evaluation and the report were prepared between October 2022 and July 2023. Council. The directive on forming working groups was approved by the Rector on 11 October 2022. Students were also including in the working groups, the students were appointed by the Student Council. The process of drafting the self-evaluation report is described on Figure 3.

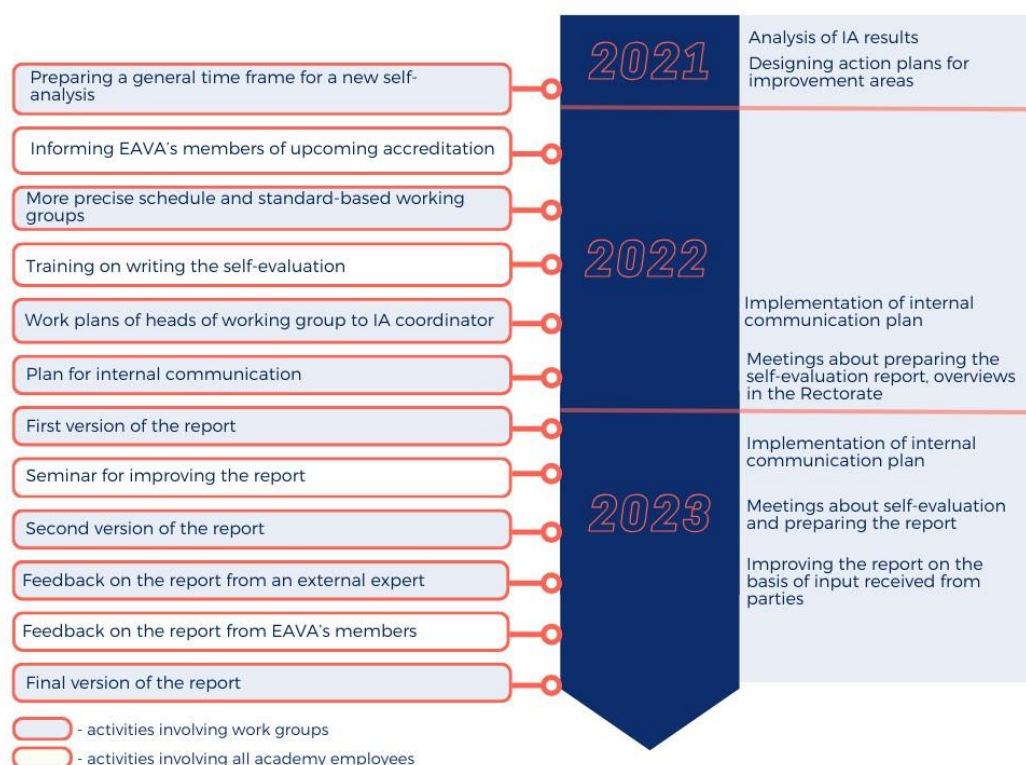


Figure 3. Process of drafting the self-evaluation report.

1.1.4 Consolidated data on students

Table 1. Consolidated data on students by study programmes for academic years 2018/2019 to 2021/2022. Source: Study Information System (SIS).

Curriculum group	Study programme (also curriculum)	Indicator	2018/19	2019/20	2020/21	2021/22
Estonian-taught study programmes						
Transport services	Operation of Aviation Enterprise (AM)	Number of students ¹	59	63	48	34
		Number of students enrolled	17	16	-	-
		Number of graduates ²	9	10	8	13
		Number of dropouts ³	1	5	6	1
	Aviation Management (AM)	Number of students	-	-	13	26

¹ The number of students is reported as at 10 November 2023.

² The number of graduates is indicated between 1 October and 30 September. Graduate number includes external graduates.

³ Number of discontinuing students between 11 November and 10 November.

Curriculum group	Study programme (also curriculum)	Indicator	2018/19	2019/20	2020/21	2021/22
		Number of students enrolled	-	-	12	12
		Number of graduates	-	-	0	0
		Number of dropouts	-	-	0	3
	Air Traffic Services (ATS)	Number of students	28	29	30	25
		Number of students enrolled	6	8	8	-
		Number of graduates	7	7	2	6
		Number of dropouts	2	2	2	2
	Air Traffic Services (ATS)	Number of students	-	-	-	5
		Number of students enrolled	-	-	-	4
		Number of graduates	-	-	-	0
		Number of dropouts	-	-	-	1
	Communication and Navigation Systems (CNS)	Number of students	19	18	13	6
		Number of students enrolled	0	0	0	0
		Number of graduates	3	5	6	0
		Number of dropouts	2	0	1	2
	Aircraft Piloting (PIL)	Number of students	45	46	48	47
		Number of students enrolled	10	10	10	10
		Number of graduates	8	6	12	9
		Number of dropouts	1	0	2	1
	Engineering, manufacturing and technology	Aeronautical Engineering (CNS/TECH)	Number of students	34	51	68
Number of students enrolled			30	27	28	32
Number of graduates			0	0	0	5
Number of dropouts			11	11	17	12
Aircraft Engineering and Maintenance (TECH)		Number of students	57	38	32	23
		Number of students enrolled	0	0	0	0
		Number of graduates	6	5	5	6
		Number of dropouts	10	1	5	5
English-taught study programmes						
Transport services	Commercial Aviation Management (CAM)	First study group opened in the academic year 2022/2023				
	Commercial Air Transport Pilot (CATP)	First study group opened in the academic year 2022/2023				
TOTAL		Number of students	242	245	252	251
		Number of students enrolled	63	61	58	58
		Number of graduates	33	33	33	39
		Number of dropouts	27	19	33	27

Data and student trends have been analysed below in their respective sections.

1.1.5 Consolidated data on academic employees and support staff

Table 2. Consolidated data on employees for the period 2019–2022. Sources: Estonian School Administration Information System (EKIS), State Financial, Personnel and Payroll System (SAP) and State Employee Self-service Portal (RTIP).

Figures for personnel	2019	2020	2021	2022
Total number of employees (excl. employees on parental leave), incl.	50	54	56	62
elected academic employees (incl. women)	15 (2)	16 (3)	16 (4)	21 (5)
non-academic employees (incl. women)	35 (22)	38 (24)	40 (27)	41 (26)
Non-academic employees who teach	17	15	13	10
Visiting teaching staff	44	42	36	29
Ratios of personnel				
full-time academic employees	12	13	13	20
part-time academic employees	3	3	3	1
full-time non-academic employees	25	30	32	29

Figures for personnel	2019	2020	2021	2022
part-time non-academic employees	10	8	8	12
Distribution of qualifications of academic employees				
PhD, incl. academic degree	3	3	3	6
MA or its equivalent	8	9	6	7
Non-academic employees having a doctorate or master's degree %	40	39	50	54
Professional development of employees				
Total volume of participation in internal and external training courses (in academic hours), incl.	3,541	6,621	4,713	7,337
volume of professional development of academic employees	837	1,252	1,110	2,985
volume of training for a participant who is an academic employee	69	83	74	149
volume of professional development of non-academic employees involved in teaching	1,616	2,739	1,316	1,363
volume of training for participants who are non-academic employees involved in teaching	80	210	94	136

2 MAJOR STANDARD-RELATED CHANGES ARISING FROM THE RECOMMENDATIONS OF PREVIOUS INSTITUTIONAL ACCREDITATION AND QUALITY ASSESSMENTS

Table 3. Recommendations from the 2020 assessment report and the associated implemented activities

Recommendation presented in the assessment report	Activities implemented
Strategic management	
It is recommended that management take a wider view of the term 'internationalization', build consensus on this across the Academy and invest in a proactive approach.	Internationalisation and research and development are clearly prioritised objectives in the Strategic Plan and support the achievement of other primary objectives. The objectives of research and development (R&D) are set out as a separate strategy map, whilst the objectives of internationalisation are reflected in all strategy maps (see section 1.1.1).
It is recommended that the vision of EAVA for 2025 needs to be stronger in respect of research activity, with clear strategic objectives in SP 2021-2025 for actions that will progressively grow research capacity, activity and impact over the long term. Management needs to develop a deeper shared understanding across the Academy of the high benchmark for research impact in an aviation institution of international repute and ensure that allied strategic objectives and drivers have full staff 'buy-in'.	Across 2020–2022, several structural changes were made at EAVA, in response to developments in the aviation sector, and a clearly designated focal area (future technologies in unmanned aviation and the enabling environment – the digitalisation of aviation) was included in the Strategic Plan. Study programmes were redistributed between two main areas: Aeronautical Engineering and Aviation Services. To reduce fragmentation, three smaller departments were merged into one larger unit, the Department of Aviation Services (see section 3.1).
Quality culture	
The Panel recommends implementation of the Compliance, Quality & Safety Management System across all operations of the Academy and not just at certain specialties of it.	In 2020, EAVA began to assess risks in accordance with the guidelines outlined in the EAVA Management Manual, and identified 29 risks for further assessment. The Rectorate assessed the impact and seriousness of these risks and proceeded to quantify them (the average score was 10.3 out of 25 in 2020 and 9.6 out of 25 in 2021) and then to develop mitigation measures (see section 3.3.1). The use of risk scores as indicators has been included in the Strategic Plan as a means by which EAVA will administer its management and safety system.
Academic ethics	
Consider setting up a systematic approach (process) to register the handling of dishonorable behavior cases, both minor and major. Statistics are not recorded in respect of minor cases of dishonorable behavior by students if the cases are resolved at local level. This deprives management of a useful tool in identifying long-term trends should systematic drift be occurring.	Complaints, suggestions, feedback and other notifications can be submitted to EAVA in two working languages of the Academy (Estonian, English), in either written or oral form. The complaint proceedings are transparent (registered in EKIS) and objective and guarantee the equal treatment of the parties according to the Estonian Aviation Academy Guidelines and Strategy for Equal Treatment.
Internationalisation	
The term 'internationally recognised' no longer appears in the revised vision statement of the Academy, perhaps inadvertently leading to loss of focus on the importance of internationalisation to the future flourishing of the Academy. It is recommended that the Academy's international ambitions be unambiguously stated in the vision statement for 2025.	Since the Academy's last evaluation, a new strategic plan has been developed, and the term 'internationally acclaimed' is now included in the vision statement. According to the Strategic Plan, internationalisation is now one of the major objectives of the Academy.
Many of the targets set in the Strategy for International Cooperation are low, demonstrating a lack of ambition. It is recommended that much greater stretch targets be set, prioritised and supported to integrate international aspects into all the main processes of the Academy.	The Academy's vision is to be an internationally acclaimed aviation training organisation and development partner. To this end, the Strategic Plan focuses on the development of English-taught study programmes, on increasing the mobility of students and teaching staff, and on establishing international cooperation and development projects. Appropriate indicators for measuring internationalisation have been developed for each of the Academy's identified priorities (see section 3.1, Table 4).
There is a need to build consensus and buy-in across the Academy on the value of building international reputation and the magnitude of the task required, which will require sustained activity across a range of integrated collaborations within the Academy. Consideration should be given to dedicated leadership and support on this significant multi-faceted task, which may require support to staff through a senior management post, an international member of the Advisory Board and perhaps a dedicated International Office with adequate start-up funds and expertise.	International cooperation now occurs across a variety of levels: at the management level (where the focus is on cross-institutional networking and cooperation), at the level of development projects (see section 3.11.4), and at the level of studies and academic development (to which employees contribute in accordance with the activities specified in their job descriptions). The Advisory Board now includes an external expert, and the focus of the Rector and Vice Rector for Development's governance is on internationalisation.
EAVA has not yet devoted targeted resources and energy in a cohesive multi-faceted approach to growing international reputation through a	In Chapter 3.5 (R&D), EAVA's focal area is outlined and its international ambitions for R&D are set out. To underpin its focal area, EAVA participates in a variety of international project consortiums and networks.

combination of mobility and research partnerships in a strategic way. It is recommended that the growth of RDC in the Academy be conducted by selecting niche areas of research expertise and developing these areas with international partners in a twin track approach to building research and internationalisation.	
Teaching staff	
The number of teaching staff with higher academic degrees (Master, PhD) should be higher. There are limited R&D opportunities for staff development at EAVA. It is recommended growth in RDC activity at the Academy be closely allied to staff career development in a twin track strategy.	The number of teaching staff with a PhD has risen, from three in 2019 to six in 2022. Since 2021, training opportunities on research and development have been offered to academic employees at least quarterly, in which issues relating to research methods, academic writing, and scientific research have been presented. Permanent academic staff are supported in the development of their chosen career path (see section 3.6.3).
Learning and teaching	
The international competitiveness of students could be enhanced by further internationalizing the student experience through a holistic approach to an international atmosphere within the Academy. It is recommended that the Academy explore the barriers to international mobility of students and proactively address these.	EAVA's speciality departments have been seeking ways to increase the number of students carrying out their practical training abroad. Students of Aeronautical Engineering have traditionally been the least likely to take advantage of mobility opportunities. However, as a result of changes to the study programme (see section 3.7.1), these students' opportunities for learning mobility have increased. Currently, the proportion of the Academy's students who participate in short-term study abroad (5.7% in 2022) is higher than the Estonian average (3.6% in 2022) (EHIS).
Research and development	
Low commitment of staff and students, weak R&D culture and poor performance in terms of publications, number of contracting partners, international projects. The number of teaching staff with higher academic degrees (Master, PhD) could be higher. There are limited R&D opportunities for staff development at EAVA. It is recommended growth in RDC activity at the Academy be closely allied to staff career development in a twin track strategy.	As a result of feedback from the accreditation committee, R&D is now addressed in a more systematic and targeted manner. The specific changes made towards developing and reshaping the Academy's overall R&D culture are described in detail in section 3.11.
The academic staff have limited experience in grant writing for international research calls. Provide mentorship to staff, with seed funding if required, in the skill of preparing and presenting strong research proposals to EU funding calls.	R&D activities carried out by the academic staff of the Academy are guided by and connected to the designated focal area, which enhances the corresponding development of study programmes and subject courses. The level of R&D methodology is actively being increased across the Academy through participation in R&D seminars, training sessions and writing camps (see section 3.11.2).
Limitations induced by the Estonian legislation on professional HEI: no institutional public funding, no capability to deliver doctoral degrees. This is clearly a limiting factor for cooperation with foreign HEI in Europe. It is recommended that the Academy do a comprehensive international benchmarking to better understand the potential of niche expertise applications (eg UAV, integrated ATC, ATM procedures, flow simulation...) and build international research partners built on niche expert strength.	In 2021, a model for funding R&D at professional higher education institutions (PHEIs) was proposed by a development group of the RCUAS. According to this model, targeted support to the value of 5% of an activity may be allocated towards R&D in PHEIs operating under the Ministry of Education and Research (MoER). Consequently, instead of seeking project-based funding, EAVA will be able to initiate and fund R&D more systematically, and to recruit researchers and professors. In addition, research topics arising from EAVA's designated focal area have been established in cooperation with other higher education institutions.
There is a risk that the Academy could be left aside of the larger HEI community in Europe as competitors gain ground and reputation. It is recommended that the Academy map strategic academic partners for increasing the Academy's participation in European research projects. The Academy should twin with synergistic partners and apply to calls of the forthcoming Horizon Europe "widening" programme.	To mitigate this risk, EAVA has intensified its international communication, has joined several networks, and has submitted a variety of joint project applications together with its partners (see section 3.11.4).
Lack of a clearly formulated, long-term strategy for R&D and its role for EAVA, particularly on its articulation with the educational programmes and the growth of academic staff competences. It is recommended that the Academy identify areas which contribute to the improvement of both teaching / learning and the long-term growth of competences and expertise of academic staff and set priorities accordingly.	EAVA has improved its strategic plan in line with the recommendations. A designated focal area has been identified, strategies for teaching, learning and R&D have been outlined, and longer-term objectives have been set. One of the strategic goals is to make research and development an integral part of teaching and studies (see section 3.11.2). Activities carried out by the academic staff of the Academy are guided by and connected to the designated focal area, which enhances the corresponding development of study programmes and subject courses. The level of R&D methodology is actively being increased across the Academy through participation in R&D seminars, training sessions, and writing camps. Students are encouraged to launch student projects, and their participation in research and development projects is reflected in their graduation theses.
Low funding of R&D projects due to the limited needs of R&D expertise from the Estonian aviation ecosystem. This threat limits the Academy's	While designing the image of EAVA as a development partner, education modules and development services were developed. These illustrate

<p>development due to the small size of the Estonian aviation ecosystem. It is recommended that there be improved external communication about the Academy's areas of expertise towards potential customers, not least by highlighting research on the Academy's website.</p>	<p>EAVA's potential for R&D to both our internal and external partners, many of whom are already accustomed to collaborating with EAVA as an educational institution. The development of a separate marketing and communication roadmap has also commenced, based on R&D activity and the Academy's designated focal area.</p>
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3 SELF-EVALUATION ACROSS STANDARDS

3.1 STRATEGIC MANAGEMENT

EAVA's activities are governed by its Statutes and Strategic Plan, the MoER guidelines, and Estonian legislation. The Academy's main development trends and performance indicators are described in the Strategic Plan and their implementation has been endorsed by the Rector, the Vice Rectors, and the various heads of departments. The overall responsibility for the strategic development of EAVA lies with the **Rector**. The Academy's main guiding and decision-making bodies are the Council, the Advisory Board, the Rectorate⁴, and the Research and Development Council (see Figure 1).

According to the EAVA Statutes, its highest decision-making body is the **Council**, the sessions of which generally take place at least once a month. Specific administrative decisions stipulated by the EAVA Statutes (§ 14) are subject to approval by the EAVA Council.

The **Advisory Board** plays a significant role in guiding EAVA's development. The **Advisory Board** comprises high-level leaders from the fields of aviation and education in Estonia, as well as some international members, including Patria Pilot Training OY (until 2023), Avtrain and EASA. Any decisions of EAVA that are likely to have a significant impact on the aviation industry are made in collaboration with the Advisory Board. For example, the number of student enrolments, or the division of student enrolments between each of the specialty areas. The sessions of the Advisory Board take place every three months.

Daily matters and urgent issues are discussed at the meetings of the **Rectorate**, which are generally held once a week. The Rectorate operates as an advisory body for the Rector. The meetings of the Rectorate are open to all EAVA employees, and minutes of the meetings are shared with employees. During Rectorate meetings, information is exchanged and decisions relating to everyday work issues are made.

The **Council for Research and Development** coordinates the Academy's R&D activities and defines its R&D trends.

General meetings are organised for the Academy's employees every three months, at which relevant topics are discussed. During general meetings, proposals can be made, and questions posed, by every member of the Academy. Informative events of this nature serve to improve overall awareness within the Academy. The level of active engagement in general meetings could be higher; and to this end, EAVA encourages employees to participate more actively in discussions and to make suggestions.

Once a year, **annual meetings of training organisations** are held, at which the functioning of management systems is assessed within a wider circle, the results of the previous period are reviewed, improvements are agreed upon, and new objectives are set.

Academy students are represented by the **Student Council**, with whom the members of the Rectorate meet once a month, to share information and discuss issues. Those students with voting rights are also represented on the EAVA Council and participate in several other decision-making processes (see section 3.8.4).

The **Estonian Aviation Cluster** is one of EAVA's significant strategic partners, and EAVA has participated in its work since its foundation in 2019, with a view to ensuring efficient information exchange between Estonian aviation industry stakeholders.

The membership of EAVA in the **Estonian Rector's Conference of Universities of Applied Sciences (RCUAS)** and the **European Association of Institutions in Higher Education (EURASHE)** is important for the development of the higher education sector, and enables EAVA to participate in discussions, share best practices, and contribute to the development of the higher education landscape. It is generally the Rector who participates in the work of RCUAS, however several members of EAVA management are actively involved in specialised working groups.

In order to **achieve the objectives set out in the Strategic Plan**, projects aimed at making changes, and plans for the most important activities, have been initiated by the Academy's departments. These are discussed during assessment and development discussions, and managed using the PlanPro software. The progress of those projects is regularly monitored. Twice a year, those persons responsible for each strategy map provide an overview of the extent to which the Strategic Plan has been met and provide metrics to the Rectorate (see Table 4). As an additional measure for monitoring the fulfilment of objectives, a report covering the previous financial year is submitted annually to the MoER, which includes information on the Academy's main activities, along with the Rector's overall assessment (including an assessment of management performance).

⁴ The Rectorate is composed of the Rector, Vice Rectors, heads of departments, the Head of Human Resources, the Lawyer-Quality Manager, the Quality Manager of Certified Training Organisations and Flight Simulation Training Devices, and the Head of Finance.

In total, there are twenty-two indicators defined in the Strategic Plan. Seven of these measure progress on fulfilment of the Academy's vision and are measured in terms of subjective satisfaction. Fifteen indicators are of strategic progress. An assessment of the fulfilment of objectives based on data from 2022 is provided in Table 4.

Table 4. Assessment on fulfilment of the Strategic Plan objectives

Assessment	Indicator ⁵	2020	2022	2025
Very good	Satisfaction of graduates with study programme/education	3.8/4,2 ⁶	4.1/4,4	4.1/4.5
	Satisfaction of Estonian partners in cooperation with EAVA	3.95 ⁷	4.6 ⁷	4.5
	Number of national and international cooperation projects	6	9	10
	Number of international partners	1	5	6
	Employability of graduates / rate of graduates continuing their education	100%	97%	96%
Good	Satisfaction of students with the quality of education	4.4	4.2	4.5
	Employee satisfaction index / commitment index	4/38 ⁷	4.4/45 ⁷	4.7/85
	Required aviation certificates still valid	7 cert. valid	7 cert. valid	valid
	Number of publications (category 3.1 or higher)	3	5	6
	Ratio of employees participating in mobility	12.7%	24%	30%
	Volume of own revenues (incl. project funding)	518 728	587 047	750 000
Satisfactory	Satisfaction of employers with the compliance of graduates' level with the needs of employers	3.9 ⁷	-	4.5
	Ratio of students participating in mobility	6.4%	5.7%	16%
	Number of international students	0	23	56
	Number of teaching staff of international background	3	5	10
Not satisfied	Competition for study places in English-taught study programme	-	2.4	6
	Competition for study places in the Aeronautical Engineering study programme	2.4	2.7	3.5

The table does not include the following new indicators, for which the target values are still under development:

- management's appraisal of the management and safety management system (see section 3.3.1), which will be developed on the basis of risk assessment and mitigation;
- satisfaction of international partners collaborating with EAVA;
- ratio of employees contributing to international cooperation;
- satisfaction of teaching staff with the organisation of work, the working environment, and with management;
- number of education and development service⁸ packages.

The indicator 'number of international partners' has been achieved, and the target may even be increased due to the fact that negotiations with a number of partners are ongoing.

Throughout the evaluation period, **changes have been made to EAVA's structure** (see Figure 4). The various aims of these structural changes include: facilitating cooperation between management and structural units, ensuring that the management system is appropriate for the organisation, harmonising management practices, supporting the development of a designated focal area (future technologies in unmanned aviation and the enabling environment – the digitalisation of aviation), improving communication and the decision-making processes, and optimising expenditure. The employees of the Academy were involved in both the planning and the implementation of the structural changes. Following the implementation of a structural change, the Academy is now in the process of assessing its effectiveness in meeting the intended goals.

⁵ Satisfaction is generally measured on a 5-point scale, except for the employee satisfaction index, which is measured on a 6-point scale.

⁶ As at 2019.

⁷ As at 2021.

⁸ Education services include different continuing education programmes. Development services that can be customised include applied research, development work, and consultation services by experts in the field.

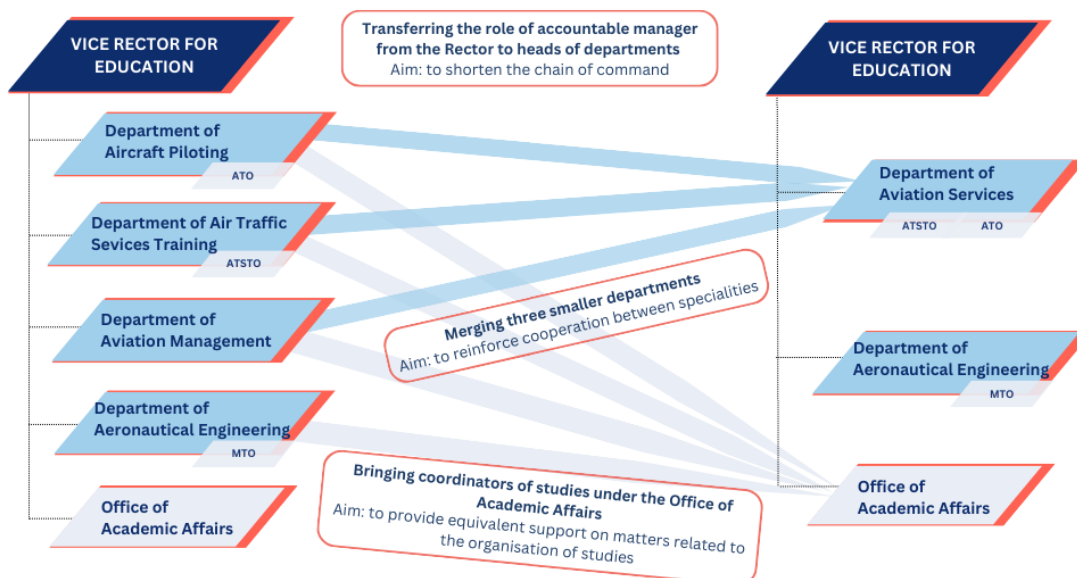


Figure 4. Structural changes at the Academy in 2022.

Between 2020 and 2022, EAVA boosted its international and R&D cooperation in multiple ways. For example, during this period, EAVA found new partners and initiated joint projects, opened two new international curricula, designed curricula for the acquisition of micro degrees, and obtained the status of an accredited IATA training partner. In addition, EAVA dedicated more resources than anticipated to the field of sustainability e.g., energy efficiency and security of supply), and increased its expertise in the designated focal area.

Strengths:

- Ambitious vision and objectives, clearly worded core values, and a designated focal area.
- During the evaluation period, systemic strategic changes were made to fulfil the objectives of the Strategic Plan.
- Strong connections and efficient cooperation with students, as well as across the aviation sector (including an Advisory Board comprised of high-level leaders in the field of aviation).

Areas for improvement and future development activities:

- Monitor the impact of structural changes.
- Encourage employees to participate more actively in discussions and to make suggestions relating to the Academy's activities and development.

3.2 RESOURCES

3.2.1 System of professional development for employees

The vision of EAVA's human resources management is of an effectively collaborative organisation. Based on the strategy map of organisational culture and human resources management in the 2021-2025 Strategic Plan, human resource activities focus on the following areas: developing employees' knowledge, skills and competencies; training support; and development activities and innovation. In addition, human resources management seeks to ensure that value-based participatory governance is functioning, and that the organisation values happiness at work. The indicator used to monitor the fulfilment of the objectives of the relevant strategy map is the "Employee satisfaction and commitment index" (see Table 4).

High-level specialists and practitioners from Estonia and abroad are involved in teaching and development activities (see Table 2). Due to the relatively small size of the Academy, and the specificity of its specialities, there are only a small number of academic positions. It is difficult to provide a full workload for specialised academic staff, and so, to satisfy the real needs of the labour market, practitioners from the aviation sector are also engaged. Nevertheless, over the past few years, the proportion of academic staff members has increased, and non-academic employees involved in teaching are encouraged to pursue an academic career path (see section 3.6).

For hiring academic employees, the Head of Human Resources receives information from the heads of departments or areas, which assists with identifying the required human resources. In 2022, the previous recruitment procedures were replaced with a new consolidated document regulating employment relations: Rules for Employment of Academic Employees (see section 3.6.2). This document governs the creation of academic positions and specifies the requirements relating to the recruitment of academic employees, as well as their career advancement and future career path.

Non-academic employees are recruited on the basis of the Procedure for Recruitment (only available in EST). Vacant positions are filled by a public and/or an internal competition. Public competitions are announced on job portals, the EAVA website, social media, and through various lists e.g., alumni, students, and school career listings). The internal movement of employees from one position to another is also supported. Visiting teaching staff members are recruited by invitation, and work under an authorisation agreement.

In certain cases, in addition to the internal regulations of the Academy, the requirements established in training organisation manuals must also be met when filling a position. Based on these requirements, persons responsible for the training organisation i.e., authorised employees) coordinate with ETA before signing the relevant employment contracts.

When new employees commence work, their integration into the Academy is supported by their immediate supervisor, and by the Head of Human Resources. New employees are briefed on issues relating to work organisation at EAVA, including teaching activities, digital solutions, principles of communication, and motivation systems. (See Procedure for Recruitment, Induction into Occupation, and Termination of Employment Relationship, only available in EST). As an additional measure of support for new employees, EAVA has trained some of its employees to be **mentors**, who support mentees during their adjustment to the Academy's culture.

The process of professional development of employees was strongly affected by the restrictions resulting from the COVID-19 pandemic in 2020-2021, including a period of distance working. For this reason, a number of development and training programmes had to be scaled back, and mobility opportunities and traineeships were also disrupted. However, in 2022, both practical training in enterprises and international mobility increased considerably (see Table 8, Table 9).

Information on employee training activities is collected via the performance appraisal interviews carried out each year (see section 3.1). Budgets for training activities are based on an analysis of training needs and an assessment of current competencies. In general, a fixed amount is allocated to each employee per financial year (approximately 1,500–2,000 euros per person).

Regular training sessions and seminars are organised for the staff as required (see section 3.6):

- to support **research and development** e.g., research methods, academic writing, scientific research);
- to develop **teaching and supervising skills** e.g., assessment on the basis of outcomes, new teaching methods, supporting self-directed learning);
- to develop **digital competencies** e.g., the digital learning environment Moodle, artificial intelligence, office software).

In order to **support employees' mental health**, various training sessions and self-development seminars have been run e.g., on preventing job burnout, maintaining good mental health, and the importance of sleep). Free psychological counselling is also offered.

3.2.2 Motivation system

To continue to adapt to the changing labour market, the employee motivation system is regularly updated. In 2021, new remuneration rules were approved, and in 2022, the principles governing the remuneration of teaching staff working under authorisation agreements were harmonised with those of other Academy employees, so that they are all now based on the same grounds. Based on labour market trends and budgetary resources, the average increase of EAVA's salary budget is 5 to 10% per annum. Employees receive additional remuneration for carrying out teaching and continuing education courses, and for participation in projects and development activities; the additional remuneration is proportionate to the extent to which an employee exceeds their specified workload for such activities.

The Academy considers it crucial **to recognise and reward its employees**. Based on the remuneration rules, management may recognise employees for remarkable work-related achievements e.g., for the publication of an academic paper). Since 2021, employees who are seen to embody the Academy's core values, or who are rated as outstanding colleagues, are recognised by way of nominations by other EAVA employees. In addition, employees are recognised by the Academy when they obtain a master's degree or PhD. As the Academy values employees' health, employees are offered a choice between health insurance by the employer, or compensation in connection with specified health improvement outcomes, and the Academy also covers the cost of psychological counselling. In addition, physically active employees are acknowledged each year.

In order to recognise long service to the Academy, non-academic employees who have worked at the Academy for at least five years are granted additional holiday leave, and all employees who have worked at the Academy for at least ten years receive a bonus.

In recognition of the fact that the aviation sector enterprises of Estonia and related specialists are predominately based in Tallinn (which is located approximately 200 km away from EAVA), since 2022, the travel costs of employees have been compensated to an agreed amount. This has the added benefit of ensuring that EAVA remains attractive to the labour market and does not lose access to specialists due to distance.

3.2.3 Employee satisfaction

Every two years, staff satisfaction surveys are carried out at the Academy, with the assistance of an external partner to ensure anonymity and reliability. The last survey was conducted in 2021. The two-year period between surveys strikes a balance between the effort required by employees when responding to questions in a thorough and long study, and the employees' desire to see their feedback impacting on the type of activities planned and implemented in the Academy. A relatively long period between surveys also provides EAVA with time to improve results on the basis of employee feedback, and to take follow-up action.

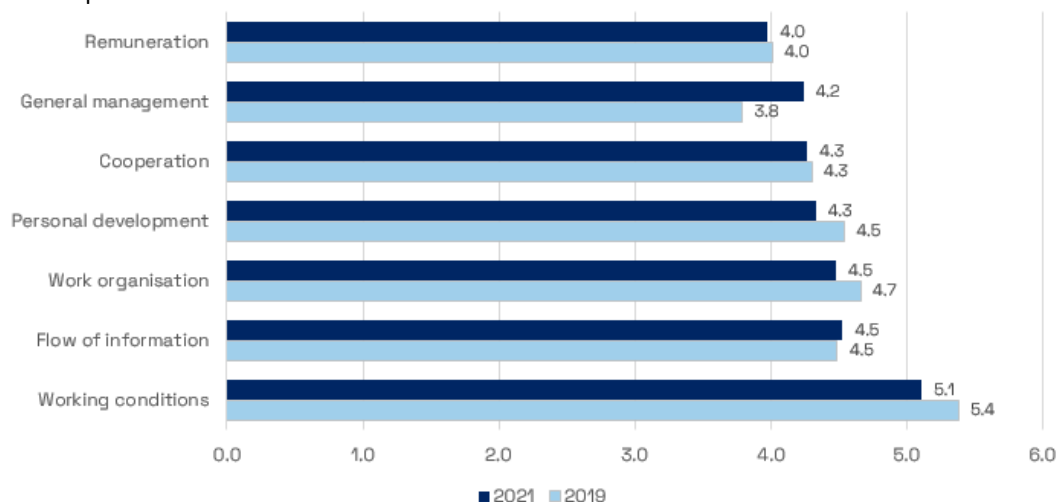


Figure 5. Results of the employee satisfaction survey (on a 6-point scale).

In 2021, the survey was sent to EAVA employees and yielded a response rate of 77% (88% in 2019). The results of the satisfaction survey were influenced by the COVID-19 restrictions, as employees were required to combine work at the Academy with working from home, and the opportunities for participating in groups were therefore limited. In addition, the results were influenced by new management, a changed leadership style, and accompanying structural changes.

The results of the employee satisfaction survey were presented to employees at a seminar. Based on the results, the following steps were agreed upon: to review workloads, especially those of managers, along with their available means of support; to review the system for recognition, remuneration and motivation; to increase employee remuneration within the limits of budgetary resources; to improve the flow of information within departments e.g., by arranging regular meetings between departments); to improve the intranet in order to ensure better availability of documents; and to review work organisation and responsibilities, with a view to harmonising workloads.

Due to the specific nature of their work, a separate feedback survey for teaching staff (including, for the first time, visiting teaching staff) was carried out in September 2022. This survey assessed the teaching staff's satisfaction with their work organisation and support systems. The results indicated that the basis for calculating permanent academic staff workload needs to be reviewed, but that teaching staff were otherwise highly satisfied with the working environment and support systems.

3.2.4 Management of financial resources

The EAVA budget (see Figure 6, Figure 7, Figure 8) is based on the objectives of the Strategic Plan and budgetary availability. To achieve the objectives of the Strategic Plan, the following measures have been put in place: ensuring financial sustainability by increasing revenue (including finding new sources for funding), finely detailed planning, and the prudent use of resources.

In managing its financial resources, EAVA observes the following regulations:

1. Guide for Drawing up, Approval and Amendment of the Consolidated Budget;
2. Procedure for Using the Funds Allocated in the State Budget and Income from Economic Activities;
3. Procedure for Acquiring Assets and Keeping Records of Acquired Assets;
4. Procedure for Procurement.

Finely detailed financial planning has helped the Academy to act in a sustainable manner. Financial resources are planned at the departmental level, and are based on EAVA's needs and objectives as stated in the Strategic Plan. The budget is sufficient for current functioning. In recent years, priority has been given to valuing the work of employees, ensuring the competitiveness of EAVA as an employer, and to creating new jobs. State support is not sufficient for large-scale investments, so additional funds must be found for these, either from support measures or from EAVA's own revenue streams.

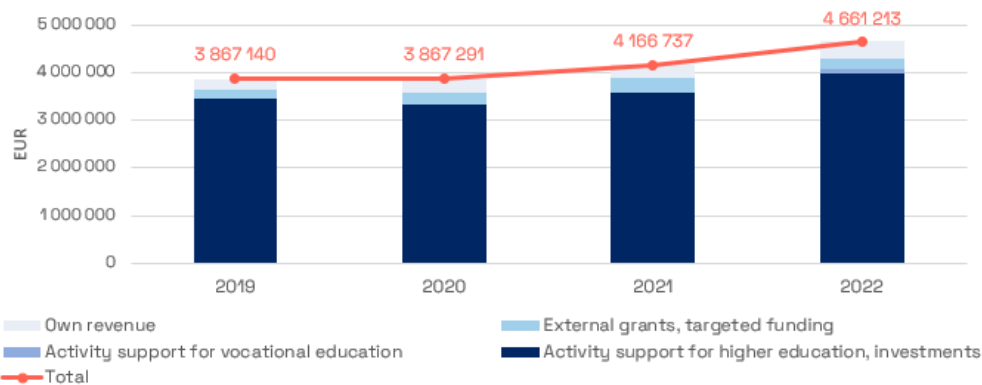


Figure 6. Sources of revenue for 2019–2022⁹. Source: SAP BusinessObjects.

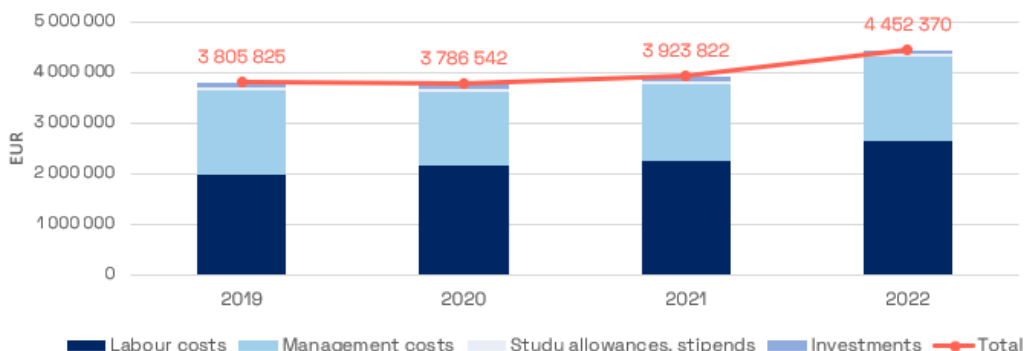


Figure 7. Distribution of expenses for 2019–2022⁹. Source: SAP BusinessObjects.

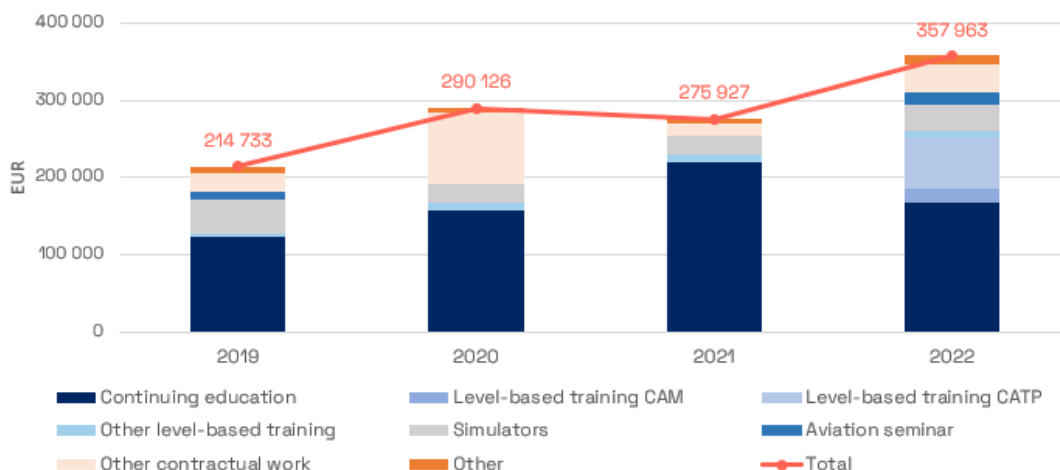


Figure 8. EAVA's own revenue streams for 2019–2022. Source: SAP BusinessObjects.

As can be seen, EAVA's own sources of revenue have become more diverse e.g., international study programmes and development services) and its total budget has also increased. Based on recent decisions of the Estonian Government and the MoER, it is reasonable to assume further increases in funding for both educational activities and R&D over the coming years, especially for the period 2023-2026.

3.2.5 Learning and working environment

Learning and teaching at EAVA predominately take place in the main EAVA study centre (in use since 2011), the study hangar (rented since 2012), and in the unmanned aerial vehicle laboratory (RPAS lab) (rented since 2017) (see Figure 9). To satisfy increased spatial needs, study sessions also take place in the Academy's ceremonial hall and in office rooms rebuilt into lecture halls. Staff (including teaching staff) and student **satisfaction with the learning and working environment** has been very high during the evaluation period.

⁹ Amounts for 2019 include VAT, amounts from 2020 onwards exclude VAT (due to a change in funding methodology).

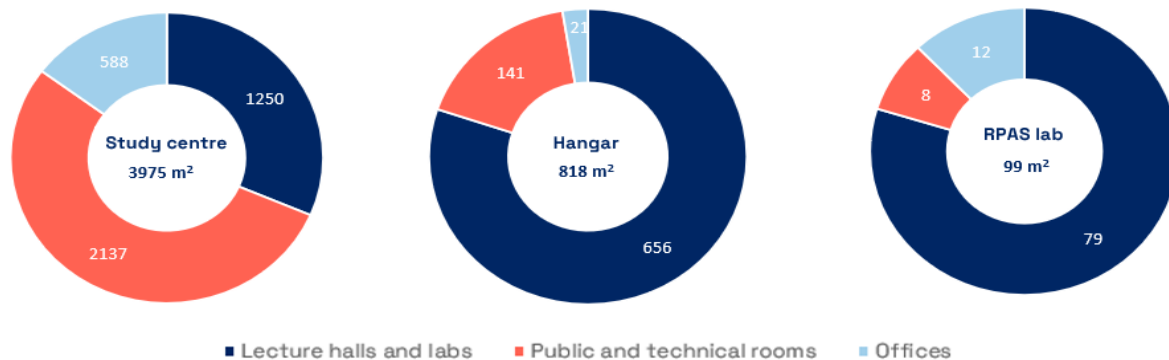


Figure 9. Distribution of teaching and learning spaces (m²)

During the EU Structural Funds programming period of 2014–2020, EAVA allocated funds from the measure ‘Institutional development programme for R&D institutions and higher education institutions (ASTRA)’ to develop an air traffic control simulator. This initiative **supported the activities of the unmanned aviation sector** by creating an unmanned aerial vehicle capability. The air traffic control (ATC) simulator and UAV simulator have since been linked. Funds from this measure were also used to acquire a Global Navigation Satellite System (GNSS) signal simulator for the Communication and Navigation Lab, and monitoring platforms for the RPAS lab, to assist with teaching and development. In cooperation with the Estonian Defence Force, parts of some military unmanned aerial vehicle systems have been acquired by the RPAS lab.

EAVA’s IT department is responsible for handling **the Academy’s information and communication technology (ICT)**. The IT department is tasked with ensuring the necessary level of IT capacity and operability for fulfilling the Academy's objectives and tasks, as well as ensuring the accessibility of IT support services to EAVA’s employees, students and visitors. The IT Department is responsible for providing technical support to users; maintaining the IT systems, network and hardware (see Table 5); planning and carrying out development; and consulting with other departments on their ICT issues and needs. The various simulators e.g., aeroplane simulator, helicopter simulator, UAV simulator and ATC simulator) are handled as autonomous systems, and the IT Department is responsible for their operational reliability, development and improvement.

Table 5. Hardware and software used in teaching. Source: IT Department.

Hardware	Number of positions	Application software	Number of licences
Computer classroom	21	Microsoft Office 365 A1 Plus	343
Laptops (for lending)	10	Microsoft® Project Professional	15
Tablets with study materials (for lending)	115	Microsoft® Visio Professional	15
		MatLab (Campus Wide Suite)	50
		Simio Simulation Software	28
		Zoom	45

During 2023, the IT Department has been focusing on **cyber security**, including testing, staff training, and the drafting of cyber security policies. In addition, the department regularly updates the Academy’s IT services and processes in order to increase the general level of cyber security. Over the coming years, the IT Department aims to renew the infrastructure of servers and networking equipment. Following on from this, the IT Department will introduce more modern protocols and functions, to enhance its capacity to provide IT services and to improve cyber security across the organisation. **Data protection** at the Academy is regulated by the Rules for Processing of Personal Data and the Data Protection Policy.

EAVA is guided by its Environmental Policy as it works towards decreasing adverse ecological effects and promoting an environmentally sustainable mindset. Various processes at the main study centre have been automated, including waste treatment, power and water consumption, and the heating system. Whereas in 2022, EAVA produced 19% of its own electricity, the target for 2024 is 50%. In 2023, EAVA plans to transition to geothermal heating, to supplement the existing solar plant with the energy storage capacity, and to start to regulate lighting automatically.

3.2.6 Internal and external communication

The Department of Marketing and Communication is responsible for both internal and external communication. The department’s strategic goals, focal areas for marketing and communication, and its implementation measures are derived from the Strategic Plan. During the evaluation period, the Academy has focused on internationalisation, building up EAVA’s reputation as a centre of competence within the aviation sector, and promoting cooperation with other interest groups and stakeholders. Between 2019 and 2022, the Academy’s visual identity was gradually modernised, and in 2022, this identity was collated into the Brand Style Guide², which is now the basis for uniform internal and external communication.

External communication is mainly targeted towards potential candidates for degree programmes taught in Estonian and English; users of education and development services (including continuing education programmes); student representatives; and attendees of major events in which the Academy participates. When informing external target groups, the main communication channels used are the EAVA website, social media channels (Facebook, LinkedIn, Instagram, YouTube), press releases, and a regular newsletter for prospective students. Alumni and cooperation partners are updated monthly via the Estonian Aviation Cluster's newsletter. A Facebook alumni group was created in 2021, which currently has around 500 members (equating to around 50% of EAVA and Tartu Aviation College alumni). Moreover, EAVA maintains separate mailing lists to inform cooperation partners and aviation companies. The organisation of international aviation events also plays an important role in EAVA's international marketing (see chapters 3.5 and 3.12).

The Academy's website is available in both Estonian and English. The Department of Marketing and Communication and the Office of Academic Affairs are jointly responsible for ensuring the accuracy and relevance of the information on the website. The website underwent a comprehensive update in 2019, and in subsequent years, efforts have been made to modernise its visual identity and improve its user-friendliness. The website automatically adapts to different devices.

Social media is one of the main information sources for the young, and for this reason, the Academy has systematically created content for different channels since 2020. The content varies depending on the social media channel profile and its followers. The primary focus has been on LinkedIn, a professional social and marketing channel for the international programmes, which has resulted in a five-fold increase in the number of followers.

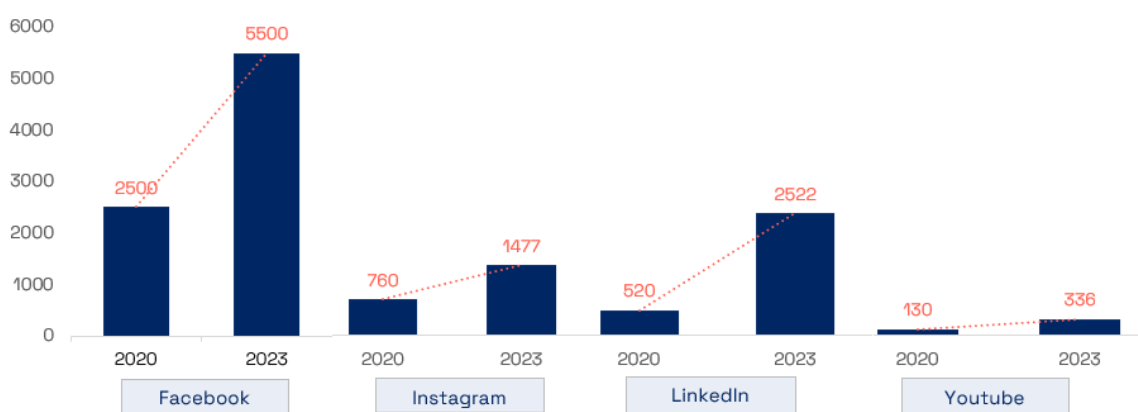


Figure 10. Increases in the number of followers at the beginning of 2023 as compared to 2020. Source: Department of Marketing and Communication.

According to the **universities' reputation survey conducted by Kantar Emor**, the number of respondents who spontaneously mentioned EAVA in the Estonian context has increased, from 6% (in 2019) to 11% (in 2022). Among Estonian higher education institutions, EAVA has maintained a high third to fifth place ranking throughout 2021-2022. The most highly rated aspects of the Academy are its practical education, its tight competition for admission, the perceived value of the graduation diploma in the labour market, the success of alumni, its reliability, the attractive educational building, the high quality of education, and the friendly approach to students (all scored 8 points out of 10 in 2022).

In 2021, the Academy conducted a **partner's satisfaction survey**, which also showed improvements in all aspects, and which yielded an average of 4.5 points out of 5 for the following aspects: satisfaction with cooperation, flow of information, taking proposals into account, cooperative culture, reputation, and continuing education. These results demonstrate the efficiency of EAVA's marketing and communication activities in recent years.

Although the competition for admission has remained relatively high during 2019–2022 (see section 3.8), candidates' awareness of EAVA's different specialty areas varies. Least well known is the speciality of aeronautical engineering. For this reason, the focus of marketing has moved to the engineering programmes, and as a result, the competition for admission has become higher (see Table 15). In addition to its admission campaigns, EAVA popularises engineering education throughout the year (see section 3.12.1).

At EAVA, the role of **internal communication** is to support the Academy's main activities, to implement change, and to increase engagement and a sense of shared identity. Due to its small size, EAVA uses relatively informal channels for internal communication. Between employees, information is exchanged through Slack, mailing lists, the intranet, opportunities provided by Google e.g., calendar, Drive), meetings, and direct communication. In addition, internal information is available in the document management system EKIS (the Information System of Estonian Schools), the Government Employee Self-Service Portal (RTIP), and the project management platform PlanPro.

The principles of internal communication and an introduction to the various channels are available to employees on the intranet, where a table outlines the functions of each different environment. Small surveys are conducted when needed, and the results are discussed at general meetings. According to a 2021 survey, employees' satisfaction with the flow of

information was very good (4.5 points out of 6) (see Figure 5). The main channels for internal communication relating to students are mailing lists, the Student Council, social media (Facebook, Instagram), internal screens, and direct communication.

Strengths:

- Targeted and systematic personnel and staffing policy, including the mentoring system.
- Modern study centre with simulators, laboratories, and workshops, and IT solutions adequate for teaching, learning and development activities.
- High satisfaction of students and staff with the learning and working environment.
- Increased own revenue and more diverse sources of revenue.
- Internal and external communication which support the achievement of the objectives of the Strategic Plan.

Areas for improvement and future development activities:

- Continuous improvement of funding opportunities, including increasing own revenue from projects and sale of services, targeted funding of research and development, performance funding, etc.

3.3 QUALITY CULTURE

3.3.1 Quality system

EAVA's Management Manual describes the management system underpinning its core and support processes, as well as its principles of quality assurance. The associated goals and metrics are defined by strategy maps in the Strategic Plan.

The **Lawyer-Quality Manager** is responsible for ensuring the development of the Academy's management system. The **Quality Manager of Certified Training Organisations and Flight Simulation Training Devices** is responsible for EAVA's compliance with aviation requirements, and also performs the roles of compliance monitoring manager and safety manager. Close collaboration between quality managers ensures the comprehensive functioning of EAVA's quality system. EAVA also participates in the RCUAS quality working group.

The Academy's quality assurance system follows the principles of the Deming Cycle: to plan, do, check and act. Across its development and improvement activities, EAVA relies on the following assessments:

- **internal evaluations**, eg reporting on the achievement of the objectives and metrics of the Strategic Plan, reporting on legislative amendments, internal audits, risk assessments, performance appraisal interviews, the analysis of safety incidents, and oral and written feedback (see Management Manual table 2);
- **external evaluations**, e.g., institutional accreditation, supervision by the ETA.

Following on from the implementation of these assessments is the analysis of their results, the identification of any underlying root causes, and the determination of appropriate corrective measures, responsible persons, and deadlines.

Students' and alumni survey participation rate has been lower than expected (in some cases lower than 20%). The survey instruments may need to be reviewed and improved in order to increase involvement. This will allow EAVA to receive more relevant and substantial feedback (in accordance with the Strategic Plan) and to improve its study processes.

Descriptions of EAVA's aviation training organisation's management systems (see section 1.1.1), including their safety management system and study processes, have been approved in the training organisations' manuals (see the list). The Quality Manager of Certified Training Organisations and Flight Simulation Training Devices prepares reports on any changes in aviation regulations and coordinates their implementation within EAVA. Compliance with changes is monitored, and further development of the implementation procedure occurs where necessary.

EAVA has **internal regulations** for describing its internal procedures, and persons have been appointed to take responsibility for ensuring that they are updated and implemented (see the list, only available in EST) The internal regulations are updated in collaboration with the Lawyer-Quality Manager, who monitors the compliance of EAVA's regulations and documents with the relevant legislation.

The assessment of EAVA's safety management systems, in accordance with the Strategic Plan, is implemented by the ongoing review of identified risk levels, with the aim being to lower risk levels. Since 2020, EAVA has **assessed risks** in accordance with the guidelines for risk assessment specified in the Management Manual. For the initial risk assessment, 29 theoretical risks were selected. The Rectorate assessed the impact and seriousness of risks, identified their levels (on a scale from 1 to 25), and agreed on mitigation measures. All issues identified as risks in 2020 have since been addressed, and each of their levels has decreased. In 2022, the average risk score was 7, whereas the average risk score was 9.6 in 2021 and 10.3 in 2020. In 2022, 12 major risks affecting the Academy were identified, each with a level of above 7; mitigation of these risks is currently ongoing.

The Vice Rector for Administration is responsible for ensuring the safety of the learning and working environment. Employees receive regular training on matters of safety and first aid, and EAVA conducts practical training sessions on how to act in case of emergency. Risks related to the working environment are assessed and regularly reviewed on the Estonian Labour Inspectorate self-service portal. The risk analysis of the working environment was last updated in relation to the COVID-19 pandemic.

3.3.2 Main changes made on the basis of evaluation outcomes

As a result of internal and external evaluations, several changes have been made to EAVA's core processes, including in study programme development (see section 3.7.1), in academic support for teaching staff (see section 3.6.3) and in research and development activities (see sections 3.6.3 and 3.11).

Based on the results of the last institutional accreditation, together with the objectives of the Strategic Plan, responsibility for management of the TOs was transferred from the Rector to the heads of the relevant speciality departments. To prepare for this change (see Figure 4), a risk assessment analysis and a change management plan were prepared, in collaboration with the ETA. In addition, the required amendments were made to the training organisation's manuals. To communicate these changes to employees, meetings of the training organisations were held, at which the current situation, the relevant activities, and the extent to which the objectives set at the annual meeting had been achieved were outlined, and an action plan was prepared. In addition, the principles of quality assurance were affirmed and a platform was created for making suggestions and reporting concerns and incidents anonymously.

The principles of just culture in aviation safety and of safety management systems are introduced to all students in various subject courses e.g., Aviation Safety, Quality Management and Human Factors) during both the first and second years of study. Prior to commencing their practical training, students are briefed on safety issues, including EAVA's safety management system. Any safety incidents which have occurred during practical training are recorded and analysed, and a summary of the analyses is presented either at the relevant training organisations' annual meetings, or at EAVA's training managers and heads of study programme meeting. The principles of safety management and just culture are also available on the Academy's speciality information boards. Since 2021, the principles of safety management and just culture have also been introduced to EAVA employees at general meetings.

Strengths:

- Clearly defined quality standards for core and support processes.
- Systematic management of quality and safety, including a requirement for valid training certificates, analysis of incidents, and compliance with the principles of just culture.

Areas for improvement and future development activities:

- Substantial development of the feedback system, with the aim of increasing involvement and receiving more relevant and substantial feedback, which can then be used for planning improvement measures.
- Smoother implementation of, and communication about, changes. For example, by improved documentation, improved governance of changes to the management system, and by further analysis of legal amendments.

3.4 ACADEMIC ETHICS

The Academy has developed key good practices, guidelines and prompts for ethical behaviour, which incorporate both the values formulated in the Strategic Plan and the norms stipulated in legislation, whilst providing instructions for behaviour in various situations. These good practices, guidelines and prompts are as follows:

- the Statutes of the EAVA (§ 5 clause 2), which oblige EAVA to ensure conditions conducive to the acquisition of ethical beliefs by students and other learners;
- the Statutes of the Student Body and of the Learners Body (only available in EST) (article 2.3 clauses 1) and 4)), which oblige students and learners to adhere to academic practices and act ethically;
- the Rules on Organisation of Work, through which EAVA employees commit to adhering to EAVA's values, principles, norms and ethics, and its principles of reasonableness and good faith. Through adherence to these rules, EAVA employees must consider each other's interests and avoid behaviour that may be detrimental to others. Employees also commit to avoiding any conflict of interest or corruption; accept the prohibition on offering and accepting a bribe; and commit to loyalty to EAVA, to the proper use of EAVA resources, and to the responsibility to be objective
- the Study Regulation, which deals with the principles, values and guidelines regarding dishonourable conduct (including plagiarism, dishonest behaviour, dishonourable conduct and consequences) (chapter 6, clause 7.2.3.9 and chapter 8.9);
- the Good Practice of Studying and the Good Practice of Teaching, which help to uphold EAVA's core values, thereby contributing to the creation of an atmosphere of trusting cooperation;
- the guidelines for preventing the conflict of interest and corruption in EAVA;

- training manuals of EAVA's aviation training organisations, which confirm that during the training process, all parties will act on the principles of just culture;
- the Guidelines and Strategy for Equal Treatment, which outlines the principles, values and guidelines relating to equal treatment and gender equality (including the Gender Equality Plan), incorporating 11 key values. By joining the Diversity Charter in 2022, EAVA confirmed that it respects the diversity of people and values, and upholds the principle of equal treatment among its employees, students, customers and cooperation partners.

Although dedicated student surveys on academic ethics are not conducted, existing questionnaires (see section 3.8.4) address issues of academic ethics. For example, in the questionnaire on subject courses, students are asked whether teaching staff members treat students equally. The average response to this question in surveys conducted during the period between 2020-2022 was between 4.7–4.9 (on a 5-point scale).

EAVA employees can discuss issues of academic ethics during their performance appraisal interviews, or on an ongoing basis with their immediate supervisor, as well as with the Head of Human Resources. Students may turn to the coordinators of the Office of Academic Affairs, the Head of Study programme, and the Student Council. Anonymous concerns and suggestions may be submitted on the respective form on the Academy's website. All complaints are registered in the EAVA document management system (EKIS), and all registered complaints receive an official answer.

EAVA prioritises the application of **ethical academic practices in the digital environment**, preventing the appropriation of intellectual property and ensuring the observance of copyright both through verbal instructions and through the use of working contracts or authorisation agreements. These agreements include the Code of Conduct for Research Integrity (chapter 3); the guidelines to teaching staff; the Rules for Using the Library (including article 8.1 which addresses copyright); the copyright guidelines; a Guide to Creating a High-Quality E-Course (chapter 3, 6.2 (about copyright)); the Study Regulations (articles 1.2.30, 6.2, and 7.2.3.9); and the Rules for Using a Computer Network (chapters 5 and 6).

In order to disseminate the principles of academic ethics, EAVA:

- holds regular briefings on copyright for employees;
 - hosts presentations at general meetings;
 - organises employee training sessions;
- arranges briefings for students;
- provides a guidelines to teaching staff at the beginning of each semester, which includes topics related to copyright and plagiarism;
- informs new employees of internal regulations.

The plagiarism detection technology OURIGINAL is used to review student theses, and other written assignments as required. Since OURIGINAL is not capable of detecting AI generated text, new plagiarism detection measures will soon need to be developed and implemented. Currently, academic staff can report plagiarism by submitting a form; these reports (of which there were three in 2022-2023) are analysed by the Office of Academic Affairs, and preventive measures are then developed. The EAVA Rules for Organising Activities Related to Graduation Theses and Final Exams allows students to check the authenticity of their theses with OURIGINAL. Graduation thesis supervisors and the Office of Academic Affairs are also involved in reviewing students' work for plagiarism. A major challenge in the near future will be the impact of artificial intelligence (AI) on studies and R&D.

By joining the Estonian Code of Conduct for Research Integrity in 2022, EAVA confirmed that it respects fundamental scientific values and operating principles. Joining the Estonian Code of Conduct for Research Integrity and consequently updating the procedure for research and development activities has led to several changes that require further dissemination in order to raise employees' awareness of the principles of research ethics.

Strengths:

- EAVA's values and principles strongly underpin the ethos of ethical academic behaviour.
- Clear guidelines for ethical behaviour have been developed.
- The Guidelines and Strategy for Equal Treatment (including the Gender Equality Plan) have been developed.

Opportunities for further improvement:

- Raising employees' awareness of the updated procedures and principles of research ethics.
- Specifying the principles of using AI in studies and R&D.

3.5 INTERNATIONALISATION

According to the Academy's Strategic Plan, internationalisation is a major objective, and is reflected in all processes. The Academy's vision is to be an internationally acclaimed aviation training and development partner. Consequently, the main focal points of the Strategic Plan are the development of English-taught curricula; increasing the mobility of students and teaching staff; and establishing international cooperation and development projects (see indicators in Table 4). At the management level, the focus is on cross-institutional networking and on institutional cooperation. Employees' international

activities (including mobility; participation in conferences and fairs; and teaching, research and development projects) (see section 3.11.4) are planned annually and agreed upon during development and assessment discussions.

During the institutional accreditation period, modules of education and development services are designed (see section 3.12.5), which are also applicable internationally. Furthermore, the Academy works with different start-up accelerators, such as the Defence Innovation Accelerator for the North Atlantic (DIANA), and the European Space Agency Business Incubation Centre (ESA BIC), and has joined the R&D community platform ADAPTER, in order to provide international education and development services more efficiently.

The provision and marketing of English-taught curricula has brought a new dimension to the internationalisation of EAVA, and provides an opportunity to bring the specialities and services offered by EAVA closer to international target groups. Of similar importance is the Academy's participation in various international cooperation projects, because these make the Academy better known and increase its credibility as a partner and centre of competence within the field of aviation. EAVA's English language LinkedIn account further supports its international marketing.

3.5.1 Participation in the work of international organisations

During the accreditation period, EAVA has actively built and maintained international contacts, and shared information with stakeholders, in order to further its international partnerships and its participation in international projects. In 2021, the Academy joined the Air Transport and Aeronautics Education and Research Association (ATAERA), an international network of universities providing aviation-related studies. Through ATAERA membership, EAVA aims to develop partnerships across the education, research, and aviation industries. Several of the Academy's international partners are already members of the network and supported the Academy's application for membership. In addition, the Academy has also recently joined the European Network of U-space Stakeholders, through which it gains direct access to the community of its focal area, where the most recent knowledge and best practices are shared. Towards the end of 2022, the Academy also became a member of Alliance for Zero-Emission Aviation (AZE), through which Academy employees participate in working groups and thereby contribute to the development of zero-emission aviation.

Finally, the Academy belongs to the EUROCONTROL working groups (ATM Training Team, FEAST User Group, and ELPAC), which ensures the compliance of its activities with the regulations relating to the study and practice of air traffic services.

3.5.2 Internationalisation in studies

In accordance with the objectives of the Strategic Plan, two international curricula have been designed and launched, **Commercial Aviation Management (CAM)** and **Commercial Air Transport Pilot (CATP)** (for more details see sections 3.7.1 and 3.8.1). These new curricula are a step towards one of the Strategic Plan targets: to have 50 international students enrolled at the Academy by 2025. In 2022, there were 23 international students enrolled at the Academy (comprising 7.5% of total enrolments).

Internationalisation is further supported by the activities of the **Erasmus+ programme**. To date, EAVA has signed 25 cooperation agreements within the Erasmus+ programme with different partner universities in Europe, and actively cooperates with these universities to arrange mobility and to develop curricula. The Erasmus+ programme enables the Academy to support the mobility of students, recent graduates, and academic and non-academic staff.

Student mobility may either mean studying at a partner university or carrying out practical training. EAVA students typically use the opportunity to study at a partner university, however the Academy's departments are trying to find more opportunities for their students to carry out practical training abroad. Students of the Aviation Management, Aircraft Piloting, and Air Traffic Services programmes have participated in mobility programmes to a greater extent than have the students of the Aeronautical Engineering programme. Recent changes to the Aeronautical Engineering curriculum (see section 3.7.1) have created better mobility opportunities for these students. During the review period, the overall proportion of students studying abroad has been higher than the Estonian average (see Table 6).

Table 6. Proportion of students studying abroad. Source: Haridussilm

Participation of students in learning mobility	2019	2020	2021	2022
Estonian Aviation Academy	9.9	6.6	7.2	5.7
Average in Estonian Higher Education Institutions	3.1	2.6	2.2	3.6

When organising studies, the Academy tries to facilitate students' participation in international (including virtual) mobility. One such initiative has been the incorporation of a 'mobility window' into the PIL, CNS/TECH, AM and CAM curricula. In addition, the recognition of courses taken at another higher education institution towards completion of a student's study programme has been made more specific. To this end, an annex to the Erasmus+ programme study plan is prepared, in which the subject courses selected at the higher education institution abroad as well as the subjects that students wish to substitute within their own study programme are specified. The correlation between the selected subject courses and EAVA learning

outcomes is then analysed by the Head of Study programme, who approves the subject substitutions before mobility, giving the student assurance that their selected subjects will be recognised.

EAVA supports students both before, during and after mobility, and in both academic e.g., selecting subject courses, documentation) and non-academic e.g., living conditions, finding accommodation, insurance) matters. For international visiting students, the Coordinator for International Studies is the primary contact person (see section 3.10.2).

Each academic year, **visiting international students from the Erasmus+ programme of partner universities** study at EAVA, and may select subject courses of up to 45 ECTS. The volume of courses which may be selected has recently increased, due to the development of international curricula. The number of international visiting students varies and has been affected by both the pandemic and the geopolitical situation in Europe (see Table 7).

Table 7. Proportion of visiting international students. Source: SIS

Share of foreign visiting students in the EAVA student body	2019	2020	2021	2022
Number of foreign visiting students	25	11	21	15
% of the total academy's student body	10.2	4.4	8.5	5.9

In November 2022, EAVA's Erasmus+ programme project system (2020) was audited. According to the audit committee, EAVA's introduction of Erasmus+ possibilities is continuous and systematic; mobility is viewed favourably and supported, and students receive support from the coordinator and speciality department with respect to formalising documents and transferring subject courses. The audit committee recognised EAVA's active involvement in introducing the ERASMUS+ programme, and the level of participation by its employees and students in mobility.

The **learning and working environment of EAVA supports internationalisation and cultural openness**. In order to raise employee awareness within its multicultural working environment, EAVA has arranged training sessions and events, in which different cultures are introduced. Cultural openness is also supported by the Guidelines and Strategy for Equal Treatment drawn up in 2022 (see section 3.5). In 2021, EAVA joined the Diversity Charter prepared by the Estonian Human Rights Centre, which ensures that the values and principles included in the Charter are respected and followed in Academy activities.

3.5.3 Internationalisation of the staff

EAVA supports and recognises the participation of its employees in learning, research and development projects; in teaching and research and development activities; and in improving its relations with international partners. Various indicators of internationalisation have been added to the Strategic Plan, including the proportion of employees participating in mobility; the proportion of employees contributing to international cooperation; and the number of international teaching staff who participate in teaching, research and development. The results of these indicators are monitored each year (see Table 4). Employee mobility generally relates to training (see Table 8, Table 9), but EAVA aims to encourage employees to take up teaching opportunities at partner universities more often. This will improve EAVA's ability to develop academic contacts with whom it can cooperate on teaching, research and development projects.

Table 8. Mobility of teaching staff within Erasmus+. Source: RTIP.

Participation rates of teaching staff in mobility programs	2019/20	2020/21	2021/22	2022/23
Employee training	4	-	4	7
Teaching at an international higher education institution (including virtual teaching)	6 (4)	-	2	1

Table 9. Employee placements abroad. Source: RTIP.

International mobilities	2019	2020	2021	2022
International mobility participation rates of academic staff	11	5	4	13
International mobility participation rates of non-academic staff	25	3	10	26

During the pandemic, EAVA pursued digital opportunities for developing international cooperation, such as an online learning programme in cooperation with the Portuguese university ISEC Lisboa; participation in international conferences and training programmes; and participation in online study sessions at a partner university.

3.5.4 International visiting lecturers, experts and instructors

Visiting teaching staff and international visiting teaching staff participate in teaching at EAVA (see Table 10). Visiting international teaching staff members are mostly from Erasmus+ programme partner universities.

Table 10. International visiting teaching staff and instructors engaged in teaching (2019-2023).

Visiting international teaching staff	2019/20	2020/21	2021/22	2022/23
Teaching 3 ECTS or more	3	-	2	2
Teaching less than 3 ECTS	5	2	4	4

Increased digitalisation, along with the pandemic, has broadened the opportunities for distance working and students' willingness to participate in digital learning. This has made it easier to engage and involve international teaching staff. In addition, EAVA has organised in international large-scale training programmes e.g., SORA, Robots Expert UAV training programme) in order to increase EAVA's competence in its designated focal area.

Where suitable, international competitions are arranged for academic employee positions. The proportion of international full-time teaching staff has risen from 6.7% in 2019 to 9.5% in 2022. Teaching positions may also be advertised internationally, and are generally promoted through EURAXESS (a job portal for researchers) and through social media (primarily LinkedIn).

Through the Fulbright U.S. Scholar programme, an associate professor from the Embry-Riddle Aeronautical University will visit EAVA for the autumn semester of 2023/2024, and will contribute to the development of the CAM study programme. This visiting scholar will also collaborate with the teaching staff of EAVA's Aviation Management programme towards publication within EAVA's designated focal area.

Strengths:

- Variety of international partners and well-functioning cooperation on mobility, academic development, and R&D.
- Membership of international networks, which provide opportunities to obtain up-to-date information and to contribute to developments in the focal area.
- International visiting students and teaching staff are offered a high level of individual support by the Coordinator of International Studies.

Areas for improvement and development activities:

- To increase the number of opportunities for practical training, which would allow more students to carry out practical training abroad.
- To increase the opportunities for international networking of EAVA teaching staff for the purpose of research and academic development.

3.6 TEACHING STAFF

3.6.1 Diversity of teaching staff

EAVA employs a variety of academic and other teaching staff, including:

- permanent academic staff members elected by the EAVA Council e.g., professors, assistant professors, lecturers, teachers, instructors), the number of whom has increased over the past year (from 16 to 21);
- non-academic employees teaching at least 3 ECTS;
- visiting teaching staff working under an authorisation agreement;
- academic employees of other higher education institutions working under cross-institutional cooperation agreements, e.g., from the University of Tartu (UT) and the Tallinn University of Technology (TalTech).

The ratio of students to academic staff (see Table 11) has consistently remained at between 8 and 11 students per full-time academic employee (including those working under authorisation agreements, and non-academic employees contributing to teaching). This relatively high ratio of academic staff allows EAVA to be highly learner-centred; to offer a more personalised approach to students; and to support more practical work arrangements.

Table 11. Number of students per full-time academic employee across comparable Estonian professional higher institutions.

Source: Haridussilm¹⁰

	2019/20	2020/21	2021/22
Estonian Aviation Academy	9.3	10.4	9.6
Estonian Military Academy	2.8	3.3	2.5
Estonian Academy of Security Sciences	8.2	8.5	10.3
TTK University of Applied Sciences	25	24.5	19.7

¹⁰ Data in [Haridussilm](#) as at 10 November for 2019/2020 - 2021/2022.

In recent years, the age composition of EAVA's academic employees has changed (see Figure 11). A number of younger academics have joined EAVA, including alumni. Those academic employees who begin their career at the Academy generally fill the positions of instructors and teachers, because the more senior positions require prior experience in teaching and/or research. As at the end of 2022, EAVA employs four academics under the age of 30: two instructors and two teachers. These younger colleagues are supported by mentors, and are encouraged to complete training programmes to develop their teaching and supervising competencies, and to start master's and doctoral studies.

High-level specialists, practitioners, and visiting lecturers from both Estonia and abroad comprise EAVA's visiting teaching staff. Every academic year, approximately 30–45 visiting lecturers, working under an authorisation agreement, teach at the Academy, and many of them have been teaching at EAVA for a long time. Visiting practitioners and lecturers each bring their own aviation-related knowledge and skills, which helps to develop the Academy's teaching and learning. The engagement of visiting teaching staff also helps to develop close collaboration between EAVA's heads of curricula and training managers and the potential employers of EAVA graduates.

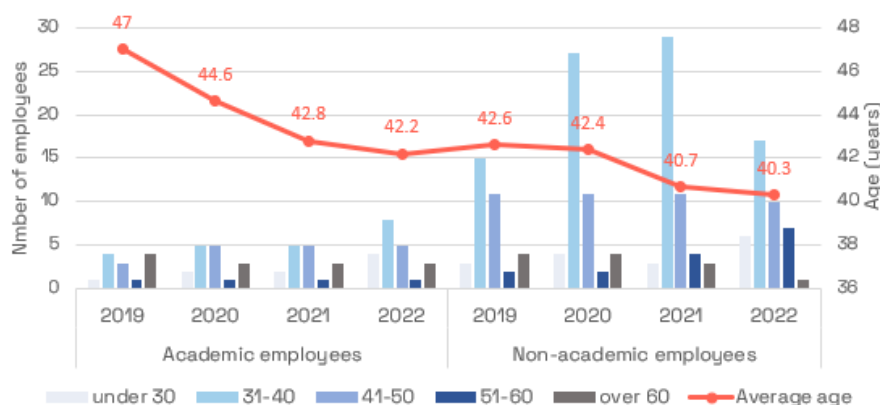


Figure 11. Age distribution of employees. Sources: SAP, RTIP.

In recent years, the cooperation between members of the teaching staff on studies, research and development has been significantly reinforced. This cooperation occurs both within the Academy and in conjunction with partners from other institutions e.g., the Estonian Military Academy, the Estonian Academy of Security Sciences, TalTech, UT, ETA, and the Estonian Aviation Cluster and its members) (see sections 3.5, 3.11, 3.12). Team teaching by visiting lecturers / practitioners and members of EAVA's academic staff generates synergy, as does EAVA's system of lesson observation, and its seminars on teaching and digital competences. EAVA's teaching staff also participate in study programme development for Military Leadership in the Air Force (at the Estonian Military Academy) and cooperate closely with the teaching staff of the Estonian Military Academy.

3.6.2 Recruitment of permanent academic employees

When electing, appointing and evaluating the performance of permanent academic employees, EAVA takes into account their earlier teaching experience, knowledge in the field of aviation, work experience and competencies, research and development, student feedback, participation in networks, and professional development. In many of the competitions for aviation-related positions (especially in the field of aeronautical engineering), there are a low number of candidates (see Table 12). The main reason for this is the specific nature of the field, alongside Estonia's limited human resources. As a result, EAVA has begun to recruit its own graduates, providing them with internal opportunities to progress along an academic career path. Public competitions are publicised through EURAXESS (the EU job portal for researchers), and through social media (primarily LinkedIn), to improve their visibility and to find international candidates. These public competitions are supplemented by the use of targeted searches for recruiting visiting lecturers.

Table 12. Average number of candidates for academic positions between 2019 and 2022. Source: EAVA's recruitment statistics.

	2019	2020	2021	2022
Number of competitions	1	2	9	12
Average number of candidates for a competition	16	5	5.8	7.6

3.6.3 Development of teaching staff

One of the aims of the organisational culture and human resources strategy maps in the Strategic Plan is to ensure that employees' skills, knowledge and competencies support EAVA's training, R&D, and innovation activities. To this end, it is important to support the teaching staff's personal development and motivation.

Since 2021, the Academy has started to pay more attention to those R&D activities carried out by teaching staff. More generally, the Academy supports all of its employees in carrying out R&D activities and participating in different projects. The volume of R&D activities is shown in the workload tables of academic employees and currently comprises around 25–30% of lecturers' workload (see section 3.11.2).

In 2022, the collection of documents regulating EAVA's employment relations with its academic employees was consolidated into the uniform Rules for Employment of Academic Employees. These rules describe the recruitment process, tasks, grounds for calculating employee workload, and career path. The rules also outline the procedure for creating the position of professor, detail the connection between performance evaluation and progress along the career path, and provide position descriptions for researchers. In 2023, the R&D activity plan has as an objective the creation of professorial positions in focal areas. The grounds for calculating workload currently need to be reviewed, on the basis of employee feedback, and due to the increased volume of English-taught curricula and digital learning.

In recent years, the Academy has begun to support **the improvement of employee competencies**:

- In 2021-2022, an efficient system of internal training was developed, which aimed to improve teaching skills and R&D competencies e.g., teaching in multicultural classrooms, training sessions on research methods, supervising research papers, writing camps for the preparation of scientific papers).
- Assessment competencies (regular training sessions for teaching staff, including visiting teaching staff, on planning assessments, giving feedback to students, assessment methods and criteria).
- In May 2022, an Academic Developer joined the Academy, whose main tasks are to provide individual support to teaching staff members, and to give seminars on the development of necessary skills.
- Since the COVID-19 pandemic, the practical training of teaching staff at our partner organisations has become more frequent. In 2022, 38% refreshed their knowledge and skills at our partner enterprises in Estonia e.g., Magnetic MRO, XFly, Estonian Air Navigation Services (EANS), Threod Systems, Ämari Air Base, Tallinn Airport) and abroad e.g., in Germany and Croatia).
- Speciality-related knowledge is refreshed, and air service permits are renewed at training sessions abroad e.g., IATA, Eurocontrol, JAA TO, EASA).
- The volume of training hours for both academic employees and other staff involved in teaching has increased (see Table 2).

In addition, **digital competencies** are developed and teaching staff are supported in the field of information technology. Teaching staff are supported on a day-to-day basis by the Educational Technologist, who conducts training sessions, prepares guides, and instructs employees individually, where necessary. Nevertheless, permanent academic staff will need further support to underpin their contributions to R&D, including, for example, more support for cooperation with other higher education institutions, guidance on research methodology, and the proofreading of their research papers.

The Academy provides flexible work arrangements for those academic employees **pursuing formal education studies**. In cooperation with TalTech and UT, teaching staff members may study at these universities as industry doctoral students who, after completing their studies, will then take on the position of researcher at the Academy. In 2023, the Academy has plans for two of its employees to participate in this opportunity.

3.6.4 Student feedback on the performance of teaching staff

Every semester, students give feedback on the performance of teaching staff as part of the subject course monitoring. Feedback surveys are also arranged by the Quality Manager. All teaching staff can see the results of student feedback in the study information system, Tahvel. Student feedback is jointly analysed by the heads of department, heads of curricula, and head of training. Student feedback is taken into account when deciding whether to renew cooperation with a visiting staff member, when evaluating academic staff, and during performance evaluation interviews. Student feedback on the performance of teaching staff is generally positive, with an average score of over 4 points out of 5 (see Table 13).

Table 13. Student feedback on the performance of teaching staff. Source: EAVA surveys.

	2019/20	2020/21	2021/22	2022/23
Average satisfaction with the teaching staff member	4.6	4.6	4.6	4.3
Teaching skills of the teaching staff member	-	4.3	4.2	4.2
Teaching methods	-	4.4	4.2	4.1

3.6.5 Appraisal and recognition of teaching staff

At least once every five years, academic staff must pass a performance appraisal, in which they are assessed on the extent to which their performance meets the requirements of their position. The aim of the appraisal is to support each employee's professional development, including progress along their chosen career path. The performance appraisal of teaching staff is largely based on their annual workload plans and their evaluation interviews. Additional assessment measures include their contribution towards R&D, student feedback, their performance as supervisors, the development of their teaching and supervision skills, international mobility, and any commercial or other work experience in their specialty field outside the Academy. The performance evaluation committee includes student representatives and representatives of other higher education institutions. In 2021, the majority of teaching staff underwent an extraordinary evaluation. The aim of this evaluation was to harmonise the positions and tasks of academic staff members with the new version of the Higher Education Act, to assess the competencies of teaching staff, and to reposition them within a new career model. Based on the results of the inter-institutional accreditation, more attention is now paid to R&D and internationalisation, and job descriptions have been refreshed to reflect this change. Those members of the teaching staff with insufficient performance on R&D were approved in their positions for a shorter period. This evaluation process also allowed EAVA to identify the support required by academic employees for the performance of R&D.

In order to value and recognise the work of teaching staff, the Academy annually awards the title of Best Lecturer of the Year (see the Statute of the Best Lecturer of the Year). The award committee is made up of Academy students. The aim of this award is to recognise good teaching, including interesting and innovative approaches to teaching, and to inspire and encourage teaching staff to pay more attention to those values which are important to students. In addition, EAVA employees recognise one outstanding colleague from within the academic staff each year.

Strengths:

- Systematic planning of the work of permanent academic staff, giving feedback, and a working environment that supports the self-development of academic staff.
- Involvement in teaching of high-level specialists and practitioners from partner enterprises and educational institutions, who introduce more expertise and experience into the teaching process.
- Cooperation of permanent academic staff with different partner organisations, including practical training.

Areas for improvement and future development activities:

- The grounds for calculating the workload of academic staff need to be analysed and specified due to the increased volume of English-taught curricula and digital learning.
- Permanent academic staff need further support to underpin their contribution to R&D.

3.7 STUDY PROGRAMME

The Academy has the ongoing right to organise studies in two study programme groups. Studies are conducted across ten programmes of professional higher education. Students have been admitted into six of these, and four programmes will be closed over the coming years (see Table 14). The numbers of students, graduates, discontinuing students, and enrolled students have been provided in Table 1 in section 1.1.4.

Table 14. Curricula registered in the Estonian Education Information System (EHIS) and related data

Curriculum group	Study programme (its designation)	Code	Duration (years)	Language of instruction	EU Commission implementing regulation	Responsible structural unit
Engineering, manufacturing and technology	Aeronautical Engineering (CNS/TECH)	194140	4	Estonian	TECH - 1321/2014 CNS - 2017/373	Department of Aeronautical Engineering
	Aircraft Engineering and Maintenance (TECH) ¹¹	118817	4	Estonian	1321/2014	
Transport services	Communication and Navigation Systems (CNS) ¹³	118857	4	Estonia	2017/373	
	Operation of Aviation Enterprise (AM) ¹³	2284	4	Estonian	-	Department of Aviation
	Aviation Management (AM)	214444	3	Estonian	-	

¹¹ Closed in the coming years

Air Traffic Services (ATS) ¹³	2282	4	Estonian	2015/340
Air Traffic Services (ATS)	222006	3	Estonian	2015/340
Aircraft Piloting (PIL)	2283	4	Estonian	1178/2011
Commercial Aviation Management (CAM)	218187	3	English	-
Commercial Air Transport Pilot (CATP)	223303	3	English	1178/2011

The standard duration of studies at the Academy is 3-4 years and the volume of studies is between 180–240 ECTS. Curricula are divided into thematic modules, which in turn comprise subject courses. Practical training accounts for between 15–20% of the study programme, and the study programme culminates in a graduation thesis or final examination, the volume of which is around 6–12 ECTS, depending on the study programme.

Studies of the Air Traffic Services and Aircraft Piloting programmes, as well as the Commercial Air Transport Pilot, and Aircraft Engineering and Maintenance specialities, take place within certified TOs. EU regulations are directly applicable, and EASA AMCs and GMs are used to determine study programme volumes, subjects, outcomes, acquired levels, the percentage of theoretical and practical training, and the requirements for participation. Compliance with these regulations is monitored by the ETA.

3.7.1 Development of study programmes and compliance with societal expectations

The study programme statutes establish the requirements for the structure, content and quality of each study programme, as well as the procedure for opening, maintaining and closing the study programme. The study programme statutes aim to ensure that the study programme complies with the Standard of Higher Education (only available in EST), the Higher Education Act, the Education Strategy, the Academy's own objectives, aviation regulations, and the changing needs of the labour market.

Development of curricula is an ongoing process, and must take into account any legislative amendments relating to education and aviation, societal expectations, the changing needs of the labour market, and feedback from a variety of different parties (e.g., students, alumni, teaching staff, supervisors of practical training and external partners). The following indicators are used to assess the quality of curricula development and implementation: student satisfaction (see Figure 14), alumni satisfaction (see Figure 15), satisfaction of employers with the fit between graduates' skills and the employers' needs (see Figure 17), and the proportion of graduates continuing their studies at the next higher education level or working (according to the MoER, this proportion is currently at around 97–100%).

The development of each study programme (see Figure 12) is led by the **Head of the Study programme**, who is also the Chair of the programme council made up of the representatives of employers, teaching staff, alumni, and students. Since 2022, programme councils now also include a member from an international partner university, with a view to enhancing international cooperation and the exchange of knowledge. The programme council (see the members of programme councils) (only available in EST) advises the Academy and the Head of Study programme on issues relating to study programme development. Since 2022, study programme development has also been supported by the Academic Developer.

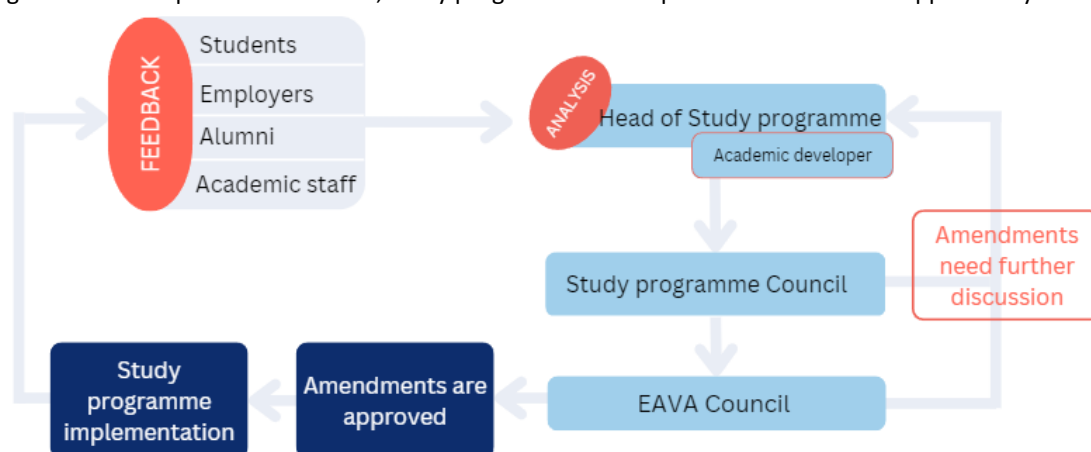


Figure 12. The study programme development process.

In 2020-2021, EAVA held meetings with Estonian aviation enterprises and organisations in order to identify possibilities for cooperation, to receive information required for curricula development, and to assess the needs of employers for employees with specific qualifications. In 2020, EAVA also cooperated with the Estonian Aviation Cluster on a survey of the aviation sector's perceived employment needs.

During the review period, two 3-year **Aviation Management** curricula have been opened to replace previous 4-year curricula, as well as a new study programme for **Air Traffic Services**. The study processes of both programmes were made more efficient and compact, the entrance of students into the labour market was accelerated, and subjects were modified. Modules also became more clearly focused on study programme objectives and now take the conditions and prerequisite courses for admission into master's programmes into account.

Based on the strategic objectives of EAVA and the results of the preconditions study, the volume of courses relating to electronics and unmanned aviation has been increased in the **Aeronautical Engineering** programme. In 2022, elective modules on continued airworthiness and structural engineering were also designed. In 2023, **the major specialisation of communication and navigation systems** within the Aeronautical Engineering programme was refreshed. A variety of IT competencies have also been added to the curricula, reflecting the trend towards the digitalisation and automation of aviation. Reflecting the substantial additions to its major specialisation, this major specialisation has also been renamed and is now called **Information and Communication Technology in Aviation**.

In order to better integrate **general subjects** e.g., Advanced Mathematics, Physics, English) into the speciality studies, these are now taught by EAVA teaching staff, instead of by partner universities, and enrolment is restricted to EAVA's own students. General subject courses have also been further developed so that their content is more closely related to aviation.

During the accreditation period, **two international curricula** – Commercial Aviation Management (CAM) and Commercial Air Transport Pilot (CATP) – were designed and opened. The objective of these new curricula is to further the internationalisation of the Academy, by providing a multicultural working and learning environment for employees and students. Courses in English based on International Air Transport Association (IATA) study materials have been integrated into these curricula, and are taught by those Academy teaching staff who are certified by IATA. After opening the English-taught curricula, performance indicators and feedback from related parties will need to be monitored, to enable further development of the programmes.

One outstanding aspect of the **Commercial Aviation Management** programme is the 30 ECTS module which allows students to simulate and practice visualising different aviation processes. This module was designed in cooperation with the Arctic University of Norway, within the joint cooperation programme between SA Archimedes EMP and Norway, called 'Simulation Based Learning in Aviation'. External partners from aviation enterprises (Air Baltic) and the Haaga-Helia University of Applied Sciences were also involved in the development of this programme. During development of the study programme, comparisons were drawn with similar programmes in nearby countries.

The design of the **Commercial Air Transport Pilot** programme was based on the perceived needs of medium to large sized external enterprises engaged in commercial air transport. The study programme objective is to train pilots who obtain education according to international aviation requirements, as well as the knowledge and skills required for engagement in commercial air transport (especially the operation and management of aviation enterprises). Graduates of this programme acquire not only the skills of a professional pilot, but also other competencies necessary for working in other sectors of aviation, and in other positions. This widens graduates' career prospects in the labour market. Part of this study programme is offered as asynchronous online learning in order to provide those pilots who already work with the opportunity to participate. The study programme was designed in close cooperation with Patria Pilot Training OY (Finland) and was developed along the lines of a similar programme in EAVA's partner university, SETU Carlow.

All curricula include the **development of general competencies**:

- Given that aviation is a highly regulated area, with high requirements set for safety culture, the cultivation of appropriate patterns of behaviour is of the utmost importance. Students' sense of responsibility and awareness of aviation safety requirements are developed.
- **Communicative competence** is reflected in the language module learning outcomes and in the graduation theses. It is also integrated into speciality subjects e.g., written assignments, presentations). The increased number of English-taught subjects develops students' proficiency in English.
- **Entrepreneurship** is developed through student projects and competitions, subjects on entrepreneurship, Student Council activities, finding and/or choosing an organisation for practical training, and developing a topic for the graduation thesis.
- **Digital competence** is developed via separate courses e.g., Informatics, Engineering Graphics, Programming, Simulation Software, Cyber Security, Data Analysis and Visualisation), and in speciality subjects e.g., RPA Construction, Systems and Design, Radio Measurements in Aviation, Arranging Air Transport Operations).
- **Teamwork, creativity and innovation** is developed via group work (e.g., Basics of Aviation, Aviation Safety) and project learning (e.g., Project Management, Mechatronic Systems, RPA Construction, Systems and Design, etc.), as well as by writing and defending research papers.

Topics related to sustainability are integrated into different subject courses e.g., Introduction to Aviation, Innovation and New Technologies in Aviation). The aim of these topics is to develop students' knowledge and skills in sustainability. EAVA also participates in the Energy Roadmap of the Green Tiger collaboration platform aviation working group, to ensure that student's understanding of sustainability reflects the needs of external enterprises.

3.7.2 Volume and coherence of study programmes

The primary means by which the coherence of study programmes is ensured is by the programme structure, which is based on thematic modules. For improved coherence, wording of the learning outcomes for study programmes enables them to serve as the basis for modules. In turn, the wording of the learning outcomes for modules enables them to serve as the basis for subject syllabi development. The logical sequence of subject courses is determined by the system of prerequisite subjects. The curricula have been built so that the general subject courses are followed by more specialised courses which, in turn, lead into the practical training. Between some of the subject courses, there is a partial overlapping of content, but the lecturers agree on this beforehand with the aim of ensuring better coherence across topics. To ensure continuity and coherence across topics, teaching staff meetings and seminars are also organised.

Within the study programme syllabi, the volumes and descriptions of both contact learning and independent work are provided. The volume of independent work varies, and its content is planned by the person responsible for teaching the subject course. When preparing the syllabus, the proportion of contact learning and independent work is determined, taking into consideration the learning outcomes as well as prior student feedback. In general, the volume of contact learning is equivalent to the volume of independent work. In certified specialities, the proportion of contact learning may be greater, as it depends on the requirements established by the training organisations (ATO, ATSTO, MTO). Participation in contact learning sessions is recorded. The equal distribution of the study load across semesters is ensured by drawing up standard study plans. For the completion of independent tasks, students can access resources within the Moodle learning environment, in the Academy's library, in computer classes, and in the study labs.

Strengths:

- Flexibility in changing and developing study programmes, which ensures the compliance of study programmes with the needs and expectations of the labour market.
- High degree of employer satisfaction with students' knowledge and skills.
- Engagement of students and alumni in the development of curricula through the feedback system and programme councils.
- Compliance of study programmes with the provisions of aviation regulations, which ensures the competitiveness of students in Estonia and abroad and is reflected in high rates of employability and further study.

Areas for improvement and future development activities:

- Analysis of indicators for new English-taught curricula, and improvement of curricula.
- More targeted implementation of sustainability skills in studies.

3.8 LEARNING AND TEACHING

The Strategic Plan includes separate strategy maps for learning and teaching, for which the following strategic goals have been defined:

1. We provide internationally competitive and high-quality training.
2. Learning opportunities have been extended through the portfolio of education services.
3. Active national and international cooperation with other educational institutions and employers is ensured.
4. R&D is closely aligned with studies.

3.8.1 Admission requirements and procedures

The admission of students is based on the admission rules, including the requirements and the schedule, which are published on the Academy's website each year by November. The number of study places is established by the EAVA Council, based on: the directive by the Minister of Education and Research on the allocation of activity support; on training needs; on the Academy's own resources; and on the proposals of the Advisory Board. Applications for Estonian-taught curricula are submitted through the national admission information system (SAIS). Applications for international curricula are submitted through the admission information system DreamApply. Employees involved in the admission process verify the documents of the applicants and review their compliance with EAVA's admission requirements. Certificates from foreign states are assessed in cooperation with the Estonian Academic Recognition Information Centre.

Admission is coordinated by the Office of Academic Affairs. Candidates are assessed by the speciality departments, which form subcommittees for each study programme, comprising the Head of Study programme, teaching staff, and, where necessary, external specialists. The aim of admission tests is to assess the prior knowledge, motivation and capabilities of each candidate for successful performance in the selected speciality. For admission to the Estonian-taught curricula, candidates are provided with the opportunity to take admission tests before the start of the application period. For all curricula, an interview forms part of the selection test, which helps to identify each candidate's motivation for studying their chosen speciality. The interview accounts for around 40–50% of a candidate's total score.

In addition, the candidates for the specialities of Air Traffic Services, Aircraft Piloting and Commercial Air Transport Pilot must pass professional suitability tests, which help to determine the candidates' psychological aptitude and personality traits. A special set of tests (FEAST) is used in assessing the professional suitability of candidates for the speciality of Air Traffic Services. The set of tests is updated on a regular basis by EUROCONTROL, which also offers support services to test users.

Since 2020, the candidates for the Aviation Management and Aeronautical Engineering programmes have been able to take the admission exams online. However, due to the specific nature of their admission tests, admission tests for the Air Traffic Services and Aircraft Piloting programmes are at a location determined by the Academy.

The application-to-admission ratio is always high (see Table 15) and has become higher for most study programmes. The number of applications received has increased in the Aviation Management, Aircraft Piloting, and Aeronautical Engineering study programmes. The Academy has implemented a more intensive marketing strategy for the Aeronautical Engineering programme with the aim of finding more motivated students, with the potential for better academic performance.

Table 15. Number of admitted students and application-to-admission ratio. Source: SAIS, SIS.

Study programme	Indicator	2019	2020	2021	2022
Operation of Aviation Enterprise (AM) – up to 2019 Aviation Management (AM) – since 2020	Competition	5.9	8.2	15.6	13.7
	Number of admitted students	16	12	12	13
Air Traffic Services (ATS) – 2020 Air Traffic Services (ATS) – since 2021	Competition	8.8	9.9	22.7	0.0
	Number of admitted students	8	8	4	0
Aircraft Piloting (PIL)	Competition	8.4	9.5	12.9	13.6
	Number of admitted students	10	10	10	7
Aeronautical Engineering (CNS/TECH)	Competition	2.2	2.4	3.3	2.7
	Number of admitted students	27	28	32	30
Commercial Aviation Management (CAM)	Competition	-	-	1.7	1.4
	Number of admitted students	-	-	0	5
Commercial Air Transport Pilot (CATP)	Competition	-	-	-	4.0
	Number of admitted students	-	-	-	19
TOTAL	Competition	6.3	7.5	11.2	7.1
	Number of admitted students	61	58	58	74

In 2021, admission to the Commercial Aviation Management international study programme was opened for the first time, however due to the COVID-19 pandemic, it was not possible to form a cohort for the 2021/2022 academic year. In 2022, admission was opened to two international study programmes, Commercial Aviation Management and Commercial Air Transport Pilot. Admission was arranged remotely by electronic means. Cohorts were formed for both programmes, and in the 2022/2023 academic year, studies commenced with 24 students. The competition for international study programmes is not as high as the target set in the Strategic Plan. This may be due to the geopolitical situation in neighbouring Ukraine, but the reasons nevertheless need to be analysed, and changes be made, where necessary, to the study programmes and/or marketing measures.

3.8.2 Learner-centred approach and support for students' personal development

In 2022, the Good Practice of Learning and Teaching was drawn up, which includes the Academy's best practices related to studies. The Good Practice of Learning and Teaching was presented to employees at a general meeting, and is referred to in the teaching staff guide, which is sent to all members of the teaching staff (including visiting teaching staff) at the beginning of each semester. The Good Practice of Learning and Teaching is also presented to students at their information sessions and is available on the Academy's website.

Learning and teaching in the Academy is **learner-centred**, which is facilitated by the fact that cohorts at the Academy are generally small. The process of learner development (including becoming a self-directed learner) is supported by EAVA's use of active learning methods e.g., problem-based and project-based learning, flipped learning); formative assessment; individual counselling and supervision; and the Academy's modern learning environment e.g., simulators, study labs, well-equipped lecture halls, Moodle digital learning environment). Student feedback has highlighted an excessive proportion of theoretical lectures, and students have expressed their wish to perform independent tasks in either the digital learning environment or via active contact learning. For this reason, the Academy intends to increase the proportion of learner-centred teaching methods and to develop more practical assignments to theoretical subjects.

In order to take the individual capabilities of students further into account, and to foster students' development as self-directed learners, the Academy has taken the following steps:

- the development of an Elementary Mathematics course, as preparation for the study of Advanced Mathematics;
- cooperation with the University of Tartu for foreign language learning, so that students can choose courses that correspond more closely to their proficiency level;
- the offering of elective and optional courses in cooperation with partner universities, to provide students with greater choice;
- support for participation in student projects and competitions e.g., Solaride, ESTCube, Robotex, Delta X, Shell Eco-marathon);
- student involvement in research and development e.g., projects related to automatic meteorological observation equipment, marine wind parks) as part of the graduation theses as well as outside the study programme.

3.8.3 Practical training and its integration with speciality studies

Practical training is regulated by EAVA's Rules for Practical Training (only available in EST). The objective of practical training is to introduce students to practical work in their speciality field, which reinforces and deepens their theoretical knowledge. Furthermore, students gain the necessary practical skills, and form the required attitudes for ensuring aviation safety. Students also develop an appropriate understanding of workplace culture. In certified specialities, the arrangement and requirements for completing practical training is regulated, as outlined in the manuals of training organisations.

Practical training comprises at least 15% of the volume of each study programme. Placements may be with an enterprise or organisation provided by the relevant academic structural unit, or students may arrange a placement themselves (Table 16). Increasingly, speciality departments try to arrange opportunities for students to complete practical training abroad.

Table 16. Major partners in practical training for the period 2019–2022. Source: Office of Academic Affairs.

Study programme / speciality	Practical training cooperation partners
Air Traffic Services	Estonian Air Navigation Services AS, Air Force Ämari Air Base, LGS (Latvian Air Navigation Service Provider)
Communication and Navigation Systems, Aeronautical Engineering (CNS)	Air Force, Estonian Air Navigation Services AS, Tallinn Airport AS, OÜ Rantelon, AS Enics Estonia, Consumer Protection and Technical Regulatory Authority, Tartu Observatory
Aircraft Piloting, Commercial Air Transport Pilot	AS Pakker Avio
Aviation Management, Commercial Aviation Management	AS Nordic Aviation Group, Finnair Business Services OÜ, Magnetic MRO AS, AS Pakker Avio, Estonian Air Navigation Services AS, Estonian Aviation Cluster, Ministry of Economic Affairs and Communications, Diamond Sky OÜ
Aircraft Engineering, Aeronautical Engineering (TECH)	AS Panaviatic Maintenance, Air Force, Aerohooldus OÜ, Magnetic MRO AS, Estonian Police and Border Guard Board Aviation Group, Nordic Aircraft Service AS

Students keep records of their practical training, which are checked by the placement supervisor. The placement supervisor also assesses the student's performance on practical training and provides an overall review of their work. Each student analyses and gives feedback on their practical training in his or her final report. The student's report is then assessed by their EAVA supervisor. Students may also provide anonymous feedback on practical training in the SIS and in surveys carried out by the Quality Manager. In certified training organisations, an alignment between theoretical instruction and practical training is achieved by following the requirements outlined in the EU regulations. The students generally evaluate the practical training highly and understand its importance for achieving the learning outcomes (see Figure 13). The general goal of the speciality practice is to connect theoretical knowledge with its practical application via the experience gained in a real working environment. An additional aim of practical training is to enforce and develop classroom learning and thereby contribute towards the achievement of learning outcomes. Prior to the commencement of practical training, the concrete objectives are discussed and defined by supervisors from the practice bases together with supervisors from the Academy. EAVA strongly encourages students to choose their graduation thesis topic during their practical training. A close connection between the practical training and the graduation thesis ensures the topicality of the thesis, as well as its commercial applicability. Furthermore, this connection fosters the student's involvement in the enterprise's development activities during their practical training placement.

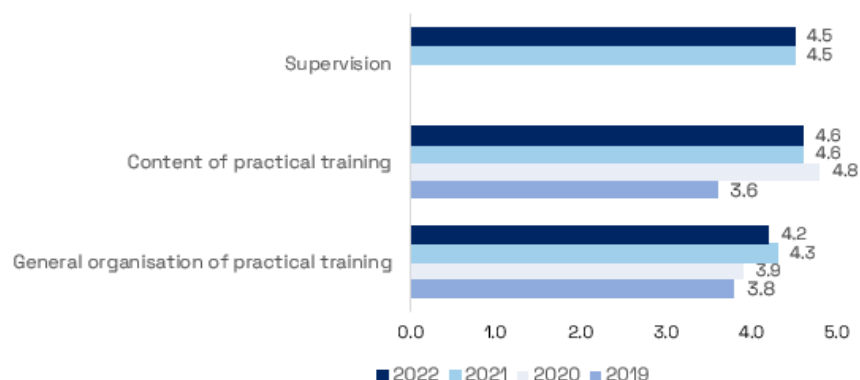


Figure 13. Student satisfaction with practical training. Source: EAVA surveys 2019-2022.

With the aim of improving and further developing the supervision of practical training, four training sessions were arranged over the evaluation period within the project 'Aviation Academy's practical training 2021-2022', in which 45 practical training supervisors participated.

From 2021, the students of the Air Traffic Services study programme have also been encouraged to complete (as an elective subject), the practical training intended for the students of Aviation Management. In this way, EAVA aims to achieve greater interdisciplinarity, and a holistic broadening of students' aviation-related knowledge and skills.

3.8.4 Feedback from students, alumni, and employers on the study process and its organisation

At the Academy, students are involved in the major decision-making processes. This involvement is realised in the following ways: three students are members of the EAVA Council; and a student representative sits on each of the councils for study programme study programme development, on the academic staff election and evaluation committee, and on the committee for the allocation of study allowances. Students also contributed to the development of the Strategic Plan.

Student satisfaction is surveyed annually. Survey results measure students' satisfaction with the quality of education, the structure of the study programme, the organisation of studies and practical training. Student satisfaction with the quality of education and the organisation of studies has remained stable, at around 3.4–4.3 points out of 5 (Figure 14). Student satisfaction with the way studies are scheduled is the lowest, at between 3.4 and 3.8 out of 5. Unfortunately, due to the specific constraints of the aviation sector e.g., weather conditions, visiting lecturers with a fixed schedule), it is not possible to design a timetable in advance for the entire semester. Student response rates to satisfaction surveys have been lower than expected and the Academy intends to cooperate with the Student Council on updating the student feedback system, as well as to communicate more effectively with students about the significance of their feedback.

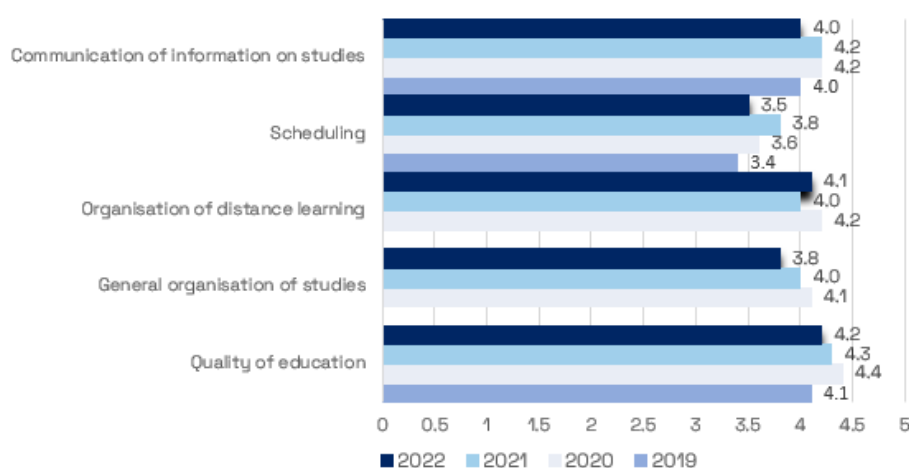


Figure 14. Student satisfaction with the quality of education and organisation of studies in 2019–2022. Source: EAVA surveys 2019-2022.

At the end of each semester, students are asked to provide feedback on their subject courses. In addition to surveys carried out for identifying student satisfaction, the Heads of Curricula and/or Heads of Training meet with study groups at least at the beginning of each semester. At the meetings, matters related to the organisation of studies are discussed, students receive information on the studies to be completed (including on practical training), and the results of student feedback from the previous semester are reviewed. Students are advised on elective choice and on optional courses and plan their practical training.

Alumni satisfaction surveys are carried out every year. Alumni generally rate their studies highly; the average score on a 5-point scale for the evaluation period was 4.4 (see Figure 15).

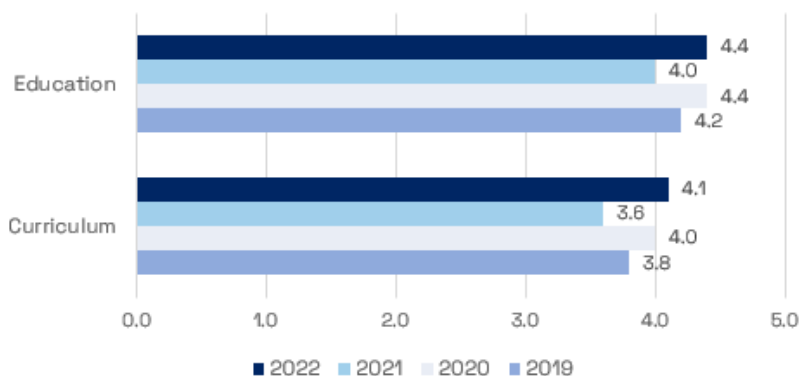


Figure 15. Satisfaction of alumni with study programmes and education for 2019–2022. Source: EAVA surveys 2019-2022.

Employers’ satisfaction surveys are carried out every two years. On a 5-point scale, the knowledge, skills, and attitudes of EAVA graduates scored an average of 3.7–4.2 points between 2015 and 2021 (see Figure 16). This indicates that EAVA studies adequately prepare graduates for their professional careers. Since 2021, this feedback has been collected across individual specialty areas (see Figure 17) in order to gain more specific information about EAVA graduates.

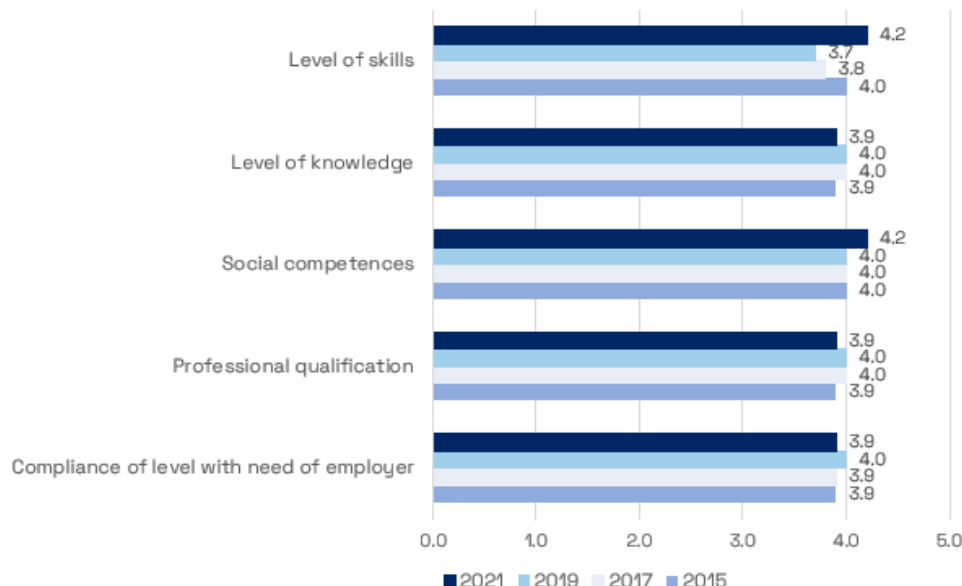


Figure 16. Employers’ assessment of graduates’ knowledge, skills, and attitudes. Source: EAVA survey results 2015-2021.

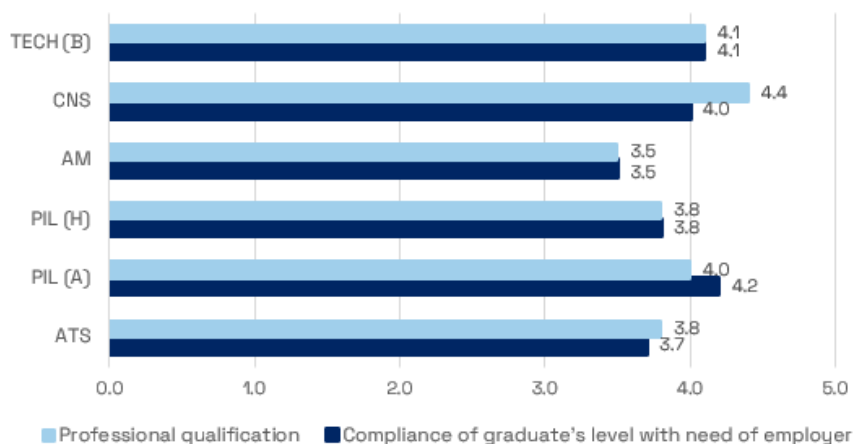


Figure 17. Employer satisfaction with graduates by specialty area. Source: EAVA survey 2021.

Strengths:

- Studies are carried out in close cooperation with aviation organisations (planning of study places, conducting practical training, suggesting topics for graduation theses).
- Feedback is regularly requested from employers, and the Academy's graduates rate their knowledge and skills highly.
- Small study groups provide good opportunities for tailoring studies to students' individual capabilities and interests, for supporting students who lag behind, and for guiding students with better academic performance towards involvement in research and development.

Areas for improvement and development activities:

- To increase the proportion of learner-centred teaching methods and of practical assignments in theoretical subjects.
- To update the feedback system in cooperation with the student body in order to achieve a higher number of respondents and to collect more substantial feedback.

3.9 STUDENT ASSESSMENT

3.9.1 General principles

Student assessment is guided by the Academy-approved documents:

- chapters 4.11 and 5.4 of the Study Regulation, as well as chapter 8.10, which provides the conditions and procedures for contesting decisions relating to the organisation of studies;
- Rules for Organising Activities Related to Graduation Theses and Final Exams;
- the Rector's Directive on the approval of minimum requirements for e-courses and on the committee for assessing e-courses,
- Procedure for the Accreditation of Prior and Experiential Learning (APEL).

The summative assessment of learning outcomes may be either differentiated or non-differentiated. The **assessment methods and criteria corresponding to learning outcomes are outlined in the study information system (SIS)** and form part of the syllabus drawn up by the teaching staff responsible for each subject; they also require approval by the Head of Study programme. The syllabus is made available to students before the start of each semester and teaching staff introduce the syllabus (including the principles of assessment) at the first contact learning session. The assessment methods and criteria for e-courses are provided in the study guide, available in the Moodle digital learning environment.

Teaching staff members choose the **most appropriate assessment methods for the learning outcomes**, and, if required, may receive assistance from the Academy's Academic Developer. Peer observation provides teachers with the opportunity to discuss their assessment criteria. Where possible, EAVA encourages consistency of assessment formats e.g., in the pilot training speciality, multiple-choice tests are used to help students prepare for the external exams administered by ETA). When a course is taught by several teaching staff members, they work together to choose assessment methods and determine assessment criteria. When a project is carried out as teamwork during a course e.g., Radio Measurements in Aviation, RPA Construction, Systems and Design), teaching staff not directly involved in the course assist with assessment, in order to ensure objectivity.

Students' achievement of learning outcomes is verified by way of ongoing and summative assessment. To date, summative assessment has generally been in the form of multiple tests. However, this is not always the most appropriate method for assessing learning outcomes. The Academy therefore aims to increase the proportion of formative and continuous assessment, especially in theoretical subjects. In addition to tests, solving practical tasks, case studies, essays, and projects (by stages or as a whole) may be assigned as assessment tasks. Students are permitted to sit an exam or a pass/fail evaluation once they have met all other requirements specified in the syllabus. The final mark is recorded in the student report. For the final assessment of learning outcomes, where a student receives a negative result on a final assessment, they are permitted one opportunity to resit the exam or to resubmit the pass/fail assessment. If the student does not then receive a positive result, he or she must re-enrol in the course. Students are not permitted to resit an assessment in order to attempt to improve a positive final mark received in either an exam, a pass/fail assessment, or in the defence of the graduation thesis.

Assessments by aviation training organisations are arranged pursuant to the procedures established in relevant manuals. Courses required for air service permit applications are assessed by applying the relevant requirements as provided for in aviation regulations.

As part of the subject course monitoring and review process carried out at the end of each semester, aspects of the course relating to assessment are reviewed (see Table 17). The scores for assessment methods have remained consistently high (within the range of 4.5–4.9, on a 5-point scale).

Table 17. Results of subject course monitoring relating to assessment methods. Source: EAVA surveys

	2020/21	2021/22		2022/23	
	Spring	Autumn	Spring	Autumn	Spring
The aim, implementation options, and requirements for completing the subject course were clearly expressed	4.5	4.5	4.6	4.5	4.6
Achievement of learning outcomes is assessed by the lecturer	4.7	4.7	4.9	4.5	4.6

To contest a decision related to the organisation of studies (including assessment), a student must contact the person responsible for the decision, as provided for in the Study Regulation, and express a clear wish to contest the decision. If the decision remains unchanged after discussion between the student and the decision-maker, the student may submit a written appeal to the Vice Rector for Education.

3.9.2 Assessment of and giving feedback on graduation theses and final exams

Assessment of graduation theses and final exams is regulated by the EAVA Rules for Organising Activities Related to Graduation Theses and Final Exams. As part of the process of writing the graduation thesis, seminars (including a preliminary defence and writing camps) are organised for students in the final year of studies, with the aim of supporting them and offering individual feedback.

The graduation thesis is defended before the defence committee. The defence committee includes members of EAVA's teaching staff, specialists in the relevant field, and/or representatives of partner universities nominated by the speciality department. An additional reviewer also participates in the assessment, who may be a member of the EAVA teaching staff, or a specialist in the relevant field. Graduation theses are assessed in accordance with the relevant assessment criteria, and the external members of the defence committee are instructed on these before the defence. Any member of the defence committee who is also a supervisor, consultant or reviewer of a particular thesis does not participate in its assessment as a member of the defence committee.

Final exams are assessed by exam committees, which are made up of at least three members. Usually, the exam committee is chaired by the Head of the Study programme. When awarding grades, the exam committee is deemed to have a quorum if at least 50% of the members are present. Assessment criteria are described in the syllabus.

Students who wish to dispute a grade may submit a written appeal to the Vice Rector for Education. The Vice Rector for Education convenes the defence committee, composed of new members, within five working days after receiving the appeal, and arranges a repeat defence in front of this new committee.

3.9.3 Accreditation of prior learning and professional experience (APEL/RPL)

The Procedure for the Accreditation of Prior and Experiential Learning (APEL/RPL) regulates the submission of applications, their assessment, and the passing of decisions on the recognition of vocational training or prior education. The Accreditation of Prior and Experiential Learning (APEL) is also referred to as Recognition of Prior Learning (RPL).

APEL/RPL may be applicable in the following circumstances:

- for the fulfilment of admission requirements established by the Academy;
- when accounting for credit points received in the course of prior studies, towards completion of the EAVA study programme (excluding the graduation thesis and final exams);
- as evidence of independently acquired knowledge and skills, in the context of continuing education courses, or when seeking credit points for professional experience (excluding the graduation thesis and final exams).

The number of credit points applied for and accredited by APEL/RPL (see Table 18) increased significantly in the 2022/2023 academic year. This was largely due to the opening of the Commercial Air Traffic Pilot study programme, because this cohort comprises pilots who already work, and whose speciality studies were taken into account by APEL/RPL.

Table 18. Number of credits applied for and accredited by APEL/RPL per academic year. Source: SIS

	2019/20	2020/21	2021/22	2022/23
Number of credits applied for	644	282	828	2401
Number of credits accredited	589	270	648	2386
Number of applications	94	54	70	45
Number of granted applications	84	51	54	42
Number of partly granted applications	2	0	6	2

Number of rejected applications	8	3	10	1
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The APEL/RPL principles are presented to students at the information sessions at the beginning of their studies and are also available on the Academy's website. Students who wish to submit an application online are assisted by the APEL/RPL Coordinator and APEL/RPL counsellors. The APEL/RPL counsellor assesses the compliance of an application with formatting requirements and refers it to the APEL/RPL committee for assessment. The APEL/RPL committee is chaired by the Head of the Office of Academic Affairs and includes all Heads of Study programme. The committee may involve experts in the field of assessment when, for example, the committee lacks the relevant expertise e.g., English, Marketing, Advanced Mathematics).

To review and assess applications, the committee convenes four times per year (in January, April, August and September). The exact deadlines for submitting applications are published on the Academy's website, and on the student calendar by the beginning of each academic year, and the Office of Academic Affairs also communicates these deadlines to students via an information email.

Strengths:

- Feedback given to students during practical training is systematic and individual and supports the learner's development to the maximum extent.
- The APEL/RPL procedure is clear and transparent, and professionals in the field are involved in the assessment.
- The assessment of graduation theses is transparent and based on assessment criteria.
- Clear principles are established for contesting decisions relating to the organisation of studies.

Areas for improvement and future development activities:

- To increase the proportion of formative and continuous assessment in theoretical subjects.

3.10 LEARNING SUPPORT SYSTEMS

3.10.1 Student counselling

Students are provided with the following **counselling services**:

- academic counselling;
- career counselling;
- psychological counselling.

Academic counselling is provided by Coordinators of the Office of Academic Affairs; its aim is to help students find solutions when planning their studies and to resolve problems relating to the organisation of studies. To better manage the flow of information, the mailing list ope@eava.ee was set up, which is managed by Coordinators and the Head of the Office of Academic Affairs. As a result of EAVA's structural changes, Coordinators who previously worked in separate departments have now been brought under the Office of Academic Affairs and work in the same office, which has led to improvements in the way information is received, and counselling services are provided.

Career counselling is provided by Heads of Training, Heads of Departments, and the academic staff of speciality subjects. The aims of career counselling are: helping students find solutions to problems relating to finding a job or selecting a speciality area; preparing for job interviews; managing with combining studies and work; planning studies to align with the intended future career; and completing practical training. **Career days** are organised regularly and in cooperation with enterprises. Whereas previously these focused on a particular enterprise, since the 2023 spring semester, the aim of career days has been to invite representatives of the widest possible range of aviation enterprises.

Psychological counselling is provided to students by an external partner under a cooperation agreement. Since the 2022/2023 spring semester, each student may now access five sessions of psychological counselling per academic year. Counselling is anonymous and is not recorded in the national health records.

Information on counselling services is provided to students at the information session for first-year students, and subsequently through memos in information letters. Information on counselling is also available on the Academy's website.

Student satisfaction with the psychological counselling service has increased. In contrast, career counselling scored the lowest of the three counselling services (see Figure 18). Opportunities for career counselling have not been as well communicated to students as have the other counselling services.

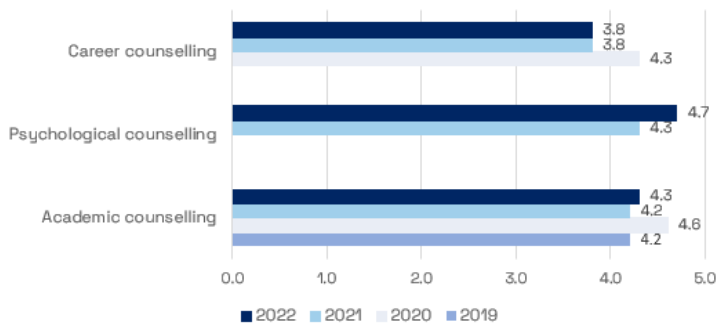


Figure 18. Satisfaction of students with support services. Source: EAVA surveys 2019-2022.

During the period of distance learning associated with the COVID-19 pandemic, the Office of Academic Affairs carried out a survey of students' preparedness for distance learning. The survey provided the Office of Academic Affairs with information on how best to support students, and on what needed to be improved when organising distance learning. Students are currently provided with IT support for the technology systems used in digital learning and are provided with study equipment e.g., students can borrow the hardware they need for studies). However, students' overall satisfaction with digital learning and IT support still needs to be reviewed more systematically to identify further areas for improvement.

3.10.2 Support and counselling for international visiting students and international students

The primary contact person for international visiting students and international students is the Coordinator of International Studies, who assists in both academic and non-academic matters e.g., living conditions, insurance, transport, residence permit, visas and health care).

To support adaptation, a course on Estonian language and culture (3 ECTS) is offered, and international students are invited to participate in events organised by the Academy's local students (sporting events, student parties, film nights). The Coordinator of International Studies organises visits to museums in Tartu and its vicinity (including the Estonian Aviation Museum) for international students and international visiting students. Satisfaction with the counselling services provided by the Academy has been consistently very high.

Counselling of the students pursuing the CATP study programme takes place online because they complete their studies by distance learning and are therefore not physically present at the Academy. They receive counselling from the Coordinator of International Studies and the head of the study programme. To facilitate communication between the CATP students, an informal social media group has been set up, which also includes the Coordinator of International Studies.

3.10.3 Supporting students to reduce the discontinuation rate and increase the graduation rate within the standard duration of studies

The standard study period in the Academy's study programmes is three or four years. The average duration of studies (see Figure 19) is generally longer due to male student's compulsory military service (8–11 months). Most of the Academy's male students (who currently constitute 70% of the total number of students) are subject to the national defence obligation.

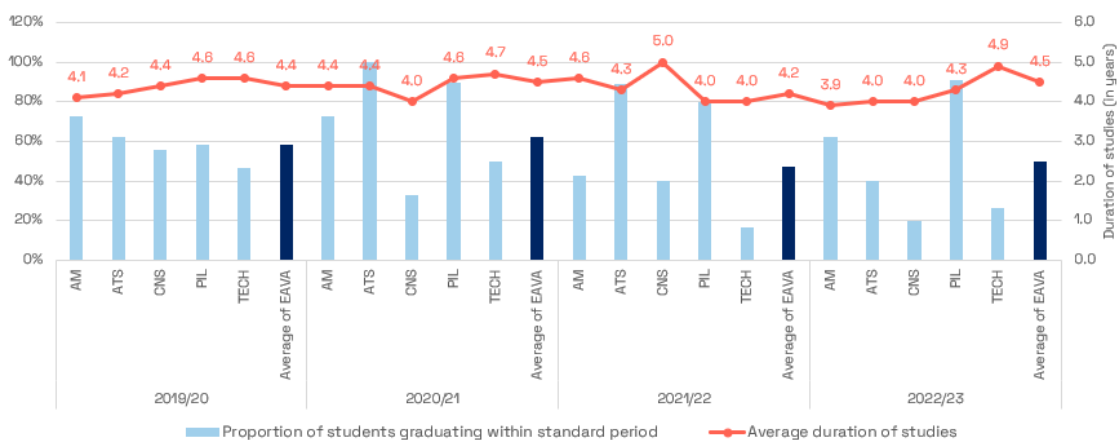


Figure 19. Average duration of studies by study programmes, and graduation rates (%) for standard programme duration (4 + 2 additional years). Source: SIS.

According to national statistics (haridussilm.ee), the proportion of students who have disrupted their studies over the past four years (see Figure 20Figure 19) at the Academy averages 10.7%, which is lower than the Estonian average (12.3%).

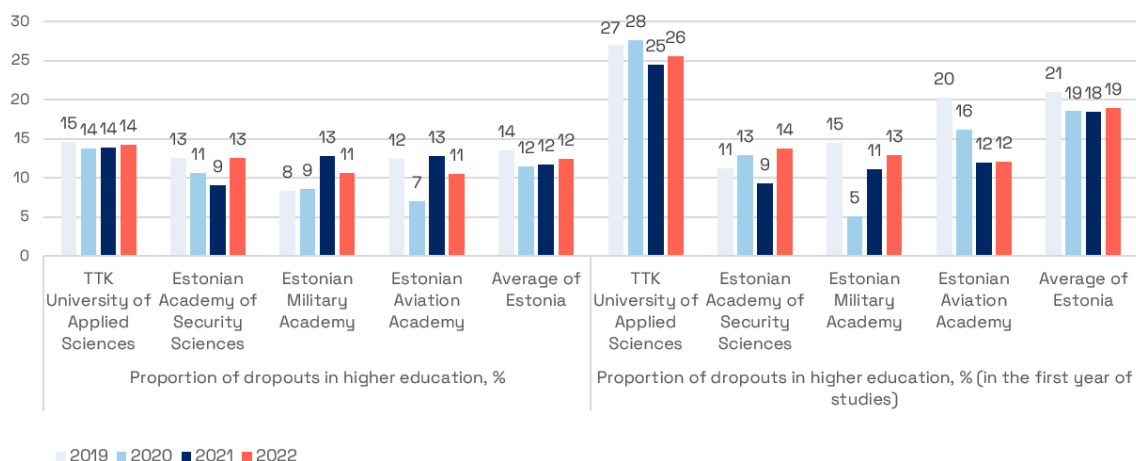


Figure 20. Proportion of students discontinuing studies at EAVA, as compared to other Estonian professional higher education institutions. Source: EHIS.

The rate of discontinued studies was highest among the students of the Aeronautical Engineering programme (11.4–21% in the evaluation period), where the number of students with academic debts was also the largest. In 2021, the Academy started to record and analyse students' reasons for discontinuing or interrupting studies in order to design measures to reduce these rates and to thereby increase the number of graduations within the standard duration of studies. The analysis shows that students who interrupt their studies within their first year most often give the unsuitability of the speciality as the reason. Moving forward, the Academy intends to increase its use of learning analytics. Data on students of the Aeronautical Engineering programme who discontinued their studies were analysed in 2023 as part of a graduation thesis. The results indicated that the highest level of discontinued studies occurred among first-year students; for more than 20% of students who discontinued their studies, this was due to the unsuitability of their specialty area.

Several measures have been implemented to reduce discontinuation rates and to increase the number of students graduating within the standard duration of studies, including:

- **raising the student candidates' awareness of the availability of different specialities** (see section 3.12.1);
- **supporting students' academic progress:** monitoring student participation in training organisation studies; monitoring the completion of curricula; counselling students with academic debts (including drawing up individual plans aimed at the completion of studies); interviewing first year students to identify potential problems during the first semester; holding meetings between the Head of Study programme and/or the Head of Training and study groups; offering a supplementary course on Mathematics (to harmonise student levels); offering additional consultations where necessary; revising the process of writing the graduation thesis to better support students in the completion of their thesis; encouraging better preparation for writing theses; and organising seminars on writing the graduation thesis in a more systematic manner.
- **maintaining and enhancing motivation:** increasing the share of subject courses on aviation in the first years of study to enhance motivation among first-year students; involving students in research and development activities; establishing scholarship funds e.g., stipends from different aviation enterprises); creating opportunities for and supporting sporting activities; involving employers / practitioners in teaching; and arranging meetings with employers.

3.10.4 Availability of educational and scientific literature, study materials

The Academy houses the only public aviation library in Estonia. Library materials can be found in the online catalogue RIKSWEB. Since 2017, the digital versions of graduation theses have been made accessible to the public.

During the review period, the library has mainly focused on the availability of online resources and on widening its collection. In addition to the EBSCO database collection, the library has gained access to the digital journals of several major publishers. The EAVA library offers remote access to most databases and materials, which benefits students undertaking distance learning. The library organises seminars for students and teaching staff on how to search for information. In consultation with teaching staff, new materials are regularly added to the library, and interlibrary loans may be used to borrow supplementary materials.

3.10.5 Availability of digital learning and IT support

Academy students are registered as users of the Academy's computer network by creating a user account, after which they can use the available information systems (study information system Tahvel (SIS), Moodle learning environment, mailing system) and computers. First-year students complete the Informatics course in the first semester, in which they study the

information systems needed for their future studies and learn to use the required programmes. When registering for subject courses, students are offered additional support and answers to any of their questions.

The Academy's official information exchange environment is the study information system Tahvel (since 2020), managed by the MoER. EAVA actively participates in Tahvel's ongoing development. In the SIS, students can find information on their curricula, draw up their study plan, view the timetable, access documents and study results, prepare applications, and request certificates. The Academy plans to develop a system for the digital monitoring of student attendance, which would replace the labour-intensive system of paper attendance lists.

The Academy uses the digital learning environment Moodle. More than 70% of courses are using the Moodle environment and the number of such courses increases each year. In courses with Moodle support, the digital environment is used by teachers for presenting course materials, giving feedback, and sharing information with students. Students can also monitor their own progress in Moodle. The Educational Technologist assists teaching staff with the development of e-courses and also helps students who need assistance with using Moodle. The IT Department provides support to students and employees with computer network issues, printing, and any other IT issues (including the use of software and hardware) (see section 3.2.5).

3.10.6 Participation of students in extracurricular activities

EAVA involves students in the popularisation of the field of aviation and in its endeavours to introduce aviation to the wider public. Funds from the Department of Marketing and Communication budget are allocated to the Student Council for recreational and sporting activities e.g., participation in the events organised by the Estonian Academic Sports Federation and expenses related to renting indoor sports practice facilities). In addition, EAVA permits students to use its premises for student-organised events e.g., quiz shows, donor days, film nights and training sessions of the folk-dance group) (see section 3.12.1).

Strengths:

- The system of personal counselling of students functions well and students receive professional support in the case of psychological problems.
- Estonian language and culture are introduced to international students and international visiting students, and they receive support throughout their studies.
- The Academy has the only aviation library in Estonia which supports teaching and learning, research and development.

Areas for improvement and future development activities:

- Development of the library's remote access so that all databases needed for R&D can be accessed from outside the Academy's study centre.
- Greater implementation of learning analytics, to reduce discontinuation and interruption of studies (especially in the speciality of Aeronautical Engineering).
- Development and implementation of a system of digital monitoring of students' attendance, which would replace the labour-intensive system of paper attendance lists.
- Improve feedback surveys to get clearer review of student satisfaction with digital learning and IT support.

3.11 RESEARCH AND DEVELOPMENT

R&D at the Academy is based on the following documents:

- the Strategic Plan of the Estonian Aviation Academy 2021–2025, (including strategy maps for research and development);
- the Estonian Aviation Academy Procedure for Research and Development Activities;
- the Estonian Aviation Academy Procedure for Registering Spin-off Enterprises;
- the Estonian Aviation Academy Procedure for Disposal and Use of Intellectual Property.

The regulatory documents were updated and augmented at the beginning of 2023, as the Academy joined the Estonian Code of Conduct for Research Integrity (2017). In addition, a separate motivation system for publishing research papers has been established.

3.11.1 Objectives and focal area of R&D

In the previous accreditation assessment report, EAVA was found to be only partially in compliance with the R&D standard. The Academy therefore designated the development of R&D as one of its priorities. In light of the recommendations presented in the institutional accreditation assessment report, the rapid development of the aviation sector, and the Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021-2035, a separate strategy map was included in the Strategic Plan (including indicators), to define EAVA's **focal area**. The Academy's chosen focal area is on future

technologies in **unmanned aviation** and the **creation of the environment enabling its functioning**.

Table 19. Indicators of R&D at EAVA. Sources: R&D Strategy Map, ETIS, SAP.

Key Performance Indicator (KPI)	2020 baseline	2021	2022	2025 target
Number of development service packages	0	2	3 ¹²	3
Number of active projects per year	8	6	8	9
Number of scientific publications (ETIS classifier 3.1 and higher)	2	6	5	6
Share of staff involved in development activities	18%	27%	44%	29%
Sales volume of development services	102,000 €	35,000 €	70,647 €	50,000 €
Volume of external funding (incl. volume of project grants)	228,622 €	298,254 €	188,870 €	350,000 €

R&D activities are coordinated by the **Vice Rector for Development together with the Council for Research and Development** (R&D Council), which is composed of EAVA's employees whose competencies cover different specialities in the field of aviation. To help integrate the R&D focal area, the R&D Council is chaired by the Unmanned Aerial Systems Team Lead. To enhance coherence between R&D and the academic programmes, the Head of the Office of Academic Affairs is also a member of the R&D Council.

Cooperation on R&D activities with experts from the University of Tartu Institute of Technology has led to better organisation of R&D, the exchange of practices, and the establishment of scientific cooperation on several projects (see section 3.11.3).

As a focal area, unmanned aviation is topical and develops rapidly. This is illustrated by strategy documents published as recently as November 2022¹³. Unmanned aviation is closely related to other areas, such as defence, internal security, urban mobility, and medicine. Consequently, enterprises and partners (including those outside the traditional aviation sector) increasingly seek academic expertise.

3.11.2 R&D and studies

At the beginning of 2020, the Department for Development was closed, which was previously responsible for R&D. The aim of this change was to make R&D an integral part of teaching and learning, to reinforce its links to speciality departments, and to support interdisciplinarity. The R&D activity of academic staff is now guided by and linked to the focal area, which assists the progress of curricula and subject courses towards R&D. The uptake of R&D methodology across the organisation is catalysed by seminars, training sessions, and writing camps.

The Academy also supports the launch of student projects, and, in 2023, a non-profit organisation founded by the EAVA's students was awarded an Estonian Business and Innovation Agency student development project grant in the field of engineering. Students are mainly involved in R&D through their graduation theses, and academic staff suggest potential graduation thesis topics in their field of expertise. In some specialty areas, students participate in applied R&D projects, where they may carry out research as part of their practical training, or as part of their graduation thesis. Excellent examples of student participation in applied R&D projects include students' applied research studies on the impact of marine wind parks on aviation (which forms part of four graduation theses), and a study relating to Tartu Airport where four students completed their practical training. A growing number of graduation theses relate to the Academy's focal area, to the research areas of academic staff, and to development projects (growing from four theses in 2021 to more than ten in 2023).

As at the end of 2022, the Academy had 21 permanent academic employees, 9 of whom had an obligation to publish research, and 6 of whom held a PhD. Due to the uniqueness and small size of the Academy, the performance of R&D activities and participation in projects by non-academic employees is strongly encouraged. This is illustrated by the share of employees involved in development activities (see Table 19). All permanent academic employees are required to complete a certain volume of R&D (as indicated in their workload plan). For lecturers, this volume averages about 25–30% of their workload.

Although academic staff members are free to select their own research area and topics, the Academy encourages R&D and scientific publications in its focal area. One means of encouragement has been to increase the coefficient in the publication motivation system for the focal area. Publications based on teaching areas are also encouraged, because the study of the future of aviation (and the related skills and competencies) is also highly valued (see the number of high-level publications in Table 19).

In Estonia, higher education institutions providing professional higher education do not currently receive any state funding for R&D. Applied research is mainly carried out based on demand, and the expenses are covered by the clients. While there

¹² Eight out of ten service packages include development services.

¹³ The EASA Research Agenda 2022–2024, European Commission's communication "A Drone Strategy 2.0 for a Smart and Sustainable Unmanned Aircraft Eco-System in Europe", strategy map "Digital solutions in each area of life" in the Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021–2035.

are high expectations of a leap forward in conducting the required volume of high-quality research at EAVA, it is difficult to do so within the constraints of existing resources. In 2021, a development team of the RCUAS proposed an R&D funding model, according to which professional higher education institutions operating under the MoER will be allocated targeted support for R&D from 2023 onwards. With this support, EAVA intends to create three professorial (CNS, Applied Mathematics, Advanced Air Mobility) positions for the further development of its focal area; to enrol three academic staff members in an industry-based doctorate at UT and TalTech (who will subsequently fill the position of research fellow and thereby develop a new generation of academic staff); and to continue with training on R&D methods, writing camps, and seminars.

To support internal R&D activities, 40,000 euros are allocated each year from EAVA's budget to EAVA employees and students. During the evaluation period, activities on two large-scale internal research lines have been launched: a study of the efficiency of multi-rotor drone propellers (aerodynamic issues), and a study of UAV positioning and GPS interference.

3.11.3 R&D and cooperation

During the evaluation period, cooperation with other higher education institutions has also been initiated. The objectives of this cooperation are to transmit and link topics related to R&D and the focal area to other fields, to prepare joint publications, to prepare for the establishment of professorships at EAVA, and to negotiate the cooperation agreements on industry doctorates with the University of Tartu and TalTech.

Below is a list of significant R&D collaborations with other Estonian higher education institutions that have commenced during the evaluation period:

- Research topic of the University of Tartu (Institute of Technology): unmanned aircraft management in the changing environment. Implementation and adaptation of technological solutions to multirotors.
- Research topic of the Estonian University of Life Sciences (Chair of Energy Application Engineering): studying the impact of nanopowders in the composition of exhaust gases emitted from gas turbine engines. A master's thesis is being completed by an employee of EAVA, which involves students who carry out testing as part of their graduation theses.
- Research topics of the Estonian Military Academy (Department of Applied Research): analysis of aircraft with precision attack capability and their life cycle. Preparation and synchronisation of an unmanned aircraft-based sensor network.
- Research topics of the Estonian Academy of Security Sciences (Remote Sensing Research and Development Centre): development of national drone services in the context of internal security. Mapping the possibilities for cross-reuse of data e.g., terrain awareness).
- Research topic of TalTech (Department of Electrical Power Engineering and Mechatronics): maximising the utilisation of magnetic flux in aircraft electric motors with low rotational speed.
- Academic Summer School 2023 (only available in EST) in cooperation with the Estonian Military Academy and Estonian Academy of Security Sciences: unmanned aviation applications in civil and military use.

3.11.4 R&D projects

As a result of its focus on developing international cooperation during the evaluation period, EAVA has joined several project consortiums. During 2022 and 2023, a total of seventeen applications were submitted. Seven of these were granted, and for the four applications, the decision on funding has not yet been made (as of date July 2023). In 2022, ten project applications were submitted. The most significant of those receiving a positive decision were the **Interreg CITYAM and Horizon-Sesar SAFIR-Ready projects**. Activities carried out within the framework of these projects have provided EAVA with the opportunity to be Europe's leading voice on the topics of U-space and Urban Air Mobility.

The most important R&D activities at a national level are as follows.

ZeroEST or the Tartu County ecosystem of zero-emission aviation (members: Tartu Science Park, City of Tartu, Union of Tartu County Municipalities), in which EAVA plays an important role in issues relating to the strategic planning of management of urban air mobility and sustainable air traffic management. This role has led to EAVA's involvement in various large-scale projects. Within this ecosystem, EAVA collaborates on the application of innovative technologies and the provision of services in and around Tartu, in the areas of testing and validation (development of Tartu U-space sandbox and LivingLab). The creation of a collaborative development environment for unmanned aviation encourages enterprises to set up business in Tartu, which consequently provides EAVA with additional opportunities for the provision of development services. The resulting increase in competence, and in revenue from partnership projects and applied research are additional safeguards of EAVA's long-term sustainability.

Collaboration with the **Estonian Academy of Security Sciences Remote Sensing Research and Development Centre**. The primary aims of this collaboration are to develop joint training programmes for remote pilots, to establish a separate airspace (Väike-Maarja U-space sandbox) for the operation and testing of unmanned aircraft, including UAS operation, enacting scenarios, and UAS defence. In addition, this collaboration leads to the identification of potential research questions, such as the 2023 study entitled UAV study of the Unmanned Aircraft System Traffic Management (UTM), and another study on the

application of regulations to the provision of national services. Finally, this collaboration forms the basis of national drone service development.

The development of the U-space sandbox. The establishment of U-space *sandboxes* will ensure that Estonia becomes a leader in Northern Europe for the carrying out of tests in the field of future aviation, as well as an attractive development environment for local and foreign enterprises. To date, preparations have been made for establishing the sandbox, so that, in the future, EAVA will be seen as both as an operator of the sandbox and as a support provider for end-users. With this in mind, a procurement was conducted by the EBIA and the ETA for the joint development of the U-space concept and roadmap, in conjunction with a working group of experts from EAVA, ETA and EANS. EAVA was responsible for drawing up the vision document for the U-space sandbox. The U-space sandbox functions as a *U-space* integration platform and provides the means for assessing the compliance of technology with technical requirements and regulations. EAVA's role as an operator of UAV will be to provide support for end-user compliance with technical and operational standards and requirements, and to support UAV operators in integrating the U-space. EAVA's role will also encompass compliance with requirements relating to the capability and functioning of unmanned air vehicles within established criteria, and the integration of control centre software.

3.11.5 R&D services

One of EAVA's strengths is its strong cooperation with the aviation sector of Estonia and the Estonian Aviation Cluster (a non-profit association). EAVA has been an associate partner of the Estonian Aviation Cluster since 2019, which enables it to receive constant feedback from enterprises and other organisations within the aviation sector. This feedback relates not only to the need for continuing education, but also to R&D, as EAVA is involved in the cluster's development projects. Through the Estonian Aviation Cluster, EAVA also participates in the European Aerospace Cluster Partnership (EACP) skills working group.

One of the reasons for EAVA's low number of R&D projects is the limited demand for these within the Estonian aviation sector. Over the past few years, EAVA has improved its communication with entities located outside Estonia, with a view to promoting its competencies to a wider audience. The next step towards presenting EAVA's competencies and services more systematically is to develop a strategic science communication plan targeted at specific interest groups e.g., employees, students, partners, national institutions and members of the public). In Spring 2020, EAVA became part of the ADAPTER network and carried out the ELASTRA II project (on the Development of EAVA Competence Centres) to develop education and development services for enterprises. This was preceded by a preconditions study, in order to gain insight into the market and sector potential. As part of this project, a digital platform was designed using SIMIO software, which can be used to develop simulation models for managing processes in the aviation sector.

In order to support enterprises and provide services, EAVA is part of several cooperation networks. In addition to the Estonian Aviation Cluster, the Academy is now a member of the support group Hydrogen Valley Estonia, participates alongside other partners from Estonia in the DIANA programme, and has recently joined the ESA BIC Estonia Tartu Science Park consortium.

Strengths:

- Positive funding decisions, including on international project applications in the focal area, which have provided the opportunity to become one of the leading organisations in the development of U-space.
- Cooperation with Estonian partner universities in R&D activities in the focal area.
- Contributing with academic competence to the activity of working groups and organisations supporting the development of aviation.

Areas for improvement and future development activities:

- Developing a science communication plan for specific interest groups.
- Increasing the number of scientific publications relating to the focal area.

3.12 SERVICE TO SOCIETY

3.12.1 Community engagement

EAVA contributes to the development of the aviation community via the allocation of physical resources and by popularising aviation. **Within the aviation community**, EAVA provides packages of education and development services and training programmes. The Academy has also created the 'Lennurada 03' podcast, and gives public lectures (in Estonian). Additionally, EAVA publishes a quarterly newsletter for its alumni and partners. To enhance understanding about the aviation sector, posters introducing various aviation organisations are displayed in the EAVA study centre foyer, and social media campaigns have also been run (sixteen campaigns during the period between 2020–2022).

In order to introduce the field of aviation to **secondary school students**, targeted cooperation modules for students of general education schools have been developed e.g., for sector-specific extra-curricula groups, courses, elective subjects and study trips) and secondary school students are offered the chance to attend preparatory courses (see section 3.12.5). EAVA

participates in most of the Estonian educational fairs and career days e.g., “A Cool School Day”, Robotex International, and ‘Study in Tartu!’). Additionally, student shadowing opportunities are offered to secondary school students, which are becoming increasingly popular (the annual number has grown from 37 in 2019/2020 to 73 in 2022/2023). Since 2020, the possibility to seek advice from a student representative has been offered. Each year, EAVA also hosts an open doors day for student candidates. In 2021 and 2022, this was organised in the form of a live virtual tour, and this online accessibility significantly increased the number of participants.

For **alumni**, the most important news is shared via the Estonian Aviation Cluster newsletter, although a Facebook group has also been created, which now includes more than 50% of all graduates. Once per year, an aviation seminar is held that brings alumni back to the Academy. In addition, EAVA alumni are involved in teaching and the development of curricula as members of the Study Programme Advisory Boards and of the Speciality Councils.

Local **organisations and residents of the local area** may visit EAVA’s library and café, rent rooms, and use its conference services. Donor days, for students, employees and residents of the area are organised by the Student Council. In addition, the opportunity to use flight simulators is offered to members of the public, with students of aircraft piloting speciality acting as instructors.

3.12.2 Development of the non-profit sector, participation in charity

EAVA’s employees and students have participated as organisers in all Estonian Aviation Days (led by the Estonian Aviation Museum). Since 2021, EAVA staff have also participated in the Aviation Day in Jõhvi. EAVA provides assistance in organising this event, gives public lectures on aviation, and organises tours.

Since 2021, EAVA has contributed to the organisation of the Robotex International programming contest and the cyber hacking competition Cyber Battle of Estonia. In 2021, EAVA created the content of the task block on aviation for this competition. Since 2021, EAVA has also been involved in the Solaride project of building a solar car.

The Academy supports a project launched by the foundation *Minu Unistuste Päev* (My Dream Day) by providing children with the chance to experience simulator flights. At the 2022 aviation seminar, a charity auction was held, the revenue of which was donated to this foundation. Through the provision of gift cards for simulator flights, the Academy has supported several sporting events and endorsed various youth initiatives. Throughout the year, school tour groups are received at the Academy. Since the beginning of the war in neighbouring Ukraine, several campaigns for collecting donations have also been arranged. Furthermore, in the academic year 2022/2023, a Ukrainian national was granted a free study place in the Commercial Aviation Management programme.

3.12.3 Conferences, fairs, and other events

The major event that brings together the Estonian aviation community is the annual Estonian Aviation Seminar organised by EAVA, although this did not take place in 2020 and 2021 due to the COVID-19 pandemic. At this seminar, a travelling trophy (the ‘Eagle’) is awarded to the winner of the ‘Deed of the Year in Estonian Aviation’ competition.

In cooperation with the University of Zilina, EAVA will organise the international aviation conference INAIR 2023 in November 2023, bringing top-level European research on aviation to Tartu.

In order to promote EAVA as a centre of competence in unmanned aviation and to popularise the topic of unmanned aerial vehicles in the wider society, a seminar with more than 100 participants was organised in August 2022 (‘How to make the most of drones by exploiting them correctly’). Together with the Estonian Military Academy and the Estonian Academy of Security Sciences, EAVA has planned an academic summer school for August 2023 (see section 3.11.3).

3.12.4 Participation in specialised and professional associations, and in advisory and decision-making bodies

EAVA is a member of several aviation-related international organisations and associations (see section 3.5.1), as well as in other advisory and decision-making bodies. The Academy is represented in the Estonian Rector’s Conference of Universities of Applied Sciences (RCUAS) working groups. Throughout the 2021/2022 academic year, the RCUAS was chaired by the Rector of EAVA, who published several opinion articles (only available in EST) during his tenure on issues of higher education. EAVA employees are also members of the Aviation Terminology Committee, contributing to the development of Estonian-language aviation terminology. Between 2017 and 2021, an EAVA employee was the Chair of this Committee. In 2022, EAVA participated in the development of the Tartu County Development Strategy 2040 and contributed to the mobility working group. EAVA is a member of Estonian Association of Engineers and Estonian Logistics and Freight Forwarding Association.

To ensure that EAVA’s employees are able to contribute to community development, and to the development of the field of aviation within the framework of their specialisation and workload, employee workload plans account for their participation in committees and decision-making bodies, in the popularisation of their specialisations through presentations and workshops, in the preparation of legislation, and in academic mentoring.

3.12.5 Continuing education

At EAVA, continuing education is conducted, and its quality is assured, on the basis of the Rules for the Provision and Quality Assurance of Continuing Education. Activities in this field are the responsibility of the Lifelong Learning Project Manager, who works closely with Training Managers and Heads of Departments. After each training session, feedback is requested, and the results are analysed and taken into account when planning further training events. Since September 2021, the information system of continuing education, Juhan, has been used for organising continuing education.

The Academy offers a variety of customised and open registration continuing education courses. In addition, micro degree programmes (only available in EST), individual programme courses and MOOCs may be completed as continuing education. Due to the specific requirements of the aviation sector, many of the EAVA's training courses are based on the directives of the European Commission, which define their volume, content, and learning outcomes. All courses offered by the Academy can be found in the training schedule on EAVA's website, which is regularly updated. When preparing the training schedule, EAVA conducts a training needs survey of Estonian aviation enterprises and the Academy's other partners.

EAVA's objectives for continuing education derive from its vision and strategic goals as defined in the Strategic Plan. EAVA's overall goal is to introduce its education and development services to international markets, and to provide continuing education services beyond Estonia. Indicators used to assess the achievement of these objectives include the number of education modules and development services, and the volume of derived revenue (see Figure 8).

EAVA's provision of continuing education has recently been reorganised. Education modules are now prepared on the basis of activity areas, and the education and development services of related areas have been linked. EAVA's education services now include a variety of continuing education programmes. Development services which can be customised include applied research, development work, and professional counselling and are provided by experts in the field. The volume of EAVA's own revenue has continuously increased (see Figure 8).

Within the area of unmanned aviation, a number of operators and remote pilots in the sector lack professional aviation experience. In response to societal demand, EAVA has assumed responsibility for supporting the professional development of unmanned aircraft operators, and for contributing to the assurance of their safe operation. Training relating to unmanned aviation is therefore of fundamental importance and the number of EAVA training programmes is constantly increasing.

Since the 2022/2023 academic year, EAVA has offered two micro degree programmes: Flight Operation Officer and CAMO Officer. These programmes were developed with input from enterprises. The objective of micro degree programmes is to offer fast-paced and effective training courses which meet the needs of the labour market and provide competence in a specific field.

In 2020–2022, customised training sessions were provided in cooperation with two international training organisations, JAA Training Organisation and Entry Point North. In 2021, the Academy signed a cooperation agreement with the International Aviation Transport Association (IATA) and thereby became the only certified training organisation in Estonia that may provide contractual training courses to the aviation sector, using materials developed by IATA.

EAVA also introduces the field of aviation to members of the public via its free-of-charge MOOCs 'Introduction to Aircraft' (which has received an e-course quality mark) and 'Introduction to Aviation Specialities'. The development of several paid e-courses is also in progress. These include both initial and continuing training courses that are required by employees of aviation enterprises, as well as more general courses.

The major customers for EAVA's training courses include the Estonian Defence Force, Estonian Air Navigation Services and Tallinn Airport.

Table 20. Continuing education programmes in 2019–2022. Sources: EHIS, Juhan.

		2019	2020	2021	2022
Motorised vehicles, shipping and aviation technology	Number of courses	17	15	20	22
	Number of enrolments	146	98	138	179
Transport services	Number of courses	21	18	10	19
	Number of enrolments	509	548	748	437
Computer sciences	Number of courses	-	-	1	1
	Number of enrolments	-	-	19	19
TOTAL	Number of courses	38	33	31	42
	Number of enrolments	655	646	905	635

Strengths:

- EAVA plays an important role in the popularisation of aviation and in uniting Estonia's aviation community.
- An increase in aviation safety through training programmes provided to the wider public in the field of unmanned aviation, and by supporting the development of professional unmanned aircraft operators.
- Provision of continuing education based on the needs of aviation enterprises and other target groups, and systematically structured continuing education. Close links between the training courses provided as education services and the Academy's R&D activities.

Areas for improvement and development activities:

- Introducing the Academy's education and development services to international markets, providing continuing education outside Estonia.

4 AVIATION MANAGEMENT

Name, level of study	Aviation Management (214444), professional higher education
Structural unit responsible for implementation of study programme	Department of Aviation Services
Main author of the self-analysis, Head of Study Programme	Kristjan Roosipõld, Head of Department of Aviation Services, Head of Study Programme, kristjan.roosipold@eava.ee
Brief description of the process of self-analysis and preparation of the report (period, persons involved, allocation of tasks, coordination)	<p>The academic years 2019/2020–2022/2023 were analysed. The analysis was carried out between December 2022 and May 2023, during which time the working group held joint meetings, whilst working on a shared document in Google Drive.</p> <p>The working group included the following members:</p> <ul style="list-style-type: none"> ○ Kristjan Roosipõld, Head of Department of Aviation Services and Aviation Management study programme; ○ Nele Tootsi, Head of Office of Academic Affairs; ○ Heliise Unt, AM Head of Training, heliise.unt@eava.ee; ○ Virge Prank-Vijard, Lifelong Learning Project Manager; ○ Merilin Jõesaar, Coordinator – statistics; ○ Anett Veski, Coordinator – preparation of annexes.

4.1 PLANNING AND MANAGEMENT OF STUDIES

4.1.1 Development of study programme

As outlined in the Strategic Plan, one of EAVA's strategic goals is to be a sustainable professional higher education institution offering quality education. In addition to the strategic goals set in the Strategic Plan, the strategic focus established in section 4.5 of the Annex to the Strategic Plan 'EAVA AM strategy map for 2021–2025' was taken as a starting point for the development of the AM study programme, including the integration of R&D in studies.

In developing the study programme, the process used at EAVA for developing study programme(s) is followed (see section **Error! Reference source not found.**). Feedback received from the Study Programme Advisory Board, alumni, employers, teaching staff, and students is taken into account. In addition, a member from a international higher education institution offering similar studies is involved in the Study Programme Advisory Board (In the academic year 2022/23, this was a representative from the IUBH University of Applied Sciences). The Study Programme Advisory Board also includes a student representative, and representatives from enterprises. In order to assess the compliance of the study programme with the needs of the labour market, feedback and input is regularly requested from the representatives of enterprises that have recruited the Academy's graduates, and/or accepted Academy students for practical training. Feedback on the content of the study programme and modules is mainly collected from the Study Programme Advisory Board and from students. Feedback is generally positive (in 2020–2022, the average score on a 5-point scale was 4.0). During study programme development, regular communication with local aviation organisations is maintained, and as many practitioners as possible are involved in teaching. The fact that the future needs of the labour market are taken into account is illustrated by the new subject courses which have been added to the list of electives e.g., Cybersecurity in Aviation, and Innovation and New Technologies in Aviation).

The good fit between the study programme and the needs of the labour market is illustrated by the number of students who continue their studies at a higher education level, and by the proportion of graduates who find employment. A number of students are offered professional employment during their studies e.g., in the enterprise where they complete their practical training). In the Strategic Plan, a target of 90% for graduate employment or further study has been set for the graduates of the AM study programme by 2025. In 2021 and 2022, these target levels were already exceeded (see Table 21). After the COVID-19 pandemic, the aviation sector of Estonia has started to redevelop, and enterprises are expanding.

Table 21. Employment and further education rate of AM graduates. Source: EAVA Office of Academic Affairs.

2020	2021		2022	
Baseline	Target	Actual rate	Target	Actual rate
95%	70%	100%	75.00%	100% ¹⁴

The most significant change made to the AM study programme within the last three years has been **the development and opening of a 3-year study programme**. This programme aims to accelerate students' entry in the labour market, and to align the study programme more closely to the needs of employers. Before reducing the length of the study programme from four to three years, a thorough analysis was performed, under the leadership of a graduate of the study programme and an employer representative. The first students of the 3-year AM study programme were admitted in the academic year 2020/2021. Previously, the Academy had offered a 4-year study programme with similar content. Input for modifying the study programme was received from students, alumni, and enterprises. The new study programme is more compact, and the subject courses more closely reflect employers' needs. The new programme is a better fit for the needs of the aviation sector, offering the theoretical framework and professional skills required for working in aviation organisations. Competition for admission has become significantly higher, demonstrating that the new study programme is also popular among student candidates (see Table 22).

Table 22. Application-to-admission ratio in the AM study programme 2018–2022. Source: SAIS.

Study programme	Code	2018	2019	2020	2021	2022
Aviation Management (AM, 4 years)	2284	5.7	5.5	-	-	-
Aviation Management (AM, 3 years)	214444	-	-	8.2	15.6	13.7

In 2022, the AM study programme was amended and now the **Continuing Airworthiness Management Organisation Office (CAMO)** and **Flight Operations Officer (FOO)**¹⁵ competencies can be obtained. There is currently a strong need for professionals in these areas, which is predicted to increase still further. The CAMO and FOO competencies were developed in close collaboration with employers. Both specialities can also be obtained as a micro-qualification through continuous education.

In 2022, **the proportion of elective subjects** in the study programme was significantly **increased**, to provide students with a wider range of subject courses which can be chosen according to their interests, level, and preferences. Those alumni who have completed the Aviation Management study programme have found employment in a variety of areas e.g., as specialists in aviation marketing, quality and/or safety assurance, CAMO, project management), each of which require different background knowledge and skills. A larger number of electives provides the students with an opportunity to tailor their studies to their career plans. The change has been well received by students; not only has it boosted their motivation to study, it has also helped the Academy to see which electives students prefer.

When developing the new study programme, **comparisons were drawn with similar programmes** taught in Finland, Latvia, the Netherlands, France, Lithuania, Cyprus, and Germany. Analysis of these programmes indicated that in several higher education institutions, studies are largely organised as project learning, with a high proportion of independent learning. Group work and distant learning methods are also often used. Within EAVA's Aviation Management study programme, there has also been a clear trend towards introducing project-based learning (particularly in the subjects of the Aviation Management Module and the Module of Elective Subjects). Some subject courses (Airline Network Planning, Innovation and New Technologies in Aviation, Operations Management in Air Transportation) have been reorganised as e-courses in order to make studies more flexible and diverse, and to develop learner autonomy. The analysis also showed that other equivalent study programmes provide students with a wide range of practical training cooperation partners (including international partners), and this has now also been made possible within the AM programme by engaging almost all of the Estonian aviation organisations (see Table 16). The Academy also seeks for opportunities to complete practical training abroad, especially in neighbouring countries such as Latvia, Lithuania, and Finland, where the aviation sector is developing and the number of aviation enterprises is increasing.

The development of the study programme has been further supported by several graduation theses relating to the study programme. The results of the graduation thesis "Internship at Finnair Business Services Ltd for Estonian Aviation Academy Aviation Management Students" (2022) has been of assistance in improving the organisation of practical training. The model

¹⁴ The Academy has no information on 13% of graduates.

¹⁵ According to ICAO doc 10106 Appendix A

designed as part of the thesis “Develop Passenger Forecasting Model Based on QSI Methodology, Using Tallinn Airport Routes for Students of Aviation Management of the Estonian Aviation Academy” (2022) is now used in teaching the subject course Airline Network Planning. In addition, applied research studies, involving students and with a focus on R&D activities relating to the study programme have been carried out (e.g. “Identifying the Development Potential of Tartu Airport and Planning its Multi-Faceted Development”, and “Identifying the Market for Potential Air Cargo in South Estonia”).

4.1.2 Structure and coherence of the study programme

The objectives of the study programme and its modules are established by the Head of Study programme in conjunction with the Study Programme Advisory Board and academic staff. Study programme development is coordinated with the Study Programme Advisory Board and approved by the EAVA Council. The study programme is drafted by the responsible teaching staff member in cooperation with the Head of Study programme. The final version is reviewed by the Head of Study programme, who reviews the functioning of study programme as a whole, the learning outcomes, the teaching and assessment methods and criteria.

EAVA’s overarching principles (see section 3.8), together with student capacity, are the foundation for the planning of subject course volume. Feedback on subject volume is collected from students in subject surveys.

During study programme development, the requirement for general competencies have been taken into account:

- By associating with each other, both international students and Estonian students develop their ability to work with people from different cultures and backgrounds. The study programme also includes several subject courses which specifically develop communications skills, such as Business Ethics and Communication (3 ECTS), and Aviation English (6 ECTS). As electives, students may select Estonian Orthography and Composition (3 ECTS) and foreign languages (6 ECTS). Student’s communication skills are also developed via group work in several subject courses.
- Digital competencies are generally developed across subject courses, but more specifically in the courses Informatics (3 ECTS), Information Technology (2 ECTS), and Cybersecurity in Aviation (3 ECTS).
- The ability to work as a team member is also developed across different subject courses, especially through group work. Practical training also plays a major role in developing student’s teamwork skills.
- Creativity and entrepreneurship are developed in the courses Speciality Project (6 ECTS) and Project Management (3 ECTS), as well as in the Module of Practical Training (27 ECTS).

The further development of **project-based learning** opportunities in cooperation with enterprises will enhance students’ ability to manage real-life working situations.

Practical training is important for the reinforcement of theoretical knowledge. A number of students write their graduation theses on a topic related to their practical training and find employment in the organisation where they carried out their practical training. Organisations in which practical training involves working with regulatory documents may be found, and practical training is organised by the teaching staff member responsible for the subject course. Speciality practice affords students the opportunity to shape their own studies, because the students choose the place where they will complete their practical training and draft a practical training plan. The practical training plan is then approved by the supervisor from the Academy. EAVA often receives offers from aviation enterprises inviting students to complete their practical training there. These offers are all communicated to students. Supervisors of practical training complete specific training courses and supervision is generally assessed very positively by students (the average score on a 5-point scale was 4.5 in 2020–2022).

Students assess their practical training in their practical training reports and in general satisfaction surveys. During the evaluation period, the overall organisation of practical training by the enterprises and the Academy has received very positive feedback (the average score on a 5-point scale was 4.2 in 2020–2022). The substance of practical training has also achieved high scores (on average, 4.7 out of 5 in 2020–2022).

4.1.3 Learning environment, material and financial resources

There is a constant demand for aviation specialists on the labour market, which is predicted to increase, therefore AM study programme can be assessed as sustainable. The availability and accessibility of material means and financial resources are sufficient for high-quality studies. Most of the resources are used for the remuneration of (visiting) teaching staff. To ensure the provision of the most up-to-date professional knowledge and close cooperation with the aviation sector, the Academy has taken a clear position on the future involvement of visiting teaching staff. Depending on budgetary availability, the Academy intends to involve more international visiting teaching staff, thereby making studies even more international, and to transition towards more project-based learning e.g., enterprises may present students with real-life problems, and ask students to try to solve them).

The area most in need of improvement is the availability of **educational literature**, because in some subject courses e.g., Airport Operations and Ground Handling Management, Flight Planning), studies are based on regulatory acts. For this reason, staff members must compile study materials themselves, which is extremely time-consuming. Students and teaching staff have access to several multidisciplinary **scientific and aviation databases**, such as EBSCO, Science Direct, Oxford Academic,

ICAO eLibrary, SKYbrary, etc. Instructing students on how to use scientific databases in a more active and targeted manner also needs attention; despite being provided with ample opportunities, students do not yet use them sufficiently.

In the new study programme, topics on **environment protection and sustainability** have been integrated into the content of subject courses e.g., Introduction to Aviation, Airport Operations and Ground Handling Management, Innovation and New Technologies in Aviation). The preservation of the environment is also taken into account when organising studies e.g., by using digital study materials and assessment tasks).

For **independent work**, the EAVA library, seating areas in the foyer, meeting rooms and classrooms are all available to students (when there are no other study sessions there). The study centre, built in 2011, provides students with excellent learning conditions and modern facilities. In the annual student surveys, the learning and social environment is consistently assessed very positively (above 4 out of 5). In addition, these issues are often discussed in meetings with the Student Council and study groups. Based on student feedback, chairs with foldable writing tablets have been replaced by desks in lecture hall B203.

Strengths:

- The study programme complies with the expectations of the labour market and the rate of employability of graduates is high.
- A wide range of electives and cooperation partners for practical training allows students to tailor their studies to their interests and career plans.

Areas for improvement and future development activities:

- Further development of project-based learning in order to provide more opportunities for managing real-life working situations.

4.2 LEARNING, TEACHING AND ASSESSING

4.2.1 Admission and support in choosing the specialisation

Potential students are informed about the possibility of pursuing studies in AM through EAVA's various marketing channels (see section 3.2.6). The admission procedure is described in section 3.8.1. In order to be admitted to the AM study programme, candidates are required to take a written test and then demonstrate their motivation in an interview with the admission committee. The competition for a study place in the AM programme is high (see Table 15), which allows EAVA to choose only the most motivated candidates. Since the opening of the 3-year study programme, the competition has become even higher.

To assist potential candidates in choosing a speciality, EAVA offers a MOOC ('Introduction to Aircraft'), which introduces the specialities taught at the EAVA. In addition, prospective candidates can shadow a student and meet with student representatives, who describe their studies and speciality.

After admission, students are supported in making choices within the programme on the basis of their career interests (electives, a place for completing practical training); by employers, with whom different meetings are arranged (career days, public lectures); by the Head of Study programme; and by the teaching staff of the department.

4.2.2 Learner-centred approach

The AM study programme includes a variety of electives (51 ECTS) and speciality practice (24 ECTS), which encourages students to take responsibility for planning their own studies and career. Small study groups allow the teaching staff, the head of the study programme, and coordinators to observe student progress. In addition to career counselling, students may discuss any problems they are facing at consultations provided within subject courses, or while choosing the electives or a place for practical training. Students may participate in student projects and the activities of the Student Council. Within the Erasmus+ programme, a wide range of options for studying a semester abroad is provided. Using the guidelines, students plan the timing and detailed content of their practical training themselves. At the beginning of each semester, meetings with study groups are held to collect students' opinions and ideas for improving study processes and the substance of subject courses.

For teaching and learning, a variety of different methods are used e.g., classical lectures, seminars for discussion, group work, projects, writing essays, reading and analysing articles, compiling written summaries, oral presentations, solving tasks and brain storming). In choosing purposeful and efficient study methods, the teaching staff are supported by the Academic Developer as necessary.

The study process is supported by the use of **digital technology**; 83% of subject courses use the Moodle learning environment. Several subjects have been awarded the e-course quality label, including Operations Management in Air Transportation (2023) and International Economics (2022). Compared to the period prior to the COVID-19 pandemic, the digital competency of teaching staff has developed enormously and they are further supported by the Educational Technologist, who conducts

training sessions, prepares guides, and instructs employees individually, where necessary. In the 2022 student satisfaction survey, the learning materials available within the Moodle learning environment scored 4.3 (on a 5-point scale), which is an improvement on previous years.

Independent work is part of every subject course. Since the study groups are small, students receive individual written feedback on independent work. Individual feedback and formative assessment play a central role in practical training where the supervisor from the organisation at which students complete their practical training provides students with direct feedback.

Students are encouraged to become involved in R&D activities through the suggestion of potential topics for their graduation theses. Several studies have been conducted in which students have worked alongside academic staff members e.g., 'A Survey of the EAVA Preconditions for Development', 'Identifying the Development Potential of Tartu Airport and Planning its Multi-Faceted Development'). Within the Space4UAM development project, a graduation thesis aimed at improving the EAVA's R&D focal area was written ('Tartu Airspace Analysis for the Establishment of Unmanned Aviation Systems Test Field'), which was awarded the Applied Research and Development Competition stipend. Students' interest in becoming involved in R&D activities might actually be higher than it appears, which is why the Academy intends to introduce R&D to students even more.

In order to ensure the alignment of credit points with the actual study load of students, independent work is also accounted for in the syllabi, and feedback is regularly collected from students on their study load through the subject monitoring surveys. Based on student feedback, the volume of the subject course Aviation Safety has been reduced, and the 6 ECTS subject Economic Accounting and Aviation Finance has been divided into two (Economic Accounting, 3 ECTS and Aviation Finance, 3 ECTS).

Students can improve the quality of their studies by providing responses in the subject monitoring and other surveys, and by providing input at the regular meetings of study groups with the Head of Study programme and Head of Training. Small study groups provide opportunities for close cooperation and direct communication between students. Students' self-analysis skills are developed and demonstrated, for example, through the task of compiling their own practical training reports.

4.2.3 Student assessment

When assessing students, the general principles applied across the Academy are followed (see sections 3.7.1 and 3.9). In addition to multiple choice tests, which are the principal assessment method, students are assessed through group work, defence of their projects, etc. Formative assessment is particularly used in the course on project management e.g., students design a project and receive regular feedback on their project), and in the writing of their graduation thesis. In addition, formative assessment is used in practical training e.g., direct feedback from the supervisor over the course of training). The primary obstacle in applying formative assessment is the low level of awareness of visiting teaching staff of the concept, and the difficulties in involving them in assessment-related training.

Students receive information on assessment criteria in the syllabi, and they are also informed about these by teaching staff during their first contact learning sessions. In subjects taught by several members of the teaching staff, all members are also involved in its assessment. Employers and representatives of other higher education institutions are engaged to form part of the defence committees assessing graduation theses.

Students' prior learning and professional experience is recognised pursuant to the Procedure for the Accreditation of Prior and Experiential Learning (APEL/RPL) (see section 3.9.3). APEL/RPL has been used to transfer the results of introductory courses on Economics and Entrepreneurship, whereas other applications concerning electives e.g., in Economics and Psychology) have been rejected.

4.2.4 Student mobility

Students pursuing the AM programme are strongly encouraged to take advantage of opportunities for **international mobility**. Regular information sessions are organised where students who have participated in mobility share their experiences. EAVA has concluded Erasmus+ partnership agreements with 25 partner universities, including with 15 higher education study programmes which closely resemble the AM study programmes and which are recommended for mobility. Mobility indicators (see Table 23) were above the Estonian average, but below target level. The target level is feasible, if the proportion of practical training completed abroad is increased.

Table 23. Proportion of AM programme students who have participated in mobility. Source: EAVA Office of Academic Affairs, EHIS.

Participation of students in learning mobility	2020 baseline	2021	2022	2025 target ¹⁶
Aviation Management students (%)	12.7	14.8	8.5	16
Average in Estonian Higher Education Institutions (%)	2.6	2.2	3.6	-

In order to offer international (visiting) students an opportunity to participate in AM programme studies, several subject courses are taught in English. International (visiting) students are supported prior to commencing studies and during their studies by the Coordinator of International Studies.

4.2.5 Supporting students

The provision of support services relies on EAVA's learning support systems (see section 3.10). One of the advantages of the AM study programme is its small study groups, which facilitate a more personal approach to student support. Teaching staff members are able to pay attention to each student, and to follow and support their individual progress.

The wide range of electives makes the study programme relatively flexible. Students can choose the timing for the completion of elective courses and practical training, and can consequently optimise their study load during and between semesters.

For further support, students may turn directly to the Head of the Office of Academic Affairs, a teaching staff member, the Head of Training, the Head of Study programme, or the Head of Department. In addition, students may communicate their problems (including anonymously) through the Notify Us of Any Problems or Suggestions section on the EAVA website.

In 2020–2022, four students of the AM study programme discontinued their studies (as at the time of drafting this report, this equates to 10.5% of admitted AM students). The proportion of AM students who discontinue their studies is higher than the Academy average, but lower than the overall average for Estonia. Discussions are held with all students intending to discontinue their studies, in order to find out their reasons and to offer potential solutions, thereby helping students to continue their studies wherever possible. To try to prevent discontinuation, interviews are held with programme candidates to establish their motivation to study. Subject courses on aviation are also included in the first year of studies, in order to maintain the students' motivation.

Strengths:

- Small study groups which provide good opportunities for offering personal support to students during their studies and when planning their careers.
- Large number of subject courses with e-support.

Areas for improvement and future development activities:

- Include even more AM students in R&D activities.

4.3 DEVELOPMENT OF TEACHING STAFF, COOPERATION AND INTERNATIONALISATION

4.3.1 Qualification of teaching staff and development of competencies

The qualification requirements for academic staff are set out in the EAVA Rules for Employment of Academic Employees. The number and qualifications of academic staff is currently sufficient for the AM study programme. Each academic year, academic staff workloads are planned, which indicates any need for visiting staff. Workloads are reviewed at least once per academic year and changes are made with a view to complying with the prescribed norms for the workload of teaching staff. Workloads are calculated in accordance with the EAVA principles for calculating the workload of academic and teaching employees.

Members of EAVA's permanent teaching staff have an obligation to continuously develop their professional and pedagogical skills. During performance appraisals, many factors are taken into account, including the alignment of their teaching with modern concepts of learning, the employee's efficiency in supervising, the employee's contribution towards the development of new subject courses, the volume of taught subjects, the employee's contribution to the development of curricula, and their contribution towards the existence, development and quality of e-support/e-courses. Student feedback is also taken into account.

¹⁶ EAVA's target level in the Strategic Plan

In order to motivate visiting academic staff to improve and maintain their pedagogical and professional qualifications, a new system was implemented in 2022/2023, according to which their qualifications, experience and pedagogical training completed within the last three years contribute towards the determination of their remuneration rate. Since this system has not yielded the desired results in terms of developing visiting academic staff's teaching and supervision skills, additional measures are now being planned.

In order to support teaching staff members (including visiting teaching staff), EAVA has established a system of internal training, and visiting teaching staff members are regularly offered training opportunities (relating to teaching in multicultural classrooms, research methods, supervision of research papers, planning assessment, giving feedback to students, etc.). In addition, teaching staff members are personally supported by the Academic Developer, where necessary.

To facilitate cooperation between teachers of the AM study programme, some subject courses are taught collaboratively by several teaching staff members e.g., Project Management, Airport and Ground Handling, Specialty Project). To share experience and knowledge obtained through external training, EAVA uses a separate internal communication channel, which the AM programme staff actively use e.g., to share information received at IATA conferences or the Green Forum of the Transport Sector).

Traineeships for teaching staff members are agreed on and incorporated into the workload plans during performance appraisal interviews. After completing a traineeship, teaching staff members submit a report, in which their acquired skills, knowledge and experience, and their implementation of these into teaching and R&D are analysed, as is their potential for future cooperation with the relevant enterprise. Assessing traineeships is part of the staff performance appraisal. During the COVID-19 pandemic, traineeships were disrupted. However, between 2020–2023, three teaching staff members from the AM study programme completed traineeships in aviation enterprises (Regional Jet OÜ, Tallinn Airport and Airbus Urban Mobility). As a result of these traineeships, the relevant study materials were updated, insights into airport operations were gained (which was useful for creating simulation models), and the participants acquired knowledge about new technologies in aviation. The academic staff of the AM study programme participate in several professional networks, including the aviation terminology committee, the Federation of European Simulation Societies (EUROSIM), the AZEA different working groups, and the International Civil Aviation English Association (ICAEA). The academic staff of the AM study programme also contribute as experts to the work of specialised committees, decision-making bodies, and working groups (e.g., as an expert in the Horizon Europe programme committee). Five teaching staff members of the AM study programme act as certified IATA instructors.

The target level set for employee participation in learning mobility ('mobility') in the Strategic Plan is 30% by 2025. The mobility indicators for the teaching staff of the AM study programme are strong (in 2020, there was no mobility due to the pandemic, but in 2021 and 2022, it was at 60%).

4.3.2 Following the principles of academic ethics

Issues relating to academic ethics are addressed and responded to in accordance with the relevant rules, guidelines, and good practices established at EAVA (see section 3.4). Training sessions on issues of academic ethics are regularly organised, and an overview of academic ethics is provided during information sessions for first-year students. Students follow guidelines for formatting written assignments, and teaching staff use the guidelines on copyright when compiling study materials.

Incidents of plagiarism can be reported through a specific form. The seriousness of the incident is determined i.e., the proportion of work which is plagiarised), and appropriate steps are taken. EAVA's centralised system for reporting on incidences of plagiarism ensures that similar incidents are handled analogously, and also makes it possible to detect repeat offenders. Since the launch of the system, one report in connection with the AM study programme has been submitted, involving the use of artificial intelligence. In the context of academic ethics, regulating the principles of artificial intelligence use in learning, teaching and research will require greater attention in coming years. Complaints concerning academic ethics are resolved by committees, which generally include student representatives. These committees make decisions based on the Academy's Guidelines and Strategy for Equal Treatment.

4.3.3 Involvement of visiting teaching staff

During the review period, several visiting teaching staff members have been involved in teaching the AM study programme courses (mostly from partner universities of the Erasmus+ programme), and have participated both in face-to-face and online sessions. In Spring 2021, a virtual mobility week was organised with ISEC Lisboa, in which lecturers from both institutions delivered lectures on different topics, and students carried out group work and made presentations.

Cooperation with practitioners in the aviation sector is excellent, and most of the visiting teaching staff members are practitioners. In addition, they are involved as supervisors and reviewers of graduation theses, as consultants, and as members of defence committees.

4.3.4 Appraising the performance of teaching staff and providing feedback

The performance of teaching staff is assessed during performance appraisals and includes an interview process. At least once every five years, permanent academic staff members must pass a performance appraisal, in which their activities and outcomes in key areas are assessed, as well as their progress along their chosen career path. In assessing different areas (conducting studies, R&D activities, contribution towards development of the Academy, professional development), opportunities and obligations to contribute in relevant areas are taken into account. The objective of the performance appraisals is to support the development and career prospects of each academic employee, and to assess each employee's ongoing suitability for their position, or for progression along their career path. The evaluation committee always includes a student representative, as well as an external member from another higher education or partner institution, who is both competent in the relevant field and at the career level of the evaluated employee. The evaluation committee also makes specific recommendations for improvement.

At least once a year, performance appraisals of each member of the permanent teaching staff are conducted, in conjunction with their immediate supervisor, with the aim of assessing their compliance with position requirements, and to support further professional development. During the appraisal interview, any requirements for additional training are planned and these are specified in the employee's workload plan.

The total workload of a permanent academic staff member and its division into distinct professional duties is calculated on the basis of the average annual number of working hours (1600 hours). These duties are described in the annexes to the Rules on Employment of Academic Employees (principles for calculating workload, career path). Each permanent teaching staff member has the right to one fully-paid semester every five years, free of teaching duties, during which they may improve their professional skills and/or carry out R&D activities.

Strengths:

- Feedback on the performance of teaching staff is given and analysed systematically, and corrective measures are planned when necessary.
- Teaching staff members have good opportunities for professional development and EAVA supports their traineeships in aviation organisations, international mobility, publication, and participation in projects.

Areas for improvement and future improvement activities:

- Increasing the level of teaching and supervising skills of visiting teaching staff.

5 AIRCRAFT PILOTING

Name, level of study	Aircraft Piloting (2283), professional higher education
Structural unit responsible for implementation of study programme	Department of Aviation Services
Main author of the self-analysis, head of study programme	Jaan Annus, ATO Head of Theoretical Training, Head of the Study programme, jaan.annus@eava.ee
Process and brief description of self-analysis and preparation of a report on it (period, involved persons, allocation of tasks, coordination)	<p>The analysis was carried out between December 2022 and May 2023, during which time the working group held joint meetings, whilst working on a shared document in Google Drive.</p> <p>The working group included the following members:</p> <ul style="list-style-type: none">○ Jaan Annus, Head of the Study programme – content analysis of the study programme;○ Nele Tootsi, Head of Office of Academic Affairs;○ Virge Prank-Vijard, Lifelong Learning Project Manager;○ Merilin Jõesaar, Coordinator – statistics;○ Ivar Viilup, Coordinator – preparation of annexes.

5.1 PLANNING AND MANAGEMENT OF STUDIES

5.1.1 Development of study programme

According to the Strategic Plan, one of EAVA's strategic goals is to be a sustainable university of applied sciences offering quality education. In developing the aircraft piloting (PIL) study programme, the strategic goals set out in the Strategic Plan were taken into account, as was the strategic focus defined in Annex 4.4 to the PIL programme development plan 'EAVA PIL strategy map for 2021–2025' (which is to provide professional pilot training in compliance with the needs of Estonian enterprises).

The PIL study programme includes the integrated courses of airline transport pilot licence (ATP(A)) and helicopter commercial pilot licence (CPL(H)), each of which comply with the aviation requirements outlined in the European Commission Regulation (EU) No. 1178/2011 ('Commission Regulation') and which have been approved by the ETA. This allows the students who complete the study programme to apply for the commercial pilot licence issued by the ETA. The study programme offers students the opportunity to specialise either in aeroplane or helicopter piloting. The study programme plays an essential role in training pilots for national units (Air Force, airborne squad of the Police and Border Guard Board). Graduates may also be employed as pilots by various aviation enterprises (Nordic Aviation Group, NyxAir, Airbaltic, Wizzair, etc.). Graduates can also contribute to the development of the aviation sector as professionals and inspectors in government bodies (ETA), since the base module of the study programme offers all the necessary prerequisites. In addition, the study programme aligns with changes taking place in society, since the demand for pilots has significantly increased since the COVID-19 pandemic. The fact that graduates have a high chance of success in the labour market is evidenced by their high employment rate, which in 2020–2022 was 90–100%.

The PIL study programme is developed in accordance with EAVA's process for developing study programmes (see section 3.7.1). The study programme is reviewed annually, taking into consideration the information collected through feedback surveys (learners, alumni, partners), and the feedback received at the end of each subject course from students and teaching staff. Changes to the content of the study programme are discussed in the Study Programme Advisory Board, which includes the Head of Study programme, representatives of the teaching staff, employers and students, as well as a representative of an external higher education institution which offers a comparable study programme (in the academic year 2022/23, this was the Head of Department of Air Transport in Czech Technical University in Prague). The most significant change introduced in the study programme within the last three years has been the addition of a new subject course, Knowledge, Skills and Attitudes (KSA) within the Module of Basic Professional Training. This change was necessary due to amendments to aviation requirements established by the Commission Regulation (AMC & GM to Part-FCL — Amendment 4). Practical exercises relating to human factors that have a direct impact on aviation safety and the everyday work of the aircrew are now introduced during pilots' basic training (previously, human factor issues were only compulsory in theoretical subjects). Other changes that have been made relate to the volume of modules i.e., reducing the volume of the Module of Languages, and increasing the volume of optional subjects and the graduation thesis).

The development of the study programme is supported by research projects e.g., “Impact of the Gulf of Riga Offshore Wind Farm on Aviation”, “Study on Low Reynolds Number Propellers”, “Inductive Efficiency using a Test Bench”), from which graduation thesis topics are suggested to students. While writing their theses, students obtain knowledge and understanding about the theoretical impact of their topic on the aviation environment, and related topics may be introduced into the study programme. In 2020, a graduation thesis entitled “Pilots Assessments and Expectations on Meteorological Observations at the Regional Airports of Estonia” was defended, which related to a study on the feasibility of automatic meteorological observations at airports commissioned by the Environment Agency. In 2023, two graduation theses were related to an applied area of research, which resulted in an expert study on the impact on aviation of the planned wind farm in the Gulf of Riga.

In a graduation thesis of 2019, the PIL study programme was compared to the Bachelor’s programmes for professional pilots taught at the University of Debrecen and Brno University of Technology. The comparison mainly focused on the general subject courses, their syllabi, and the alignment of speciality training modules with theoretical training. The content of the speciality training modules across study programmes must comply with the aviation regulations established by the Commission Regulation, and should therefore contain no major differences. The author of the thesis highlighted several positive aspects of EAVA’s study programme e.g., the alignment of the Science Module and the Module of Engineering with speciality training, and the volume of the Module of Languages), which gives confidence that graduates will flourish in the aviation environment.

5.1.2 Structure and coherence of study programme

The PIL study programme includes modules of general studies and modules of speciality training, which support the students’ choice of speciality. Learning outcomes and, in certain cases, the assessment criteria and methods are regulated by the Commission Regulation. In designing the study programme, the integration of specialised knowledge and skills with the development of general competencies was deemed important. The coherence of the study programme and the integration of general competencies is best exemplified by the topics of the Knowledge, Skills and Attitudes (KSA) which are taught both separately and within other subject courses, in order to assess the capability of future pilots to combine the knowledge and skills acquired from different courses. Where possible, the exercises done as part of the KSA course, and student assessment, are scenario-based and combine several theoretical courses, and the topics are based on the objectives of the subject courses in the speciality training modules (Module of Basic Professional Training, Module of Aeroplane Piloting Speciality Training, Module of Aeroplane Piloting Speciality Training), as well as on the methodology of Threat and Error Management (TEM). Learning in the classroom is combined with sessions on flight simulation training devices. In addition to the KSA, general competencies are developed in several other courses (e.g., Aeroplane Multi-Crew Cooperation, Helicopter Multi-Crew Cooperation, Aviation English, Specialty English language, Principles of Entrepreneurship, Informatics). The study programme includes elective courses to the volume of 18 ECTS, which support the formation of a self-directed learner since each student may acquire the additional skills which most interest them.

Practical training is regulated by EAVA’s Procedure for Practical Training (only available in EST), the ATO training manuals, and the Commission Regulation. Practical training is completed by way of training flights, and teamwork is practised on the flight simulation training devices. Practical training ensures that graduates have acquired flying experience to the extent required for professional pilots of aeroplanes or helicopters under the Commission Regulation. In addition, practical training plays a fundamental role in obtaining the principles of safety culture. In compliance with the manual, students report all incidents that happen during their flight practice, which provides them with the opportunity to learn from mistakes.

Practical training is organised under contracts by subcontractors, who all have the required competencies and training licences. Contractual partners are found through public procurements. In the academic year 2022/23, practical training was organised by Pakker Avio AS. Student feedback on practical training has been very positive (4.2–4.3 points out of 5), and competent instructors have earned many words of praise. Under the Commission Regulation, instructors supervising practical training must complete refresher training every year, to stay abreast of any amendments to regulations, and to refresh their pedagogical knowledge. Negative feedback has been given to some of the organisational aspects of practical training, as, due to the weather conditions in Estonia, the period suitable for practical training is limited and flights are often postponed if flying is impossible due to the weather.

The mobility indicators of the PIL programme have recently improved and are higher than the Estonian average.

Table 24. Proportion of PIL programme students who have participated in mobility. Source: EAVA Office of Academic Affairs, EHIS.

Participation of students in learning mobility	2020 baseline	2021	2022	2025 target ¹⁷
Aircraft Piloting students (%)	8.7	4.2	10.9	10
Average in Estonian Higher Education Institutions (%)	2.6	2.2	3.6	-

In the implementation of the study programme, it was foreseen that students would study abroad at partner universities under the ERASMUS+ programme in their third semester. Due to the nature of pilot studies, students can complete general subject courses from the study programme (Avionics, Aerodynamics, etc.) during the mobility, or subjects which can be transferred as elective modules. After the fourth semester, mobility is not possible, as according to the ATO manual, speciality training must be completed at the same training organisation within 36 months of commencing the ATP(A) theoretical training and within 24 months of commencing the CPL(H) theoretical training.

Feedback on the study programme is collected from students, graduates, alumni, and employers. After the completion of each subject course, a subject monitoring survey is carried out, in which students provide feedback on the correspondence between the theoretical subject volume and actual workload. At the beginning of each semester, meetings with study groups are held to collect students' opinions and ideas for improving the study processes and the substance of subject courses. Based on this feedback, the subjects of Electrical Engineering and Electronics in cooperation with the Estonian University of Life Sciences was phased out in 2021, and these subject courses are now designed and carried out by EAVA, which has led to better alignment of these subject courses with speciality training. Based on the feedback of teaching staff, the volume of the Module of Languages was decreased in 2023, as students' English language proficiency is already high (at least B2, but generally C1), and there is therefore no need for so many language lessons. Instead, the volume of electives was increased in the study programme, to support mobility and the formation of self-directed learners. In addition to subjects offered by EAVA, learners may choose electives at the University of Tartu, which greatly extends the available choice.

Based on the feedback from learners, graduates, and alumni on the organisation of practical training, an analysis of the opportunities for completing flight practice has been commenced, with a view to changing the conditions of the procurement for flight practice, and to thereby make them more flexible so that flight practice may be completed outside Tartu, or abroad. At the same time, it means major rearrangements to the study process and requires a longer period of preparation e.g., to coordinate the changes with ETA). Based on student feedback, an optional course, Multi-crew Co-operation of International Airline, was opened again in 2023, which includes visits to aviation enterprises and provides students with an overview of the procedures performed by the aircrews of international air carriers, and with opportunities for learning about the everyday problems of air carriers and the ways in which they can be resolved.

5.1.3 Learning environment, material and financial resources

The most expensive component of the PIL study programme is flight practice. As the costs of this increased in 2022/23, the number of study places was reduced from 10 to 7. By regulating the number of study places, financial resources will be sufficient for the implementation of the study programme in the long term, but additional funds are still needed for acquiring expensive equipment e.g., flight simulation training devices), as the state funding is insufficient for this. The flight simulation training device currently used is outdated, and new devices should be acquired over the coming years, or other possibilities must be found for carrying out practical training on the training device e.g., finding a partner through procurement). The main motivation for acquiring a new training device is to have a device with a configuration and equipment which replicates the cockpit of a modern aeroplane, and to be able to practise the Required Navigation Performance (RNP) procedures, which are based on satellite navigation and are increasingly used. The efficient use of material and financial resources is facilitated by the fact that the subjects of the first two years of studies can be taught to students of several other study groups e.g., Avionics, Electrical Engineering, Aviation Physics), and the flight simulation training devices are also used, to some extent, in the speciality training of other study programmes e.g., ATS and CNS/TECH). Providing training services relating to the study programme and renting out the simulator allows EAVA to earn its own revenue. Developing educational and development services targeted at air transport operators may also provide EAVA with opportunities for increasing its own revenue.

In developing the study programme, great attention is paid to the protection of the environment and sustainability, which are matters of the utmost importance in the aviation sector. Air transport operators are interested in economical management, which in turn means less pollution. The same principle is followed in the organisation of flight practice within the PIL study programme (planning of training flights includes finding the most efficient route to a destination because shorter flights generate less pollution). Several graduation theses have covered environmental topics e.g., "Achieving Carbon

¹⁷¹⁷ EAVA's target level in the Strategic Plan

Neutrality in Estonian Regional Aviation by 2050", "Mapping the Carbon Footprint of Regional Jet OÜ and Nordic Aviation Group AS for Year 2021").

For independent work, students may use the EAVA library, cubicles in the foyer of the Study Centre, and any classrooms that are free. In addition, they can borrow laptops for study purposes (see sections 3.10.5 and 3.10.6). Students and teaching staff have access to several multidisciplinary scientific and aviation databases, such as EBSCO, Science Direct, Oxford Academic, ICAO eLibrary, SKYbrary, etc. Instructing students on how to use scientific databases more actively and in more a targeted manner needs attention because, despite the opportunities provided, they are not yet used sufficiently.

The learning and social environment is assessed very positively in annual student surveys. In addition, issues are discussed at the Student Council. Based on student feedback, for example, chairs with foldable writing tablets were replaced by desks in lecture hall B203.

Strengths:

- Managing changes systematically, by involving different parties, which ensures that the study programme is up-to-date and relevant.
- High employment rates after graduation. The study programme is related to a specific flight licence, which provides further opportunities on the labour market (including internationally).

Areas for improvement and future development activities:

- Analysis of the organisation of practical training and making changes that would provide opportunities for completing practical training outside Tartu, or abroad.
- The flight simulation training device used at the moment is outdated, and EAVA must analyse whether it will invest in a new device, or find other possibilities for carrying out practical training on a training device.

5.2 LEARNING, TEACHING AND ASSESSING

5.2.1 Admission and support in choosing the specialisation

Potential students are informed of the possibility to pursue studies under the study programme through EAVA's various marketing channels (see section 3.2.6). EAVA's admission procedure is described in section 3.8.1. Candidates for the PIL study programme must pass a written aptitude test (only available in EST), which assesses their capabilities e.g., attention, perception, logical thinking, mental multi-tasking), their psychological aptitude, and their personality traits, in order to ensure their compliance with the requirements for working as a pilot. In addition, physical fitness for the work is checked. If the aptitude test indicates the unsuitability of a candidate for the PIL study programme, they may still apply for a study place in a different speciality, or they may apply again for the PIL study programme later. One component of the admission test is an interview with the committee, which includes working pilots who represent the real-world view of the work. The competition for study places of the PIL study programme is strong (13.5 candidates per place in 2022), which allows the Academy to select only the most motivated learners from amongst those who meet admission requirements.

To assist in choosing the speciality before commencing studies, the EAVA offers a MOOC ('Introduction to Aircraft'), where the specialities taught at EAVA are introduced. In addition, prospective candidates may shadow a student and meet with student representatives, who describe their studies and speciality. Entrance interviews have shown that the candidates for the PIL study programme are well informed about their choice of speciality, as the profession is widely known throughout society. Before commencing studies in the speciality module, students must choose their specialisation: commercial pilot of aeroplanes, or helicopters. In making their decision, students receive support in special information sessions, and, if requested, working pilots teaching at the department share their experience.

5.2.2 Learner-centred approach

One of the advantages enjoyed by students of the PIL study programme is the small study groups (up to 12 students), which provides opportunities for giving individualised attention to each student. Flight practice is performed one-to-one with an instructor, who instantly gives personal feedback to the student. Students of the PIL study programme may be employed as instructors providing pleasure flights on the aeroplane or helicopter simulator, which helps them to decide whether they want to find employment in an aviation enterprise as an instructor. Students can also participate in the student projects and activities of the Student Council.

The PIL study programme is based on the requirements established in the Commission Regulation, which provides a solid foundation for the teaching methods used in speciality training. Throughout the studies, practical exercises play an important role in preparing the graduates for the exams to be passed at ETA. To practise teamwork and acting in dangerous situations, plane or helicopter training devices are used to simulate conditions that may exist in real life. During flight planning, students must solve practical tasks, such as the calculation of fuel usage in different situations. The Academic Developer provides staff with assistance in choosing the right teaching methods.

The large volume of electives provides students with the opportunity to supplement their studies with subject courses from many other fields. Students can make suggestions on the organisation of studies at the meetings of study groups or through feedback surveys. Flight practice is an extremely important part of studies, as the students are placed in a working environment where they are responsible for a safe flight complying with all requirements.

Although 50% of the subject courses in the PIL study programme have e-support, most of these are general studies subjects, because face-to-face classes are important in speciality training. Study materials used in the speciality training are textbooks listed in manuals. Tasks contained in the textbooks are solved together in the classroom and providing e-support for each subject is therefore often unnecessary. Nevertheless, the number of subject courses with e-support is planned to increase for those courses where some value can be added for students by supplementing the study materials listed in the manual. For example, this approach was taken in Meteorology I, and was awarded the e-course quality label in 2021. On a day-to-day basis, teaching staff are supported by the Educational Technologist, who conducts training sessions, prepares guides, and instructs employees individually, when necessary.

For their independent work, students generally receive individual written feedback. EAVA provides guidelines for formatting written assignments, and supports students in writing their theses by organising regular seminars and writing camps. In 2021, the graduates of the PIL study programme highlighted several problems relating to the supervision of graduation theses e.g., commencing the process of compiling the thesis too late, competence of supervisors). All study programmes now include the course “Fundamentals of Research” (3 ECTS), and supervisors are offered a training course “Supervision of research papers that supports self-directed learners”. As a result, feedback on the supervision of graduation theses has improved.

Teaching staff members involve students in R&D by suggesting topics for their graduation theses (see examples in section 5.1.1). Students’ willingness to participate in R&D activities is high because, through applied research studies, they find topics of practical value for their graduation theses and can work alongside potential employers.

Students contribute to the improvement of the quality of their studies by responding to subject course monitoring surveys at the end of each semester and to feedback surveys at the end of each academic year. Small study groups provide opportunities for close cooperation and direct communication with other students.

5.2.3 Student assessment

Student assessment is based on EAVA's general assessment principles as described in section 3.9. The main assessment method used in the PIL study programme is multiple choice tests that resemble, as much as possible, the theoretical knowledge examination to be completed at ETA in the final stage of their studies. In speciality training, subject courses are completed across several semesters and the final semester of each course ends in an exam which, in terms of time and volume, is identical to the theoretical knowledge exam to be taken at ETA. If ETA changes their assessment method e.g., questions with open-ended answers were recently added), the format of the school exam is changed accordingly. Each student receives different questions, but the proportions of subtopics remain the same.

In the Knowledge, Skills and Attitudes (KSA) course, tasks in which students are required to calculate by heart, and situational awareness assessments by solving prescribed scenarios were added. Based on the Commission Regulation, a separate assessment guide has been prepared for the KSA. Solving typical problems during training flights and practising on flight simulation training devices has been added to flight practice. This helps to better prepare students for their subsequent career in national or commercial aviation, where these types of tasks or problems must be solved every day.

In the KSA course, formative assessment plays a significant role. Formative assessment is also used in assessing flight practice, and in the course of writing the graduation thesis. As the change to formative assessment is very recent and this assessment method is new to the KSA instructors, they are not yet very experienced in using it. To improve results, the implementation needs more resources, and this assessment procedure needs further development.

Students are provided with information on assessment criteria in the syllabi and are also informed about assessment in their first contact learning session with teaching staff members. Teaching staff members of other higher education institutions are represented on defence committees for the assessment of the graduation theses.

Students’ prior learning and professional experience is recognised pursuant to the EAVA’s Procedure for the Accreditation of Prior and Experiential Learning (APEL/RPL) (see section 3.9.3). Through the APEL/RPL, students of the PIL study programme may apply for the transfer of subjects in the General Module, Science Module, Module of Engineering, Module of Languages, and Module of Elective Subjects. Through the APEL/RPL, subjects in sciences (Higher Mathematics, Electronics) that students have completed at other higher education institutions have been recognised. Negative decisions on the recognition of prior learning have been made when applications have been submitted for the recognition of, for example, secondary school courses on Psychology and Philosophy.

5.2.4 Supporting students

Due to the requirement prescribed by the Commission Regulation, students of the PIL study programme are under time pressure to complete the study programme (see section 3.10.3), which motivates students to complete their studies within

the standard duration of studies. During their studies, students are provided with counselling by the Coordinators or Head of Training of the department. In implementing the study programme, subject courses which provide knowledge and skills for commencing speciality training are taught in the first two years e.g., Avionics, Electronics, Electrical Engineering in the Module of Engineering). Subjects in the Module of Language, however, are taught throughout the studies, including general aviation English, and speciality-related English, which assists students in passing the required ICAO language test). As required by the Commission Regulation, participation in studies is recorded (with a 75% attendance requirement) and students missing study sessions are individually communicated with. The percentage of students disrupting their studies is low in the PIL study programme (in 2019-2022, 2.2–4.2% overall, and 0% for first-year students). The main reason for discontinuation of studies is the unsuitability of the chosen speciality.

The provision of support services is via EAVA's learning support systems (see section 3.10). Free psychological counselling is important in supporting the PIL study programme students. To successfully manage their studies requires a strong sense of responsibility and can cause considerable stress. Feedback on psychological counselling is very positive (4.4–4.7 on a 5-point scale). Through a specific form on EAVA's website, students can report any issues anonymously. In addition, students may turn directly to the Head of the Office of Academic Affairs, teaching staff members, the Head of Training, Head of Study programme, or the Head of Department.

Strengths:

- Learner-centred and personal approach to students, individual practical training with personal feedback.
- Systematic and well organised support systems helping students to manage responsibility and stress.

Areas for improvement and future development activities:

- Increasing the share of courses with e-support.

5.3 DEVELOPMENT OF TEACHING STAFF, COOPERATION AND INTERNATIONALISATION

5.3.1 Qualification of teaching staff and development of competencies

Qualification requirements for teaching staff are described in the EAVA Rules for Employment of Academic Employees. In addition to EAVA's qualification requirements, the preparation of teaching staff members teaching speciality training subjects must comply with the requirements specified in the ATO manual, which are based on the Commission Regulation.

To a great extent, speciality training in the PIL study programme is conducted by visiting staff members who work as pilots, but in order to facilitate research and development relating to the study programme, it is also important to increase the number of permanent teaching staff members conducting speciality training. Visiting teaching staff members often lack the motivation to work solely at EAVA and also wish to pursue their career as pilots, which makes it difficult to find permanent staff members.

Permanent teaching staff members have an obligation to continuously develop their professional and pedagogical skills. During performance appraisals, the alignment of their teaching with modern concepts of learning, their efficiency in supervising, their contribution to the development of new subject courses, the volume of taught subjects, their contribution to the development of curricula, and the existence, development and quality of e-support/e-courses are all taken into account, as is student feedback.

To motivate visiting teaching staff to improve and maintain their pedagogical and professional qualifications, a system was implemented in 2022/23 according to which the qualification, experience and pedagogical training completed within the last three years are taken into consideration when determining remuneration rates. The rate of participation of visiting teaching staff in pedagogical training courses is low, which is why the implementation of additional measures is being considered e.g., adding requirements for training to their authorisation agreements).

The PIL study programme includes subject courses jointly taught by several teaching staff members e.g., Knowledge, Skills and Attitudes, Flight Training, Navigation), which facilitates cooperation between the academic staff. For sharing experiences and knowledge obtained from external training, EAVA has a separate internal communication channel.

In order to support teaching staff members (including visiting staff), a system of internal training has been established at EAVA and visiting teaching staff members are regularly offered a variety of training opportunities (relating to teaching in multicultural classrooms, research methods, supervision of research papers, planning assessment, giving feedback to students, etc.). In addition, teaching staff members are individually supported by the Academic Developer and Educational Technologist, when necessary.

Traineeships for teaching staff members are agreed on and built into the workload plans during performance appraisal interviews. After completing a traineeship, teaching staff members submit a report, in which the skills, knowledge and experience they have acquired, and their implementation of these in teaching and R&D are analysed, as is the potential for

ongoing cooperation with the relevant enterprise. Assessing traineeships forms part of the staff performance appraisal. Working as a pilot is taken into account as a traineeship.

Student feedback on teaching staff (including visiting teaching staff) is good. The statement “Teaching skills and knowledge/experience of teaching staff support learning”, for example, currently yields a higher score on a 5-point scale than it did previously (from 3.0 in 2021 to 4.2 in 2022). Based on student feedback, teaching staff members have been offered more opportunities for developing their skills in supervising graduation theses.

5.3.2 Following the principles of academic ethics

Issues relating to academic ethics are addressed and responded to in accordance with the relevant rules, guidelines, and good practices established at EAVA (see section 3.4). Training sessions on issues of academic ethics are regularly organised, and an overview of academic ethics is provided during information sessions for first-year students. Students follow guidelines for formatting written assignments, and teaching staff use the guidelines on copyright when compiling study materials.

Incidents of plagiarism can be reported through a specific form. The seriousness of the incident is determined i.e., the proportion of work which is plagiarised), and appropriate steps are taken. EAVA’s centralised system for reporting on incidences of plagiarism ensures that similar incidents are handled analogously, and also makes it possible to detect repeat offenders. No reports on plagiarism by the students of the PIL study programme have been submitted so far, but the overall experience at EAVA supports the conclusion that, in the context of academic ethics, regulating the principles of using artificial intelligence in learning, teaching and research will require more attention over the coming years. Complaints concerning any infringements of academic ethics are resolved by committees, which generally include student representatives, and decisions are made on the basis of the Academy’s Guidelines and Strategy for Equal Treatment.

5.3.3 Mobility of teaching staff and involving practitioners in teaching

The target level set for the participation in learning mobility of EAVA's employees (including teaching staff) in the Strategic Plan is 30% by 2025. The mobility indicator for the teaching staff of the PIL study programme is lower than the target level (17% in 2022), as the work schedule of working pilots acting as visiting staff members makes it impossible to participate in mobility. From the academic year of 2022/2023, mobility will be included in the workload of teaching staff.

Visiting teaching staff members (9 in 2019–2022) were involved in teaching subject courses of general studies e.g., Introduction to Aviation, Introduction to Entrepreneurship) within the Erasmus+ programme.

A number of visiting staff members teaching the subject courses of the PIL study programme hold a pilot licence. In addition, practitioners working in different fields e.g., aviation safety, aviation security) are invited to teach subject courses within the General Module. Cooperation with practitioners is very effective. In addition, practitioners (including alumni) are involved as supervisors and reviewers of graduation theses, consultants, and members of defence committees.

5.3.4 Appraisal the performance of teaching staff and providing feedback

The performance of teaching staff is assessed during performance appraisals and includes an interview process. At least once every five years, permanent academic employees must pass a performance appraisal, in which their activities and outcomes in key areas are assessed, as well as their progress along their chosen career path. In assessing different areas (conducting studies, R&D activities, contribution towards development of the Academy, professional development), opportunities and obligations to contribute in relevant areas are taken into account. The objective of the performance appraisals is to support the development and career prospects of each academic employee, and to assess each employee’s ongoing suitability for their position, or for progression along the career path. The evaluation committee always includes a student representative, as well as an external member from another higher education or partner institution, who is both competent in the relevant field and at the career level of the evaluated employee. The evaluation committee also makes specific recommendations for improvement.

At least once a year, performance appraisals of each member of the permanent teaching staff are conducted, in conjunction with their immediate supervisor, with the aim of assessing their compliance with position requirements, and to support further professional development. During the appraisal interview, any requirements for additional training are planned and these are specified in the employee’s workload plan.

The total workload of a permanent academic staff member and its division into distinct professional duties is calculated on the basis of the average annual number of working hours (1600 hours). These duties are described in the annexes to the Rules on Employment of Academic Employees (principles for calculating workload, career path). Each permanent teaching staff member has the right to one fully-paid semester every 5 years for R&D activities.

Staff members of the PIL study programme are also involved in several professional networks, including the aviation terminology committee, the International Civil Aviation English Association (ICAEA), and the Estonian Meteorological Society.

Strengths:

- Several teaching staff members hold a pilot licence and provide a link between studies and the real world of work through specific examples, which enriches the academic environment.
- Several staff members teaching subject courses within general studies are related to aviation through their work or recreational activities and are therefore able to link the subject they teach to the speciality training of professional pilots.

Areas for improvement and future development activities:

- Greater involvement of teaching staff from higher education institutions outside Estonia in conducting general studies and other subject courses that support speciality training.
- Increasing the number of permanent staff members involved in speciality training.