

ESTONIAN QUALITY AGENCY

FOR HIGHER AND VOCATIONAL EDUCATION

Assessment Report

**Transport Services;
Engineering, Manufacturing and
Technology**

Estonian Aviation Academy

2016

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Introduction

Quality assessment of a study programme group involves the assessment of the conformity of study programmes and the studies and development activities that take place on their basis to legislation, national and international standards and developmental directions with the purpose of providing recommendations to improve the quality of studies.

The goal of quality assessment of a study programme group is supporting the internal evaluation and self-development of the institution of higher education. Quality assessment of study programme groups is not followed by sanctions: expert assessments should be considered recommendations.

Quality assessment of a study programme group takes place at least once every 7 years based on the regulation approved by EKKA Quality Assessment Council for Higher Education [Quality Assessment of Study Programme Groups in the First and Second Cycles of Higher Education](#).

The aim of the assessment team was the evaluation of the study programme group of Transport Services and the study programme group of Engineering, Manufacturing and Technology at the Estonian Aviation Academy.

The team was asked to assess the conformity of the study programmes belonging to these two study programme groups and the instruction provided on the basis thereof to legislation and to national and international standards and/or recommendations, including the assessment of the level of the corresponding theoretical and practical instruction, the research and pedagogical qualification of the teaching staff and research staff, and the sufficiency of resources for the provision of instruction.

The following persons formed the assessment team:

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|-----------------------------|---|
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| Philipp Schulz | Student member; RWTH Aachen University – Germany |

The assessment process was coordinated by Tiia Bach (EKKA).

After the preparation phase, the work of the assessment team in Estonia started on Tuesday, October 25, 2016, with an introduction to the Higher Education System as well as the assessment procedure by EKKA, the Estonian Quality assurance organization for higher and vocational education. The members of the team agreed the overall questions and areas to discuss with each group at the Academy. The distribution of tasks between the members of the assessment team was organised and the detailed schedule of the site visits agreed.

During the following two days, meetings were held with the representatives of the Academy (October 26-27). The schedule for discussion on site for each of the various study programmes only allowed for short time slots to be available for team members to exchange information, discuss conclusions and implications for further questions.

On Friday, October 28, the team held an all-day meeting, during which both the structure of the final report was agreed and findings of team meetings were compiled in a first draft of the assessment report. This work was executed in a cooperative way and the members of the team intensively discussed their individual views on the relevant topics.

In the following sections, the assessment team summarises their general findings, conclusions and recommendations which are relevant across the two SPGs. The team provides an external and objective perspective on the programmes and the contexts within which they are delivered. The intention is to provide constructive comment and critique which may form the basis upon which improvements in the quality of the programmes may be achieved.

Programmes evaluated and statistics of the study programme groups

Professional higher education programmes assessed in the **study programme group of Transport Services:**

- Air Traffic Services
- Aircraft Piloting
- Aviation Management
- Management of Aviation Communication and Navigation Systems

Professional higher education programme assessed in the **study programme group of Engineering, Manufacturing and Technology:**

- Aircraft Engineering and Maintenance

Assessment Report on Transport Services; Engineering, Manufacturing and Technology

Number of students / students admitted / graduates / interruption cases and of students having participated in mobility programmes by curricula in 2013/ 2014; 2014/15; 2015/16 (No. of graduates 2015/16 will be indicated after Sept 30.)

| Field of study | Study programme group | Code of curriculum | Title of curriculum | Study year | No. of students | No. of students admitted | No. of graduates | No. of interruption cases | No. of student mobility | |
|--|---|--------------------|--------------------------------------|---|-----------------|--------------------------|------------------|---------------------------|-------------------------|---|
| 5 Engineering, manufacturing and construction | Engineering, manufacturing and technology | 118817 | Aircraft Engineering and Maintenance | 2013/14 | 66 | 16 | 7 | 9 | 1 | |
| | | | | 2014/15 | 86 | 18 | 13 | 14 | 1 | |
| | | | | 2015/16 | 80 | 18 | | 5 | 2 | |
| 8 Service | Transport services | 2282 | Air Traffic Services | 2013/14 | 55 | 8 | 8 | 1 | 2 | |
| | | | | 2014/15 | 42 | 6 | 11 | 8 | 1 | |
| | | | | 2015/16 | 31 | 8 | | 0 | 1 | |
| | | | 2283 | Aircraft Piloting | 2013/14 | 47 | 10 | 11 | 0 | 3 |
| | | | | | 2014/15 | 46 | 10 | 11 | 3 | 4 |
| | | | | | 2015/16 | 43 | 10 | | 2 | 3 |
| | | | 2284 | Aviation Management | 2013/14 | 74 | 10 | 16 | 5 | 8 |
| | | | | | 2014/15 | 45 | 10 | 7 | 3 | 2 |
| | | | | | 2015/16 | 47 | 14 | | 3 | 3 |
| | | | 118857 | Management of Aviation Communication and Navigation Systems | 2013/14 | 49 | 11 | 7 | 6 | 1 |
| | | | | | 2014/15 | 57 | 12 | 5 | 9 | 3 |
| | | | | | 2015/16 | 55 | 10 | | 2 | 2 |
| TOTAL | | | | 2013/14 | 291 | 55 | 49 | 21 | 15 (5%) | |
| | | | | 2014/15 | 276 | 56 | 47 | 37 | 11 (4%) | |
| | | | | 2015/16 | 256 | 60 | | 12 | 11 (4%) | |

Source: Self-Assessment Report of The Estonian Aviation Academy, pp 12-13

General findings and recommendations at the study programme group level

The Estonian Aviation Academy is an institution of professional higher education. There are five study programmes: Air Traffic Services, Management of Aviation Communication and Navigation Systems, Aircraft Piloting, Aviation Management, and Aircraft Engineering. All the study programmes are with a total of 240 ECTS and the studies are planned to last for four years.

The self-assessment report and the information received during the interviews at the site-visit (feedback procedures, encouragement of students to participate in R&D activities and other projects, counselling/tutoring and supervision of theses, prevention of plagiarism etc.) confirm that higher education principles are taken very seriously by the Academy, which contributes to producing high level of professionalism and social consciousness of the graduates.

The assessment team had an impression that the Academy is satisfied with the functioning of the current system and does not consider necessary to challenge it. Therefore, some reluctance to changes has been noted. Strong government funding, lecturers and graduates as well as the national job market grant satisfaction to the Academy and might not lead it to find faster or better ways to provide the studies. However, as the aviation industry grows and develops faster every year, the Academy should aim to produce graduates without lowering the quality faster than today, too. If some other European universities are able to provide such study programmes within three years or less, why not this Academy?

The Academy's programmes are all calibrated for a four-year period, composed of two years of general (thematic) courses and two years of specialty courses, including a six-month final thesis which has to be defended and, in some programmes, a substantial on-the-job training or an industrial internship. Three out of the five programmes end up with the granting of a professional licence title (Commercial Pilot / Air Traffic Controller or Licensed Mechanics) and all five programmes lead to the awarding of a "Professional Higher Education Diploma".

At first glance, that four-year duration for a higher education programme is not easily readable from an external point of view, since the European process of Bologna has largely contributed to a harmonization of higher education programmes in Europe in either three or five years since the beginning of the 2000's. Three-year programmes are calibrated to allow for the granting of a Bachelor's degree while five-year programmes deliver a Master's degree. In many countries, the three-year programmes are allowing graduates to either directly enter the job market or continue their studies towards a Master's degree.

Usually, programmes leading to a professional license for pilots, ATCOs (Air Traffic Control Officers) or aircraft mechanics are equal or less than three years. The EASA (European Aviation Safety Agency) requirements for those professions can actually be met over a period of training from 18 months to three years. When such programmes are three years long, they generally also deliver a Bachelor's degree. In some cases, five-year professional programmes (ATCOs with all three ratings: TWR, APP and ACC) can even lead to a Master's degree (e.g., in France).

The establishment of the PEGASUS network (Partnership for a European Group of Aerospace Universities) in 1999 was also based on the Bologna 3-5-8 (Bachelor-Master-Doctorate) structure. The length of the programmes, both in terms of ECTS and years, is an important criterion to consider for membership eligibility to the network.

Therefore, the assessment team feels that there are some differences between this European "practice" and the length and structure of the Academy's programmes. This may not be a problem for Estonian students since the Estonian Professional Higher Education Diploma in four years is officially recognised as equivalent to a Bachelor's degree and allows students to pursue their course of study towards a Master's degree in Estonia. Conversely, it may constitute an obstacle to the development of the Academy's international relations, by refraining foreign students to apply to the Academy's programmes. Therefore, this issue is to be considered jointly with the strategy for international development that the Academy will have to update for the future.

Finally, it would probably be interesting for the Academy to consider reshaping its programmes into a 3+2 model, where the professional requirements for licensing are met in the first three years.

The four-year length of the curricula needs also to be revisited in the light of student complaints about the contents of the first two years and of some observations made by employers and alumni concerning the reactivity of the Academy towards job market needs.

In general, the Academy's curricula are considered quite full in terms of workload, especially if we add up class hours and personal work on an equal basis (one ECTS is considered worth of 13 class hours plus 13 hours of personal work at the Academy). Such a high amount of work hours allow little room for flexibility in the curriculum and the assessment team also noted that elective courses are very limited (just a few ECTS per year and some "electives" are not really chosen by the students, e.g. the ATCO ratings courses). There is also little time for students to develop their social life through sports and other extra-curricular activities.

Employers and alumni have expressed a need for more reactivity of the Academy to the fluctuating job market. Of course, having to wait for four years is not a very reactive way to answer their needs.

Finally, the following could help the Academy to improve its curricula according to the above considerations:

- Progressively restructure the current four-year programmes into three-year programmes, leading to the delivery of the professional license.
- Further developing a continuing education offer of short courses to cope with short-term needs of the employers.

In general, the student satisfaction and motivation level, as well as the employment rates of graduates are high, and drop-out rates are low in comparison to other Estonian higher education institutions.

Nevertheless, the selection process seems to be a major improvement area. While the Academy enjoys relatively high competition among candidates in the admission process for Aircraft Piloting, the competition for the remaining four study programmes is significantly lower. Consequently, the quality of the admitted students cannot always be ensured, which again leads to higher drop-out rates and problems concerning the employability of graduates. Generally, the marketing activities for the study programmes besides Aircraft Piloting should be improved to raise competition in the admission processes and enable the Academy to keep student numbers constant while admitting only the most capable and suitable students.

Concerning student satisfaction level, a difference occurs between the general knowledge subjects mostly taught by cooperation partners (Estonian University of Life Sciences and the University of Tartu) in the first two years of all study programmes and the aviation-related subjects taught by the Academy in the following senior years. While students are very satisfied with the aviation-related subjects, more dissatisfaction can be perceived regarding the basic subjects of the first two years, also leading to lack of motivation and higher drop-out rates at this stage. This is the result of several circumstances: students do not see the necessity of the basic subjects for their future occupation in the aviation sector, teaching environment at the cooperating universities is different, and commuting between the three involved institutions appears to be very time consuming. The Academy is aware of these problems and has made efforts to find solutions for them in recent years, but as student satisfaction level is still not optimal, further adjustments such as better scheduling of classes, integration of more aviation-related subjects in the first two years or teaching all (or at least more) courses at the Academy itself are necessary.

Personal development of staff will be one of major items when the Academy will implement its plans to be more international and increase teaching in the English language. General basis for that with the staff is good, because they are

motivated and students have indicated that their teaching skills are good. Connections through the organisation are easy to make and the atmosphere is open. However we can find that students' and sometimes teachers' workload is quite heavy and there is an existing reluctance to change in the opinion of various stakeholders. According to the Academy's self-assessment report, the situation with teaching resources in each curriculum is more than satisfactory. Unfortunately the paragraph with numbers does not reveal the real situation. Some teachers are very young in the career, some teachers are at the other end of their career. Overlaps of resources between different curricula are not visible and analyzing real resources is therefore not possible. Differences between part-time staff and visiting lecturers is not clear for the reader.

As a common recommendation to the Academy, self-assessment of the teaching staff should be done once more with careful risk assessment. As a result of that, resources, teaching skills, availabilities, back-up plans for missing resources or skills should exist. Goals concerning the number of full-time teachers versus other teachers should be decided. To keep up the teachers motivation and skills, the Academy should make sure that every person has a personal development plan that also supports the Academy's policy towards the development of a more qualified teaching staff. Development plans should also support the Academy's future goals.

Strengths and areas for improvement of study programmes by assessment areas

Study programme development

Standards

- ✓ The launch or development of the study programme is based on the Standard of Higher Education and other legislation, development plans, analyses (including labour market and feasibility analyses), and professional standards; and the best quality is being sought.
- ✓ The structure and content of modules and courses in a study programme support achievement of the objectives and designed learning outcomes of the study programme.
- ✓ Different parts of the study programme form a coherent whole.
- ✓ The study programme includes practical training, the content and scope of which are based on the planned learning outcomes of the study programme.
- ✓ The study programme development takes into account feedback from students, employers, alumni and other stakeholders.

General Comments

The study programmes are based on the main standards of Higher Education. A curriculum council, which includes curricula managers, teaching staff, as well as industry representatives and students, elaborate the curriculum. All speciality modules are developed on the basis of aviation regulations. Based on a strong internal quality assurance system implemented on the basis of feedback collected from all stakeholders who are currently involved in this process, including an annual assessment based on the feedback from teachers and students, the best quality of teaching and learning is ensured. The specialities include internal practice (lab work, simulators, hands-on work) and practical training in the aviation industry, which is crucial for success in the labour market. At the same time, a working relationship with other universities (Estonian University of Life Sciences, the University of Tartu, Tallinn University of Technology) enables the adjustment of the curricula.

The different parts of the study programmes, which form a coherent whole, provide the appropriate learning outcomes and competence profiles for the aviation needs and meet the specific accreditation criteria that would complement the existing European, national or regional accreditation systems for aviation. However, these four-year study programmes are quite long and some companies may need graduates more rapidly.

The Academy's curricula have also been identified as quite dense (in terms of workload), compared to other European programmes in the same areas of study. This represents a potential limitation to the development of the social life of individual students. The choice of elective courses is also quite limited (just a few credits in some years of study) and focused at topics which are directly connected to the main course of study. It seems quite difficult for students willing to "breathe fresh air" out of this constrained framework to manage to do so (statement made by some students during the interviews).

Strengths

- Short organizational/ communication lines due to the lean structure of the Academy
- Strong internal quality assurance system based on feedbacks and yearly performance interviews with every teacher and students
- Good cooperation with the industry, involvement of industry representatives in the curriculum councils and in the supervision of final project thesis
- Support from the Academy in terms of finding practical training partners

Areas of improvement and recommendations

- Reluctance to adjust the curricula (e. g., in case of changing needs of the aviation industry); in general, the staff is satisfied with the present structure of the courses and is not eager to provide changes.
- Learning outcomes are very generic and concrete outcomes should be more explicitly formulated; relevance of subjects taught in the first two years with respect to the aviation sector appears very late to the students (in the third year).
- Lack of benchmarking with similar programmes in other European countries which limits possible adjustments
- Restructure the current four-year programmes into three-year programmes (following common European "practice"), leading to the delivery of the professional license
- Speciality modules should be carried out in English and, as cooperation partners (i.e. other universities) are also developing courses in the English language, those courses could also be integrated into the curriculum; the number of courses in the English language should be increased.
- In terms of academic mobility, increasing the number of credits in elective courses and the crediting of courses abroad requires some changes in the schedule to provide more space to go abroad.

- Students are attending courses at three different locations, which raises a problem in terms of logistics and time efficiency.
- Most applicants tend to select the aircraft piloting or Air Traffic Services programme. The other programmes are less attractive, which creates a gap in terms of quality of recruitment. Those other programmes should be better advertised.

Resources

Standards

- ✓ Resources (teaching and learning environments, teaching materials, teaching aids and equipment, premises, financial resources) support the achievement of objectives in the study programme.
- ✓ There is a sufficient supply of textbooks and other teaching aids and they are available.
- ✓ Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).
- ✓ Resource development is sustainable.

General Comments

The Estonian Aviation Academy has a new modern propeller-shaped building with a total of 4,000 square meters which includes fourteen lecture rooms with a total of 260 seats. In addition there are available a large conference room, an adequately supplied library, gym facilities and a cafeteria. Running costs for the new building are extremely low which gives the Academy an opportunity to channel funds for other needed areas.

The Academy is government funded giving it the possibility to hire personnel with sufficient skills and expertise needed for teaching.

In order for the students to receive practical skills, there are different labs available and a hangar for the Aircraft Engineering and Management of Communication and Navigation Systems students, with a variety of tools, engines, an aircraft etc. For the pilot initial training the Academy provides simulators for helicopter and aircraft but real flight training is subcontracted to a private company; Air Traffic Controllers conduct their practice in the 360-degree tower simulator and in radar simulator.

The Academy has established a development department to increase third-party funding including continuous learning (numerous courses already available, in 2015 EAVA provided 34 continuing education courses for 531 participants. In 2016 the procedures for opening aircraft technical personnel vocational courses were initiated at the request of major employers), research and development

activities. These projects foster the relation between the Academy and the aviation industry.

Strengths

- A new modern building with well-equipped labs, hangar for the maintenance practice and simulators for Aircraft Piloting and Air Traffic Services students
- Good technical environment for specialty courses (ATC and piloting simulators, maintenance workshop etc.)
- Library with all needed books, as well as access to different national and international digital databases
- Students are provided with free accommodation during their studies at the University of Technology in Tallinn

Areas of improvement and recommendations

- Ensure long-term availability of teaching equipment for pilots (e.g. aircraft). Outsourcing the entire flight training activities from a single private company might be seen as a threat in future.

Opportunities

- Simulators can be used more either by renting out or conducting additional training. Additional ATCOs for EANS during the last two years were trained in Finland, but not in Estonia.

Teaching and learning

Standards

- ✓ The process of teaching and learning supports learners' individual and social development.
- ✓ The process of teaching and learning is flexible, takes into account the specifics of the form of study and facilitates the achievement of planned learning outcomes.
- ✓ Teaching methods and tools used in teaching are modern, effective and support the development of digital culture.
- ✓ Practical and theoretical studies are interconnected.
- ✓ The organisation and the content of practical training support achievement of planned learning outcomes and meet the needs of the stakeholders.
- ✓ The process of teaching and learning supports learning mobility.
- ✓ Assessment of learning outcomes is appropriate, transparent and objective, and supports the development of learners.

General Comments

The overall situation in teaching and learning at the Academy is quite good: the Academy has set up an environment where everything is made to spur individuals into studying and working hard to achieve clear, pre-established learning outcomes that fully comply with legal requirements and standards set by authorities.

Obviously, the Academy's higher education programmes contribute to the development of individuals in terms of knowledge and skills. Within the Academy's curricula, many opportunities exist for students to establish working links with the teaching staff, including professionals hired by the Academy as part-time lecturers. R&D projects offer another possibility for students to get integrated in working teams made of a variety of individuals (professors and students). As noted by the assessment team, the Academy as a whole appear as a complete social structure – a small village or a "Happy Family" – where everyone knows each other, with its advantages and disadvantages.

The process of teaching and learning is well-structured and organised, relying on an impressive internal quality assurance system, standards and specifications made by Estonian law, the Estonian Ministry of Education and Research and European regulations as applicable. This strong system as well as the long duration of the programs (four years) is a sure way to achieve the planned learning outcomes.

However, as already pointed above, this process of teaching and learning appears as relatively rigid and lacking of flexibility. Little opportunities for elective courses exist at this time, and international mobility is much constrained by the schedule

of mandatory courses. Extra-curricular activities do not appear to be much promoted by the Academy.

The digital environment at the Academy clearly appears as a real strength and this was confirmed by a tour of the facilities, including classrooms, labs and the library. Students are encouraged to make the best use of these tools, which contributes to the efficiency and effectiveness of teaching and learning. From the interviews with teaching staff, the assessment team got the feeling that innovative teaching methods are in use: problem-solving, problem-based teaching, group projects and teamwork are implemented, as well as extensive use of e-learning. Courses are systematically uploaded on the Academy's network for students to access them after class, recording of classes is also used.

The main feeling emerging from the self-assessment report and the interviews is that the global coherence of the training programs is good, in particular for the interconnection of theoretical and practical studies. However, the interviewees pointed out some areas of improvement for the thematic courses taught at partner universities (Tartu University, Estonian University of Life Sciences and Tallinn University of Technology): better coordination with the courses taught at the Academy, improvements required in the planning / schedule of classes etc. The interconnection of some courses taught at these universities with practical training conducted at the Academy may not be well-identified by students. For some courses taught at the partner universities, the question of their relevance for the whole curriculum can also be raised. Moreover, the students must commute during their lecture days between the University of Life Sciences, University of Tartu and the Academy which is time consuming and consequently causes major inconvenience for the students. Rescheduling courses currently taught at cooperating universities to the Academy appears to be an important area of improvement.

For regulated professions (ATCO, pilots, licensed mechanics), the practical training contents are specified by national/EASA regulations and the teaching delivered at the Academy is fully compliant with them. There are therefore no discrepancy between the learning outcomes and their achievement by the Academy. Employers appear generally satisfied with the technical skills acquired by graduates from the Academy. However, the process of learning may be deemed a bit too long for them and / or, in some cases, they might have been reluctant to hire graduates but for other reasons that their technical skills. This issue (reactivity of the Academy programs to fluctuations of the job market) was pointed out on several occasions during the interviews.

Learning mobility is clearly something that is fostered by the Academy. The structure of curricula allows for learning mobility in the second year but not really in the third or fourth years (specialty years). This can be seen as a drawback for future professionals since the advantages of learning mobility for future professionals at the specialty learning stage may also be highly interesting. However, there is no clear evidence of existing academic mobility anywhere else in Europe for regulated professions such as ATCO or licensed mechanics/maintenance technicians.

The small size of the Academy (in terms of student numbers) allows for a very good individual follow-up of each student by the teaching staff. Learning progression is well monitored and difficult situations are quickly addressed and corrected (counselling, remedial courses etc.). No complaint arose from the interviews regarding assessment of students, neither from teaching staff nor from students or alumni. For ATCO and pilots, the rhythm of progress is also quantified by regulations, which makes for objective and transparent assessment throughout the whole practical training phase.

Strengths

- Up-to-date teaching methodologies
- Supportive digital environment using advanced technologies for recording classes and sharing documents (including handouts, feedback forms, exams etc.)
- Close and reactive student supervision by teaching staff, especially at specialty level

Areas of improvement and recommendations

- Increasing flexibility of programs by reducing the amount of mandatory credits and promoting more elective courses and individual work: although students tend not to complain about the amount of work required by the current curricula, there is objectively little free time for them to shape their own individual profile and become actors of their own education
- Fostering the commitment of students to activities which are not directly linked to their field of specialty, including sports and other social activities
- Students must commute during their lecture days between the University of Life Sciences, University of Tartu and the Aviation Academy. The Academy should seek to schedule all the lectures in the premises of the Academy, so the lecturers of other universities come to the Academy instead of the students commuting.
- Intensifying international exposure of students by:
 - Developing the number of courses fully taught in English for attracting foreign students to the Academy
 - Developing the possibilities for Academy's students to go and study abroad at various stages in their curriculum (including specialty years)
- Introducing specialty courses or specialty familiarization courses earlier in curricula, so that students can better perceive what their future career will look like (increasing motivation for first and second year courses) and the

Academy is able to anticipate the suitability for the chosen speciality of their students at an early stage

Teaching staff

Standards

- ✓ There is teaching staff with adequate qualifications to achieve the objectives and planned learning outcomes of the study programme, and to ensure quality and sustainability of the teaching and learning.
- ✓ Overall student assessment on teaching skills of the teaching staff is positive.
- ✓ The teaching staff collaborate in the fields of teaching and research within the higher education institution and with partners outside of the higher education institution (practitioners in their fields, employers, and staff members at other Estonian or foreign higher education institutions).
- ✓ Recognised foreign and visiting members of the teaching staff and practitioners participate in teaching the study programme.
- ✓ The teaching staff is routinely engaged in professional and teaching-skills development.
- ✓ Assessment of the work by members of the teaching staff (including staff evaluation) takes into account the quality of their teaching as well as of their research, development and creative work, including development of their teaching skills, and their international mobility.

General Comments

Teaching staff can be divided in three groups: teachers at the universities, full-time teachers at the Academy and part-time/visiting teachers at the Academy. There are typically only few full-time teachers (15), when the number of available visiting teachers is high. Number of teachers at the universities is equal to visiting teachers.

All teachers are qualified and capable to give lectures. The Academy's teachers have ongoing procedures to meet each other regularly and evaluate received feedback and develop curricula. However an organized procedure to make sure that the goals and standards of curricula are distributed to all teachers is missing.

The Academy's teaching staff members have the possibility to develop themselves in various seminars and courses. However, although being somewhat lower than in some other European aviation training institutions, teachers face heavy workload as estimated hours per year of teaching.

Very good connection to aviation industry helps to understand requirements and wishes set by industry. However there is generally a limited interest to develop or remodel the contents of subjects within the Academy's teaching staff.

Teaching skills including the subject content are evaluated regularly. That happens via performance discussions and evaluating lecturers during class hours.

Proficiency in English skills varies among the Academy's teachers and that may affect the teaching skills. The Academy shall seriously consider actions to ensure that values, messages and facts stay the same if the lectures are given in English.

International visiting staff is rare and most commonly visiting teachers come from Estonian companies.

Strengths

- Strong motivation and dedication of involved personnel (including teaching staff and students)
- Lecturers from Estonian enterprises and from abroad
- Relations with the aviation industry
- Regular meetings and close co-operation among the teaching staff
- Open atmosphere for discussions
- New teachers get support both from the Academy and other teachers
- The Academy has increasing R&D activity in which teachers can participate
- Career development within the Academy exists
- Student feedback on teaching staff is positive
- Students feel free to contact teachers at anytime
- Two thesis supervisors (one from the Academy and one from the company), supervisor training is provided

Areas of improvement and recommendations

- English skills of the teaching staff need to be further improved to provide more and better teaching in English
- Some teachers have no personal development plan. It is advisable for every teacher to have a personal development plan.
- Teachers' critical thinking regarding topicality of course content, teaching skills and methods could be improved

- Teaching staff workload is not even, e.g. Air Traffic Services study programme needs additional teaching resources
- Teaching staff is not able to foster awareness of different cultures between countries, therefore the international exchange of teachers would be beneficial

Students

Standards

- ✓ Student places are filled with motivated and capable students.
- ✓ The dropout rate is low; the proportion of students graduating within the standard period of study is large.
- ✓ Students are motivated to learn and their satisfaction with the content, form and methods of their studies is high.
- ✓ As part of their studies, students attend other Estonian and/or foreign higher education institutions as visiting or international students.
- ✓ Employment rate of alumni is high.
- ✓ Alumni and their employers are pleased with their professional preparation and social competencies.

General Comments

The number of students is on a constant level. Concerning the number of applicants and the resulting competition there is a major difference between the study programme of Aircraft Piloting on the one side and the remaining four programmes on the other side. The competition for Aircraft Piloting is relatively high (one student selected out of ten applicants on average) so that the most capable and motivated students can be chosen. Regarding the other programmes there is less competition in the admission process, therefore the overall quality of admitted students is lower.

The overall drop-out rate is below the average in the Estonian higher education system. Especially in the first two years of studies, some drop-outs due to a lack of motivation can be counted. The main reason for the mentioned lack of motivation is the design of the curriculum consisting of basic subjects in the areas of natural sciences and humanities taught at cooperation partners (i.e. other universities). It is difficult for students in their first years to see the necessity of these subjects and their connection to aviation, which was the main reason for choosing the respective study programmes. Additional drop-outs, resulting from health issues, employment found before graduation and changing the study programme within the Academy, can be counted.

The general satisfaction and motivation of the students is high, especially regarding the aviation-related and practical teaching. The relations between the Academy staff and the students are very strong, the students' opinion is taken into account when it comes to decisions on curriculum development.

As mentioned above, in the first two years the majority of the basic subjects are taught at cooperating universities, the satisfaction of the students in this time is considerably lower. To keep up the motivation, basic aviation-related subject courses taught by the Academy itself have started to be integrated in the first two years of studies.

In general the Academy provides opportunities for students to attend mostly European partner universities as visiting students, moreover the teaching staff supports interested students with counselling. A certain number of students take this chance and go abroad during their studies. During the interviews, students quoted destinations in Spain, Portugal and the Netherlands for ATC, France and Turkey for pilots. As the curriculum is rather inflexible, visits at foreign higher education institutes typically lead to a prolonged study time as compulsory courses have to be taken after returning from the visit abroad and crediting of courses taken at foreign higher education institutes is mostly limited to replacements for elective courses at the Academy.

Besides attending foreign partner universities, performing parts of the practical training at aviation enterprises abroad is another option for international mobility during study time.

Consequently, the programmes facilitate some students' exchanges across the EU, promote the modernization of education and improve their skills and ultimately their employability. In other words, the programmes are well-fitted for air transport related careers; yet, the internationalization of the students is a bit below what could be expected. Adding more elective and English-taught courses could enhance this aspect.

Attending other Estonian higher education institutions is necessary within all study programmes since most of the not-aviation-related basic subjects are taught at one of the three cooperating universities (Estonian University of Life Sciences, University of Tartu and Tallinn University of Technology). The Academy makes much effort to provide smooth organization regarding schedules and commuting for students who have to attend classes at different institutions. The distances between the institutions cause challenges for the students and their satisfaction with both organization and teaching in the first two years is lower than in the last two years when most of the teaching activities take place at the Academy.

The overall employment rate is high (around 95%), most of the graduates find jobs in the aviation sector. Contacts to employers resulting from practical training is highly valuable when it comes to looking for employment at the end of their

fourth year at the Academy. Satisfaction of alumni and their employers is high concerning both knowledge and personal skills of EAVA graduates. Nevertheless resulting from the low level of competition in the study programmes (except Aircraft Piloting) there are problems in terms of the employability of graduates due to a general lack of student capability in some cases.

Moreover, the long duration of the study programmes leads to a lack of flexibility regarding changing human resources demand of employers. Changing the number of admitted students affects the number of graduates not earlier than four years later. As a result, employment opportunities for alumni strongly depend on the current situation in a rather small labour market on the one hand and the opportunities for employers to satisfy their changing labour force demand are limited on the other hand.

Strengths

- Very high motivation and satisfaction of students regarding aviation-related subjects
- Close connection between the students and the staff of the Academy, student feedback is taken into account in the development process of study programmes
- High employment rate of graduates, especially in the target sector of aviation
- Satisfaction of employers regarding knowledge and skills of graduates
- High competition in the admission process of the study programme of Aircraft Piloting

Areas of improvement and recommendations

- Marketing of the study programmes besides Aircraft Piloting to raise competition in the admission process and to raise capability and overall quality of admitted students
- Adjustment of all selection processes (except Aircraft Piloting) to ensure that only suitable students are admitted to the Academy
- More emphasis on teaching quality and the link of subjects taught during the first two years to the aviation sector to raise motivation of students and prevent them from dropping out
- Ensure reasonable schedules and enough time for commuting for students who have to attend classes at different institutions or provide all courses at the Academy itself in the first years to increase satisfaction

- Internationalization is limited: there are some incoming students, not in the core speciality courses. Moreover, outgoing mobility is very limited at this time, mainly during the programmes' second year, and an increase of student mobility should be planned quite shortly.
- Increase international academic mobility by developing a more flexible curriculum and fostering English language skills of teachers and students
- Further improvement of employability by adjusting practical training within the institution to the conditions in real working environment (e. g. longer training sessions for Air Traffic Controllers, training of conflict situations for Aviation Management students, overall picture of structures and systems for Communication and Navigation Systems students)
- Generally faster adjustment of teaching content to developments in the aviation industry to ensure employability of graduates

General conclusion

The Estonian Aviation Academy is a valuable asset for the Estonian Higher Education system.

The aviation job market is locally well served by the Academy but it is a highly competitive, internationally-oriented sector, which requires responsiveness to quick adjustments needed by aviation companies, which are the natural employers of the Academy's graduates.

The Academy is missing a long-term vision and the corresponding strategy in such an unstable economic environment. It should take advantage of its own strengths to seize market opportunities and implement improvements needed to mitigate the threats that could impact its activity in the future.

Such a strategy for the future is necessarily internationally-oriented, with an emphasis put on neighbouring job markets and more generally speaking European "standards".

The assessment team is fully conscious that some challenges faced by the Academy cannot be solved by the Academy alone. This is the case in particular for all the findings related to the four-year length of the curriculum and the possibility for the Academy to deliver Bachelor's degrees instead of a professional higher education diploma. Restructuring the curricula into shorter programmes may also require some support from Estonian Higher Education authorities to the Academy.

The assessment team is convinced that the Estonian Aviation Academy has a role to play in the European Higher Education system and will become an even more valuable partner to other higher education institutions as well as industrial companies if it is able to successfully tackle those challenges in the years to come.