FP7-AAT-2013-RTD-1

BEWARE
Bridging East West for Aerospace Research

Instrument: Coordination and support actions (Support)
Thematic Priority: Aeronautics and Air Transport

Report on aeronautical research competences and technological capabilities (Deliverable 1.3.)

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Dissemination Level		
PU	Public	**X**
PP	Restricted to other program participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Notices

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This document is intended to fulfil the contractual obligations of the BEWARE project concerning deliverable D1.3 described in contract number 605465

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Foreword

Although the European aerospace industry naturally tends to be dominated by a few prime contractors, the supply chain of these OEMs is composed of thousands of small and medium-sized (SME) companies and research institutes that still play a vital role in a high-tech sector. While positioning themselves at the cutting edge of innovation, SMEs often face serious challenges accessing aerospace industry and benefiting from pan-European research programs.

Statistics show that up to 95% of project Coordinators under Framework Programs have come from the Western European countries. Although the potential of aeronautical organizations from Eastern Europe is much bigger, the majority of them are not yet in a position to move from a regionally organized supply chain to a Europe-wide value creation chain, either because they lack of funds or because they are not aware about the needs and requirements. This is the reason, why BEAWARE project was launched.

We would like to thank Dr. Viktoras Mongirdas and Dr.sc.ing Kaspars Kalnins for their input into this report.

Executive Summary

The BEAWARE project set the objective to support potential coordinators and potential partners from Eastern European countries in the identification of future R&D project opportunities in the field of Aeronautics and Air Transport within the framework of Horizon 2020.

As a first step, common repository was compiled, which reflects aeronautical research competences and technological capabilities of Eastern European organizations from selected countries (Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia and Romania), which have had lower participation in Framework Program 7 (FP7) Collaborative projects (CP) compared to their potential. In general, collected data about Eastern organizations will be used to prepare following deliverables:

- Deliverable 1.1. Report on aeronautical research competences & technological capabilities (which is subject here)
- Deliverable 1.2. Common technological areas matrix with respect to H2020
- Deliverable 1.3. Report on participation in FP7/6, follow-up actions

This document presents in a structured manner a compilation of all important facts & figures as well as selected R&D issues. Document delivers the analysis on East European participation in FP7/6 and gives conclusions and recommendations.

This document can be of help to those that are involved in EU Aeronautics and Air Transport Policy in general (not necessarily only research). However, wherever analysis is presented or conclusions are drawn, these do not necessarily reflect the opinion of the European Commission. In addition this document support research intensive SMEs and research centres and universities, who are willing to cooperate within H2020 and other programs.

This document does not contain any confidential information. It does contain numerous links for easy access.

List of Abbreviations

BEAWARE	Bridging East West for Aerospace Research
EU	European Union
FP	Framework Programme
H2020	Horizon 2020
INCAS	National Institute for Aerospace Research "Elie Carafoli"
NCP	National Contact Point
OEM	Original Equipment Manufacturers
R&D	Research and Development
SME	Small Medium Enterprise
VGTU	Vilnius Gediminas Technical University

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1 Introduction

Despite poor results for Eastern European organizations as indicated above, there are still “advanced” organizations, which have been historically closely involved in aeronautics. These actors are willing to get in direct talks with Original Equipment Manufacturers (OEMs) and Tier 1 actors in order to “get a piece of the pie”. However, BEAWARE project still concentrates on original objectives by trying to support research intensive SMEs and research centres and universities, who are willing to cooperate within H2020 and other programs.

Identifying potential coordinators, linking them with Western European organizations, thus increasing the involvement of them in upcoming calls will still remain the main objective for the BEAWARE. When it comes to H2020, especially SMEs have to agree to a long term investment, in case they’ll participate.

2 Methodology

Methodology is based on Western and Eastern European countries participation in FP7/6 projects data collection from NCP’s. The two datasets were used. The data represents participation in AAT projects during 2007-2012. Next step is a detailed analysis of collected data in various cuts and layers. The data graphs and tables are presented which give the more clear view on analyzed data. The conclusions and recommendations are based on observed dependencies and regularities.

3 Preliminary analysis

The collected data (Fig.1) shows that main actors in FP7/6 projects are Western European countries such as Germany, France, United Kingdom, Italy, Spain, Netherlands and Belgium.

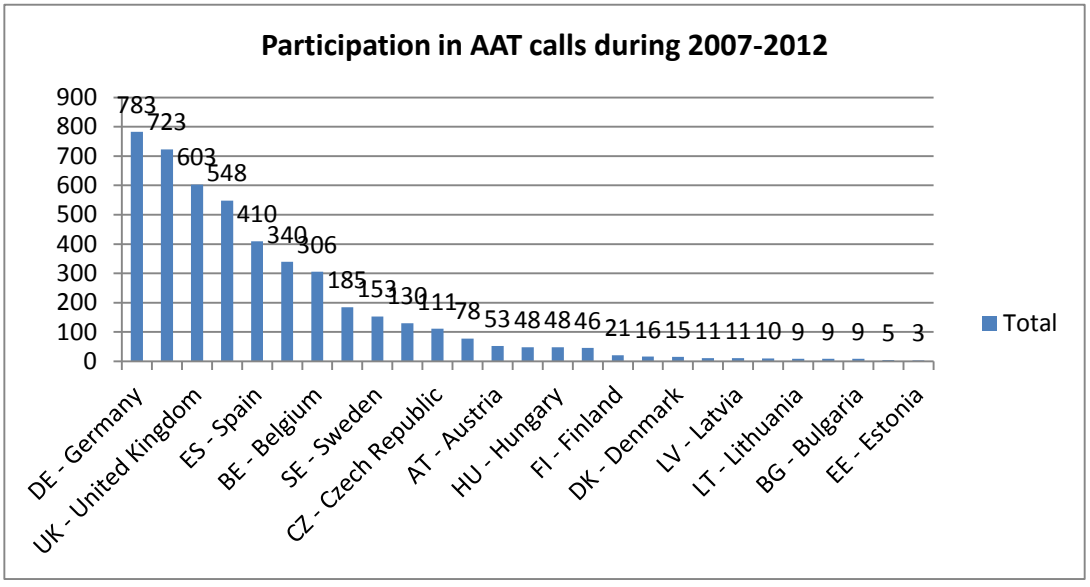

Fig.1 Participation in AAT calls during 2007-2012

These countries are traditionally strong in aeronautics and air traffic management. The global companies such as Thales, Indra, Selex, Aerobus are based in these countries. This means they have better competencies and resources in R&D areas.
However the Eastern European countries are active too. We should note countries such as Poland, Czech Republic, Romania, Hungary and Slovenia. These countries have an aeronautics industry traditionally strong too. However their industry is not so well developed as in West. On other hand aeronautics area is very wide and spreads from simple work to state of the art technology. Eastern countries still have R&D competencies and centers. Collaborated efforts could give benefits to both parts East and West.

4 Participation analysis results

The total number was 1160 of Fp7/6 projects during 2007-2012 years. The Western countries played main role in 1085 projects and Eastern countries in 75 projects. So we could see that Western countries have nearly 14 times greater figures.

4.1 East and West Europe participation in calls and top 5 participants from East Europe

Fig. 2 presents comparison of Western and Eastern countries participation in AAT calls during 2007-2012.

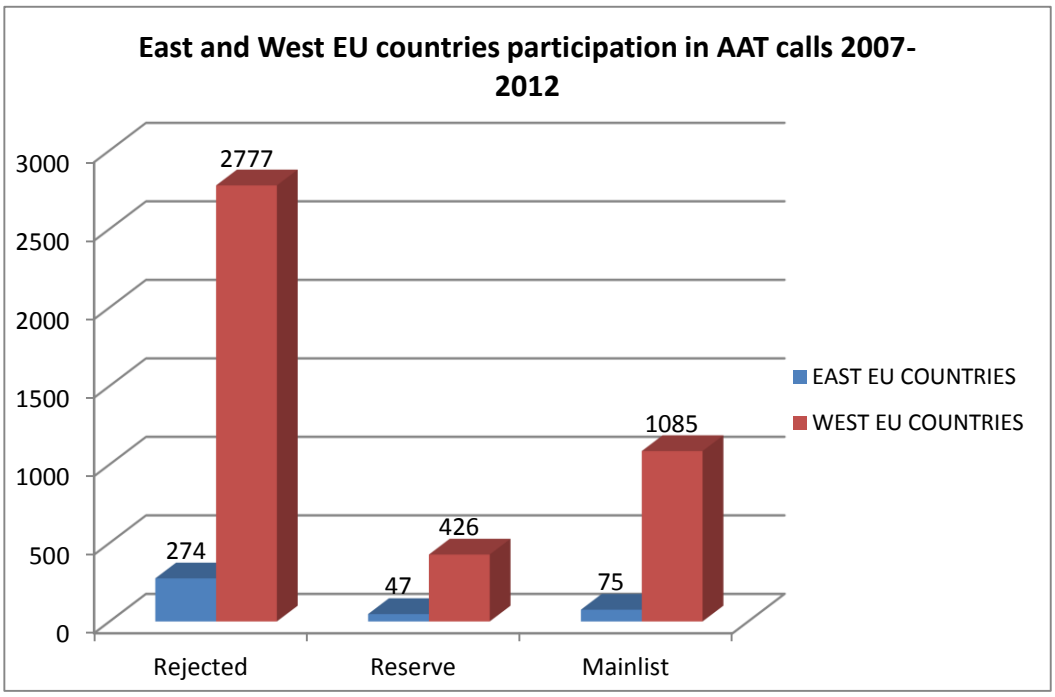

Fig.2 Comparison of East EU and West EU countries participation in FP7 projects

If we look into reserve and rejected applications West participation have nearly 10 times greater participation rates. However the Western Europe applications were in the first place 1085 times and approximately 14 times more frequent.

The detailed East and West European countries participation in FP7/6 is presented in Fig. 3.

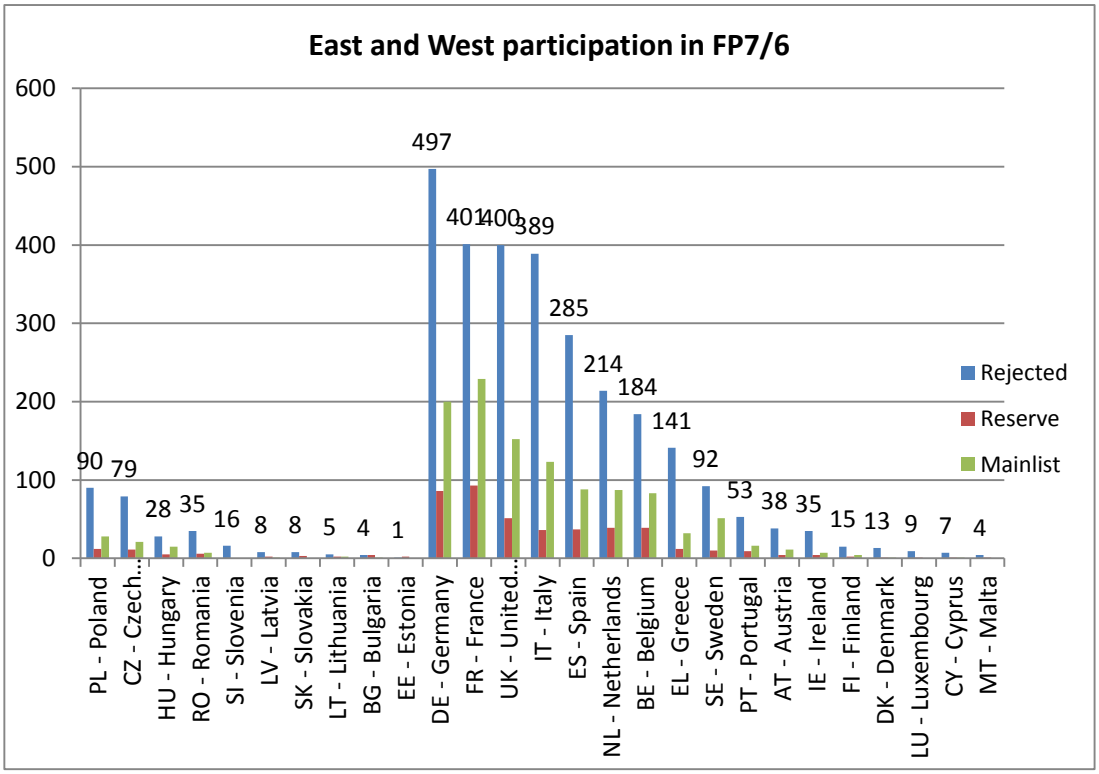

Fig. 3 Comparison of EU countries participation in FP7 projects

Fig. 3 gives a deeper view on each particular country. The most active of Eastern countries in submitting applications are:

- Poland 130 total applications;
- Czech Republic 111 total applications;
- Romania 48 total applications;
- Hungary 48 total applications;
- Slovenia 16 total applications;

They are top five FP7/6 Eastern European participants. The graphical presentation is showed on Fig.4:

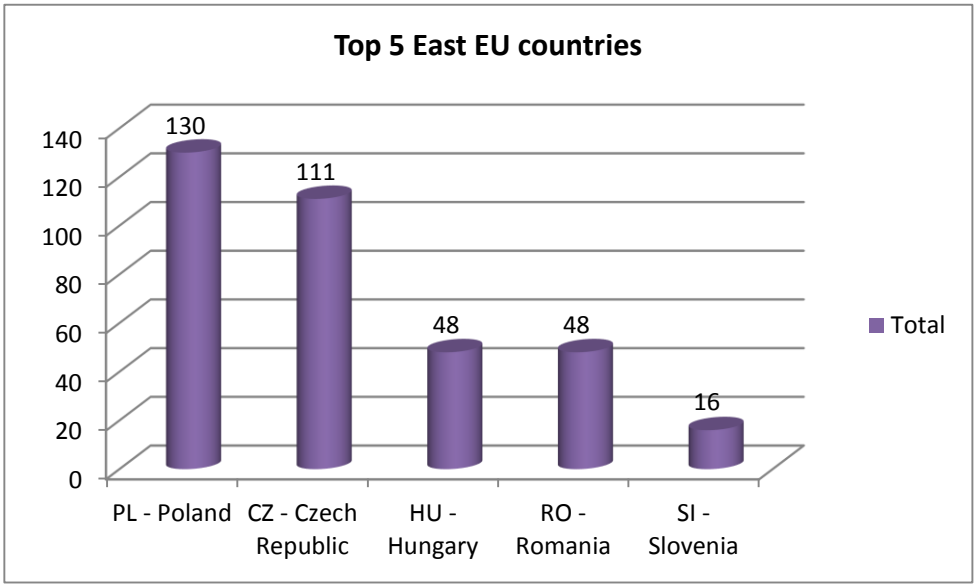

Fig. 4 Top 5 East EU countries participation

We can notice that these countries are closer to Western Europe. This means closer and easier contacts with better developed countries.

The Fig. 5 represents Cost distribution between Eastern and Western European countries.

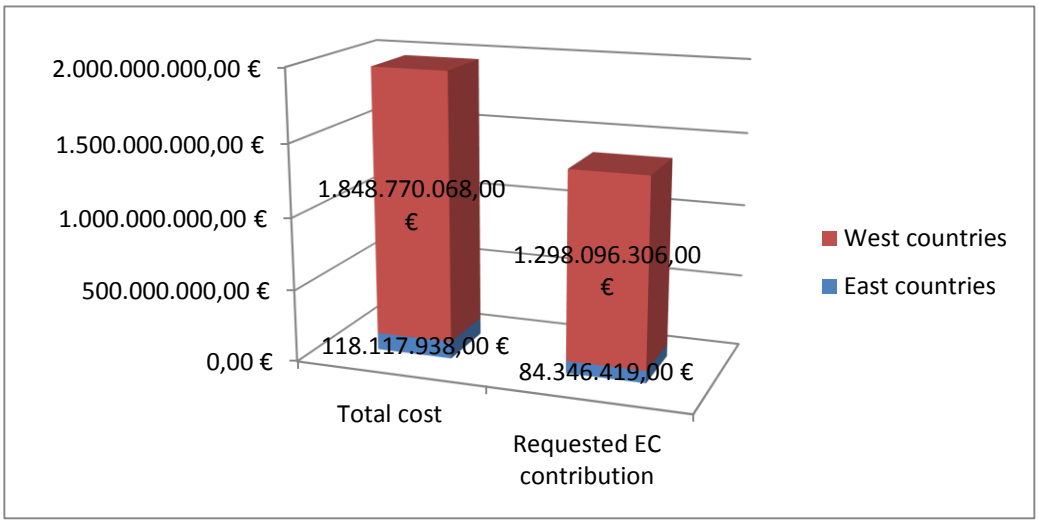

Fig. 5 Total cost and requested contribution

The total cost and requested EC contribution of projects for Western European countries is greater by figure 15 if we compare with Eastern EU countries. We can see the clear link between participation (West has greater figure 14) and project cost distribution. This means that Eastern EU countries have the equal rights. Simply they are not active enough.

4.2. Successful and rejected applications rate.

The Fig. 6 and Table No.1 shows success rate of applications for Western and Eastern countries.

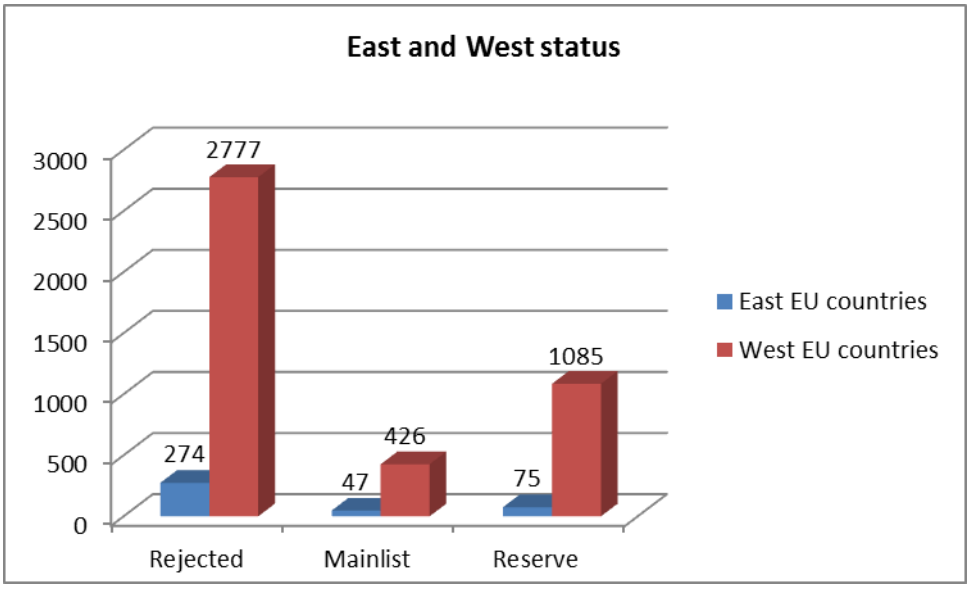

Fig.6. East and West status comparison

Table No.1

East and West status in percent's

Region	Rejected	Main list	Reserve	Total
East EU countries	69%	12%	19%	100%
West EU countries	65%	10%	25%	100%

The rejected applications rate is a little greater for Eastern countries. The reserve list percentage figure is greater for Western countries and main list percentage figure is nearly the

same. We could state that Eastern and Western countries are good enough in submitting project applications. This means that at least at the first stage they have equal competences and if the application has been submitted they have the same chances to win. Fig.7 shows the status comparison in graph form.

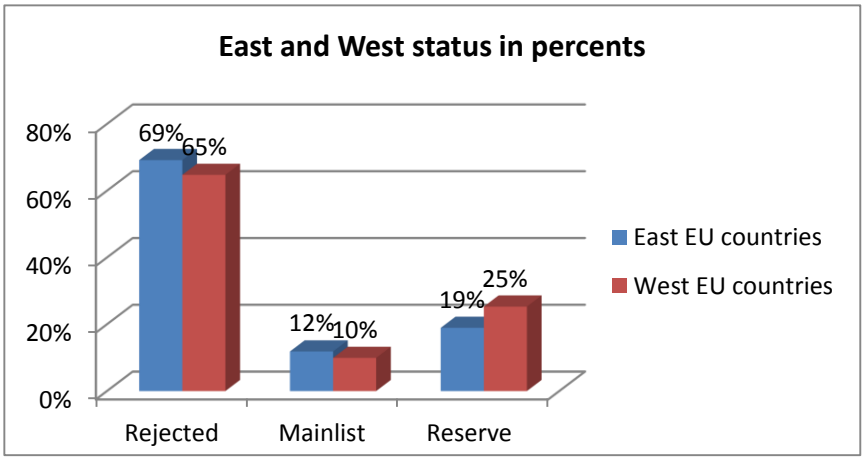

Fig. 7 East and West status comparison in percent's

4.3 Eastern EU countries participation during 2007-2012

Now we are going into deeper analysis for Eastern European countries. The Fig.8 shows project distribution between Eastern European countries during 2007-2012.

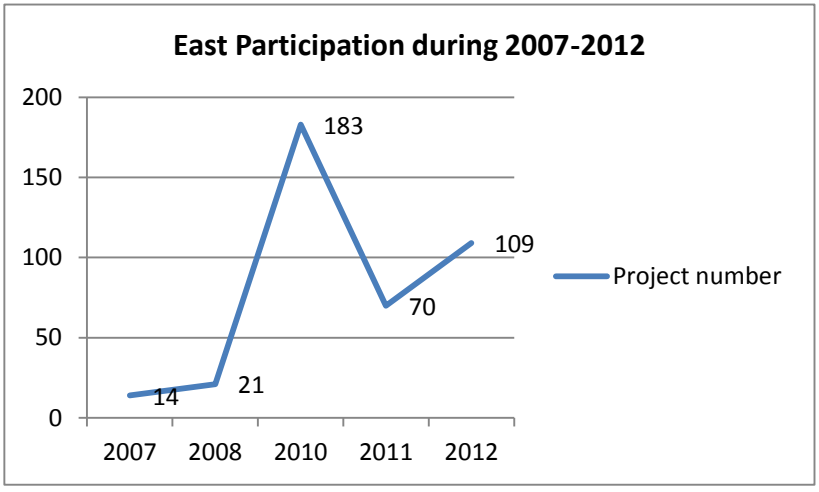

Fig.8 East EU countries participation 2007-2012

We can observe that participation sharply increased between 2008 and 2010. It could be associated with economic crisis which hit the world in 2008. The Eastern European companies started to look for additional funds and AAT projects were an attractive solution.

4.4 Detailed analysis on East countries participation in AAT calls

This chapter gives more detailed analysis on Eastern companies. The Fig. 9 shows the Poland participation in AAT projects.

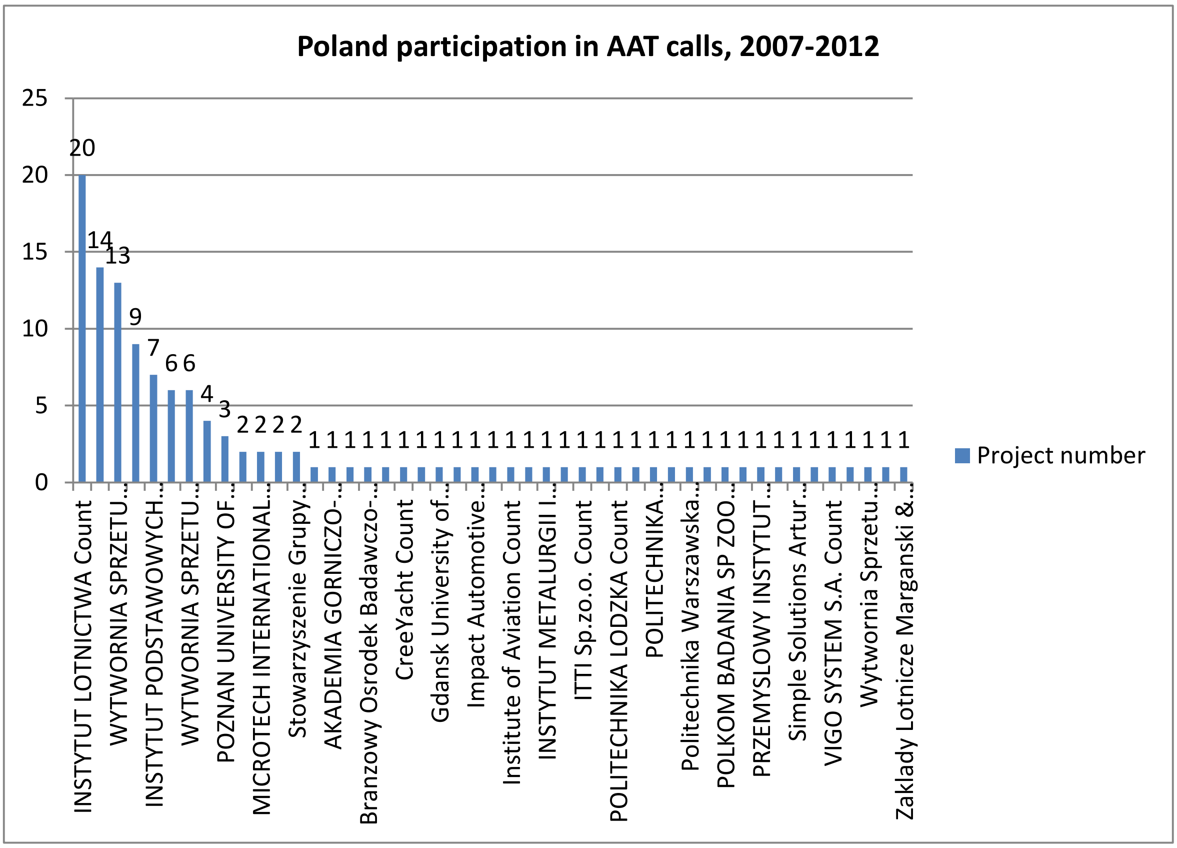

Fig. 9 Poland participation in AAT calls, 2007-2012

The most active institutions are:

- INSTYTUT LOTNICTWA - 20 applications
- POLITECHNIKA WARSZAWSKA - 14 applications
- WYTWORNIA SPRZETU KOMUNIKACYJNEGO PZL - RZESZOW SA - 13 applications
- INSTYTUT MASZYN PRZEPLYWOWYCH - POLSKIEJ AKADEMII NAUK - 9 applications
- INSTYTUT PODSTAWOWYCH PROBLEMOW TECHNIKI POLSKIEJ AKADEMII NAUK -7 applications.

We could see that these five are R&D institutions. The main competencies of them is listed in Table No.2:

Table No.2

Polish institution competencies

Institution	Competencies
INSTYTUT LOTNICTWA	▪ Structural Test Laboratory (Static tests & quasistatic fatigue tests, Dynamic tests) ▪ Aerodynamics (CFD and experimental analysis) ▪ Avionics and systems integration ▪ Design and strength analysis of metallic and composite structures (airplanes, helicopters, non-standard constructions and others) ▪ Rocket propulsion and space technologies ▪ Landing gears & energy absorption systems ▪ Aircraft propulsion including piston, turbo-shaft, & jet engines ▪ Composite technologies ▪ Vibration & flutter analysis ▪ Environmental research ▪ Space technology ▪ Acquisition and data processing ▪ Adaptronics ▪ Airfoils Center ▪ Rotating Parts ▪ Structures ▪ Combustion ▪ Mechanical Systems
POLITECHNIKA WARSZAWSKA	• Academic Research for Functional Materials, • Academic Research for Power Engineering and Environment Protection, • Academic Research for Sustainable Energy Systems, • Academic Research for Aerospace Engineering, • Academic Research for Defense and Security, • Centre for Advanced Materials and Technologies CEZAMAT
WYTWORNIA SPRZETU KOMUNIKACYJNEGO PZL - RZESZOW SA	• Aerospace industry (manufacturing, overhaul and post-sale services, special order services, design and research)
INSTYTUT MASZYN PRZEPLYWOWYCH - POLSKIEJ AKADEMII NAUK	▪ Distributed heat & power generation in a small scale based on renewable resources, ▪ CHP technology, ▪ Plus energy technologies for private buildings, ▪ Energy storage, ▪ Photovoltaics, ▪ Wind and water turbines, ▪ Exploitation and thermal-hydraulic diagnostics of steam turbines, ▪ Machine mechanics (computer analysis, vibrations, rotor dynamics, model- base diagnostics, expert systems), ▪ High-temperature gasification and gas/syngas cogeneration,

	▪ Rotor dynamic modeling, design and testing, ▪ Fuel cells and hydrogen/biogas cogeneration, ▪ Aerodynamics and aviation, new materials, condition monitoring and smart structures, plasma and laser engineering and small hydro power plants. ▪ Smart Grids.
INSTYTUT PODSTAWOWYCH PROBLEMOW TECHNIKI POLSKIEJ AKADEMII NAUK	• Theoretical and applied mechanics, • Theory of coupled mechanical and physical fields, • Theoretical and experimental mechanics of materials and structures, • Computational methods in mechanics, • Acoustic-electronics, • Ultrasonic medical diagnostics

We can see that the main competencies are avionics, aircraft propulsion and composite materials into aeronautics area. So we could state that all needed areas for H2020 are there and simply companies have to be more active.
Figure below represents Poland companies' applications success to AAT projects:

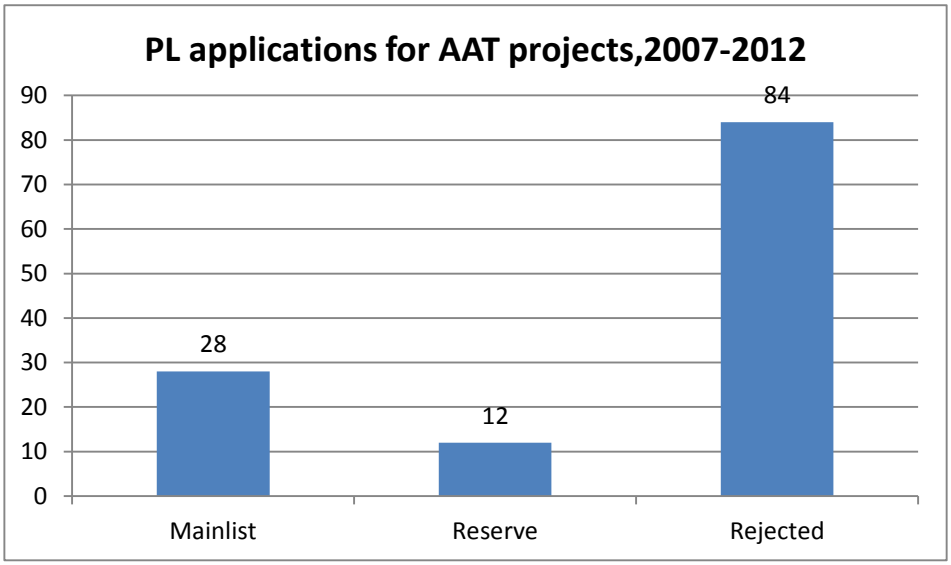

Fig.10 PL applications for AAT projects, 2007-2012

The total number of applications was 124. The success rate is 44 percent. It is higher than average. So Poland and their partners are quite good in preparing and submission of applications.

Fig.11 shows Czech companies participation in AAT projects.

Fig.11 Czech participation in AAT calls, 2007-2012

The most active institutions are:

- VYZKUMNY A ZKUSEBNI LETECKY USTAV A.S. – 26 applications
- EVEKTOR, spol. s.r.o – 10 applications
- VYSOKE UCENI TECHNICKE V BRNE – 9 applications
- Czech airlines – 6 applications
- HONEYWELL INTERNATIONAL SRO - 5 applications

The main competencies of these institutions are:

Table No.3

Czech institution competencies

Institution	Competencies
VYZKUMNY A ZKUSEBNI LETECKY USTAV A.S.	• Aerodynamics - Wind tunnel testing • Aerodynamics – Computing • Structure and material testing • Structure and material analyses • Composite technologies • Propellers and Fans

	• Coating and corrosion engineering • Metrological works • Space
EVEKTOR	• Design and development of airframes • Development and design of aircraft systems • Power unit installations • Avionics installations and design of electrical systems • Certification and aircraft tests
VYSOKE UCENI TECHNICKE V BRNE	• Applied evolutionary algorithms • Computer architecture • Brno university security laboratory • Evolvable hardware • Formal models • Formal verification • Hardware-software codesign • Information systems • Intelligent systems • Modelling and simulation • Petri nets • Computer networks • Computer graphics • High performance computing • Robotics • Game theory • Knowledge technology • Speech processing • Image and video processing • Aerodynamics • Structures and Strength • Aircraft Testing Lab • Aircraft Systems • Aeronautical Traffic and Flying School
Czech airlines	• Scheduled air passenger carriage
HONEYWELL INTERNATIONAL SRO	• Aerospace • Production and repairs sheet metal components for aircraft turbine engines. • Automation & Control Solutions • Security; Sensing & Control; • Environmental & Combustion Controls.

First and third institutions have R&D capabilities. However Institute of Brno is oriented more to the studies. Evektor works in aircraft industry and produces from light to small business aircraft. They have R&D competencies and laboratories. Czech airlines are aircraft operator and they

simply transport passengers, mail and cargo. But they are quite active in different AAT areas. Honeywell is a global company. They participate in projects which are compatible with their competencies- aircraft avionics, propulsion, unmanned aerial systems.

The figure below represents Czech companies' success and fails in applications:

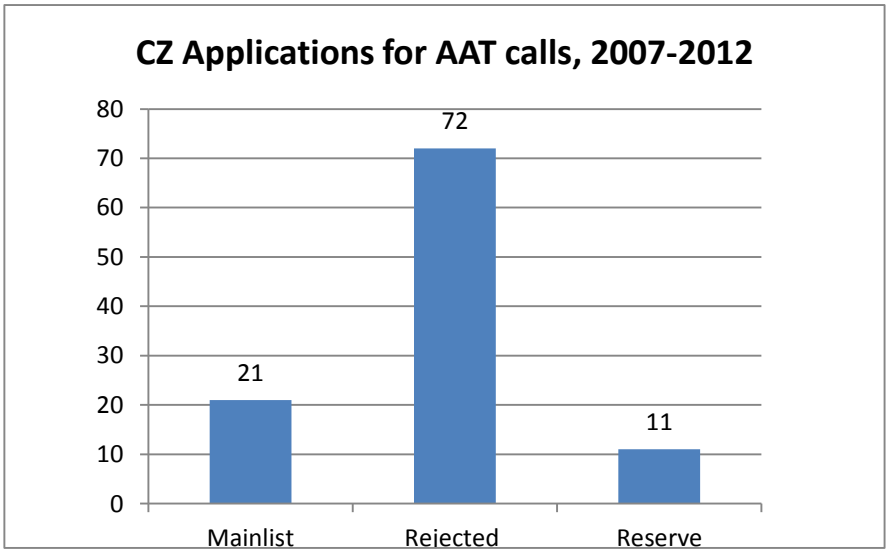

Fig. 12 CZ applications for AAT calls, 2007-2012

The Czech institutions success rate was 20 percent and is higher than average.

The Hungary does not participate in BEAWARE project. But it would useful to have a look. The Hungarian institutions are presented in Fig. 11:

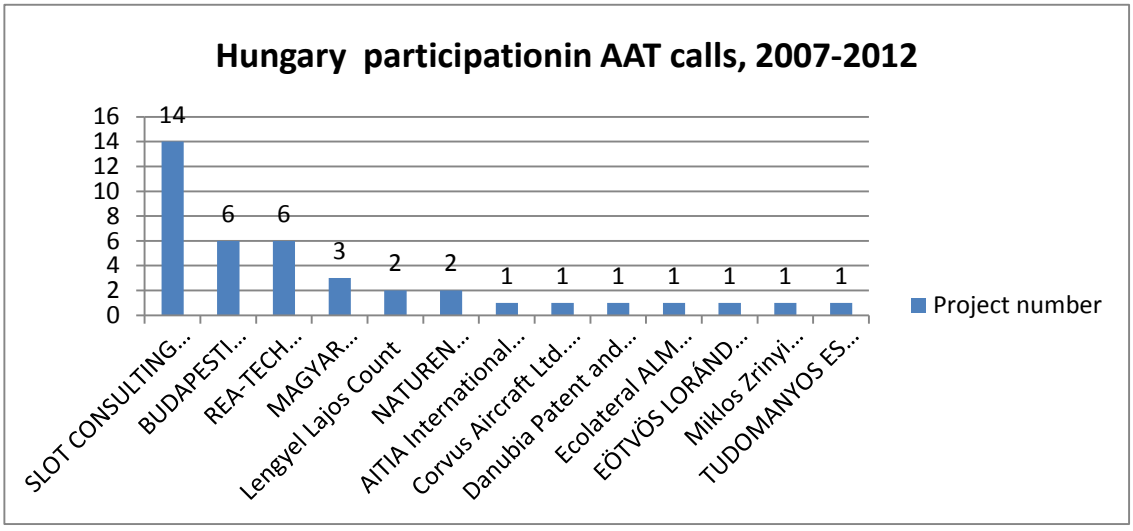

Fig. 13 Hungary participation in AAT calls, 2007-2012

The most active institutions are:

- SLOT CONSULTING LTD – 14 applications
- BUDAPESTI MUSZAKI ES GAZDASAGTUDOMANYI EGYETEM – 6 applications
- REA-TECH MERNOKI ES EPITESZETI KFT. – 6 applications
- MAGYAR TUDOMANYOS AKADEMIA SZAMITASTECHNIKAI ES AUTOMATIZALASI KUTATO INTEZET - 3 applications

The main competencies of these institutions are:

Table No.4

Hungarian institution competencies

Institution	Competencies
SLOT CONSULTING LTD	• Air navigation, • Air transportation • Aeronautics • Airport and aircraft related R&D • Consulting services • Participates in Eurocontrol projects
BUDAPESTI MUSZAKI ES GAZDASAGTUDOMANYI EGYETEM	• Sustainable energy • Vehicle technology, transportation and logistics • Biotechnology, health and environment protection • Nanophysics, nanotechnology and materials science • Intelligent environment and e-technologies • Disaster prevention: modern engineering methods
REA-TECH MERNOKI ES EPITESZETI KFT	• Engineering activities and related technical consultancy
MAGYAR TUDOMANYOS AKADEMIA SZAMITASTECHNIKAI ES AUTOMATIZALASI KUTATO INTEZET	The Hungarian Academy of Sciences (MTA) main responsibilities are : • support and represent various scientific fields, • to distribute scientific results. • support the scientific activities

The SLOT CONSULTING LTD Company is more oriented to consulting services. However they are cooperating with Eurocontrol. BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS is more focused on studies. Hungarian Academy of Sciences is more dedicated to academic research. These competencies can explain why Hungary is not so active in AAT projects.

Fig.14 represents Hungarian companies' applications rate to AAT calls:

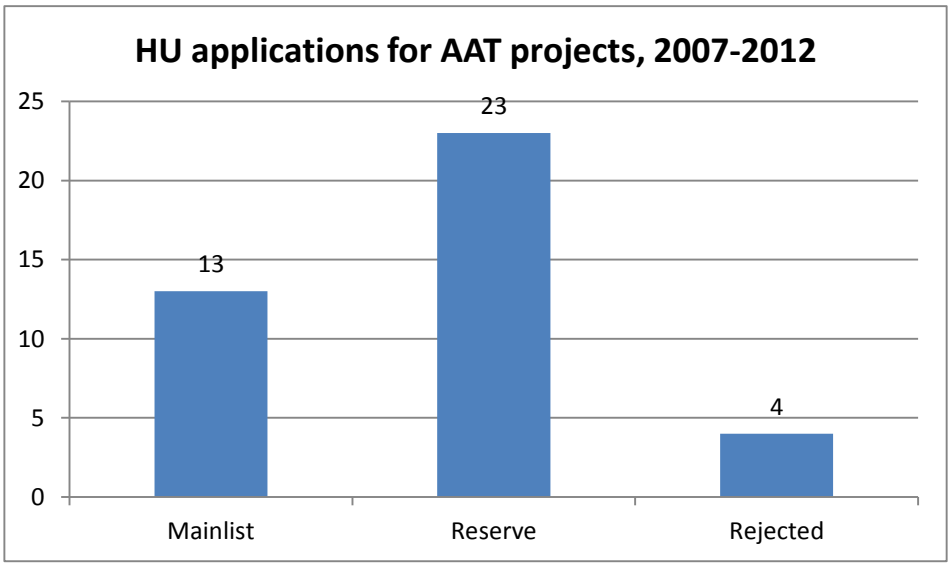

Fig.14 Hungarian institutions applications for AAT projects, 2007-2012

Hungarian and their partner's success rate was 32 percent.

The Romanian institutions are presented in Fig. 15:

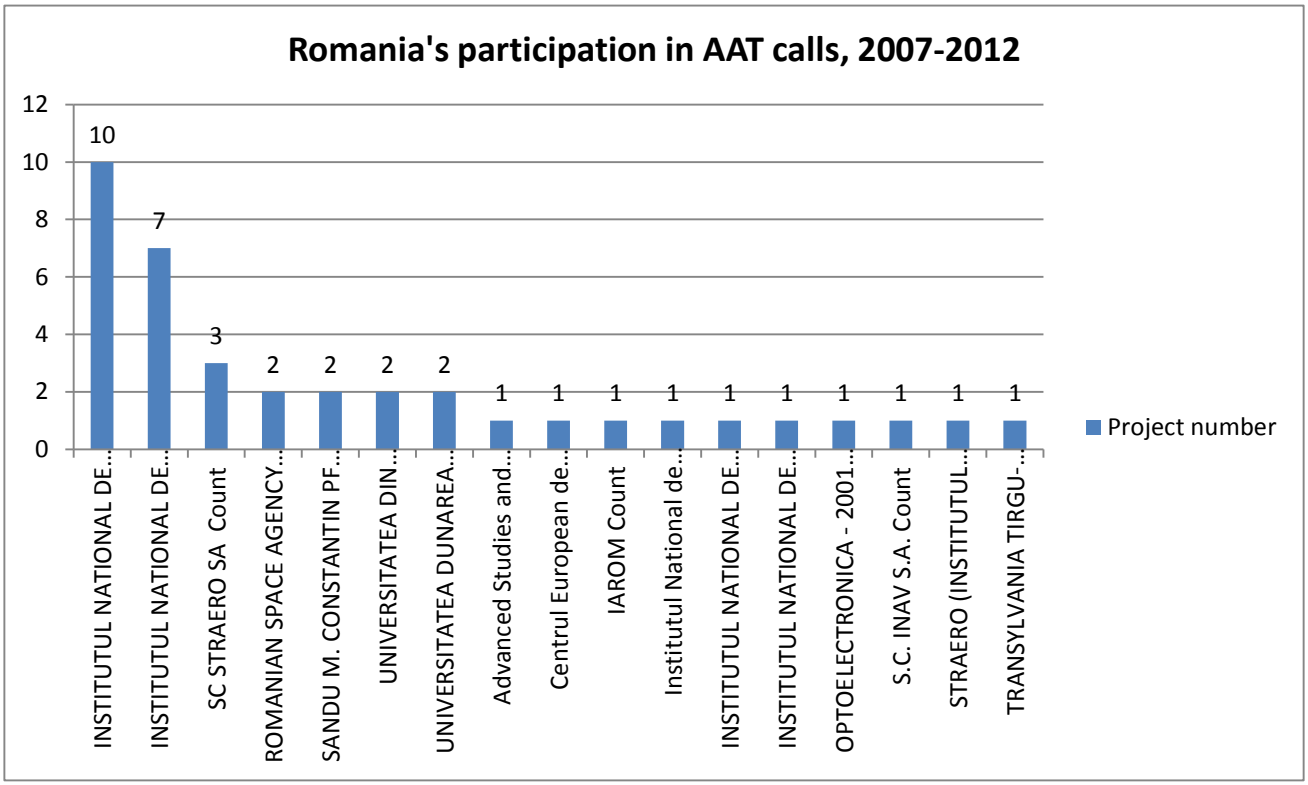

Fig. 15 Romanian participation in AAT calls, 2007-2012

The most active institutions are:

- INSTITUTUL NATIONAL DE CERCETARI AEROSPATIALE ELIE CARAFOLI - I.N.C.A.S. SA - 10 applications (**Note:** other data sources – 17)
- INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE TURBOMOTOARE - COMOTI – 7 applications
- SC STRAERO SA - 3 applications
- ROMANIAN SPACE AGENCY – 2 applications

The main competencies are:

Table No.5

Romanian institution competencies

Institution	Competencies
INSTITUTUL NATIONAL DE CERCETARI AEROSPATIALE ELIE CARAFOLI - I.N.C.A.S. SA	• General Aerodynamics • Numerical Simulation • Experimental aerodynamics • Environmental Aerodynamics • Systems Dynamics • Mecatronics • Aero-Structures
INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE TURBOMOTOARE - COMOTI	• Aircraft turbo-engines • Quality certification of turbine engines and power sets • Noise and Vibrations • Physics and chemical testing • Metrology • Combustion • Compressor research and experimentation • Composite material for aeronautic field • Three-Dimensional Metrology
SC STRAERO SA	• Analysis and experimental testing of structures and materials, • Analysis of flight control systems, • Design and manufacture of testing installations, • IT solutions.
ROMANIAN SPACE AGENCY	• RTD contracts, consultancy, international cooperation, management.

INCAS - National Institute for Aerospace Research "Elie Carafoli" is the leading research establishment in aerospace sciences in Romania, with more than 60 years tradition in aerospace engineering, flow physics and applied aerodynamics, using state-of-the-art

technologies and unique infrastructure of national strategic importance. The most important research facilities in INCAS are the subsonic wind tunnel and the trisonic wind tunnel.
COMOTI Turbine Engines Research and Development Institute is the only unit in Romania specialized in development and integration of scientific research, constructive and technological design, manufacturing, experimentation, testing, technological transfer and innovation in the field of aviation turbine engines, gas turbine industrial machines and high speed blade machines. Constant concern led to high reliability industrial products: power sets, electrical or turbine natural gas compressor sets and gas turbine cogenerative groups. The experience gathered in the field of high speed blade machines allowed development, in own conception, of series of electrical centrifugal natural gas or air compressors and electrical centrifugal air blowers in a large variety of flows and pressures, making COMOTI the only national producer for such complex equipment.
ROMAERO is an aerospace company that integrates two major activities: aero structure manufacturing and maintenance and repair for civil and military transport aircraft. It is the largest company in the Romanian Aerospace Industry with 90 years of tradition in this field and is located near the Baneasa Airport platform.
Romaero has a long standing experience in manufacturing both complete aircraft and aircraft components such as skins, structural parts and assemblies.
Romaero's maintenance and repair organization has proven to be an invaluable asset because of its flexibility, wide range of services and customer satisfaction dedication. One of the main strengths is its ability to cope with extensive structural repair as direct results of CPCP findings during checks or damages sustained during operation or other acts of god. Romaero's MRO operates with customers technical and maintenance approved documentation but can also issue maintenance documentation for the approved capabilities or may perform the above mentioned activities under the customer's approved inspector supervision and civil/military airworthiness authority approval.
STRAERO is a private research center acting as a leading provider of aerospace research and development (R&D) services and consulting in Romania.
Romania traditionally has been strong in aeronautics. Its companies have required competencies and R&D capabilities. We could state that Romania could be a good partner for Western aeronautics companies.

The Fig. 16 presents Romanian companies' applications rates for AAT projects:

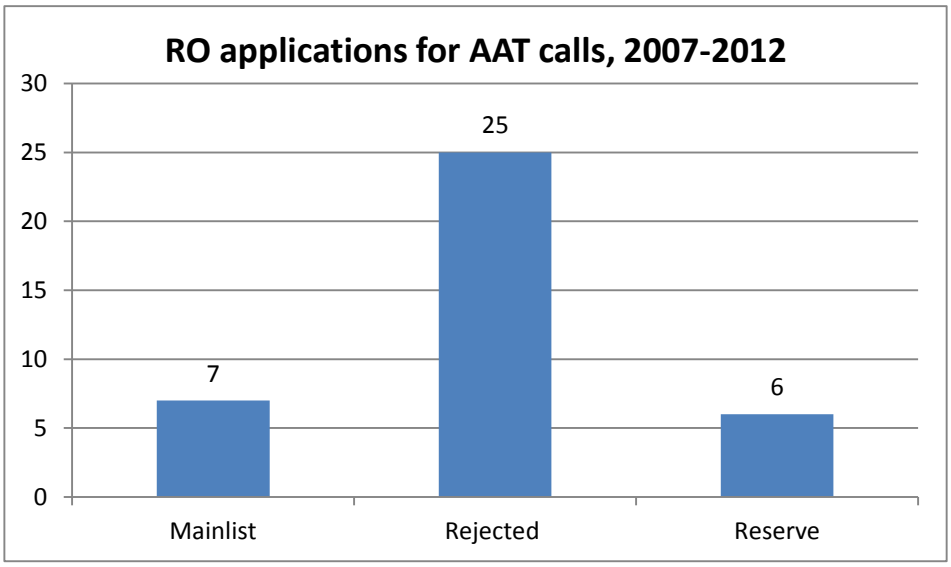

Fig. 16 Romanian institutions application for AAT calls, 2007-2012

Romanian institution and their partner's success rate was 18 percent.

The Lithuania's institutions are presented in Fig. 17:

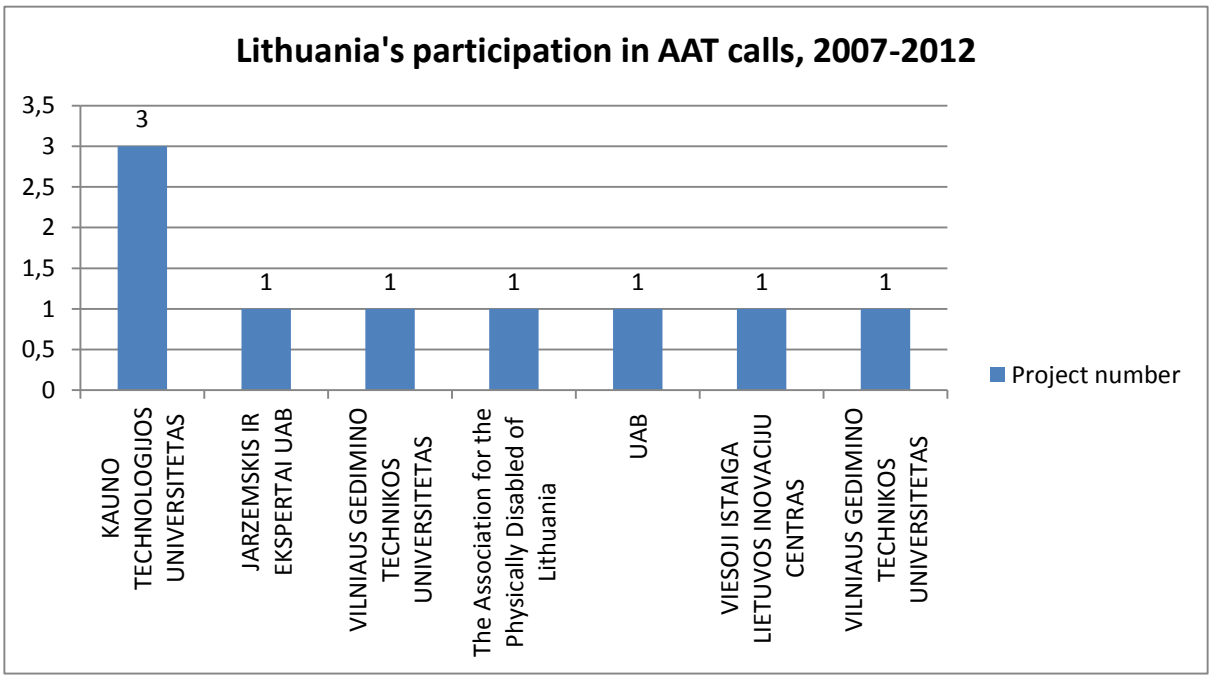

Fig. 17 Lithuania's participation in AAT calls, 2007-2012

We could mention two most active institutions:

- KAUNO TECHNOLOGIJOS UNIVERSITETAS – 3 applications,
- VILNIAUS GEDIMINO TECHNIKOS UNIVERSITETAS – 1 applications

The main competencies are:

Table No.6

Lithuania's institution competencies

Institution	Competencies
KAUNO TECHNOLOGIJOS UNIVERSITETAS	• Diagnostic and measurement technologies, • New materials for high-tech, • Smart environments and information technology, • Sustainable growth and social-cultural development, • Technologies for sustainable development and energy.
VILNIAUS GEDIMINO TECHNIKOS UNIVERSITETAS	• Sustainable building, • Environmental and energy technologies, • Sustainable transport, • Mechatronics, • Information and communication technologies, • Technology management and economics, • Fundamental research on materials and processes.

These two main institutions are mostly oriented into studies. However Kaunas Technological University could offer a vast variety of technological solutions and services in chemical technology, environmental protection, IT, medical, and defense, design, sound and visual technologies, also in mechatronics, metrology, measurement and civil engineering. We could see that its competencies are a little bit outside aeronautics. However it's research areas could be used in H2020. Vilnius Gediminas Technical University has Aviation Institute. It could offer:

- Management of integrated aircraft diagnostic systems.
- Transfer of data security methods.
- Unmanned aircraft performance profiles (Epler program XFOIL, RFOIL, MSES) – unmanned aircraft stability and control.
- 3-D configuration of unmanned aircraft wings and fuselage (PSW CK-Aero) – computational flow dynamics.
- Ultrasonic flow rate measurement methods.
- Manned aircraft in the airspace flow analysis.
- Unmanned and manned aircraft flow simulation in the air space.
- Aircraft flow visualization in three dimensions.
- Research of artificial neural networks for unmanned aircraft management.
- Rise in air flow identification tests using artificial neural networks.
- Testing of manned and unmanned aircraft in the air space flight control procedures.
- Manned and unmanned aircraft interoperability of joint air space research.
- Various Lithuanian air space models, scenario analysis and experimental research.
- Needs of navigation services in the Lithuanian air space study and analysis.

- Modeling of the Lithuanian air space segmentation.

However the research areas are more theoretical than practical. Aviation Institute lacks sophisticate equipped laboratories and it's more oriented to study process.

Lithuania's companies applications rates for AAT calls are represented in Fig.18 below:

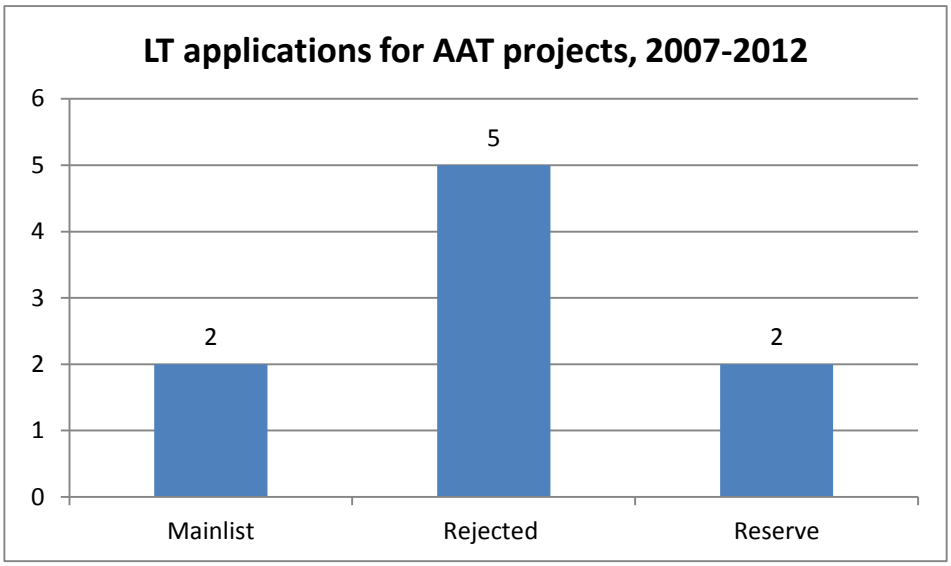

Fig.18 Lithuanian institutions applications for AAT projects, 2007-2012

The Lithuanian institutions success rate was 22 percent.

The Latvia's institutions are presented in Fig. 19:

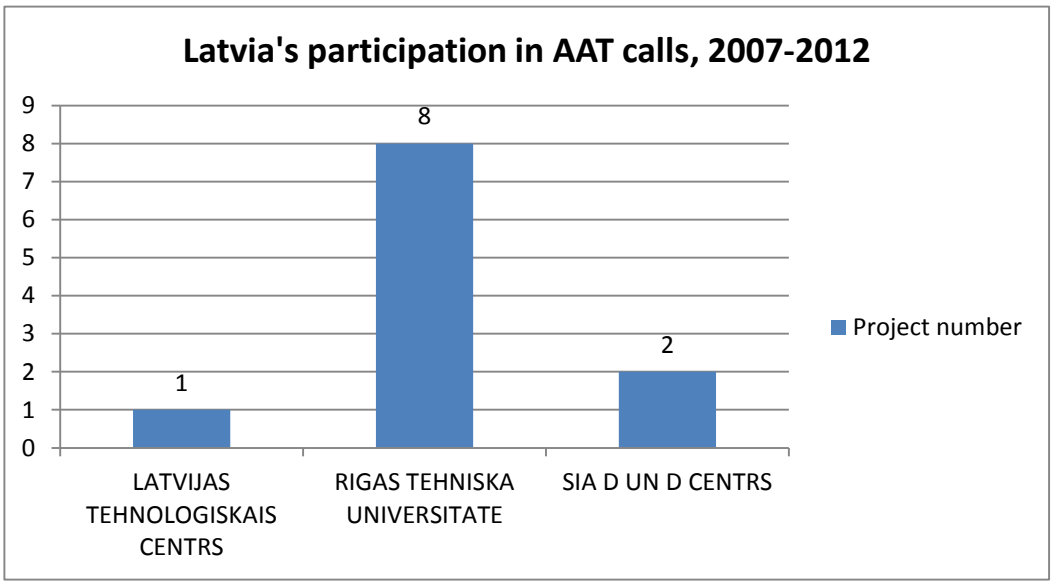

Fig. 18 Latvia's participation in AAT calls, 2007-2012

We could mention two most active institutions:

- RIGAS TEHNISKA UNIVERSITATE – 8 applications,
- SIA D UN D CENTRS- 2 applications.

The main competencies are:

Table No.7

Latvia's institution competencies

Institution	Competencies
RIGAS TEHNISKA UNIVERSITATE	• FUEL QUALITY CONTROL, • CONTROL OF ENVIRONMENTAL POLLUTION, • NON-DESTRUCTIVE TESTING METHODS, • ENVIRONMENTAL MODELLING, • MACHINE AND MECHANISM DYNAMICS, • INORGANIC CHEMISTRY, • SILICATE MATERIAL TESTING • COMPOSITE MATERIALS/ FLIGHT CONCEPTS AND COMPONENT TESTING
SIA D UN D CENTRS	• Advanced investigation techniques, • Integrated models of both vibration and other machines parameters and malfunction tests, • Modern data processing techniques of measurement and analysis

Latvia's companies applications rates are presented in Fig. 19 below:

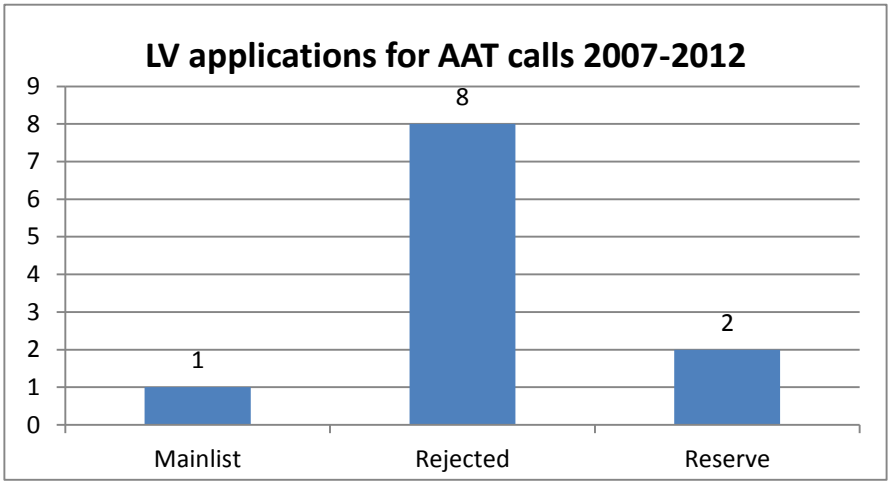

Fig. 19 Latvian application for AAT calls, 2007-2012

The Latvia's institutions and partners success rate was 9 percent.

The Estonia's institutions are presented in Fig. 20:

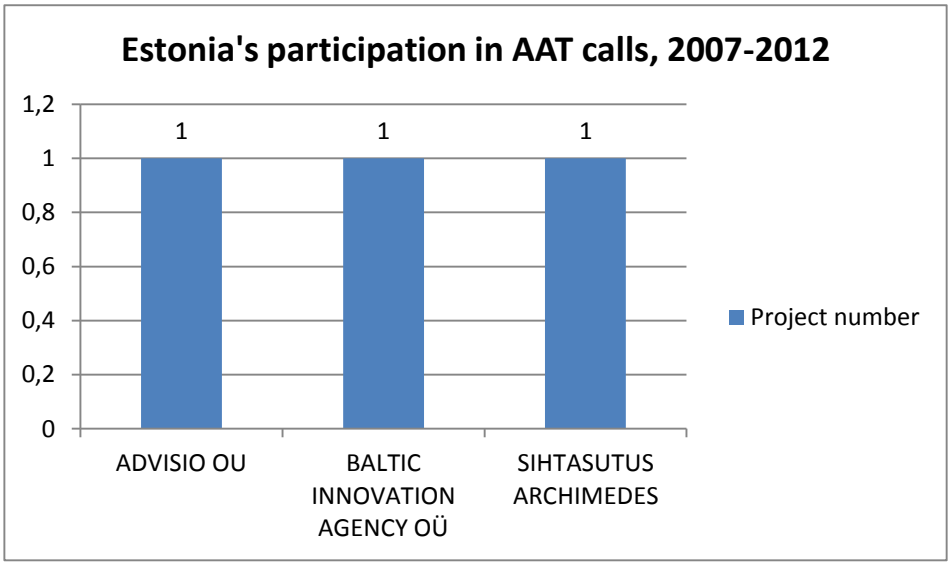

Fig. 20 Estonia's participation in AAT calls, 2007-2012

We could mention these institutions:

- ADVISIO OU – 1 applications,
- SIHTASUTUS ARCHIMEDES -1 applications,
- BALTIC INNOVATION AGENCY -1 applications.

The main competencies are:

Table No.7

Estonia's institution competencies

Institution	Competencies
ADVISIO OU	• Independent management consultancy
BALTIC INNOVATION AGENCY	• Providing innovation, clustering, technology and business development related services to public, private and third sector organizations

WE could say that these institutions provide consultancy services. The real R&D institutions still wait for their turn.

Estonia's application rate for AAT calls:

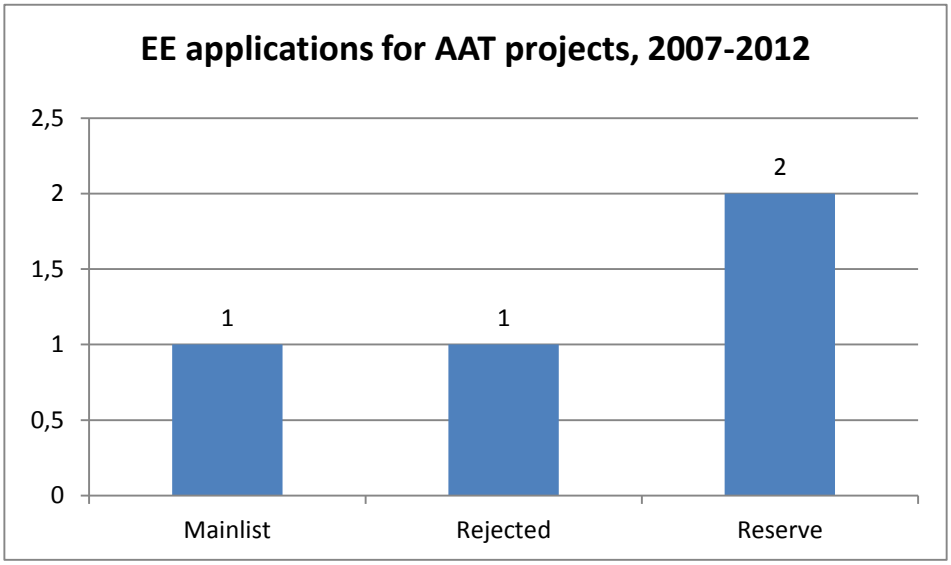

Fig. 21 Estonian institutions applications success rate, 2007-2012

4.5. Consortium, coordinators and partners.

The participation scheme in FP7/6 projects is available by creating consortium. Partners creates consortium, signs the Grant agreement and submits application. The roles of participants are coordinator and partners. The coordinator has a very specific role amongst the participants in a given project. An important task for the coordinator is to "monitor the compliance by partners with their obligations under this grant agreement and fulfilling assigned tasks. The coordinators role is really complicated. If we look to the AAT project database the vast number of coordinators come from Western European countries. The numbers of coordinator roles of Eastern European institutions are shown in Table below:

Table No. 8

Eastern European institutions coordinator roles

Country	**Estonia**	**Hungary**	**Latvia**	**Romania**
Coordinator role	1	5	1	1

The very small figures of coordination role could be because of:

- Insufficient language skills,
- Insufficient knowledge in FP7/6 project procedures,
- Insufficient human resources in project management,

- No willingness to take full responsibility.

These reasons are only assumptions. However they nearly validated with collected answers to produced questionnaire by Beaware project.

5 Conclusions

Western European companies and institutions are nearly 14 times more successive than Eastern European institutions in AAT calls. If we take Reserve and Rejected list figures the Western companies are better by figure 10. The questionnaire showed that Eastern companies lacks information about AAT project calls. However such information could be easily found on the internet.

If look into successful application rates they are nearly the same for both- Western and Eastern companies. That shows Eastern companies are good enough in submitting applications and running projects if they take a decision to participate in the project. The required competencies and R&D resources are there. The problem could be in application preparation as it needs additional resources.

Other reason is that a lot of Eastern institutions are more focused in studies process than real R&D. New technologies need a lot of investments and it could be quite difficult to start and develop state of the art research center from the scratch. In many cases Eastern institutions are funded by government. This means limited funds.

The most active Eastern companies' participation in AAT was during 2010. The economic crisis hit world in 2008. We can correlate the participation boost in AAT calls with mentioned economic crisis. The Eastern companies started to look for additional financial resources. This means they were aware of AAT calls and took a try.

The Eastern European institutions mostly participate in projects as partners. They do not want to take the coordinators responsibility in AAT projects. This happens because of insufficient knowledge in FP7/6 procedures, language skills and needed additional human resources.

The most active countries from Eastern Europe are: Poland, Czech Republic, Romania Hungary, and Slovenia. The first two have been traditionally strong in aeronautics during Eastern European block time. When socialist block collapsed Poland and Czech Republic had to reorient their aeronautics companies to new relations. This process was difficult and long. However things are getting better now and they began to restore their competences and capabilities.

6 Recommendations

Eastern European companies have the potential in aeronautics industry and R&D areas. The main problem is lack of information. At least that shows questionnaire. Recommendation in this area could be direct NCP contact with aeronautics companies and dissemination of information concerning H2020 projects. The web page is not enough.

The Eastern European companies are quite good in preparation of applications. However they need additional resources. Sometimes it could be a problem to find the right person or consulting company who is able to prepare competitive application. Eastern European companies need direct support in this area.

The requirements for European projects are quite complicated if you are not familiar with them. A lot of European companies think that it is too complicated to take part in AAT projects. The

recommendation could be if company is going to participate in project it could act as a partner for the first time. In such way it could become familiar with all the process.
Other recommendation could be the training courses for project coordinators. Similar courses are offered by ETNA consortium. However these courses could be provided in each country free of charge.
The rejected application rate for Eastern European companies is the same as for Western. However Eastern European companies apply ten times less. So disappointment is more discouraging. The recommendation in this case could be dissemination of successful stories by NCP's and theirs direct contact with companies representatives.

7 References

1. THE ROLE OF CO-ORDINATOR IN FP7 PROJECTS (Collaboration Projects). University of Cambridge, Research Services Division. October 2007.
2. http://cordis.europa.eu/fp7/how_en.html .
3. http://www.transport-ncps.net/services/trainings.html .

Note: The competences of Eastern European institutions were taken from their web pages and Beaware project partners.