Eesti Lennuakadeemia
Estonian Aviation Academy

Self-Evaluation Report

submitted to

the Estonian Higher Education Quality Agency

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Tartu 2013

MESSAGE FROM THE RECTOR

Estonian Aviation Academy is pleased to present this Self-Evaluation Report to the Estonian Higher Education Quality Agency in accordance with the established procedures for institutional accreditation. Through the report we describe the management and the operation of our organisation - a professional higher education institution also known as a university of applied sciences - the way to ensure sustainability of operations, share the good practices of our Academy and identify the areas in need of improvement.

Quality management is the phenomenon which is considered to have four main components: quality planning, quality control, quality assurance and quality improvement. The improvement of the study process and the curricula in accordance with the employers' expectations has been our major objective in managing and operating our organisation as well as gaining and applying better experience via quality management projects.

We have volunteered to participate in external assessments before, for example in 2004 our institution was successful in the competition "Estonian National Quality Award".

In 2007–2008 the Academy was a partner in the ESF project "Quality Assurance in Universities". The results of the project were:

1) expectations for the quality management system in the institution were mapped; the needs of the target groups were identified by the survey ;
2) needs for training were clarified and competences after training assessed in cooperation with Estonian aviation enterprises and organisations;
3) quality management training was organised;
4) Quality Manual was completed.

The quality criteria by the Estonian Higher Education Quality Agency were the basis for this self-evaluation. The document is structured according to the assessment criteria; the supporting material has been given in the text or via references to the corresponding parent documentation.

This self-evaluation was carried out by teams formed for this purpose; the intermediate and final reports were studied by the self-review management group. The self-evaluation report was discussed and approved at the meeting of the Academy Council on July 18, 2013.

Welcome to our home page www.lennuakadeemia.ee. For further details please contact eava@eava.ee or phone: +372 744 8100.

Jaan Tamm
Rector

GENERAL INFORMATION AND BRIEF DESCRIPTION

Institution of professional higher education:	Estonian Aviation Academy – hereinafter EAVA or the Academy (Eesti Lennuakadeemia in Estonian)
Legal form:	State agency governed by a government authority
Registration code:	70005699
Contact data:	Lennu 40, Reola küla, Ülenurme vald, 61707 Tartu maakond E-mail: eava@eava.ee Phone +372 744 8100 Fax +372 744 8125 www.lennuakadeemia.ee
The main areas of activity	EAVA is an institution of professional higher education under the jurisdiction of the Ministry of Education and Research which: – is the only educational institution in Estonia training specialists for aviation at the level of professional higher education – provides continuing education in the field of aviation – carries out aviation R&D activities, including applied research and technology transfer
Mission	We help you discover your enthusiasm for aviation and develop your potential in today's aviation industry
Vision	To continue the strong traditions and to provide knowledge-based orientation for aviation in Estonia
Core values	OPENNESS, COURAGE, ENTHUSIASM, DEVOTION
The main co-operation partners in education process	University of Tartu (UT) – basic studies during the first three semesters, speciality studies during the 5th-6th semester in information technology studies Estonian University of Life Sciences (EMÜ) – basic studies during the first three semesters Tallinn University of Technology (TUT) – speciality studies during the 5th-6th semester in navigation and communication studies Estonian National Defence College (ENDC) – training of air force officers (speciality studies at EAVA)
Number of students	310, all at professional higher education level
Personnel	59
PHE curricula 2013	1) Air Traffic Service 2) Management of Aviation Communication and Navigation Systems 3) Aircraft Piloting 4) Aviation Management 5) Aircraft Engineering
Teaching staff members	17 regular teaching staff members 15 administrative staff with the teaching assignment 29 visiting lecturers from enterprises
Teaching staff from universities teaching EAVA students on basis of agreements	27 under the UT/EAVA cooperation agreement 13 under the EMÜ/EAVA cooperation agreement 12 under the TUT/EAVA cooperation agreement

SELF-EVALUATION TEAM

Self-Evaluation Management Group	Jaan Tamm - Rector Ants Aaver - Senior Specialist Priit Mootse, Anu Vare, Jaak Umborg, Teo Krüüner, Allan Nõmmik, Karl-Eerik Unt, Carmen Ruus, Signe Maasing, Lii Nuut, Nele Andresen
Teams based on evaluation criteria	
General management and personnel management	Aiki Pärle - Personnel and Quality Manager Jaan Tamm, Ele Talu
Management of financial resources and infrastructure	Priit Mootse - Administrative Director Ele Talu, Ragnar Pähn
Teaching and learning	Signe Vanker - Head of Studies Department Anu Vare, Jaak Umborg, Teo Krüüner, Allan Nõmmik, Karl-Eerik Unt, Lii Nuut, Anu Roio, Karine Mandel, Nele Andresen, Tõnis Jürimäe, Jüri Luha, Aivi Jürgenson
Research, development and/or other creative activity	Allan Nõmmik - Acting Head of Department of Aviation Management Jaak Umborg, Karl-Eerik Unt, Jüri Krusealle, Carmen Ruus
Service to society	Eelika Tootsi - Head of Information Department Liis Linn, Aiki Pärle, Lilia Ingel, Mattias Kosemets

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INTRODUCTION

Estonian Aviation Academy (EAVA) is a state professional higher education institution (PHEI) educating specialists for Estonian aviation enterprises. The educational institution, founded in 1993 as Tartu Aviation College and renamed Estonian Aviation Academy in 2008, has by today developed into a successful higher education institution in the study process of which both the standards of Estonian higher education (HE) and international civil aviation are applied.

The Academy study process is built on a flexible system of study modules. Studies are conducted at the levels of professional higher education and vocational education. As there is no state funding for the provision of vocational education, it is conducted only in the form of in-service training on commission from enterprises or individuals. To meet the needs of enterprises, in-service training and re-training programmes for the already practising specialists are carried out.

A characteristic feature of Estonian Aviation Academy is that a great part of teaching is conducted on the contract basis by experienced specialists of respective fields working in Estonian and foreign aviation enterprises and in other higher education institutions. This ensures the stable quality of the teaching process and its conformity to the requirements established by the International Civil Aviation Organization (ICAO), the European Commission (EC), EUROCONTROL, Joint Aviation Authorities (JAA) and the European Aviation Safety Agency (EASA), which in its turn ensures the Academy graduates' high competitiveness in the Estonian and European labour markets.

HISTORY 1993–2008

Tartu Aviation College was established under the Ministry of Transport and Communications according to the Outline for the Development of Estonian Aviation for 1993-1996, priority 4: to create a modern system for training and certification of aviation specialists.

From the very beginning in parallel with administrative arrangements and building the management team, the first professional training groups for in-service training and refresher courses were started, seminars were organised.

The next qualitative step ahead was starting the professional training (Air Traffic Services, Aircraft Maintenance) according to the curricula approved by the Estonian Civil Aviation Administration (ECAA). Also the first training simulators were implemented.

HE diploma studies started in co-operation with Estonian universities for basic engineering studies in 1995, systematic funding from the state budget began in 1996, co-operation with Air Force for military training in 1997. In 1999 Tartu Aviation College was transferred under the Ministry of Education and Research.

The next years are characterised by the following developments:

2000–2002 – launching aviation training organisations (MTO, FTO, ATSTO), professional HE studies started;

2003–2005 – independent assessments, audits, international accreditations, approvals and certification by the ECAA, accreditation of the curricula by the Ministry of Education and Research, quality assurance co-operation with PHEI-s;

2006–2008 – broader international cooperation (ERASMUS, ICAO language examinations).

MAIN ACHIEVEMENTS OF EAVA OVER THE PAST FIVE YEARS

2008 – The Government of the Republic approved The Statutes of Estonian Aviation Academy [1; en, et][1] pursuant to which Tartu Aviation College was renamed Estonian Aviation Academy. The updated Statutes gave the Academy the right to open also vocational education curricula.

2009 – The EAVA election commission elected Jaan Tamm as the new Rector of the Academy;

– EAVA adopted learning outcome based curricula;

– EAVA and the Estonian National Defence College (ENDC) signed a cooperation agreement to educate Air Force officers.

2010 – EAVA students established the NPO Estonian Aviation Association that unites the Academy students and others interested in aviation with the purpose of popularizing aviation and fostering cooperation between the Academy and Estonian Aviation Museum;

– EAVA curricula received positive assessment at the transitional evaluation.

2011 – The new building of the Academy was opened at Ülenurme, EAVA won the contest Accomplishment of the Year in Estonian Aviation for completing and implementing its new study centre.

2012 – The 360° ATC simulator was installed. It comprises a ground surveillance radar and an electronic flight data system;

– EAVA proceedings, the collection of articles on students' research and graduation theses and applied research were published;

– Constructive changes were made in the curricula – thematic modules were taken into use to enable better cohesion between the subject courses;

– The Archimedes Foundation awarded the Academy with the Golden Apple 2012 for successful international cooperation in education.

2013 – To provide better practical training in avionics, automatic and mechatronic systems, the Academy obtained a *Learjet* plane;

– The Academy is working towards institutional accreditation.

In its 20-year development Estonian Aviation Academy has reached the point where, in addition to educating highly recognised specialists, it is about to extend its activities far beyond the boundaries of professional HE. The Academy is offering in-service training to enterprises on a much wider scale, our students and faculty members participate as partners in applied research and cooperation projects, we organise cooperation of regional aviation communication network – it all testifies that the Academy is becoming a recognised aviation competence centre.

EAVA DEVELOPMENT PLAN

The Development Plan of Estonian Aviation Academy [2; en, et] defines the role of the Academy and its present position in the society and in Estonian educational environment, presents its strategic goals and activities for achieving concrete results. The development plan serves as the framework document for further activities proceeding from the general development trends in European aviation industry and from the needs of Estonian aviation.

[1] en – available in English, et – available in Estonian

The EAVA Development Plan for 2013–2017 has been approved by the Minister's of Education and Research Directive No 151 from April 4, 2013. Although the previous development plan was to be valid up to 2014, the Academy decided to draw up a strategically new plan. This was derived from the changes both in aviation and in educational environment in general. In the drawing up process the rights, obligations and responsibilities of the Ministry and the Academy arising from the implementation of the system of allocating activity support were taken into account. The procedure for allocating the support, the goals established for 2013–2015 and the activities for achieving these goals agreed upon at negotiations with the Ministry as well as the institutional accreditation were also paid attention to.

The development plan defines the mission, the vision and the core values of EAVA, provides the evaluation of its present situation through the SWOT analysis, defines the strategic goals and core activities for achieving these goals, and specifies the procedure for updating the development plan. The draft of the development plan was co-ordinated with the members of the EAVA Board of Councillors, including the representatives of the Ministry of Education and Research and the Ministry of Economic Affairs and Communications, and the councillors appointed from the ECAA.

When drawing up this document the advisory guidelines on compiling the development plans for the Ministry of Education and Research governed professional higher education institutions were followed in regard to the structure of the plan as well as to the most important legal acts and strategic source documents.

In the development plan the Academy established its main strategic directions for the next five years taking account of the changes in the higher education environment and proceeding from the goals agreed upon with the Ministry of Education and Research and established by the directive on allocating the activity support thereafter. The annual action plans [3; en, et] of the Academy are compiled on the basis of the development plan.

1. MANAGEMENT AND OPERATION OF THE ORGANISATION

1.1 General management

1.1.1 The role of EAVA in society

EAVA is a state institution of professional higher education under the jurisdiction of the Ministry of Education and Research. EAVA is the only aviation higher education institution in Estonia, preparing specialists for civil as well as for state and military organisations. As a PHEI the Academy prepares specialists for Estonian economy and for air transport enterprises. Its graduates meet the international professional standards and are able to work in concrete professional fields; they have a comprehensive overview of their field, which enables them to deal with international aviation development issues and to facilitate the development of the competitive national air transport system. In line with the development plan the basic strategic activities of the Academy are:

1) training on the basis of professional higher education curricula, incl. in the specialities certified in compliance with international aviation standards;
2) participation in research and development and application projects;
3) supporting life-long learning in aviation domain;
4) networking aviation enterprises and organisations, contacts with international training organisations;
5) developing the comprehensive system of professional higher education.

1.1.2 EAVA mission, vision, core values and strategies

The mission, the vision up to 2017 and the core values are defined proceeding from the role of the Academy.

Mission: we help you discover your enthusiasm for aviation and develop your potential in today's aviation industry.

Vision 2017: to continue the strong traditions and to provide knowledge-based orientation for aviation in Estonia.

Values: the Academy defined its core values within the values project conducted specifically for this purpose:

OPENNESS:	open for cooperation, cooperation capability and reliability, capability for creating synergy;
COURAGE:	courage to change, courage to enter into dialogue, courage to make competence-based decisions;
ENTHUSIASM:	to complete the tasks agreed upon and achieve the goals set, initiative and being active in everything undertaken;
DEVOTION:	dedication to work, ability to focus and determination.

Strategic development directions of EAVA

The structure of the Academy curricula, the volume of the training needs and the aviation enterprises expectations of the quality of training are in good concordance and therefore it is reasonable to continue following the present PHE curricula. At the same time the suggestions made by enterprises and the Board of Councillors [4; et] refer to the need for perfecting and updating the curricula to improve their coherence, for specifying the training needs more operatively and for creating more

opportunities for training aviation specialists on the basis of vocational education curricula and at in-service training courses. The following strategic directions are of significant importance for the development of the Academy:

1) Application of more efficient methods for finding and selecting capable student candidates, including the conformity of the number of students studying in professional higher education curricula to the training needs and to the conditions as established by the directive on allocation of the activity support. To increase the revenues from economic activities and to more quickly respond to the needs of the labour market the Academy develops and increases the number of in-service programmes.
   Also, an important key area is increasing the scope of international activities that the Academy is making preparations for and holds consultations with neighbouring states to open study groups for training pilots and/or air traffic controllers.

2) Development of the specialist knowledge and experience of the personnel, creation of preconditions for more extensive internationalisation, making better use of the opportunities offered by international projects. In regard to the teaching staff it is important to optimise the proportion of the teaching staff, to ensure the new generation teaching staff and raise their qualification, and to implement the rotation system of the teaching staff members and instructors in cooperation with aviation enterprises.

3) Continuous development and updating of the learning and working environment and of the teaching methods. The Academy intends to develop its laboratories of the Ülenurme study centre. First and foremost, it is intended to improve the training conditions of the students of the speciality of aircraft maintenance in the hangar leased from Tartu Airport.
   The major updating of the curriculum of the speciality of Aviation Management enables in accordance with the conditions provided by the directive on allocation of activity support to offer studies in entrepreneurship to the students of all the specialities taught in the Academy.
   Improving the organisation and content of practical training, increasing the proportion of practical training in the speciality of Aviation Communication and Navigation Systems Management enables to offer the ENDC cadets training of higher quality and in the volume needed, and in-service training to the personnel of enterprises.
   The provision of the Master's level education satisfying the needs of aviation industry is planned to be conducted in cooperation with TUT and EMÜ as the Academy Master's programme in its present form will be closed in June 2013.

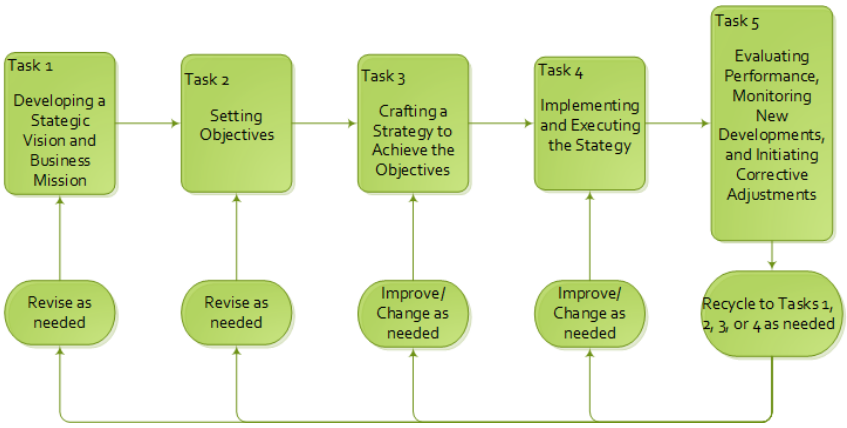
4) Enhancing the quality of teaching and learning, predicting the training needs and specifying the training capacity, creating and developing communication networks for this purpose. The Academy regularly and directly consults with enterprises as well as through its Board of Councillors to find out the most optimal need for the specialities of professional higher education and for in-service training necessary for enterprises (incl. the training at the fifth level of the Estonian qualifications framework). The latter becoming a major priority in the Academy activities of the coming years. Because of high demand for the Academy as a cooperation partner in the Erasmus Programme, and in line with the goal of internationalisation established by the directive on allocation of activity support the Academy is increasing the number of modules and subject courses conducted in English.

5) Integrating the studies and research and development activities, systemic development and increasing of the proportion of in-service training. For that purpose the Academy has drawn up the R&D procedure [5; et, en] that defines its priorities and aims, and implements R&D as the activity supportive to the studies process. Within the R&D activities it is planned to solve the problems of practical nature which arise from the needs of enterprises' everyday operations and from the potential of the Academy.

6) Development of funding opportunities and improving the financial planning. The Academy develops other activities in addition to provision of PHE in aviation – for example, research and development, in-service training, cooperation in various development projects of enterprises, fee-paying services, etc, which create supplementary funding opportunities alongside with the secured though limited state funding and helps to fulfil the goal of raising the revenues from economic activities as set out by the development plan.

7) The Academy is improving the organisation of practical training, conducting of R&D activities, involving foreign visiting lecturers and development of in-service training system with the financial support from ESF.

More detailed and measurable goals and the activities supporting the achievement of these goals are formulated in the Academy Development Plan [2; en, et]. The Rector makes a report on the fulfilment of the tasks of the previous year and sets out the tasks for the current year at the first session of the calendar year of the EAVA Council and at the session of the EAVA Board of Councillors in June. The report on the fulfilment of the action plan of the previous year together with the Annual Report and the action plan for the current year is submitted to the Ministry of Education and Research in March every year.



The development, implementation and feedback process of the Academy development plan as the base strategic management document is described in Figure 1.1 as a sequence of 5-stage management tasks.

Fig 1.1 Five tasks of strategic management

1.1.3 EAVA key results and performance indicators

The Academy key results listed below are formulated as goals in the development plan. Measurable performance indicators for each goal are also provided:

1) volume of training meeting the expectations of enterprises, and in conformity with the Minister's of Education and Research Directive on allocation of activity support;
2) the number and composition of teaching staff satisfying the training needs;
3) team work and value-based management;
4) development of the curricula meeting the expectations of employers and in line with the development of the field;
5) reducing the number of dropouts and enhancing the learning motivation;
6) establishing the R&D system supporting the development of the Academy staff and Estonian aviation industry;
7) developing goal oriented and project-based cooperation to organize the study process and research activities and to serve the society;
8) cooperation to serve the society;
9) student and employee satisfaction with the learning and working environment.

1.1.4 Development, management and implementation of the action plans by top management, development of the membership and interest groups

Management Principles

The management of the Academy is organised proceeding from the team work principles, where the work of the academic and support structures is centrally arranged by the administration (Rector, Vice Rector for Studies, Administrative Director, heads of academic structural units) in line with the principle of consensus-based agreements. Specific administrative decisions stipulated by the EAVA Statutes are subject to approval from the highest collegiate decision-making body – the EAVA Council; the decisions of the highest impact on the development of aviation industry are coordinated with the EAVA Board of Councillors.

The development plan defines the main activities related to team work and value-based management as a major goal in regard to the development of the organisation as follows - introduction of value-based management, development of organisational culture, implementation of the Total Quality Management System and the principles of strategic management, and working out and implementing the uniform communication strategy.
A series of activities has been planned for that purpose:

1. Development of organisational culture – improving the coherence of the Academy structural units and applying the team work principles more widely; raising the awareness of the common core values and introducing the core values into the Academy's working principles.
2. The Academy works out and implements (1) the motivation system to develop the teaching staff members' specialist knowledge and pedagogical skills, and to encourage their wider involvement in international activities, and (2) the competence-based salary policy that would enable to apply the motivating and supportive to the Academy development performance management.
3. The principles of the Total Quality Management System serve as the basis for the Academy quality assurance activities. Proceeding from this principle the priorities are:
    - specifying and describing of the core processes serve as the corner stone of quality management,
    - regular in-service training of the staff in quality issues, and enhancing the quality awareness in general; training of the heads of structural units,
    - developing of the system of internal audits, self-evaluation and external feedback.
4. In developing the quality management system the Academy proceeds from the need to integrate aviation requirements with educational regulations and principles. The quality management systems of FTO, MTO and ATSTO are going to be harmonized, and their quality control centralized.
5. Working out the Academy uniform communication strategy and plan that would develop public relations and support:
    - more efficient dissemination of information to aviation industry and enhancing Academy's image;
    - introduction of aviation specialities, recruiting of student candidates and organisation of training;
    - cooperation with other higher education institutions and aviation enterprises and organisations.

The measurable goals for the coming years are formulated in the development plan.

1.1.5 Determination and description of responsibility at all levels of management to support the achievement of the goals of the Academy and consistent performance of the core processes

The structure of Estonian Aviation Academy together with its highest decision-making body – the EAVA Council, and with the EAVA Board of Councillors – the advisory body integrating the Academy and the society, are presented in Figure 1.2.

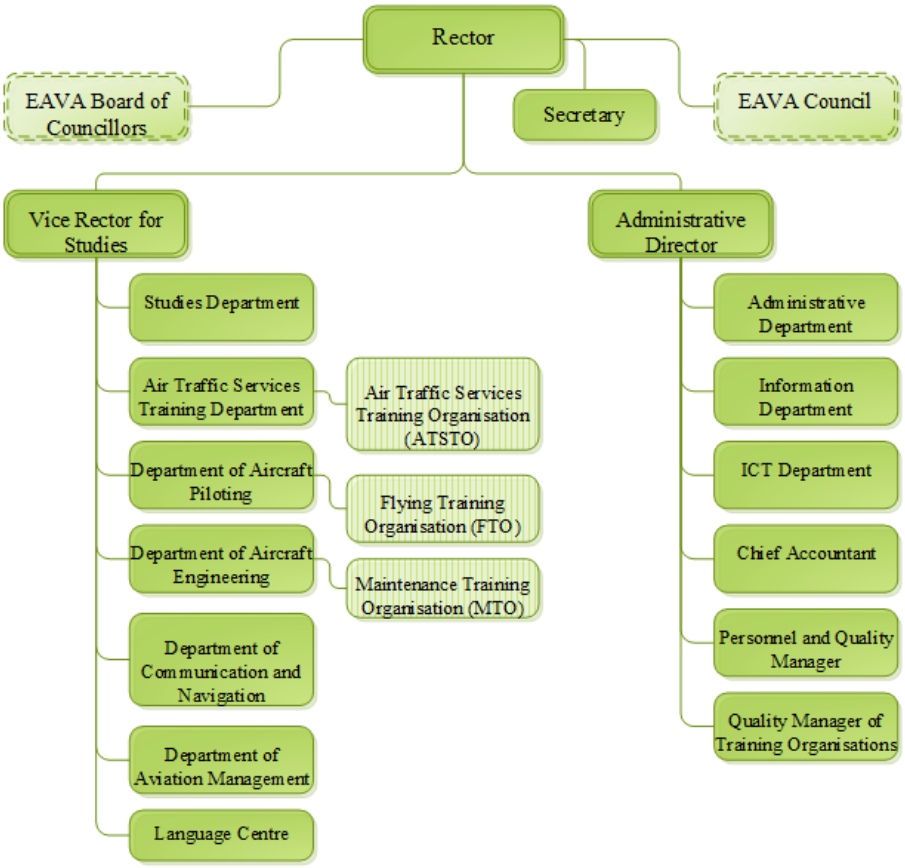


Figure 1.2 The structure of Estonian Aviation Academy

The composition of the academic structure and its key operation principles

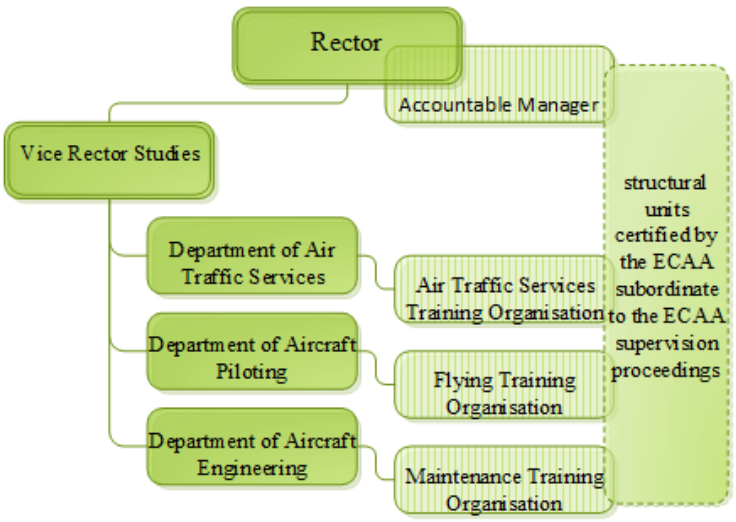
The academic structure includes departments, aviation training units and centres conducting teaching, research and development activities. The academic structure is managed by the Vice Rector for Studies. The departments plan, organise and carry out PHE studies and in-service training, also vocational training on commission. Conducting aviation-related and supportive to aviation industry applied and scientific research and development activities is the task of the entire academic structure.

The Studies Department coordinates the Academy study process and cooperation with the Estonian University of Life Sciences, the University of Tartu and the Estonian National Defence College. The department organises the development of the curricula and monitors the compliance of the study process with respective educational legislation.

The academic structure comprises the following departments:

- **Department of Air Traffic Services** (incl. Air Traffic Services Training Organisation – ATSTO),
- **Department of Aircraft Piloting (**incl. Flying Training Organisation – FTO),
- **Department of Aircraft Engineering** (incl. Maintenance Training Organisation – MTO),
- **Department of Communication and Navigation**,
- **Department of Aviation Management**,

- **The Language Centre** organises the activities related to foreign languages and to foreign language teaching at the Academy. The Centre is also certified to administer the ICAO language proficiency testing of EAVA students and Estonian aviation personnel.



In the specialities certified pursuant to international aviation regulations there is an aviation training unit at the department that conducts speciality training, which, in its turn, is monitored by the ECAA (Figure 1.3).

Figure 1.3 Governance of aviation training organisations

The composition of the support structure and its key operation principles

Under the supervision of the **Administrative Director** the support structure ensures the functioning of the infrastructure, the financial capacity and the functioning of management instruments necessary for achieving the major goals of the Academy.

The **Administrative Department** ensures the functioning and maintenance of the material and technical basis necessary for fulfilling the goals and tasks of the Academy, and the availability of respective support activities to the Academy staff and students. The department is responsible for keeping the buildings, offices and lecture rooms in order, for the maintenance of the power and security systems, for the use of the Academy means of transport, and for the surveillance of technological systems.

The task of the **ICT Department** is to ensure the necessary ICT basis, its smooth operation, reliability and the availability of respective support services to the Academy staff. It also includes the counselling of the staff and students on ICT matters, and organisation of training according to the needs and possibilities.

It is also the responsibility of the ICT Department to ensure the reliability of training simulators. It includes carrying out the maintenance procedures of simulators according to the schedule, and immediate reaction to eliminate any equipment failure.

The main tasks of the **Information Department** are to develop goal-oriented communication activities and involve the staff members into everyday information exchange – covering the Academy events and news, organising internal and external events and disseminating information on the events; also, drawing up the media plans, communicating with the media, and managing the Intranet and the Academy homepage. **The Academy library** is a part of the Information Department and the only specialist aviation library in Estonia.

The analysis of information on employee satisfaction and planning of further activities as well as the development of communication systems, compiling and publishing of promotional materials, and participation in information fairs, campaigns, seminars and conferences is also of great importance. In everyday work conducting surveys on communication activities, analysing the results obtained and making suggestions for improvements in communication occupies an important place.

The **Chief Accountant** takes care of accounting and inventory checks, draws up, manages and analyses the budget.

The **Personnel and Quality Manager** coordinates the Academy personnel management the aim of which is to implement and develop the personnel policy supportive to the development of the Academy, and ensures the functioning of the Total Quality Management System.

The **Quality Manager of Training Organisations** ensures the functioning of the quality management systems of certified training organisations, organizes the audits of training organisations on a regular basis and provides feedback for making further management decisions.

1.1.6 Targeting and management of internal and external communications

In planning its internal and external communications the Estonian Aviation Academy proceeds from the EAVA Communication Strategy for 2013–2017 [6; et] which formulates the Academy strategic communication targets and the action plan for reaching the targets. The Communication Strategy is based on the EAVA Development Plan, the Statutes of the EAVA Information Department, and on the internal and external communication strategies developed earlier.

The targets of the Communication Strategy are, first and foremost, (1) raising the public awareness of the Academy and of the specialities taught there, and implementing more efficient methods for finding and selecting capable student candidates; (2) popularizing aviation education and the field of aviation in general; (3) enhancing the public image of the Academy; (4) advancing the organisational culture; (5) furthering internal communication.

Implementation of the Communication Strategy takes place under the guidance of the Information Department which cooperates with other departments if needed. Indicators have been provided both in the development plan and the Communication Strategy to measure the efficiency of communication activities.

1.1.7 Areas of good practice and areas that need improvement

Areas of good practice

1. A developed organisation as a professional higher education institution.
2. Well functioning structure, management practices and core values system.
3. Well functioning cooperation with universities in conducting basic studies.
4. PHE curricula accredited in transitional evaluation.
5. Certified aviation training organisations (ATSTO, FTO, MTO).

Areas that need improvement

1. More efficient exchange of information and better networking with aviation industry.
2. Harmonizing the quality management systems of certified training organizations and the implementation of Total Quality Management System.

1.2 Personnel management

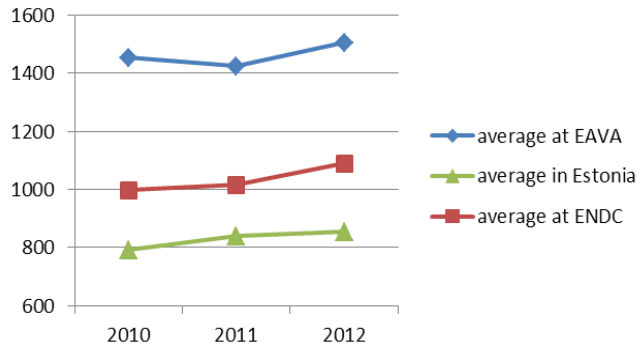
The aim of personnel management is to recruit professional and highly qualified work force, to keep high the employee satisfaction, to motivate and promote the development of the staff. The Academy Development Plan, mission and vision provide support for achieving these aims and for ensuring academic sustainability.

As of 31 December 2012, there were 59 people on the staff of Estonian Aviation Academy (7 staff members on childcare leave incl.) of which 37 members were employed full-time and 22 part-time. A great part of the staff had both administrative and teaching assignments. 21 members belonged to the teaching staff, including three professors, one senior lecturer, ten lecturers, four assistants and three

instructors. Their age distribution was: up to 35 years – 5 members, 35-65 years 11,over 65 – 5 members. In addition, every year there are 25–35 contract teaching staff members from various aviation organisations and enterprises. Four members of the Academy teaching staff hold the doctoral degree, ten the Master's degree or the qualification hereto, six the bachelor's degree or the diploma of PHE and one member has a professional degree.

The management of the staff documentation takes place in the document management system Webdesktop. All the internal regulations, directives, contracts and agreements, and job descriptions are filed in Webdesktop and are accessible within the limits of a position's needs.

The EAVA Salary Rules [7; en, et] establish the basis for salary arrangements, connect each and every staff member's salary with the significance of their position and their overall work performance ensuring the Academy's competitiveness in the labour market. The salary consists of two parts: (1) basic salary as fixed in an individual employment contract, (2) performance pay depending on the results of evaluation of a staff member's performance during the fixed evaluation period. The maximum rate of performance pay is 20% of the basic salary.



In calculating the EAVA average salary both the teaching staff and non-teaching staff have been taken into account. Figure 1.4 shows the comparative data on average salaries at EAVA, ENDC and in Estonia.

Figure 1.4 Comparative data on average salaries

1.2.1 Recruiting the teaching staff

The principles of academic positions are regulated, and recruiting of new teaching staff members proceeds from EAVA Statutes of the Teaching Staff [8; en, et]. The request for recruiting is given to the personnel manager by heads of departments or leaders of the respective field in the course of mapping the needs for personnel.

According to EAVA conditions and procedure for teaching staff evaluation and assessment of their conformity to qualification requirements [9; en, et] the candidates' prior performance as a lecturer, their R&D activities and the students' feedback is taken into account at the election of a teaching staff member or at their performance evaluation.

In certified specialities it is necessary to take account of the requirements set on the teaching staff of aviation training organisations which, first and foremost, proceed from the activity based Manuals of a particular speciality. Depending on the specifics of the position the candidates have to submit documents confirming their speciality training and qualification. The candidate has to receive endorsement from the ECAA for working at a certain position.

It is important to mention that the Academy as a state funded educational institution is not always competitive in regard to salaries offered in the aviation field. This factor greatly affects the choices and decisions made by candidates. In spite of that, specialists from partner enterprises are involved in teaching and their proportion in speciality studies is comparatively high. The teaching staff work load is fixed in Appendix 1 to EAVA Statutes of the Teaching Staff [8; en, et].

1.2.2 Recruiting non-teaching staff

Recruiting non-teaching staff takes place by public competition for the vacancies. All the principles of good practice in organizing and running a public competition are followed. Usually both the internal and external sources of recruitment are used in parallel. Competitions for vacancies are

advertised in major daily newspapers, through online job portal (CV-Online), on the Academy homepage and on Facebook. Advertisements are also spread through the job portals and career lists of other higher education institutions.

1.2.3 Employee satisfaction

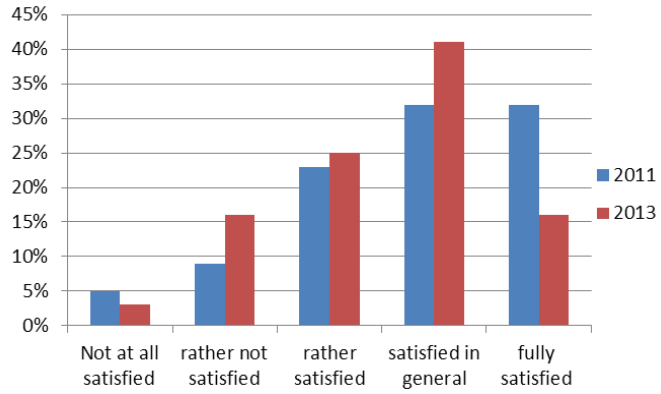


Figure 1.5 Satisfaction with EAVA management

EAVA has regularly conducted employee satisfaction surveys, in May 2011 and in March 2013 a new methodology was taken into use.

In 2011, 43% of the staff employees participated in the survey, while in 2013 the percentage was 60. General satisfaction with the management of the Academy has risen (Figure 1.5). If a 5-grade scale is used, the EAVA is grade 3.79 which is near to the PHEIs average 3.85 (2011). The positive trend has continued in assessment to direct managing.

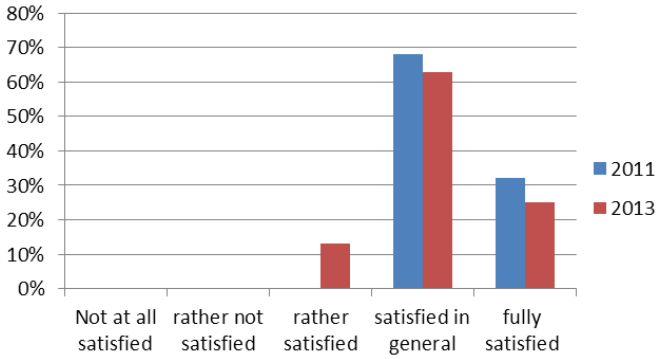


Figure 1.6 Work atmosphere and relationships

Work atmosphere and relationships at EAVA are generally positive. The last survey in 2013 has added a negative aspect (rather satisfied) – this is a significant signal (Figure 1.6). The responses show that the negative aspect has been caused to a large extent by the instability accompanying the higher education reform and by the heavy workload.

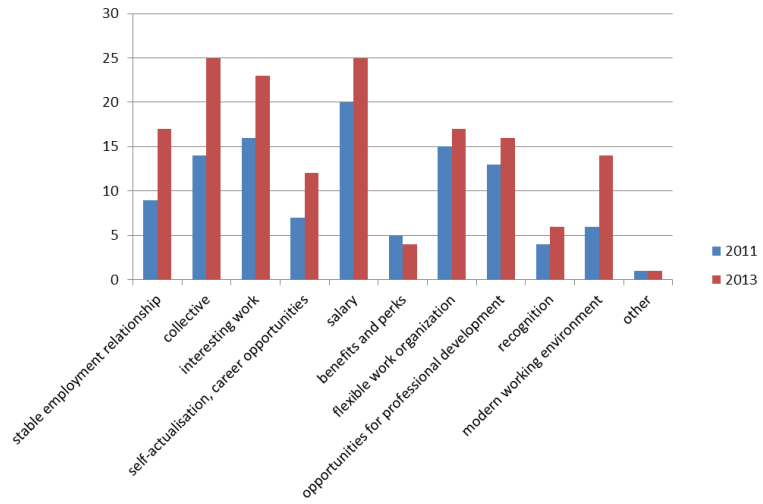
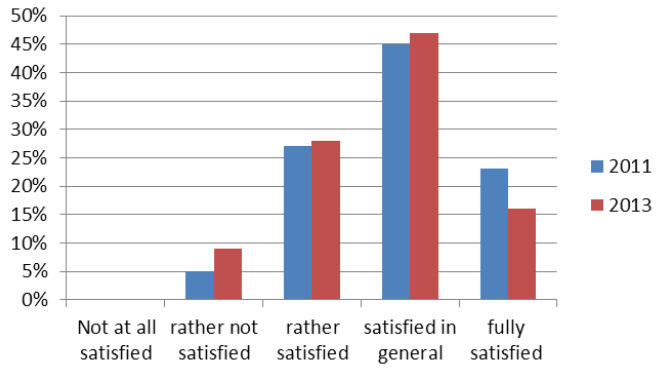


Figure 1.7 Motivation and recognition

Compared to the year 2011, the sequence of motivators has changed (Figure 1.7). The last survey indicates that the role of the collective has grown and the salary has remained one of the most relevant motivators. Interesting work at the Academy and the opportunities to contribute to the development of aviation are highly appreciated.



The employees are satisfied with the opportunities for development and self-actualisation (Figure 1.8). Responses include possibilities for degree studies, for participation in trainings offered and financed by the Academy, for being included in professional matters (to 94%), sufficient independence and the right for decision-making (100%).

Figure 1.8 Development opportunities and self-actualisation

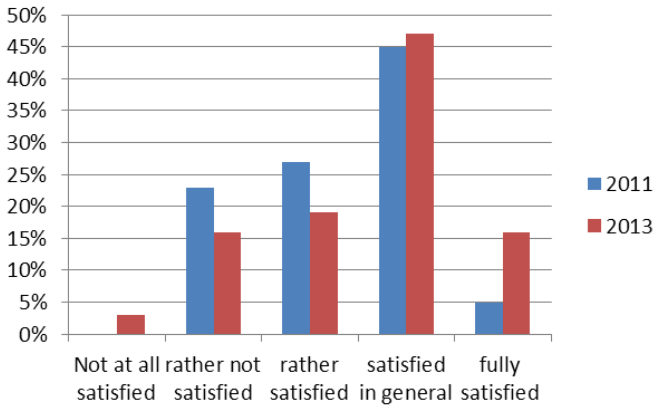
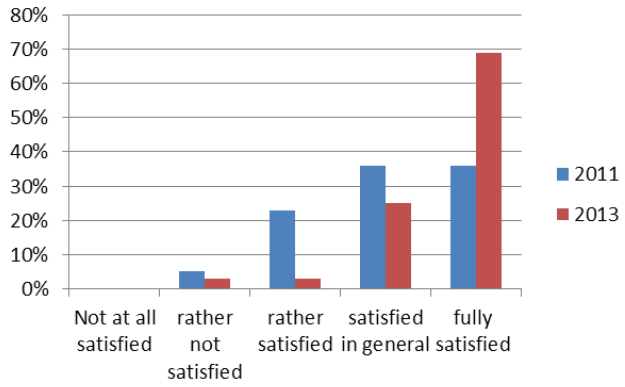


Figure 1.9 shows a positive tendency in assessments to the information flow at the Academy. At the same time a totally negative assessment has appeared which may be caused by the diversity of information channels.

Fig 1.9 Information flow at EAVA



Significant improvement related to the assessments on the working conditions has been probably caused by the new facilities and modern technologically well-equipped environment (Figure 1.10). Catering and recreation are important factors as well.

Fig 1.10 Working conditions

1.2.4 Development and motivation of the staff

Staff development and training

There is a functioning system of annual appraisals at EAVA. The outcomes of the Academy annual appraisals provide valuable information for drawing up the personnel advancement and training plans. The general training plan comprises speciality specific courses necessary for developing staff members' skills and competences as well as the budgetary resources for covering the training costs. It includes professional development courses in aviation as well as those increasing the teaching competences of the academic staff and specialist training courses for the staff of the support structural units. The quarterly performance reports help to plan and evaluate the activities aimed at staff

members' professional development, and if needed, to more operatively make corrections both to the content of trainings and funding.

The development and sustainability of the teaching staff competences in didactics of higher education is supported by the PRIMUS programme, the opportunities for professional development of which are more and more widely used. Improving the teaching and presentation skills of the teaching staff is considered one of the key factors.

The master's and doctoral students, and young teaching staff members up to the age of 35 can attend scientific events held abroad within the DoRa grants programme. Table 1.1 reflects the participation of the teaching staff in conferences and training courses. During the last years the DoRa funds have been more widely used.

Table 1.1 Mobility of teaching staff 2009 – 2012 within DoRa programme

Academic year	Number of participants	Grants/ scholarships, €
2009/2010	2	3,196.-
2010/2011	6	5,314.-
2011/2012	6	5,488.-

In addition to individual development plans an all-Academy internal training plan for the whole staff is drawn up at the beginning of every year.

The Academy also supports and facilitates participation in conferences held both in Estonia and abroad. After the conference the attendees are requested to share their experience and the knowledge obtained within the framework of in-house seminars.

In the spring of 2013 the young teaching staff training and development programme was launched during which the teaching and supervising skills of the new generation teaching staff are developed. The Estonian Academy of Security Sciences (EASS) and ENDC have also shown interest in the programme.

Within this programme the Academy supports the degree studies of young lecturers and guides them to integrate their studies with the practical needs of EAVA. In addition, the Academy facilitates and supports their participation in professional development courses and in specialist conferences and seminars.

The Spring Seminar has become a regular event where the goals for the next academic year are established and the most topical issues discussed. The second part of the seminar is edutaining (educating + entertaining), e.g. team work training.

Besides the professional development of all the staff, an increased focus has been placed on developing the management competences. In the academic year 2010/2011 the Academy management passed the managers' development programme conducted by a specialised training company. It was followed by the values project in 2011/2012 the major goal of which was to define and introduce the Academy core values. In its essence the values project was a change management programme during which the staff, the students and related organisations established the principles to be followed in decision-making and in conducting different activities. The project helped to involve the staff in a goal-oriented activity and underline their guiding role in everyday decision-making. Creation of the Academy uniform action model and introduction of the value-based management system are seen as the outcome.
In March 2013, the 360 degree feedback programme was started as the next logical step in the management development programme. This is a tool for developing a holistic view of the competences, skills and behavioural patterns of managers.

Motivation of the staff

Feedback from the staff shows that one of the most important motivation tools is the recognition given to the staff members in different ways and forms.

The Academy highly appreciates its staff members and partners' contribution to the development of aviation industry, aviation education and, first and foremost, to the development of the Academy. The highest recognition is awarding the title of the Honorary Member of Estonian Aviation Academy [10; et].

To value the work of the teaching staff, the Academy awards the title of the Best Lecturer of the Year [11; et].

To appreciate good team work and creation of supportive and helpful attitude as well as promoting the Academy core values the staff elects the Colleague of the Year. To recognize their long-standing service the staff members' are awarded with the special badge.

The staff members are also remembered on the occasions of their different personal events. The most important anniversaries and traditional holidays in the popular calendar are celebrated with all-staff get-togethers.

Besides various forms of recognition the Academy motivation system has a wider concept of developing its staff – the opportunities for professional development discussed above, the system of annual appraisals, and different measures introduced to involve the staff more widely (involvement in decision-making processes, projects, groups of experts, continuous feedback on performance).

A general meeting of the Academy takes place on the very first days of every calendar year where the Rector gives an overview of the most important activities and the goals achieved during the previous year and of the plans for the forthcoming year. The overview of the outcomes of annual appraisals is also presented. At the meeting people are informed of the major personnel development plans.

Supporting and facilitating recreational sports is part of the Academy motivation system. In the new building there are excellent opportunities – a fitness centre with multifunctional training facilities. In addition, the Academy supports its members sporting activities and reimburses partly the expenses.

The Academy follows the requirements established by legal acts on ensuring people's occupational health. The new staff members undergo a medical check, so do all the staff members every three years. In case of need, part of the cost of glasses is reimbursed.

Cooperation in sharing experience

The aim of the quality managers working group established at the Estonian Rectors Conference of Universities of Applied Sciences (RCUA) is to share experience and knowledge between PHEIs. The quality managers' seminars are held on current issues of higher education.

The universities (UT, EMÜ, TUT) have been EAVA's long-time cooperation partners with whom personnel and quality issues are discussed and joint activities planned.

The Estonian Air Navigation Services (EANS) and Estonian Air Force have provided bases for students' practical training. The specialists from both organisations are highly appreciated at the Academy as lecturers and instructors. In order to diversify cooperation and to make a better use of the Academy teaching staff knowledge and competences negotiations have been opened to reach agreements on conducting in-service training of ATC officers and basic training of aircraft maintenance technicians.

In 2013 the first meeting of the teaching staff members of EASS, ENDC and EAVA took place. The main objective of the meeting was to give the representatives of participating institutions an overview of the activities, new development plans and possible cooperation areas. By now the preliminary

negotiations on possible joint projects on air rescue training and a project based course on the use of composite materials have been commenced.

Applying principles of academic ethics

In their everyday work the Academy teaching staff members proceed from the academic code of ethics. The EAVA Statutes of the Teaching Staff [8; en, et] p. 1.4 provides as follows: *The Academy shall avoid electing or inviting an individual to the position of a teaching staff member if an appeal about the respective teaching staff member on their unsuitability to teach the subject has been previously lodged with the Rector by the students, or the individual has recurrently received evaluation significantly below average from the students. It is also taken into account if the individual has broken the code of ethics of Estonian scientists or the code of ethics of their professional field.*

1.2.5 Areas of good practice and areas that need improvement

Areas of good practice:

1. The system of teaching staff development.
2. The system of annual appraisals.
3. Employees' satisfaction with working conditions and the system of motivation.
4. Cooperation with specialists from aviation enterprises in teaching (lecturers and instructors).

Areas of further improvement:

1. Development of the teaching staff with the aim of ensuring a sustainable new generation and the compliance of the teaching staff members' activities with the Academy goals.
2. Development of the competences model of the Academy management, ensuring of strong leadership and value-based management.

1.3 Management of financial resources and infrastructure

Management of financial resources and infrastructure supports the Academy core activities and ensures that there are the best opportunities available and that the resources are used in the most effective way possible.

1.3.1 Management of financial resources

In managing its financial resources Estonian Aviation Academy proceeds from the following regulations:

1) Guidelines on drawing up, approving, implementing and making amendments to the consolidated budget [12; et];
2) Accounting policies and procedures [13; et];
3) The conditions and procedure for using state budget funds and revenues from economic activities [14; et];
4) The procedure for obtaining assets and keeping account of the assets obtained [15; et];
5) Regulation on organising public procurements [16; et].

The most important developments and financial indicators are brought out in the consolidated Annual Reports (2011, 2012) [17,18; et].

Table 1.2 describes the dynamics of the budgetary funds of the last three years 2010–2012. It appears that the funds allocated to the Academy have been growing. At the same time the administrative costs of the new Academy centre (from 2012) have been partly covered by the increased resources from economic activities.

Table 1.2 The dynamics of budgetary funds within the last three years, €

State budget funds	2010	2011	2012
Staff costs	1 009 612,81	1 079 802,30	1 016 519,98
Operating expenses	206 462,79	229 272,48	311 087,79
Costs of providing education and training	830 800,20	842 477,71	945 724,75
Development costs	65 625,37	65 439,02	63 927,07
Total	**2 112 501,17**	**2 216 991,51**	**2 337 259,59**
Revenues from economic activities	256 643,13	166 911,62	211 169,34
Overall total	**2 369 144,30**	**2 383 903,13**	**2 548 428,93**

Table 1.3 reflects the financial projection for the next four years 2013–2016 – sustainable financing of the Academy is planned through the growth of the state budget funds and the revenues from economic activities.

Table 1.3 Financial projection for the next four years, €

State budget funds	2013	2014	2015	2016
Staff costs	1 106 000	1 158 000	1 206 000	1 270 000
Operating expenses	317 000	299 000	307 000	315 000
Costs of providing education and training	1 004 000	1 024 000	1 081 000	1 116 000
Development costs	103 000	90 000	92 000	93 000
Total	**2 530 000**	**2 571 000**	**2 686 000**	**2 794 000**
Revenues from economic activities	273 000	120 000	192 000	323 000
Overall total	**2 803 000**	**2 691 000**	**2 878 000**	**3 117 000**

The activity support allocated by the Minister's of Education and Research Directive No 49 from 28 January 2013 *(Allocation of activity support to Estonian Aviation Academy for the calendar years 2013 – 2015)* is 2 485 489 euros for the year 2013.

The analysis of the cost of a student place in 2010–2012 [19; et] was compiled by the Chief Accountant and it has served as the basis for calculating the tuition fee of a non-state-funded student place.

Table 1.4 Investments into the learning and RDC environment, €

Project	2009	2010	2011	2012	TOTAL
KELA – construction of the Academy new study centre	6 756	471 806	3 408 011		3 886 573
EAVA laboratories – modernization of the Academy laboratories		16 762	173 238	391 826	581 826
An EAVA–EMÜ joint project – developing the basis for joint studies in avionics and automation				43 270	43 270
Project ECHO – obtaining a modern lecture recording system and its joint application in professional higher education institutions				19 473	19 473
Total	**6 756**	**488 568**	**3 581 249**	**454 570**	**4 531 143**

Modernization of the learning environment during 2009–2012 has been executed with the support from the European Structural Funds (ESF) as presented in Table 1.4. Development of the Academy laboratories takes place pursuant to the laboratories development plan [20; et].

1.3.2 Information systems and their use, ICT capacity

In its ICT activities the Academy proceeds from the ICT Development Plan for 2012–2014 [21; et] and from its action plan [22; et] for the current year. In January 2012, the ICT Department was founded to better manage the ICT activities.

The following information systems support the management and coherent performance of the Academy core processes:

The document management system Webdesktop (WD) - This system was taken into use on 1 January 2011. Directives, minutes of meetings, incoming and outgoing letters, contracts and agreements, applications and reports for business trips are recorded in WD. The scanned versions of files of directives and minutes are recorded in the registration sheet. The digitally signed contracts and agreements concluded with legal persons are also filed in WD.

Study Information System (SIS) - Professional higher education institutions share a joint SIS. The introduction of SIS has been in process since the second half of the year 2010. As of 2013, information on all curricula, courses, subjects, students and teaching staff data, academic progress, time-tables and feedback has been transferred to SIS, in addition to which applications for allowances and for APEL are also submitted via SIS.

Admission Information System (AIS) - AIS is a tool used for administering the students admission process. Submission of the admissions applications, drawing up the ranking lists, establishing the time for entrance tests and informing the candidates takes place through AIS. The meeting on new developments in AIS takes place every year, and the system is developed taking account of the requests made by schools and considering the budget available.

Moodle - Moodle has been in use since 1 September 2006. Before that digital materials were filed in different places of the web. Moodle enables to assemble all the teaching and learning materials into one environment. In 2013 it is planned to adopt the new version of Moodle.

Intranet - Rearranging information channels and creating a new information communication environment was set as an important priority to achieving internal communication aims of the Academy. The need for intranet arose because of the abundance of information. Intranet contains a critical amount of information, has a logical structure and is used for storing non-public information. Intranet was ready for use in October 2011.

E-mails, calendars and documents of joint usage - EAVA joined the *Google Apps for Education* programme in 2010. By now the Google mail server has become the primary server the opportunities of which (e-mail, Google Drive, Calendar, Groups) are used by all the Academy staff and students. A common calendar was created in addition to every staff member's personal calendar which enables to collect information on most important events. The common calendar is also displayed on the intranet.

Homepage - The Academy homepage is a functional tool which offers necessary information to the inner target groups and cooperation partners, Academy students as well as to potential student candidates and general public. The homepage gives relevant information on the specialities taught, study possibilities, entrance requirements, projects, scholarships, management, personnel etc. There is a photo album as well reflecting the important events at the Academy.

The homepage plays an important role in building the Academy's visual identity. The present homepage was launched in the first quarter of 2012.

WiFi - The use of all information systems is supported by integral wireless (WiFi) network, covering all the EAVA facilities. The internal WiFi is password protected and accessible for the staff, the external WiFi has free access for students and public.

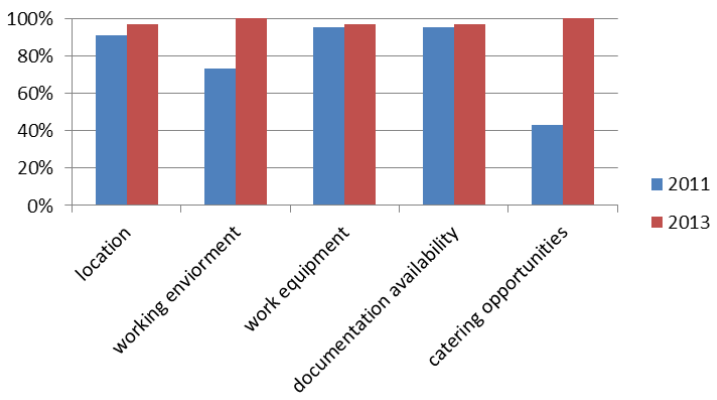
1.3.3 Management of infrastructure and satisfaction with support service

EAVA has a study centre (taken into use on 1 Sept. 2011) and a hangar (rented, taken into use on 23 Jan. 2012) at its disposal for conducting theoretical instruction and practical training (Table 1.5).

Table 1.5 The specification of EAVA study centre and aircraft maintenance hangar

Rooms	Floor space	
	Study centre	**Hangar**
Lecture rooms and laboratories	1250 m^2	656 m^2
Technical maintenance and public rooms	2137 m^2	141 m^2
Offices	588 m^2	21 m^2
Total	**3975 m^2**	**818 m^2**

Booking of the lecture rooms takes place pursuant to the established procedure [23; et] and at the end of every semester an analysis of the usage of lecture rooms [24; et] is made.



Employee satisfaction with the working environment and work equipment based on surveys in February 2011 [25; et] and in March 2013 [26; et] is reflected in Fig 1.11.

Figure 1.11 Employee satisfaction

The employee satisfaction has grown in all aspects. Owing to the new centre, the satisfaction with the working environment and catering has essentially grown. Employee satisfaction with catering according to the survey [27; et] conducted in December 2011 was very high – 80% of the staff was satisfied or very satisfied with it. Student satisfaction with the learning environment and conditions has been high throughout the years (Figure 2.8).

1.3.4 Areas of good practice and areas that need improvement

Areas of good practice:

1. Financing comes from different sources – this reduces the financial risks.
2. Budget formation process is clear and transparent, budget fulfilment is checked regularly and feedback given to the administration.
3. Modern learning environment is providing good opportunities for both theoretical and practical instruction.
4. European structural funds have been well used for developing the study facilities.
5. Versatile ICT solutions have been implemented enabling to get the maximum of necessary information.
6. Students and employees are highly satisfied with the learning and working environment.

Areas that need improvement:

1. Increasing the revenues from economic activities via expanding advanced and refresher training.

2. Intensifying the use of lecture rooms and laboratories, recording the information on room usage in the SIS.
3. Compiling the base model of the cost of a student place.
4. Improving the ICT development plan, implementing the objectives of the plan.
5. Maximum application of the Academy's technological means in the study process.

2. TEACHING AND LEARNING

2.1 Effectiveness of teaching and learning, and formation of the student body

2.1.1 General organization of teaching and learning

The volume of training meeting the expectations of enterprises as well as its compliance with the Minister's of Education and Research Directive on allocation of activity support have been defined by EAVA Development Plan [2; en, et] as the major goal of performance of the Academy. Consequently, it has been stressed that different from the present requirement to provide state-commissioned education the most important indicator of which was the number of graduates, it is the needs of Estonian aviation enterprises and the requirements set on the qualification of the graduates that has to be focused on, which, in its turn is expressed by the goals established by the directive on allocating the activity support and the activities for achieving these goals.

In its activities the Academy proceeds from the legislative acts of the Republic of Estonia, the European Commission and Parliament and international aviation organizations. The Academy consistently follows the compliance of its curricula with those regulations. EAVA has signed cooperation agreements with the University of Tartu, the Estonian University of Life Sciences and the Tallinn University of Technology. Part of the curriculum - basic studies and some speciality modules - is carried out at these universities. The quality of the teaching process as well as the teaching staff qualification is ensured by the respective university. EAVA, at the same time, provides speciality training for Estonian National Defence College.

The most characteristic feature of EAVA is that teaching is conducted on contract basis by experienced specialists of respective fields working in aviation enterprises or in other higher educational institutions. Involving the top specialists of the field in the teaching process ensures the compliance of the training with the ICAO and EASA requirements, which, in its turn, ensures the Academy graduates' high competiveness both in national and international labour market.

Feedback is regularly collected from the students, alumni, employers and teaching staff to learn about their opinion on the activities of the Academy.

With the further aim of enhancing the competitiveness of professional higher education provided in Estonia both in national and international educational environment, the Academy joined the Quality Declaration of PHEIs [28; et] which serves as the basis for cooperation in ensuring the quality of education.

2.1.2 Effectiveness of teaching and learning

EAVA has defined its goals and the respective indicators related to teaching and learning in the development plan [2; en, et] and in annual action plans. The goals are as follows:

1. The volume of training meets the needs and expectations of enterprises and is in conformity with the state allocated activity support.
2. The composition and number of teaching staff meets the training needs.
3. Updating of the curricula is in line with the employers' expectations and with the development of the field.
4. The number of interrupters is reduced and the students' learning motivation is enhanced.
5. Project-based and goal-oriented cooperation is developed in order to better organize the study process and research work and provide service to society.
6. Students and employees are satisfied with the learning and working environment.

As of 10 November 2012 there were 310 students learning at Estonian Aviation Academy (Table 2.1). The fall in the total of students in 2012 was caused by two factors: application of more stringent admission criteria, and because admission to Open Studies was stopped.

Table 2.1 Number of students

Curriculum / Year	**2010**	**2011**	**2012**
Air Traffic Management	120	122	108
Aviation Management	150	146	139
Aircraft Piloting	44	50	51
Aviation Administration (PHE)	12	8	6
Aviation Administration (Master's studies)	7	7	6
Total	**333**	**333**	**310**

Table 2.2 reflects state commission fulfilment compared with EASS in 2008-2010. Fulfilment of state commission during the years 2008 – 2012 in EAVA is reflected in Table 2.3.

Table 2.2 State commission fulfilment

	State commission fulfilment %	
	EAVA	**EASS**
2008	84	58
2009	100	77
2010	74	72

Table 2.3 The analysis of fulfilment of state commission

Field of activity	**Curriculum**	**State commission**	**Number of students matriculated**	**Number of graduates**
Graduates of 2007/2008				
Services, transportation services	Air Traffic Management	24	25	15
	Aircraft Piloting	10	10	11
	Aviation Administration	0	3	1
Technology and engineering	Aviation Management	28	37	25
TOTAL		**62**		**52**
Fulfilment of state commission		83,8%		
Graduates of 2008/2009				
Services, transportation services	Air Traffic Management	24	25	23
	Aircraft Piloting	10	11	12
	Aviation Administration	0	2	2
Technology and engineering	Aviation Management	28	31	25
TOTAL		**62**		**62**
Fulfilment of state commission		100%		
Graduates of 2009/2010				
Services, transportation services	Air Traffic Management	24	25	12
	Aircraft Piloting	10	10	13
	Aviation Administration	0	3	1
Technology and engineering	Aviation Management	28	33	20
TOTAL		**62**	**71**	**46**
Fulfilment of state commission		74,2%		

Field of activity	Curriculum	State commission	Number of students matriculated	Number of graduates
Graduates of 2010/2011				
Services, transportation services	Air Traffic Management	24	25	12
	Aircraft Piloting	10	10	5
	Aviation Administration	0	4	
Technology and engineering	Aviation Management	28	29	22
TOTAL		**62**	**64**	**39**
Fulfilment of state commission		62,9%		
Graduates of 2011/2012				
Services, transportation services	Air Traffic Management	24	28	15
	Aircraft Piloting	10	9	11
	Aviation Administration	0		1
Technology and engineering	Aviation Management	28	32	18
TOTAL		**62**	**69**	**45**
Fulfilment of state commission		72,5%		

Reasons for fluctuation in graduation rates:

The fall in graduation rates in 2009–2011 could be explained by the economic background of that period – in the conditions of economic growth the students entered the labour market before graduating from the Academy (the biggest ratio concerning those admitted in 2007–2009). Student participation in mobility programmes could also have some impact – this might have extended the nominal study period of students studying in the ECAA certified curricula. A smaller number of students admitted is an additional factor influencing the number of graduates.

2.1.3 Practical training

The curricula being the basis for the organization of practical training determine its volume, and practice instructions specify the objectives. The major objective of practical training is acquiring specialist skills and developing necessary attitudes aimed at ensuring aviation safety and high working culture characteristic of aviation industry. Practical training included in the Academy curricula falls into two: familiarization practices and practical trainings in one's speciality. In conducting practical training the Academy mainly cooperates with aviation enterprises, but there are also enterprises the products of which are used in aviation, e.g. electronic devices (Table 2.4). Students' feedback is gathered on the practical training and the organization of practice is checked in the course of audits.

All the 2nd year students familiarize themselves in a real working environment with different Estonian aviation enterprises and their organization of work, and with the future perspectives of their speciality. At Tallinn Airport the students learn about the working methods of different structural subunits; the theoretical knowledge and skills acquired at the Academy are reinforced through practical work. Primary skills in air traffic management, maintenance of technological systems, aircraft maintenance and customer service are acquired.

During the practice in the speciality of **Air Traffic Service** (taking place at certified enterprises) both the supervisor and the student fill out the on-the-job familiarization (OJF) diary on every working shift. At the end of the practice the supervisor evaluates the development of the student's performance during their OJF.

The concrete objective of the speciality practice of **Management of Aviation Communication and Navigation Systems** is discussed and formulated by the enterprise supervisor and the EAVA representative before the practical training period. The students learn about communication and

navigation equipment and its maintenance. All students pass practical training at ENICS Ltd and Rantelon Ltd where they study the technology of radio equipment construction and production.

In the speciality of **Aircraft Piloting** flying training takes place by the types of aircrafts and helicopters as specified by the curriculum; a part of the training is done in the flying training device FNPT II/MCC. The flying training programme has been approved by the ECAA and is in compliance with the aviation legislative acts of the Republic of Estonia, the ICAO, the JAA and EASA. After the successful completion of flying training the students are issued the respective pilot licence.

During their speciality practices the students of **Aviation Company Management** perform, in addition to familiarization practices, different tasks in an aviation company: participate in marketing events, work in customer service positions in different structural units of Estonian Air, Tallinn Airport and other aviation enterprises, or fulfil practical tasks in the Ministry of Economic Affairs and Communications. Students fill out the report on every practice. The supervisor's feedback approving the performance of the practice and evaluating the trainee's preparation and performance are taken into account when assessing the overall performance of the practice and in making improvements to its organisation. The specialization practice takes place in an aviation enterprise in parallel with writing the graduation thesis.

The speciality practice in **Aircraft Maintenance** is conducted in the Academy hangar and in certified aircraft maintenance organizations of Estonia. Organization of practical training as well as the nomination of supervisors takes place pursuant to the Maintenance Training Organization Exposition (MTOE). The students enter the tasks they have performed during their practice in the practice diary, and their overall performance is assessed by the ECAA certified supervisors. Students are asked for feedback on their practical training, and organization of practice is checked during audits.

Table 2.4 The most significant cooperation partners in conducting practical training

Speciality	**Practice base**
Air Traffic Service	Estonian Air Navigation Services, Air Force, Tallinn Airport Ltd
Management of Aviation Communication and Navigation Systems	Estonian Air Navigation Services, Air Force, Rantelon Ltd, Enics Ltd, Tallinn Airport Ltd, State Infocommunication Foundation, Eolane Tallinn, Ericsson, Police and Border Guard Board, the Technical Surveillance Authority
Aircraft Piloting	Pakker Avio Ltd, Estonian Air Ltd
Aviation Company Management	Ministry of Economic Affairs and Communications, Estonian Civil Aviation Administration, Tallinn Airport Ltd, Estonian Air Ltd, Panaviatic Ltd
Aircraft Maintenance	Panaviatic Ltd, Air Force, Aerohooldus OÜ, Air Maintenance Estonia, Police and Border Guard Board Aviation Group, Nordic Aircraft Service Ltd
Aviation Administration	Estonian Air Ltd, Air Force

2.1.4 Employers' satisfaction with preparation of specialists

The latest comprehensive survey among aviation enterprises and organisations [4; et] was carried out in 2011 the aim of which was to assess the graduates' competences, specify the needs for specialists and the enterprises readiness for cooperation with the Academy in applied research and development projects, or in conducting research and development activities.

The questionnaire that was developed proceeding from the aims listed afore composed of two parts:

Part 1: The survey to assess the graduates' competences and the need for specialists.

Part 2: To find out the opportunities for cooperation between the Academy and enterprises and organisations.

To sum up, the survey reveals that the level of the Academy graduates satisfies the employers' requirements to a great extent. Enterprises and organisations need specialists who have:

1) a good general knowledge of aviation and a broad outlook;

2) a holistic picture of aviation and of their speciality;
3) systemic approach and analytical thinking ability;
4) in-depth knowledge of aviation safety management system;
5) an advanced sense of responsibility and readiness for working independently or taking leadership;
6) knowledge of economics;
7) knowledge which has been reinforced through speciality practical trainings.

Concerning the Academy graduates, their analytical thinking ability, their theoretical knowledge, the knowledge of legal acts and skills in using ICT and the knowledge of foreign languages is highly appreciated. There is less satisfaction with their skills in project management, the knowledge about the operation of an organisation, and with their ability to understand the field of aviation on a broader scale. Figure 2.1 shows the outcome of the survey on satisfaction with the expectations in regard to graduates' preparation.

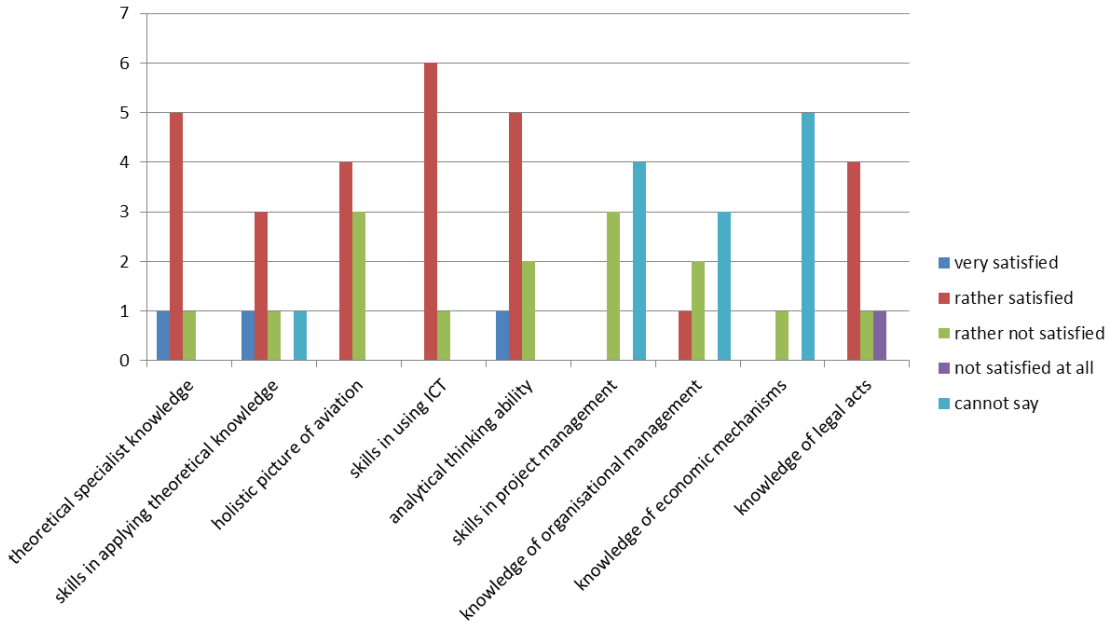


Figure 2.1 Satisfaction of enterprises with the EAVA graduates' skills and knowledge.

Proposals and recommendations made by enterprises serve as the input for the curricula development (See 2.2.2).

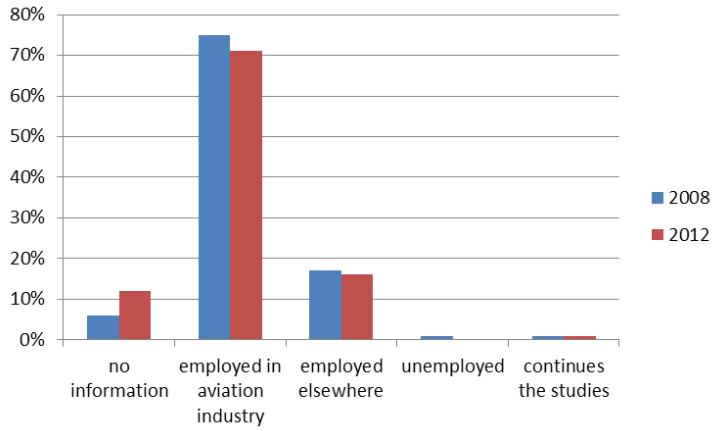
2.1.5 Factors having impact on graduates' competitiveness

Pursuant to international regulations on aviation education the Academy has to hold and regularly renew the following certificates to ensure the quality of training and education:

1. *Air Traffic Services Training Provider's Certificate* that grants the right to conduct Air Traffic Control basic training and ADV/ADI, APP, APS(RAD), ACS rating training. In addition, the maintenance agreement with the ATC training simulator manufacturer is renewed on a regular basis.
2. The *Approval Certificate* of the speciality of Aircraft Piloting that allows to provide the following licensing training courses: ATP(A), CPL(H)+ATP(H) theoretical knowledge instruction, PPL(A). In addition, FTO has to hold a valid *STD Qualification Certificate* on FNPT II/MCC training simulator.
3. The *Approval Certificate* of aircraft maintenance personnel. The certificate grants the right to provide training for Category A and B maintenance personnel.

Standardised education and training process conducted in compliance with the requirements of international aviation allows ECAA to give to EAVA PHE graduates internationally recognized aviation certificates.

The analysis of the employment rate of EAVA graduates is given in Figure 2.2. The data on graduates' employment have been collected in 2008 and 2012. The average employment rate of these two years is 89.5% which is comparable to other PHEIs – cf. 2011 – EASS 67.2%, PHEIs average 81%.



The primary goal of PHE is to prepare specialists for the labour market, so the number of those continuing their studies is relatively small. More than 70% of the graduates work in aviation. Beside the aviation industry the graduates of EAVA are employed in other transport sectors as well as in various sectors of entrepreneurship.

Figure 2.2 Employment of the alumni

2.1.6 Planning of student places and student admission process

Up to the academic year of 2012/2013 the number of student places was planned in accordance with the volume of state-commissioned education and the potential and goals of EAVA. The fulfilment of plans was analysed (incl. the state-commissioned education) and plans were revised proceeding from the results of the analysis.

From 2013 the minimum number of admission for the Academy is established by the Minister's of Education and Research Directive on allocation of activity support.

One of the parties participating in planning the number of student places is the Academy Board of Councillors comprising the representatives of aviation enterprises and ministries. To determine the number of student places the statistics for aviation personnel registered in the ECAA data bases ECAA statistics on licenses [29; en, et] are analysed, and the needs of enterprises and state organisations are evaluated. Also, the current state of economy and the results of feedback surveys are considered.

The Admission Rules approved by the Academy Council serve as the foundation document on the admission process [30;en, et]. The Rules fix the admission requirements, the documents to be submitted and the procedure for submission of documents. The rules are periodically revised. The admission process is organised by the Board of Admission established by the Rector's Directive. Submission of entrance applications takes place via the electronic admission system AIS (Admission Information System, *Est.* SAIS).

The most suitable candidates are selected by way of competition following the ranking list drawn up according to the total of points collected, the results of National Examinations included. In addition, the candidates for the specialities of Air Traffic Service and Aircraft Piloting have to pass professional suitability tests. Personal interviews are held with all the candidates with the aim of assessing the candidate's suitability and motivation. Employers' representatives are involved in the work of interview panels.

Due to the medical requirements applied to pilots and air traffic controllers it is not possible to study these specialities for persons with special needs. The Academy provides equal opportunities to all applicants in other specialities.

Admission competition rates in 2009-2012 are given in Table 2.5. The competition has been extremely high in the specialities of Air Traffic Service and Aircraft Piloting despite the fall in the total of secondary school leavers while the competition in the specialities of Aviation Company Management and Aircraft Maintenance has decreased in recent years. The drop in the competition rate in 2012 when compared to the previous years is caused because the minimum threshold of points calculated on the basis of the results of National Examinations was set in the specialities of Aircraft Piloting, Air Traffic Service and Aviation Company Management.

Table 2.5 Admission competition (applications per student place)

Speciality	2009	2010	2011	2012
Air Traffic Service	13,8	6,9	18	12,6
Management of Aviation Communication and Navigation Systems	4,4	3,6	4,8	3,8
Aircraft Piloting	17,4	11,4	22,1	14,2
Aviation Company Management	11,5	7,8	9,1	6,0
Aircraft Maintenance	3,9	4,1	4,5	4,0

Table 2.6 shows the prior level of education of those admitted to EAVA. The number of students with the already acquired higher education has increased. 7% of those matriculated at the Academy in 2012 were the graduates or alumni of some other higher education institutions. This reveals that those having acquired either the BA or the Master's degree in some university of public law are interested in professional higher education assuming that it will ensure better prospects in the labour market. The reason behind the relatively high proportion of those having interrupted their higher education studies is that a number of students admitted to the speciality of their second preference have found motivation during their first year of studies at the Academy to reapply for the speciality of their first preference, and, in fact, they have performed better during their second try. Statistically it increases the number of interrupters though, in reality, the student has not left the Academy but has just changed the speciality.

Table 2.6 Prior level of education of the candidates admitted to the Academy

Prior level of education	2008/09	2009/10	2010/11	2011/12	2012/13
General secondary education	95%	97%	94%	96%	92%
Vocational or vocational secondary education	1%	1%	4%	3%	2%
Higher education	4%	1%	3%	1%	7%
General secondary education and vocational education acquired but interrupted studies at higher education level	6%	20%	23%	15%	17%

Figure 2.3 gives the number of students admitted in 2008–2012. In 2012 the EAVA Council made corrections to the admission quota. In the last two years the total number of students accepted to the Academy has decreased. Aircraft Piloting was the only speciality which admission quota was increased from 10 to 12. This is the speciality which has always had a high competition rate and has practically no dropouts. The admission quota was reduced for the specialities of low competition: Management of Aviation Communication and Navigation Systems and Aviation Company Management.

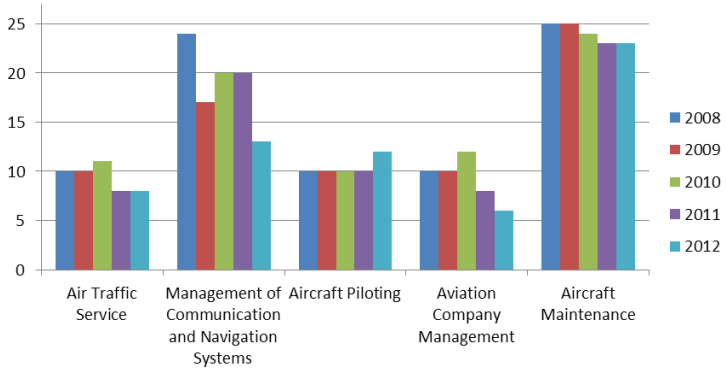


Figure 2.3 Admission quotas per speciality

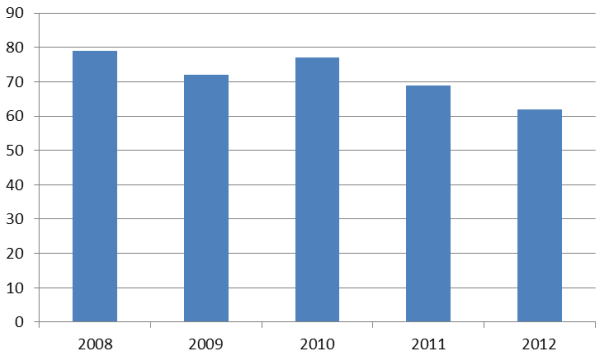
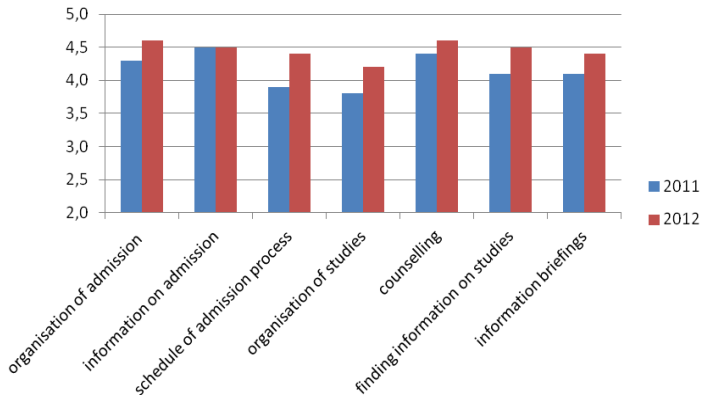


Figure 2.4 shows that the admission quotas have been relatively constant throughout the years. At the same time a certain correlation can be noticed: the higher the admission quota the bigger the dropout rate thereafter. Therefore it can be generalised that a smaller number of students admitted to the Academy ensures a more capable student body.

Figure 2.4 Admission quotas



Every year a survey of the first year students is conducted which also inquires about their opinion of the Academy admission process. The surveys of the last two years reveal that the satisfaction with the organisation and schedule of the admission process has increased (Figure 2.5).

Figure 2.5 Assessment of the admission process

2.1.7 Effectiveness of teaching and learning, and formation of the student body - areas of good practice and areas that need improvement

Areas of good practice

1. Practical training takes place in aviation enterprises, i.e. in the graduates' future places of employment.
2. Employers' satisfaction is studied by detailed surveys.
3. Education and training conducted in compliance with international aviation standards enables the graduates to find work all over Europe.
4. Close contact with the employers in planning student places.

Areas that need improvement

1. Conclude bilateral cooperation agreements with enterprises operating as practical training bases for all specialities taught at the Academy.
2. Develop practical training manuals and define the requirements for supervisors in the specialities of Aviation Management and Management of Aviation Communication and Navigation Systems.
3. Under the conditions of the fall in the total of secondary school leavers ensuring the number of students accepted to the Academy through a more efficient admission process (spreading information, preparatory courses, testing, selection procedures).

2.2 Development of curricula

2.2.1 Curricula

EAVA Statutes of Curriculum [31; en, et] establish the requirements for the structure, content and quality of the curricula of the degree studies, and the procedure for opening, managing and closing the curricula.

The objective of the Statutes is to ensure the conformity of the curricula to the goals of the Academy's activities and to the requirements established by the regulations of the Academy, the legal acts of the Republic of Estonia, the European Union and by international aviation regulations.

The Academy's PHE curricula are built up in a modular system comprising thematic modules of different volume, and the graduation thesis or the final examination. The present PHE curricula comprise the following modules: Social Sciences, Economics and Entrepreneurship, Law and Aviation Safety, Natural and Exact Sciences, Engineering, Languages, Speciality Studies/Rating Training. The nominal study period of a professional higher education curriculum is four years and the total volume is 240 ECTS credits. Practical training constitutes a minimum of 15% of the volume of the studies prescribed by the curriculum.

Professional higher education curricula

Until 2013 three curricula for full-time studies were: Air Traffic Management (specialities of Air Traffic Service and Management of Aviation Communication and Navigation Systems), Aircraft Piloting, Aviation Management (specialities of Aviation Company Management and Aircraft Maintenance). In 2013 the two curricula comprising two different specialities were separated as two independent curricula. Thus the PHE curricula in 2013 are:

1) Air Traffic Service;
2) Management of Aviation Communication and Navigation Systems;
3) Aircraft Piloting;
4) Aviation Management;
5) Aircraft Engineering.

The above curricula have been accredited by the transitional evaluation procedure (Directive of the Minister of of Education and Research 15.06.2011; Decision of the Quality Assessment Council 10.06.2013).

Curricula of vocational education

The Academy has developed two vocational education curricula: in the specialities of Air Traffic Service and Aircraft Piloting. The vocational education curricula have not been allocated any state funding. These curricula have been used for vocational training commissioned by enterprises.

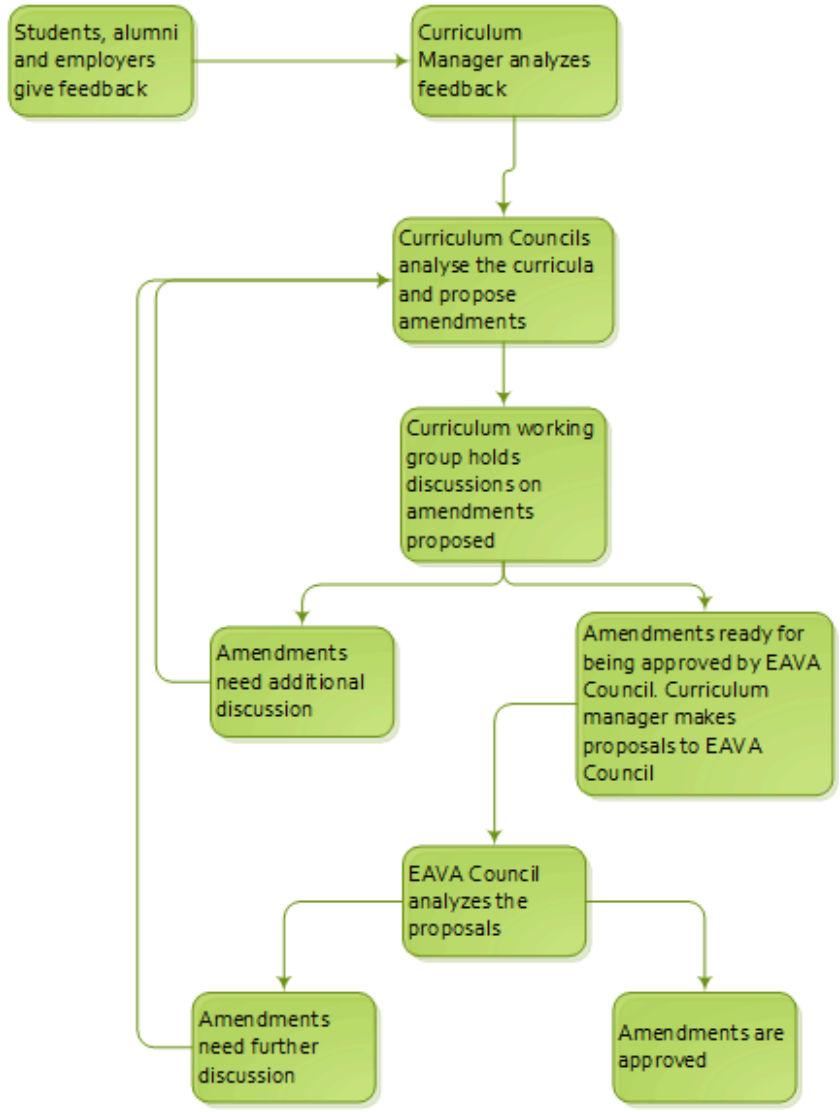
The Aviation Master's studies took place in the form of open studies in 2006–2013. The Academy decided to close the curriculum in 2013 and provide education at the Master's level in cooperation with the universities.

2.2.2 Development of curricula

Development of curricula is a continuous process whereat the amendments to the educational legal acts of the Republic of Estonia and international aviation regulations have to be taken into account. Amendments to the curricula are analysed by the curriculum working group and by Curriculum Councils and approved by the Academy Council thereafter.

Curriculum Councils in their present form were set up in the **academic year 2010/2011**. Their major task is to analyse the quality of education and training, and the development of the learning

outcomes based curricula. The Curriculum Councils involve the Academy curricula managers and teaching staff members as well as the representatives of employers, alumni and of the current students. The principal activities of the Curriculum Councils are:



1) monitoring of the compliance of the curricula and the study process conducted on their basis with legal acts, national and international standards, aviation standards incl.
2) evaluation of the level of theoretical instruction and practical training;
3) evaluation of the resources foreseen for conducting teaching;
4) mapping of the needs of the labour market;
5) giving evaluations, making decisions and proposals to amend;
6) coordination of admission requirements.

Figure 2.6 depicts the process of developing and making amendments to a curriculum – the analysis of amendments and their approval.

Figure 2.6 Curriculum development

In certified specialities international regulations are followed, first and foremost, in developing speciality modules, but also in developing the whole curriculum to ensure its coherence.

The requirements for the speciality modules of the curriculum of **Air Traffic Service** are established by the EC Regulations No 216/2008 [32; en], 805/2011 [33; en]. In developing the modules of speciality training in **Aircraft Piloting** the EC Regulations No 216/2008 [32; en], 1178/2011 [34; en], 265/2012 [35; en] and 290/2012 [36; en] have been taken as the base documents since 8 April 2013. Before that the JAA documents JAR/FCL 1/2/3 [37; en] served as the basis for curriculum development. The requirements for the curriculum of **Aircraft Engineering** proceed from the EC Regulation 2042/2003, Part 66 and Part 147 [38; en].

The above regulations are directly applicable and determine the curriculum volume, subjects, outcomes, acquired level, the percentage of theoretical and practical training and also requirements for participation. Compliance with the regulations is monitored by ECAA. Curriculum development of certified specialities must be in accordance with the international requirements.

Cooperation with other higher education institutions

EAVA has signed cooperation agreements with the University of Tartu (UT), the Estonian University of Life Sciences (EMÜ), the Tallinn University of Technology (TUT) and the Estonian National Defence College (ENDC). Cooperation agreements UT-EAVA, and EMÜ-EAVA foresee conducting of the basic subject courses during the first three semesters in these universities. The speciality studies in the Management of Data Communication and Information Processing Equipment are conducted by UT within one year under the UT-EAVA agreement. Cooperation agreements with UT and TUT foresee conducting of the speciality module of Navigation and Surveillance Equipment Management during one year.

Under the agreement with the ENDC the Academy conducts teaching within the volume of 40 ECTS credits of the ENDC curriculum.

Everyday work on curriculum development is coordinated by the curriculum working group which is composed of the Vice Rector for Studies, the Head of the Studies Department and the curricula managers.

2.2.3 Interest groups feedback on teaching and learning

The aim of the feedback questionnaires is to receive evaluation from the most important interest groups on development activities and overall performance as well as to find out the opportunities for improvement and the areas which need to be advanced.

To get feedback on teaching and learning, questionnaires have been carried out among students, employees, alumni and employers (see 2.1.4). Every year the subject courses and their teaching process are assessed which also provides feedback on teaching staff members' performance. At the beginning of every academic year a survey of the first year students is carried out. The results gained from the feedback are applied in enhancing the quality of teaching, in perfecting and developing the curricula, in making the admission process and the first year students' adaptation to the Academy more efficient and in expanding cooperation network.

Alumni satisfaction with curricula

In 2008-2012 surveys of the alumni were carried out over the Internet. The percentage of responders has been about 30%. The questionnaires comprise multiple choice and open-ended questions, and cover five major aspects of satisfaction: satisfaction with the education obtained at the Academy, the opportunities for practical training and its volume in the curriculum, the structure of the curriculum, the learning environment, and, as the last aspect, fulfilment of expectations.

In the 2008 – 2012 surveys the alumni assessed most highly the fulfilment of their expectations; the structure of the curriculum and practical training received average evaluation. The lowest opinions were given to the learning environment – most probably because the respondents had studied in the old Academy study centres (up to 2010).

The answers to the questionnaires highlight the strengths of the Academy (Figure 2.7): a close connection with aviation enterprises, the choice of specialities, focus on one field, the small size of the Academy which facilitates direct communication between students and teaching staff members, the high ICT level, the learning environment (as of the surveys from 2012), cooperation with other higher education institutions, sports facilities, and the reputation of the field in general.

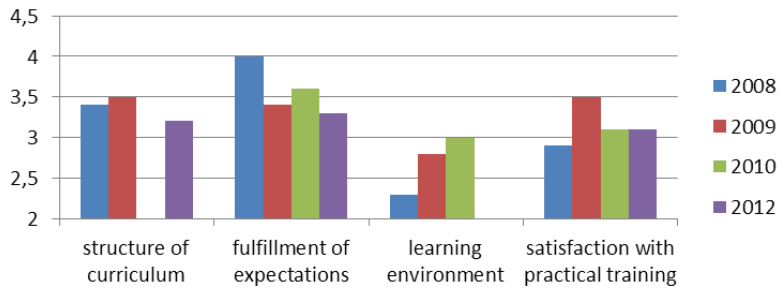


Figure 2.7 Alumni satisfaction

The quality manager makes the summary of the results of the alumni feedback questionnaires which is then analysed in speciality training departments. The possible amendments to the curricula are discussed in Curriculum Councils.

To enhance satisfaction and learning motivation more aviation related subjects have been added to the basic studies, the proportion of practical training has been increased, practical training is started at earlier stages of study, coherence between different subjects has been improved and the number of classes in foreign languages increased. In addition, concrete proposals have been made to replace or reorganise certain subject courses.

Expert evaluation of professional higher education curricula

The curricula were given expert evaluation [39; et] within the framework of the Programme Primus. The evaluations are used in curriculum development as well as organization of studies.

Questionnaires were sent to the following enterprises: EANS, Air Maintenance Estonia Ltd, Estonian Air Ltd, Tallinn Airport Ltd, the Police and Border Guard Board Aviation Group, Air Force.

Student satisfaction with curricula and organisation of studies

Student satisfaction with the curricula and organisation of studies was analysed in 2010 – 2012 (Figure 2.8).

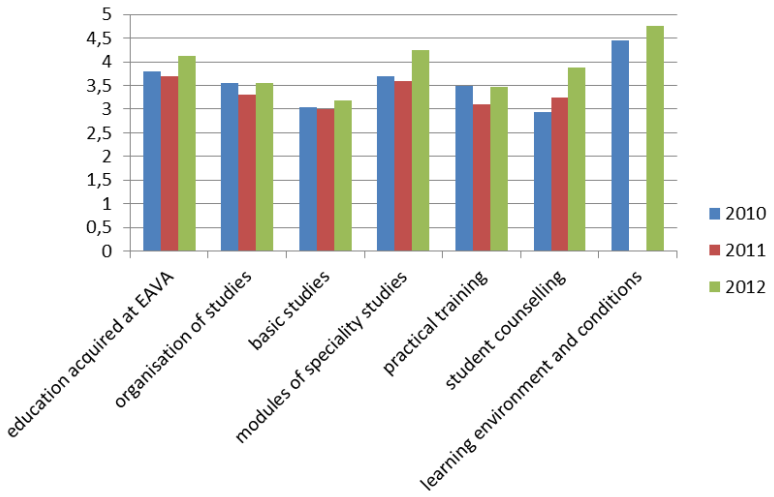


Figure 2.8 Student satisfaction

As a result, the following proposals have been formulated:

1. Increase the volume of practical training and proportion of aviation related subject courses during the first years of studies.
2. The examination sessions in the speciality of Aircraft Piloting are too intensive, therefore the number of examinations per session might be smaller.
3. Increase the number of optional subjects.
4. Enhance coherence between the first year subject courses and the speciality subject courses in the speciality of aviation communication and navigation systems.
5. Apply more group work in the study process.
6. Enhance the efficiency of Russian language teaching.
7. Informing of the changes in the timetable might take place more operatively.

The outcomes of the surveys described above are used for improving and developing the organisation of the study process and the curricula.

Amendments made to curricula during recent years:

1. Improving coherence – the curricula have been restructured. Thematic modules are used instead of temporal. It enables the teaching staff members teaching the subjects of the same module to better cooperate, thus enhancing the coherence of different subject courses.

2. Aviation related subjects conducted during the first year of studies – changes made to the subject course *Introduction to Aviation*. All the training departments are involved in delivering lectures which also supports the coherence.
3. Increasing the volume of practical training – the volume of practice in the specialities of Aviation Communication and Navigation Systems Management and Aviation Company Management has been increased and agreements with new cooperation partners have been concluded.
4. Increasing the volume of optional subjects.
5. Considerably increased volume of elective subjects resulting from the transfer to thematic modules.
6. The students' workload in the speciality of Aircraft Piloting has been balanced – the graduation thesis has been replaced by the research paper which is compiled during the second and third year of studies.

2.2.4 Curricula development - areas of good practice and areas that need improvement

Areas of good practice

1. Students' evaluation of the study process and their recommendations are taken into account. A representative of the student body belongs to every Curriculum Council.
2. Employers' wishes and recommendations are considered in developing the curricula.
3. The Academy communicates with its alumni and their opinion and recommendations are asked for.
4. Cooperation with other higher education institutions and aviation enterprises and organisations is advanced.
5. Data on the employment of the alumni are collected.
6. Updatedness and coherence of the curricula are observed.

Areas that need improvement

1. Introduction and development of the subject courses in entrepreneurship in all the curricula.
2. Ensuring a better coherence between the general and the speciality subject courses.
3. Ensuring the balance between narrow specialization and general academic studies.
4. Wider application of project-based and problem-based learning.

2.3 Student academic progress and assessment

Student academic progress is regularly monitored via the SIS. During the first two years of studies it is the task of the Studies Department, during the next two years it takes place as a coordinated activity of speciality departments and the Studies Department.

2.3.1 Average grade

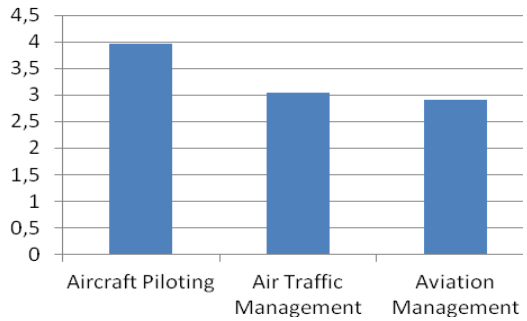


Figure 2.9 Average grade by curricula

Monitoring of students academic progress is a regular activity. The results of academic achievement are summarized and analyzed at the end of every semester.

Figure 2.9 reveals the students' average grades in 2012. The highest average grade is in Aircraft Piloting – 4.0.

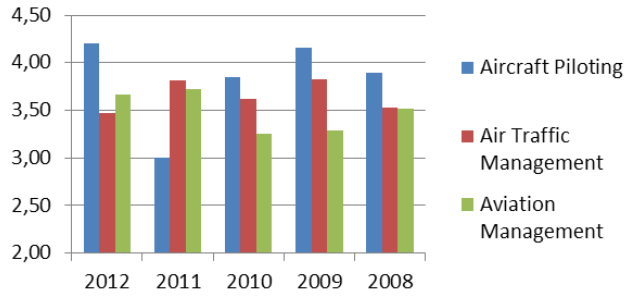
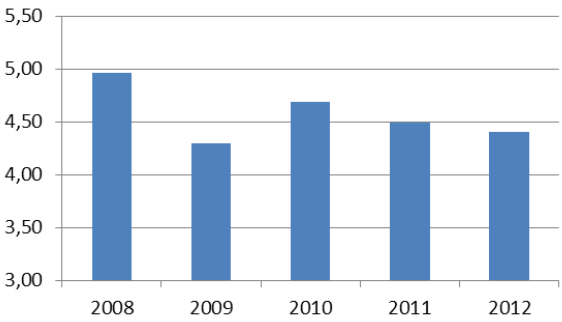


Figure 2.10 shows the average grades of graduation theses. In all the years the average grade of graduation theses has exceeded grade 3. In general, the graduation theses of the students of Aircraft Piloting have received the highest grades.

Figure 2.10 Average grade of graduation theses

2.3.2 Average duration of studies and interruption

In EAVA PHE curricula the nominal period of study is 4 years, but as seen in Figure 2.11, it appears to be longer because the male students serve in the Defence Forces (8-11 months). It should be pointed out that 78 – 80% of the students of the Academy have the duty to serve in the Defence Forces.



The average period of study is also influenced by the fact that pursuant to the EAVA Study Regulations the students having academic arrears are not transferred to speciality studies, i.e. the student has to take an academic leave to eliminate their arrears.

Figure 2.11 Average period of study of graduates

Table 2.7 shows the number of the Academy students and the number of interrupters in 2008 – 2012. The state commission during all these years has been for 62 graduates. To fulfil the state commission the Academy has tried to forecast the number of interrupters and more than required students have been accepted. The biggest number of students was accepted in 2008 – 79 students.

In the last two years the number of interrupters has increased. Mostly the studies are interrupted in the first year of studies. In 2011/2012 the number of interrupters was higher because several students interrupted their studies at the end of their first year to commence their studies anew in a different speciality. Actually these students changed their speciality though in EIS statistics they are expressed as interrupters.

The number of interrupters has also risen due to higher general requirements set on studies. The first year students have the obligation to collect at least 50% of the calculated volume of credit points before the next academic year. The minimal volume of fulfilment of the curriculum allowed in the first semester of the first year of PHE studies is 15 ECTS credits.

Table 2.7 The number of students and interrupters

	2007/08	2008/09	2009/10	2010/11	2011/12
State commission	62	62	62	62	62
Number of students admitted	69	79	72	77	68
Total of students	299	316	306	314	318
Percentage of interrupters in the 1st year of studies	7,25	15,19	8,33	18,18	26,47
Percentage of interrupters in general	4,35	8,23	8,17	8,60	10,38

The number of interrupters during the first year of studies per speciality is given in Figure 2.12.

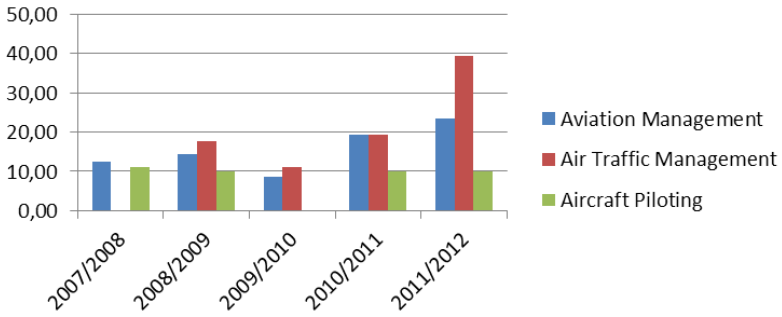


Figure 2.12 Percentage of interrupters in the first year of studies by curricula

Reasons for the drop out in the first academic year

No separate analysis has been conducted to find out the reasons behind the drop out, but certain reasons have turned out after the talks between the student and the speciality studies coordinator and/or the Head of the Studies Department. The main reasons are:

1) little awareness of the speciality studied (studies were taken up in the speciality of student's second or third preference);
2) change of speciality after the first academic year;
3) economic reasons;
4) social and psychological reasons;
5) few aviation related subjects in the first year of studies, weak connection with the speciality department.

The measures implemented and planned to reduce the dropout rate can be divided into (1) preventative measures and (2) the measures to solve problems arising during the studies process:

1. Raising the potential student candidates' prior speciality awareness by a more efficient spreading of information at educational fairs, visits to schools, study trips and at other information events.
2. Preparation courses for the potential student candidates.
3. Maintaining and strengthening the motivation of first year students by including aviation related subjects into their curricula.
4. The system of individual coaching and remedial courses.
5. Extending the attendance check up required in internationally certified specialities to non-certified specialities.
6. Counselling is provided both by the Studies Department and by speciality departments (see 2.3.4). Creating and implementing the system of student tutors.
7. Establishing and managing scholarship funds to stimulate successful students.

In addition to what has been listed above, the Academy is going to reduce the number of students admitted in order to select the most capable and motivated candidates. The number of students admitted is established proceeding from the Academy's capacity to provide training and from the needs of the labour market.

2.3.3 Assessment of learning outcomes, ensuring the objectiveness of assessment and the analysis of the results

Pursuant to the EAVA Study Regulations [40; en, et] the student's knowledge and achievement of learning outcomes is assessed by the procedure established by the Minister's of Education and Research regulation proceeding from § 6 section 2 subsection 18 of the Republic of Estonia

Education Act [41; et]. The students' knowledge in aviation speciality subjects is assessed pursuant to the requirements of the training manuals.

Acquiring of the knowledge is checked at examinations, pass/fail evaluations and at the defence of the thesis. The results obtained are entered into the study report. The forms of checking the knowledge acquired in a certain subject are fixed in the curriculum and in the syllabus of the respective subject.

Differentiated assessment of the students' achievement of learning outcomes of a particular subject takes place on a six-level assessment scale.

The learning outcomes are checked both orally and in writing (computer-based tests, project tasks). More and more, the combinations of different forms of testing are used, and the final grade develops on the basis of the results of several forms of testing. This presupposes the students' active participation and learning throughout the semester (e.g. independent work, participation in seminars, tests, group work).

Practical training is assessed on the basis of the reports written by the supervisor and the student.

The objectiveness of assessment is ensured by clearly formulated learning outcomes of the subject course and by drawing conclusions about their achievement on the basis of examination or preliminary examination results. The learning outcomes and the requirements for the completion of the subject course are available on SIS at the beginning of the course at the latest.

2.3.4 Accreditation of Prior and Experiential Learning (APEL)

Estonian Aviation Academy has adopted the Procedure for Recognition of Prior Learning and Work Experience that regulates the assessment of the applicants' competence, i.e. the correspondence of the applicant's knowledge, skills and attitudes to the learning outcomes of the curriculum or parts of the curriculum. If the applicant's competence meets the mentioned requirements, it will be recognised in the completion of the curriculum.

The EAVA Procedure for APEL [42; en, et] has been approved by the Academy Council on 15 December 2008, and amendments are made if needed.

Seminars are arranged to introduce the principles and process of APEL [43; en, et] to students and the Academy staff and faculty members. The respective information materials and instructions are available on the EAVA homepage as well as on the information stand. Information on applying for APEL is also spread via student mailing lists. Students' awareness of APEL reveals in feedback questionnaires.

The Academy ensures the APEL applicant's counselling. The counsellors and the respective board (assessors) have been approved by the Rector's directive.

Prior learning and work experience is accredited on the basis of the student's or candidate to the Academy electronic application. The application is evaluated by the Academy APEL Board.

Depending on the curriculum the prior learning and work experience can constitute up to 75% of the total volume of the curriculum. Applying for APEL has become a growing trend which is shown by the increasing number of applications (Table 2.8).

Table 2.8 APEL applications

Year	Applications	Fully approved	Partially approved	Not approved
2012	60	53	6	1
2011	23	20	3	0
2010	52	36	11	5
2009	22	18	0	4

EAVA has conducted a feedback survey [44; et] of the applicants for APEL the purpose of which was to find out the satisfaction with the application process.

In 2013 the Academy participated in the APEL external assessment process. The self-assessment report on APEL [45; et] was drawn up, and positive feedback [46; et] was received from the assessment board thereafter.

2.4 Support processes for learning

2.4.1 Organisation of studies

The study process is organised pursuant to the Study Regulations [40; en, et] throughout its duration. The Regulations provide general procedures set on study; the rights and obligations of the teaching staff members and students related to study; the procedures for matriculation, deletion from the student register and re-matriculation of students; regulations on academic leave; procedures for taking examinations and pass/fail evaluations and for the defence of graduation theses, and other general provisions related to the organisation of teaching and study.

The temporal calculation unit of the study process and the students' academic progress at the Academy is the academic year, and for calculating students' study period the academic year with its beginning on 1 September and ending on 31 August is used. The academic year is divided into two 20-week semesters. The beginning of the academic year is fixed in the academic calendar for each year. The temporal division of the studies process, the weekly timetables incl., are presented in SIS.

2.4.2 The quality control and analysis of the study process

Once a semester the students evaluate via SIS the subject courses and the level of teaching the aim of which is to get regular feedback. Evaluation takes place by the survey of students and serves as one of the cornerstones of ensuring the quality of studies. The survey is conducted by the quality manager. The feedback procedure in certified training organisations is described in respective manuals or exposition.

Surveys of students give the teaching staff and the academic structural units consistent feedback on the study process and on teaching of separate subjects. Teaching staff members can use the outcomes of surveys to make improvements to their teaching and to perfect the content and format of their subject courses. The outcomes of the surveys are also used when evaluating the suitability of an applicant to the teaching staff member's position – at professional evaluation.

2.4.3 Academic and career counselling

Academic counselling

Academic counselling is meant to support the students in study organisational issues related to planning the studies. Together with the academic counsellor solutions are found to the following problems:

1) planning of studies;
2) calculation of study load and choice of subjects;
3) taking examinations and pass/fail evaluations;
4) transfer of subjects and taking account of prior learning and work experience (APEL);
5) planning of the academic leave, extension and interruption;
6) changing the curriculum and taking up the studies in a new speciality;
7) studying as a visiting student;
8) deletion from the student register (exmatriculation);

9) continuation of interrupted studies;
10) development of learning skills, choosing the learning style appropriate for higher education studies.

In the case of more difficult or wider problems the appointment is fixed in advance. It is possible to do it by e-mail or by phone. The academic counsellors and heads of speciality departments also provide career counselling. Students are supported in their career building. The issues that the counsellor, a head of the speciality or speciality coordinator has to deal with are as follows:

1) choice of speciality and profession;
2) changing the job and speciality;
3) drawing up the *curriculum vitae* and the motivation letter;
4) preparation for a job interview;
5) combining the studies and work;
6) planning the studies in line with career plans (e.g. minor field of study, choice of optional subjects, etc);
7) performing practical training.

The system of tutors has been initiated, an e-course on counselling has been completed and preparation of tutors is undergoing.

2.4.4 Scholarships

Estonian Aviation Academy Fund (EAVA Fund) managed by *Tartu Kultuurkapital* was established by Tartu Aviation College in 2006 the aim of which was to promote Estonian aviation education, to raise the level of aviation safety and to involve the public in financing aviation education. The finances of the Fund are managed by the Council of EAVA Fund whose task is to raise the fund and arrange the distribution of its resources. Collecting the donations and selecting the foundationers is carried out in close cooperation with *Tartu Kultuurkapital*. The Fund expects all kinds of donations although the main financial support has come from the Academy long-term cooperation partners. Regular scholarships awarded on the basis of the contest once or twice a year are as follows: **Tallinn Airport scholarships** for the students of the specialities of Aviation Communication and Navigation Systems Management and Aviation Management, **Estonian Air scholarships** for the students of Aircraft Piloting, **Estonian Air Navigation Services scholarships** for the students of Air Traffic Control, **Otto Taur scholarships** for the students of Aircraft Piloting, and also the **Pühajärve scholarships** meant for the students of all the specialities. All the aforementioned scholarships and their allocation are concisely presented in the following table 2.9.

Table 2.9 Allocation of the Academy scholarships

	2009/10 spring	**2010/11 autumn**	**2010/11 spring**	**2011/12 autumn**	**2011/12 spring**	**2012/13 autumn**
Estonian Air	0	1280	0	0	0	500
Estonian Air Navigation Services	1280	1280	750	1500	1500	1500
Tallinn Airport	0	1280	0	1280	0	1280
Otto Taur	384	0	235	0	350	0
Pühajärve	0	640	0	640	0	0
TOTAL, €	**1664**	**4480**	**985**	**3420**	**1850**	**3280**

There is also the Estonian Rectors' Conference of Universities of Applied Sciences scholarship which is awarded to the authors of the best student research papers. In addition, Panaviatic Ltd is starting with its own scholarship.

2.4.5 International mobility

Supporting students' international mobility

The Academy students have the opportunity to study as visiting students in Estonian and foreign higher education institutions with which cooperation agreements have been concluded. In addition, it is possible to do practical training outside of Estonia. International mobility takes place within the framework of the Erasmus Lifelong Learning Programme. EAVA has participated in the programme since 2008. Mobility is regulated by the EAVA Strategy for Internationalization [47; en, et]. One of the key objectives of the strategy is providing the students with international experience. During the past five years the number of students involved in mobility programmes shows a growing trend. When compared to the academic year 2008/2009, the proportion of students having studied abroad has increased for about five times. Table 2.10 provides comparative data on student mobility.

Table 2.10 Proportion of students having studied abroad

Academic year	Number of outgoing students from EAVA	Proportion of outgoing students		
		EAVA	EASS*	EMA**
2008/2009	3	0,88%	0,47%	0,35%
2009/2010	9	2,69%	0,65%	0%
2010/2011	12	3,60%	0,70%	0,87%
2011/2012	12	3,54%	0,85%	0,93%
2012/2013	13	4,14%	1,10%	1,48%

*EASS – Estonian Academy of Security Sciences **EMA – Estonian Maritime Academy

EAVA has signed cooperation agreements with 18 foreign higher education institutions from Finland, Lithuania (2), Poland, Germany, Belgium, the Netherlands, the Czech Republic, Slovakia, Ireland, France, Spain, Portugal, Switzerland, Bulgaria and Turkey (2). Mainly there are visiting students from the Netherlands, Turkey and Poland. As a rule they stay in Estonia for one semester.

The candidates for mobility are selected pursuant to the Erasmus programme procedure. There is a problem accompanying the participation in mobility programmes – the international requirements set on the Academy certified courses. As the majority of the subject courses taken by the students in foreign higher education institutions do not satisfy these requirements, they are credited as optional subjects.

Since 2008 the number of foreign visiting students at the Academy has consistently increased – for more than eight times. To increase the number of foreign visiting students the Academy has been developing new subject courses taught in English. The library offers a wide range of literature in English, i.e. about 90% of special literature is in English. Also, the visiting students are given an opportunity to undergo practical training.

Various events are organised to foreign students to introduce them Estonian culture, and they can take the Estonian language course at the Academy. They can use the gym, and participate in events and parties arranged by the Student Council. Since 2012 social evenings of students having studied abroad and those interested in becoming an exchange student are organised. Table 2.11 compares the proportions of visiting students in EAVA, EASS and EMA.

Table 2.11 Proportion of foreign visiting students

Academic year	Number of incoming students to EAVA	Proportion of foreign visiting students		
		EAVA	EASS	EMA
2008/2009	2	0,58%	0,12%	0%
2009/2010	8	2,40%	0,13%	0%
2010/2011	8	2,40%	0,14%	0%
2011/2012	9	2,65%	1,10%	0,12%
2012/2013	18	5,73%	*no data available*	*no data available*

The Erasmus mobility programme is open to the Academy teaching and administrative staff. During the years the number of participants has been rather stable (Table 2.12). Every year the Academy has hosted the teaching and administrative staff members from partner higher education institutions who have delivered lectures at the Academy or got acquainted with the institution.

Table 2.12 Proportion of staff members having participated in Erasmus mobility programmes

Academic year	Number	Proportion to the total of staff
2008/2009	3	7,14%
2009/2010	3	6,67%
2010/2011	4	7,27%
2011/2012	4	6,56%
2012/2013	5	8,06%

In addition to the Erasmus mobility programme, the Academy has been a member of DoRa since 2008. The DoRa is the PhD and internationalisation programme funded from the ESF. The mobility activities organised within the framework of DoRa are regulated by the EAVA Procedure for DoRa [48; et]. The Academy has made use of the activity T8 of the programme to facilitate mobility. Activity T8 is meant for young researchers (less than 35 years of age) and applies to short-term research visits to foreign countries. Many of the young teaching staff members having received support from the programme are the alumni of the Academy having been employed by the Academy after their graduation or later. In recent years the rate of teaching staff mobility has decreased (Table 2.13) because the number of scholarships has remained the same but the number of young teaching staff members on the staff has risen.

Table 2.13 Proportion of teaching staff members having participated in DoRa mobility programme

Academic year	Number	Proportion to the total of young teaching staff members
2008/2009	0	0%
2009/2010	2	25%
2010/2011	6	75%
2011/2012	6	55%
2012/2013	6	50%

In 2012 Estonian Aviation Academy was recognised by the Archimedes Foundation and awarded with the Golden Apple for its outstanding results in international cooperation in education.

2.4.5 Modern technical and educational technology resources

The lecture rooms of EAVA are equipped with either a TV-set or video projector depending on the size of the room; there is a video projector in bigger lecture rooms and in the smaller ones there is a TV-set. There is also a PC in every lecture room, but it is also possible to use laptops. In addition, in four lecture rooms it is possible to use document cameras which can be connected with both the PC and the video projector. The Academy has also a computer classroom equipped with 20 computers, and 15 MAC laptops.

As for the more modern ICT solutions, the touch sensitive classroom boards by Promethean are in use in five lecture rooms. Touch sensitive boards make it possible to upgrade the drawings or PowerPoint presentations, solve problems and spread them to students in a digital media format.

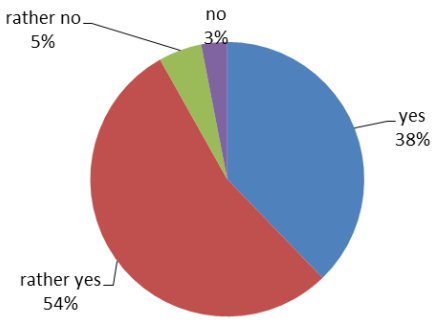
From the autumn of 2012 the Academy has two lecture recording systems Echo 360 which enable to record the sound and the picture as well as everything shown on the screen. The recording is transferred to the server and via the respective link the students can listen to and watch the lecture anew. By the lecture recording system it is also possible to broadcast the lecture over the Internet in real-time.

In addition, the Academy has video cameras which enable to record the teaching and learning process. The opportunities of cameras are used, for example, in the cases when the lessons are conducted outside of the Academy building.

From 2006 the teaching staff can use the e-learning environment Moodle located in the EAVA server to create and run online e-learning objects and courses. At present, 45 teaching staff members make use of this environment, and about 60 courses are supported by e-learning materials. The educational technologist, the multimedia specialist and the e-learning support person are there to provide assistance to the teaching staff.

EAVA participates together with the other Estonian higher education institutions in the e-learning programme BeSt (2007 – 2013) within the framework of which the creation of e-learning courses and interactive learning objects meeting the respective quality standards is supported. Under the BeSt programme the Academy staff members have developed e-courses within the volume of 68 ECTS credits (it is possible to cover 75% of the respective course by e-learning) and 42 e-learning objects. In 2013, e-courses within the volume of 40 ECTS credits and 18 e-learning objects will be completed.

To advance their ICT competences the teaching staff members are encouraged to attend the respective courses [49; et] offered by the Estonian e-Learning Development Centre.



The students are of the opinion that integrating e-learning into studies enhances its quality and efficiency (92 % of the respondents), and that there might be more of such courses (45% of the respondents) (Figure 2.13).

Does the use of e-support in running a subject course enhance its quality and efficiency when compared to traditional teaching methods?

Figure 2.13 Answers to the question

2.4.6 Support for learning processes - areas of good practice and areas that need improvement

Areas of good practice

1. A well-functioning Study Information System.
2. A well-functioning feedback system.
3. Making use of the opportunities provided by international mobility.
4. Modern ICT resources.
5. ICT courses to the Academy teaching and administrative staff.

Areas that need improvement

1. Encourage the visiting lecturers to make a more active use of ICT resources.
2. Increase the use of ICT resources.
3. Ensure the quality of studies, continue with elaborating the assessment criteria and requirements for practical training involving aviation top specialists thereof.
4. Motivate the teaching staff members to more actively create and develop e-courses and other web-based study materials.

3. RESEARCH, DEVELOPMENT AND/OR OTHER CREATIVE ACTIVITY (RDC)

3.1 RDC effectiveness

3.1.1 The goals of RDC

The Academy RDC activities are based on the Institutions of Professional Higher Education Act [57; en, et] according to which the tasks of a PHEI are to advance lifelong learning meeting the needs of the labour market, provide studies and research related services, conduct applied research, and develop its students to become responsible citizens capable of showing initiative. The activities of the teaching staff are formulated in the EAVA Statutes of the Teaching Staff. The Academy RDC takes place pursuant to the EAVA Development Plan [2; en, et] that establishes:

1) in regard to the studies and its development, the aim is to integrate the study process with the RDC;
2) in regard to the RDC and applied research, the aim is to develop the system supporting the development of the Academy staff and Estonian aviation industry;
3) in regard to partnership, networks and international relations, the aim is to advance project-based goal-oriented cooperation in order to organise the study process and research work, and to serve the society.

The EAVA Procedure for Research and Development [5; en, et] enforced in 2013 provides the principles for organising research and development at the Academy, and:

1) establishes the classification of RDC activities;
2) gives the description of the organisation of RDC;
3) formulates the outcomes of RDC.

The Academy Development Plan defines the indicators of RDC which are:

1) the volume of applied research;
2) participation in development projects;
3) the number of publications covered in ERIS;
4) Master's and doctoral theses defended by the Academy staff members.

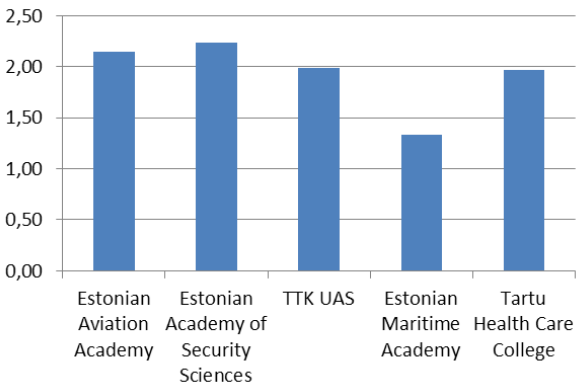


Figure 3.1 Publications recorded in ERIS by Estonian PHEIs in 2008 – 2013 (as of 1 July, 2013)

Figure 3.1 gives the statistics for the number of publications per employee of different Estonian PHEIs registered in ERIS [50; en, et]. Due to uneven quality the comparison does not include the publications of Categories 6.2, 6.3, 6.4, 6.5, 6.6, 6.7.

The textbooks published by the Academy are used in the PHE teaching process, in in-service training, by other educational institutions and professionally interested individuals.

3.1.2 Survey of the needs of the society and labour market

The nature and organisation of the Academy RDC arises from the profile of Estonian aviation. By nature aviation enterprises are service entities, and in general, they are not interested in long-term research and development activities. Finding out the needs of enterprises takes place as follows:

1. Surveys are simultaneously conducted in all the major enterprises; the last one took place in 2011.
2. Direct contacts with enterprises aimed at finding out their needs in regard to applied research. This is an everyday activity of speciality departments. At present the outcome of this activity is the choice of topics for students' graduation theses.
3. Cooperation agreements on running joint projects.

In the autumn of 2012 the Academy initiated the tradition of publishing its proceedings one of the aims of which is to wider introduce the results of the Academy research activities to Estonian aviation enterprises.

3.1.3 Participation in applied projects

ELI Ltd – in the development of technology, legislation, training and safety issues for unmanned aircraft systems (UAS). Students along with the EAVA and ELI staff members are involved in the project to achieve the objectives established.

Ministry of Economic Affairs and Communications – Estonian Transport Development Plan 2014-2020**.** The Academy staff members participated in the development of transport development plan working groups of mobility management and public services.

Estonian ANS – Tartu Airport GNSS (Global Navigation Satellite System) project – drafting the SID-STAR ATC procedures for Tartu Airport in accordance with GNSS requirements and developing the training materials to support implementation of the procedures.

Enterprise Estonia – organising the series of seminars Estonian business opportunities for the aviation and aerospace sector participation in international procurement.

SESAR (*Single European Sky ATM Research*) – through the cooperation partner Estonian ANS the Academy participates in the SESAR programme development. Within SESAR, the Aeronautical Information Management services are analysed and modelled which are used by the information systems meeting the standards of the Single European Sky.

ESTCube-1 – six graduation theses have been compiled within the project ESTCube which are connected with the construction of the satellite launched on 7 May 2013, and with developing communication with it.

Projects under preparation:

1. An application has been submitted from TUT and EAVA (EMP 134) for the project: "Combination of nano-objects synthesis and Atomic Layer Deposition for gas sensor, transparent electrodes and reinforced-nanofibers applications".
2. Preparatory work for the next EU framework programme Horizon 2020 in the field of transport, incl. aviation, *Ensuring accessibility to small and less attractive markets*. Consultations with Estonian aviation enterprises are held, and international cooperation partners are being looked for. Theoretical analysis is made and theoretical concepts are developed.

3.2 RDC resources and support processes

3.2.1 Support system for research and development activities

The Academy RDC organisation is based on the following documents and measures:

1) the EAVA Statutes of the Teaching Staff [8; en, et] which established the teaching staff obligations in regard to research and development;
2) the EAVA Procedure for Research and Development which includes the principles of RDC organisation at the Academy, the quarterly work plans which include the tasks of structural units in regard to RDC;
3) the Academy young teaching staff development plan that provides the principles and planned activities for developing the young teaching staff;
4) plans for developing and updating the Academy laboratories [20; et] on the basis of which the investment applications are drawn up for the forthcoming periods;
5) access to the EBSCO database on electronic and full text journals and reference books is enabled to all of the Academy staff members;
6) the system of taking account of employee work performance.

3.2.2 Financial resources and the strategy that supports their acquisition

Pursuant to the development plan the Academy establishes the volume of financial resources for RDC for every calendar year. In the annual action plans [3; en, et] to the development plan the priorities are specified and made corrections to if needed, incl. the funding.

Pursuant to the RDC Procedure, the pecuniary volume of research at the Academy is established as follows:

1. Calculation of indirect volume is based on the Statistics Estonia methodology [51; et] for calculating the cost of RD activities.
2. Direct volume is calculated on the basis of the cost of applied research;

EAVA participates in long-term EU higher education development programmes, such as ERASMUS, PRIMUS, BeST and DoRa which also provide support to achieving the goals of RDC.

In 2012 the **ELAR** project was initiated within the framework of the ESF sub-measure *Cooperation between Institutions of Higher Education and Enterprises*. The objective of the project is the cooperation between aviation and maritime affairs in the field of navigation technology.

3.2.3 Updating infrastructure

The laboratories development plan is regularly updated at the Academy. When drawing up the development plan the needs of RDC are considered along with the needs of the study process. To update its infrastructure the Academy has employed projects financed from the European Structural Funds:

1. *EAVA laboratories* (project code 3.2.0401.10-0007) for updating the laboratories and training simulators that would enable to offer the learning outcomes based training meeting the needs of the labour market and opportunities for developing the curricula, conduct in-service training utilizing the most modern technology, and participate in international programmes, student exchange incl.
2. Development of EAVA – EMÜ joint basis in the field of avionics and automation (project code 3.2.0401.11-0047). The objective of the project is, for providing the students with practical skills, to update:

a. EAVA integrated communication and navigation laboratory equipped with aircraft/model type solutions.
b. The College of Technology of EMÜ laboratories of digital electronics and robotics utilized by the Academy which support the realization of solutions to communication and navigation problems.

The regular development of ICT systems helps to advance the Academy RDC capability (see 1.3.2).

3.2.4 RDC networks

The Academy participates in several cooperation networks:

Estonian Rectors' Conference of Universities of Applied Sciences (RCUA) – the Academy is a member of the RCUA. The Rectors, Vice Rectors and Quality Managers of the participating PHEIs are involved in the RCUA activities which primary objectives are enhancing the quality of teaching and learning, and to better harmonizing the activities of PHEIs with the needs of the society. Through the RCUA the Academy participates in the work of EURASHE (European Association of Institutions in Higher Education) [52; en] and UASnet (Universities of Applied Sciences European Network) [53].

The Academy participates in publishing of the scientific journal Aviation [54; en]. In recent years the Academy staff members have written four and reviewed two articles for this journal. The Rector of EAVA is member of the editorial board of Aviation. The institutions belonging to the network of the journal participate in organising and running the RRDPAE/READ seminar (Recent Research and Design Progress in Aeronautical Engineering and its Influence on Education) taking place every two years. In 2006 it was the Academy's turn to organise RRDPAE in Estonia.

The Academy contributes to the journal Electronics and Electrical Engineering [55; en] by reviewing to-be-published articles. In 2011 and 2013 two articles on communication issues were reviewed.

The objective of the work of the EUROCONTROL *ATM Training Team* is to advise EASA on developing the regulations on ATM personnel certification issues (training incl.).

The EUROCONTROL FEAST (*First European Air Traffic Controllers Selection Tests*) working group comprises the users of the test, i.e. the Air Traffic Services training organisations of Europe. Perfecting and further development of FEAST proceeds from the data provided by the first users of the test.

3.3 Student research supervision

3.3.1 Involvement of students in research and project activities

Supervision and compiling of student graduation theses and research is one of the major forms of conducting applied research at the Academy. Selection of themes for student papers proceeds from their topicality in aviation industry of the world and the region, from the needs of Estonian aviation enterprises, and from the learning outcomes of the Academy curricula and the curricula development.

Since 2005, the students can submit their graduation thesis to the contest of research papers.

In the autumn of 2012 the Academy initiated publishing of its proceedings where the outcomes of the best student research papers are issued, and the research directions of the specialities taught are introduced.

In 2011 – 2013 the Academy students were involved in several projects:

1) Organisation of Estonian Air Shows with the purpose of introducing the field of aviation, and providing the students with the experience in organising a broad-scope aviation event;

2) Participation in Tartu Airport marketing survey (conducting questionnaires, analysis of results);
3) Research related to ESTCube project (see 3.1.3);
4) Participation in the Summer School project [56; en] organised by the Warsaw National Defence University within the framework of which study aids on using aircrafts in sea and air rescue and in environmental monitoring were prepared;
5) Construction of a UAV and the camera stand for taking high quality aerial photos and shooting videos (see 3.1.3, cooperation with ELI Ltd);
6) Together with Ridali Flight Club a research on the impact of mini flaps on the aerodynamics and flying characteristics of Jantar Standard III is undergoing.

3.3.2 Supervision of graduation theses

Supervision of graduation theses and consultation takes place in cooperation between the Academy and the specialists from aviation enterprises. In 2013, 51% of supervisors, 36% of reviewers and 20% of consultants were from outside of the Academy. To raise the quality of graduation theses, the Academy provides training to supervisors from enterprises. The work load of faculty members in regard to supervising, consulting and reviewing the students' graduation theses is shown in their individual quarterly work plans and reports.

According to the results of the survey conducted in 2012 the satisfaction with the supervisors of graduation theses in general exceeds 3.5 (5-point scale). The students made proposals that there might be more meetings with the supervisors and that they should be better prepared. In some of the cases there had been a problem with receiving the supervisor's feedback on time, or the feedback was inappropriate or of no help.

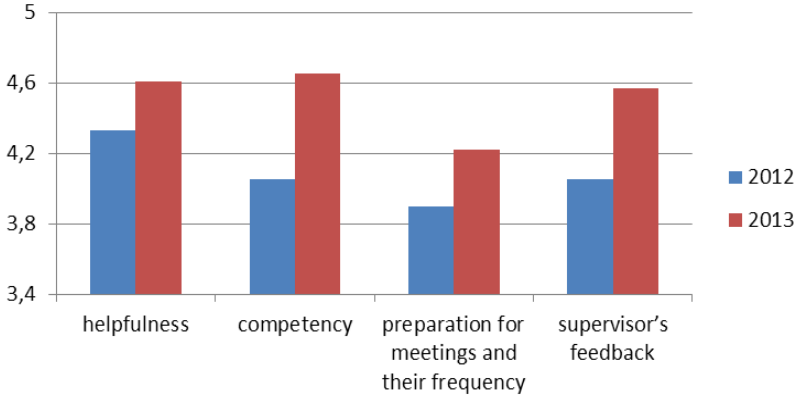


Figure 3.2 shows the outcomes of the survey conducted among the Academy alumni in 2012 and 2013. In 2013 general satisfaction with supervising has improved. There were still some problems with feedback from supervisors. It has been taken into account in amendments to the supervisor guidance material.

Figure 3.2 Student satisfaction with the supervisors of graduation theses

3.3.3 Prevention of plagiarism

From their first year at the Academy the students are guided to recognize plagiarism and to avoid it. The Study Regulations deal with academic fraud and plagiarism and underlines that it is strictly prohibited. These principles are introduced to the students in information briefings.

In the second year of studies the ethics of research work is dealt with in the subject course on Engineering Ethics; it is stressed that plagiarism is unethical. In the fourth year of studies the rules on making references in a research paper are taught in the subject course of Methodology for Compiling Student Research Papers.

3.4 Areas of good practice and areas that need improvement

Areas of good practice

1. Systematic activities carried out to ensure the necessary financial resources for RDC and personnel development.
2. Participation of the Academy, including the students, in RDC projects necessary for aviation enterprises and aviation industry.
3. Strong connection of the themes of students' graduation theses and research papers with aviation industry.
4. Publication of articles and presentations; publication of student research papers.
5. Students are able to recognize plagiarism, and avoid from it themselves.

Areas that need improvement

1. Intensifying cooperation with enterprises and other higher education institutions with the aim of developing more topical trends in RDC.
2. Establishing the priorities of RDC proceeding from the importance of the fields of research and their future perspectives.
3. Working out the faculty members' individual research topics.
4. Support to the teaching staff members' degree studies.
5. Acquiring the computer software with the purpose of checking the students' creative work towards plagiarism.

4. SERVICE TO SOCIETY

4.1 Popularization of its activities and involvement in social development

4.1.1 The system of popularizing the Academy core activities

The EAVA Development Plan [2; en, et] subsection 5.2.5 *Partnership, cooperation networks and foreign relations* defines cooperation as the aim of serving the society, subsection 5.2.3 *Study process and its development* establishes cooperation principles with the gymnasiums and the public of the area (organisation of public lectures on aviation). Strategic action foresees contribution to society and community as enhancing people's awareness and general popularization of aviation education and the whole aviation field. Popularization of the Academy is based on the EAVA Communication Strategy [6; et] which establishes the concrete objectives of activities and their performance indicators. The surveys of target groups conducted and the documents drawn up earlier have also served as the basis (e.g. EAVA Communication Strategy compiled by the students of the University of Tartu, which, among other issues, studied the image of the Academy among upper-secondary school students; EAVA Communication Strategy for 2011 – 2014). More precise annual action plans for advertising, admission campaigns and for other promotional activities are based on them.

One of the major strategic goals is employing more efficient methods for finding and selecting capable student candidates by continuously advancing the system of public relations and external communication. The Academy homepage and social media which offer the most recent news and information on the Academy serve as the major information channels for spreading information to external target groups. In 2012 the homepage design and its content were updated with the aim of making the homepage more user-friendly, more attentive to the needs of the target group and more fitting to the image of EAVA. The corporate visual identity (CVI) was renewed as well in order to keep to a uniform style in external communication.

Surveys are conducted systematically with the aim of making the promotion process - the search for student candidates included - more efficient:

1) the survey of the first year students' satisfaction with the organization of the admission process and with the related information;
2) since 2012, the survey of student candidates has been conducted to find out what information channels they consider most important, where they have got information about the Academy and what opportunities offered by the Academy they have used before deciding in favour of the Academy.

When introducing the learning opportunities the Academy greatly contributes to creating personal contacts with the candidates. Such an approach has been chosen proceeding from the outcomes of the surveys mentioned above, which reveal that close friends and relatives have a considerable impact on a young person's decision on their continuation of studies. Out of the opportunities offered by the Academy a remarkable number of candidates have always participated in the Open Days, has taken tours of the Academy study centre or taken interest in the Academy stand at educational fairs. Therefore the Academy contributes to organising excursions to the Academy to the student groups from basic and upper-secondary schools, to information and educational fairs and to visiting the gymnasiums. At the fairs quizzes are held (souvenirs of EAVA awarded as prizes) with the aim of enhancing the visitors' motivation for gathering more information on the Academy and encouraging them to take in-depth interest in the information materials. Since 2012 the e-mail addresses of the participants to the information events have been collected and those having expressed their interest are sent information about the Open Days and admission process via the list.

After the opening of the Academy new study centre the number of groups received from schools has increased year by year (Table 4.1). During the excursion the visitors are given an overview of the Academy and of the admission conditions and requirements; visitors are taken to training simulators and laboratories and to the aircraft maintenance hangar. If possible, they are given a chance to have a hands-on try on the flight training simulator.

Table 4.1 Groups received at the Academy and schools visited

	2010 autumn semester	**2011**	**2012**
Number of groups received	4	9	23
Number of participants	100	120	475
Number of educational fairs and career days participated in	5	5	7
Number of schools visited	Participation in the joint project of PHEIs *Teadlik Valik* (Conscious Choice)	10	12 (incl. visits to schools within the project *Tagasi kooli* (Back to School))

The Academy annually participates in major educational fairs *Teeviit* and *Intellektika,* and also in different information events organized in the counties of Estonia. In 2007 – 2010 the Academy participated in the joint project of PHEIs *Teadlik Valik* (Conscious Choice). The aim of this career counselling project was to promote professional higher education in society during which information campaigns were run in the gymnasiums of all the counties of Estonia. During the briefing sessions of the campaign the specialities taught at the Academy and the admission conditions and requirements were introduced. The members of EAVA participate also individually in fairs and career days and visit schools.

To introduce aviation education an Open Day is organized every spring holiday. Since 2006 the Academy has participated in the joint project of higher education institutions of Tartu within the frames of which the pupils and school-leavers from all over Estonia are brought to Tartu by special trains or buses to familiarize them with the higher education institutions located in Tartu and with the learning opportunities offered. The number of participants in the Open Days increased considerably after the new building of EAVA was opened – in 2012 and 2013 there were about one hundred visitors each time.

In popularizing aviation education EAVA cooperates with major enterprises of the field: Estonian Air Force, EANS, Estonian Aviation Museum, Estonian Air, AME, Panaviatic, Pakker Avio. With EANS joint campaigns have been carried out to popularize the specialities of air traffic control (2012, 2013) and management of communication and navigation systems (2013). The materials were made available on the internet and on the radio.

The Academy closely cooperates with the students and the Student Council. The students contribute to service of society by helping with the reception of student groups from schools, at Open Days, in the student shadow project, at educational fairs. The Academy participates in organizing the annual Estonian Air Show where the students act as guides introducing the aircrafts and ensuring safety in case of flights. The student participation and thereby the role of the Academy in the organization process has constantly grown: in 2010 there were 33 students engaged, in 2011 – 30 students and in 2012 – 55 students. The NPO *Eesti Lennundusselts* (Estonian Aviation Association) founded in 2010 by the EAVA students of aircraft maintenance also makes its contribution to enhancing the awareness about aviation. In cooperation with the Academy and the Estonian Aviation Museum practical workshops and lectures have been organized to those interested in aviation. In 2010 – 2012 the NPO carried out several public events at the Aviation Museum and EAVA within the framework of the EC Leader-programme project *Lennundus noortele lähemale!* (Aviation closer to the young!). For example, workshops on the aircraft YAK-40 and F-104, excursions to Tartu Airport and simulator

training sessions to students from schools. In January and February 2012 the NPO members delivered lectures on aviation to the basic school pupils of Tartu County (469 attendees).

The students contribute to the overall development of aviation industry through their graduation theses which are of practical application value proceeding from the specific needs of aviation enterprises and industry in general, and help to find solutions to some concrete problems, e-learning object „Link Budget in Radio Communication", graduation paper „Compiling Airbus A320 Line Maintenance Plan for Estonian Air".

EAVA conducts systematic media monitoring to evaluate promotion and public awareness about the Academy. The frequency of use of the search word *(Estonian) aviation academy* has remained constant (Table 4.2). In 2010-11 there was more media coverage as the new study centre was under construction.

Table 4.2 Data on media coverage

	2008	**2009**	**2010**	**2011**	**2012**	**2013 (as of June)**
All-republican publications	8	42	41	32	32	11
Local publications	2	19	15	19	13	12
Articles by EAVA staff members and students		2	1		5	

The news on the Academy is quite seldom covered by the TV or radio. In 2011 the Academy participated in the TV programme *Kooliproov* that introduced Estonian PHEIs. Different TV channels have covered the Open Day (ETV), aviation seminars (Tallinn TV) and the events held on the 20th anniversary of EAVA (TV3). In radio interviews the Academy specialists have given overviews of the history of aviation, and given expert commentaries on the sustainability of aviation education. To diversify media coverings the Academy has actively tried to find other ways of promoting the Academy and published articles both on its staff members and students.

Results:

2012 - The Academy organized the video contest *Lennukate mõtete akadeemia* the aim of which was to get video clips that would introduce and publicize the Academy in general as well as the specialities taught there. The clips are publicly accessible on EAVA Youtube.

The Archimedes Foundation awarded the Academy with the Golden Apple 2012 for successful international cooperation in education. The award is recognition for the Academy's consistent efforts at expanding the international cooperation network and developing the relationships with partner higher education institutions, and at increasing the proportion of international exchange students at the Academy.

Two students participated in the world finals of the Red Bull Paper Wings in Austria having previously won the national qualification round in Tartu.

EAVA students participated in the organizing team of the European airports' marketing event Routes Europe 2012.

2013 - The students of aviation management participated during their customer service training practice in the information fair Tourest representing Estonian Air.

The students' NPO Estonian Aviation Association delivered a series of lectures on aviation to upper-school students with the aim of providing them with elementary knowledge of aviation before applying to the Academy.

The series of public lectures "Introduction into Aviation" was initiated.

The student shadow project was initiated. Being a student shadow means that upper-secondary school pupils can spend one school day with an Academy student. The aim of the project is to

offer the student candidates an opportunity to get acquainted with the learning environment and the real study process at the Academy in depth.

4.1.2 Participation of employees in the activities of professional associations, as experts in advisory and decision-making bodies

Participation of staff members in bodies outside of the Academy has remained constant throughout the years: in 2009 – 20, in 2010 – 23, in 2011 – 23, and in 2012 – 24 participating members. The Academy staff members are involved in the work of International Society for Engineering Education (IGIP), Estonian Private Pilots' Association, Union of Wartime Military Pilots, Estonian Academic Sports Federation, the section of specialist libraries of the Estonian Librarians Association, Estonian Defence League, Estonian Association for Personnel Development, Estonian Mentors' Association, the Council of Estonian Aviation Museum, the Rotary Club Tartu, the work groups of the Rectors' Council of UAS, the programme committees for FP7. Previously there has been a membership in Estonian Association of Engineers. Rector Jaan Tamm is Chair of the IGIP Estonian State Surveillance Committee and since 2011 Chair of the Rectors' Council of UAS.

Results:

1. The Head of ATSTO Anu Vare can be pointed out as an expert to advisory and decision-making bodies. Ms Vare was head of the working group drawing up the state curriculum for air traffic services in 2008 within the framework of the programme *Development of the content of vocational education in 2008-2013* (1.1.0501.08-00003) initiated by the Vocational and Adult Education Department of the Ministry of Education and Research.
2. In 2010, professor Mart Enneveer attended the X3-Noise Annual National Focal Points meeting held in France as an invited expert on behalf of Estonia. In 2011, the Head of Studies Department Signe Vanker participated in the work of the X-Noise EV Impact Management Experts Committee (IEC) in Switzerland.
3. Ants Aaver has been member of the expert committee of aviation terminology working at the Ministry of Economic Affairs and Communication. Experts of all the EAVA specialities have been involved in the work of the committee and contributed to the development of the terminology database.
4. Head of the Department of Aircraft Piloting Teo Krüüner has been an unofficial expert in safety issues to the Air Force and to the Accident Investigations Centre of the Ministry of Economic Affairs and Communication.
5. In 2012-2013 the staff members of EAVA participated in the development of the Estonian Transport Development Plan contributing to the working groups on organisation of mobility and public services.

4.2 In-service training and other educational activities for the general public

The Academy is expanding its role beyond the borders of professional higher education by offering in-service training on a much wider scale. The development plan establishes that in-service training and retraining of specialists shall be organized in accordance with the needs of enterprises. The Academy considers the systemic development of in-service training and the continuous increase in its proportion as one of its main strategic directions. To realize this aim the needs for in-service training are taken into account when developing the training simulators and laboratories. The recommendations made by enterprises and the Board of Councillors for specifying the training needs more operatively are examined carefully. Surveys of aviation enterprises on their training needs are carried out. In subsection 5 of the 2011 survey (*In-service training needs of enterprises*) enterprises were asked about the topics the Academy might conduct in-service training in, and about their

preferences as to the venue, time and organization of the courses. Vocational and in-service training on commission from aviation enterprises and/or based on projects is seen as one of the opportunities for raising the revenue from economic activities in addition to the secure but limited state funding.

Increasing the volume of in-service training is the major long-term development direction. The annual growth of 20...25% has been set as the objective for the next coming years, and the actual demand for in-service training at present has proved the objective set is realistic. The volume of in-service training offered by EAVA has grown year-by-year, thus supporting the prognosis for the constant growth in the next coming years as well.

At present the biggest number of advanced training courses is offered by ATSTO that closely cooperates with EANS and continuously organizes refresher training to ATCOs. Simulator training courses to operating pilots are systematically organized by FTO. The Department of Communication and Navigation organises courses to operators of radio communication and navigation systems, and the Department of Aviation Management conducts courses in Safety Management Systems followed by advanced safety training courses. MTO has conducted courses in human factor in aircraft maintenance to the Air Force, Panaviatic Ltd, and a course introducing amendments to EASA regulations. MTO also runs Part 66 tests for aviation enterprises.

The Academy obtained the Language Proficiency Testing Organisation Certificate issued by ECAA, and the Academy Language Centre is the only certified organisation in Estonia having the right to carry out ICAO language proficiency testing. The Test of English for Aviation (TEA) developed by Mayflower College is used and the respective certificate has been issued by the owner of the test. The total of test-takers interviewed up to the present is 527.

Every year the list of courses and in-service training is provided in the Annual Report. In 2012 the overall volume and the number of titles of in-service training as well as the turnover increased (Table 4.3). The Development Plan reflects also the planned revenues from economic activities in the total budget. It is 8% in 2013 and 10% in 2014. The greatest part of the revenues comes from in-service courses.

Table 4.3 Data on in-service trainings

	2010	**2011**	**2012**
Courses:			
ATSTO	8	8	14
MTO	1	1	4
examinations	58	52	40
FTO	1	31	2+78
CNS*	1	1	2
AM**	1	-	2
ICAO LPT***	97	73	53
General courses	1	1	3
Total of trainees	451	433	699
Revenue from further education services , €	30 015	50 303	72 056
Fee for study materials , €	614	3 700	2 145
Revenue from in-service trainings, €	225 575	107 745	144 420
The proportion of money aquired from continuing education compared to revenues from economic activities (%)	9,5	4,5	5,7

*CNS – Department of Communication and Navigation

**AM – Department of Aviation Management

*** LPT – Language Proficiency Test

The volume of in-service training has been earlier measured in ECTS credits, hours or man-weeks – due to this it was complicated to compare different courses. Since 2012 a unified man-week system is applied which is also used for expressing an indicator in the development plan.

4.3 Other public-oriented activities

4.3.1 Public-oriented activities, their goals, evaluation and improvements

Public-oriented activities are developed pursuant to the development plan and the communication strategy. Every year the public services are shown in the Annual Report, and on the basis of the Report the opportunities for further development of public services are considered. The increase in the number of public-oriented events has been established as one of the strategic indicators. It is foreseen that the number of public lectures shall grow from six lectures in 2012 to twenty-eight by 2017.

Every year the Academy organises an aviation seminar for the staff members of aviation enterprises, and the Academy and for specialists of the field. By today the seminar has been held for 17 times. Besides the lectures, presentations and discussions on various topical issues the winner of the contest *Accomplishment of the Year* is announced and awarded with the challenge cup *Eagle*. The title with the accompanying challenge cup is awarded to an Estonian aviation enterprise or organisation for its excellent work and outstanding accomplishments in the field. Year by year the number of participants in the seminar has shown a growing trend and has attracted students, international speakers and attendees. In 2009 there were 98 participants, in 2010 – 117, in 2011 – 151 and in 2012 – 187.

4.3.2 Contribution to the enhancement of community welfare

The only aviation library in Estonia is housed at the Academy. The library is open to public. Beside the Academy membership the staff members and students of other higher education institutions, secondary school students, participants to the courses, staff members of aviation enterprises and organisations et al make active use of its resources. At present the library contains about 7,000 information units. The number of regular readers is about 800. The major objectives of the library are to contribute to the development of aviation education and culture, to intermediate and offer reliable and up-to-date information needed for the study, research and development activities.

The Academy café is also open to public and frequented by locals and the employees from the establishments of the area. The number of customers from outside of the Academy is showing a growing trend. The Academy allows those interested in it to use its lecture rooms. For example, in 2012, the University of Tartu Narva College organized a professional development course to the heads of service organisations; in 2013 Tartu University Hospital conducted an in-service training to about fifty doctors.

In 2013 Estonian Aviation Academy celebrates its 20th anniversary within the frames of which several public lectures are delivered, e.g. a lecture on women pilots delivered by the Academy graduates, and exhibitions introducing the Academy and aviation education are held in Tartu University Library, Tartu Department Store and in Tartu Airport. Some time ago the Academy arranged an exhibition at Tartu Airport terminal to celebrate its 65th anniversary. Within the frames of the 20th anniversary the conference *Single Sky – Challenges for Future Aviation Education* was held on 12 April. Presentations were made by specialists and public figures from Estonia and abroad. The Academy students, alumni, cooperation partners and others attended the conference – 160 people were registered.

In 2012 the Academy in cooperation with Enterprise Estonia (EAS – Est.) initiated the series of seminars on aviation and space technology with the umbrella title *Opportunities for Estonian enterprises to participate in international public procurements in the sector of aviation and space.* So

far there have been three seminars held at the Academy. The seminars are planned to take place up to 2014.

Results:

1. On 29-31 Aug. 2011 the series of public lectures introducing the specialities taught at the Academy and the tours of the new building took place within the events organised on opening the Academy new study centre.
2. In addition to groups of pupils from schools the Academy has received other groups of interest: e.g. in 2012–2013 a group from the Tartu substitute and children's home *Käopesa*, the group of radio amateurs from Ülenurme High School, Elva Youth Centre, Tõrva Library, Ülenurme Lions Club.
3. In cooperation with the Student Council three blood donor days have been organised at the Academy where both the students and the staff members have donated blood (in Dec. 2012 – 30 blood donors).
4. From 2013 the Academy participates in the water and sewer piping project of the Aasa residential district in Ülenurme.
5. The Academy has taken part in the charity event Rat Race for several years.
6. EAVA offers opportunities for practical training to the students of communication, personnel management and ICT from other educational institutions, e.g. the University of Tartu and Tartu Vocational Education Centre.

4.4 Areas of good practice and areas that need improvement

Areas of good practice:

1. At the new centre more visitor groups are received and more informative events organized.
2. Initiating the student shadow project.
3. Stronger ties with cooperation partners and alumni.
4. Seminars for specialists of different aviation fields.
5. Modern environment enabling to offer the Academy resources to public as well – conference facilities, aviation library, café.

Areas that need improvement:

1. Modernizing the Academy exhibit at educational fairs.
2. Expanding the student shadow project to a student week.
3. Increasing media coverage, more actively participating in discussions.
4. Entering the international education and training market, incl. in-service training; improving the marketing process.

ABBREVIATIONS

AIS – admission information system

APEL – accreditation of prior and experiential learning

ATC – air traffic control

ATSTO – Air Traffic Services Training Organisation

EANS – Estonian Air Navigation Services

EASA – European Aviation Safety Agency

EASS – Estonian Academy of Security Sciences

EAVA – Estonian Aviation Academy

ECAA – Estonian Civil Aviation Administration

ECTS – European Credit Transfer and Accumulation System

EMA – Estonian Maritime Academy

EMÜ – Estonian University of Life Sciences (Eesti Maaülikool)

ENDC – Estonian National Defence College

ERIS/ETIS – Estonian Research Information System (Eesti Teadusinfosüsteem)

EUROCONTROL – European Organisation for the Safety of Air Navigation

FTO – Flight Training Organisation

HE – higher education

ICAO – International Civil Aviation Organization

JAA – Joint Aviation Authorities

MTO – Maintenance Training Organisation

PHE – professional higher education

PHEI – professional higher education institution

RCUA – Estonian Rectors' Conference of Universities of Applied Sciences

RDC – research, development and/or other creative activity

SIS – study information system

TUT – Tallinn University of Technology

UAS – university of applied sciences

UT – University of Tartu

SOURCES

The numbered hyperlinked data used in this report are located in http://akre.eava.ee/.