INTRODUCTION

The aeronautical sector faces significant challenges especially in the twenty-first century. Romania has always had competence in the field of aviation and has a definite place both in history and especially, in this European aviation industry, while other eastern countries like Poland, Czech Republic and Hungary make efforts to find a place. The Romanian aeronautics research set off while the great academies of the world believed that "the problem of flight with a device that weighs more than air can be resolved and there is only a dream and he did successfully." There weren't made any investments in research, not even in the present days and no support for young aviation enthusiasts is offered. Prospects are, as before, very good. We have, however, the same old dilemma: how to fund research and aviation industry? Does it follow another period of decline? Do we continue the series of missed opportunities? Or accept what the European papers say, that we should try a new road at the long-term sustainable development, the recovery of existing capacity and develop new science and technological progress, the elimination of the standard of living gap with the West, the which supports and accepts resignation of hundreds of years? Europe says that there where is the aviation industry, there is sustainable development.

Abstract: Training of civil aviation and military personnel is based on higher education offered by, Air Force Academy, but also the courses Romanian Aviation Academy, and sport aviation. The Romanian aeronautics research set off while the great academies of the world believed that "the problem of flight with a device that weighs more than air can not be resolved and there is only a dream and he did successfully.In terms of aviation higher educational institutions, education is based more on teaching and learning and less or not at all on the research.

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Keywords: Air Force (AF), aviation industry, R&D research and development, global economic crisis.

I HIGHER EDUCATION IN AIR FORCE: CHALLENGES AND PERSPECTIVES

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who participated in this wonderful manifestation of human genius that had to lead in only half of a century, to a stunning development of air navigation."

2 RESEARCH IN AVIATION: REALITY AND PROSPECTS

This beautiful story is the beginning of Romanian aviation, from which we like to get a mention from time to time. But there is another story, woven with the first one, and in conjunction with the question "Why is not investing in Romanian research aircraft?". The story of failures, missed project, the waste of opportunities and people. In 1901 Traian Vuia start to work in Lugoj, at the draft of his first flight. Due to financial shortcomings, after repeated failed attempts to obtain funds from both Bucharest and Paris, Traian Vuia fails to build the aircraft until 1906, three years after the first recorded history of human flight brothers Wilbur and Orville Wright. What would have happened if Vuia would find the necessary funding in 1901? We will never know. How do we know how it would be no written history of Romania if the Coanda air-built rocket for the Romanian Army in 1905 had been developed and realized its true potential. Or hydroplane was designed by John Paula developments in 1911, abandoned for lack of funds? And the sad story continues: in 1910, prototype Vlaicu I successfully participate in the general military maneuvers, Romania was, at that time, the second country in the world using this weapon. Aurel Vlaicu but fails to persuade the Romanian Government to begin construction of its own aircrafts series and Army aircraft will be equipped with French aircrafts.

The years after the Revolution from december 1989 meant a further reduction of the Romanian aviation industry imposed by the disappearance of traditional markets and the difficulties of transition to the new economic system. Factories in Bucharest, Brasov, Craiova, Bacau close or restrict their activity, and the opening of the romanian borders makes, many of Romanian aviation specialists to migrate.

Where are we today? Miraculous, perhaps Romanian aviation and refused to disappear this time too. It survived the transition IAR Brasov, Craiova aircraft, Aerostar Bacau, Bucharest Turbomecanica and Aerofina. They opened modernization programs and training school aircraft IAR 99 Hawk, the IAR 330 Puma "SOCAT", and MiG 21 Lancer (110 upgraded appliances).

Romanian aeronautical research (R&D) has an interesting growth potential because of the tradition in this industry, a very good preparation of students and a good innovative potential from the young researchers in this field.

In aeronautical R&D, there are also reasons for optimism. In Bucharest, there are currently three research institutes of aviation, two governmental, the National Research - Development and turbo COMOTI and National Institute for Aerospace Research "Elie Carafoli" (Incas) and one private, Calculation and Testing Institute for Aero Structures - Astronautics STRAERO all three, came from the old INCREST, founded by Henri Coanda. The three research institutes active in analysis and testing aircraft structures and materials, flight control systems analysis and design and development of testing facilities (STRAERO) of general aerodynamics, flight dynamics and systems, space structures, strength of materials aviation and aerospace propulsion systems (INCAS), respectively aviation turbine engines, energy and energy efficiency and environmental protection and greening. Among the most important achievements of the Romanian research institutes of aviation in recent years can be mentioned the development of aircraft IAR 93, IAR 95, IAR 99, IAR 823, IAR 827 (STRAERO), AG 6, and - T and ECO 100 (INCAS ) and modernization of IAR 330 and 300 and MiG 21 aircraft VYROBU.

One of the big problems of the Romanian research, often claimed by scientists as the main cause of poor results of R&D is inadequate funding from government, research and development infrastructure exceeded (by current standards facilities gap is 5 to 10 years); non-adaptation to competitive market conditions, the reduction and increasing average age of researchers. Another major problem is still the weak link between research and economy and relatively low capacity to exploit research results. Economic interest and involvement in research and development and innovation are low; in 2003 funds raised from businesses to co-finance such projects represent only 35 % of the total budget of the National Plan for Research, Development and Innovation (NPRDI).[1] With the launch of Framework Programme 7, the European Union has paid to European researchers millions of euro, virtually eliminating the deficiency for Romania to the budget created by lack of money. In practice, funding still remains a problem for many Romanian researchers, and that's because I have not yet proven ability to attract funds. Another branch of analysis is dedicated to the analysis of the competitiveness. The robustness of the national system of higher education could be viewed as a global indicator for the ability to sustain its position in a global knowledge economy. [3]
3 EDUCATION FOR RESEARCH IN MILITARY UNIVERSITIES

The three key pillars of the knowledge society: education-research-innovation are key factors for competitiveness and cooperation in global socio-economic development. [4]

Training human resources for the new society / knowledge economy requires an integrative vision for the entire life cycle of adapting means and methods specific steps in close correlation with the evolution of science and culture, knowledge in general. Orientation to the educational system and vocational skills and build capacity to accumulate knowledge to solve problems, develop innovation and creativity to stimulate curiosity and desire to explore is a necessity in a globalized education and research.

Education for research, scientific research and innovation are essential requirements for a competitive university in the context of globalization. The key role in training highly qualified human resources, by contributing to knowledge development through creative and innovative capacity promoted key pillars universities are in knowledge-based society. The scientific research in universities in close correlation with the formative process performance can, and should, contribute to knowledge production. The capitalization in the process of innovation and transfer in the socio-economic outcomes is essential.

A specific feature of universities is the use of multi and interdisciplinary research, via different partnerships. This is efficient also in the context of the explosion of knowledge and their recovery. Skills for inter-and transdisciplinary research, for research in multidisciplinary teams is another dimension to the work undertaken by universities.

In the context of integration into the European education and research, universities are called upon to assume responsibility for specific tasks to produce new knowledge, training highly qualified human resources competitive at European level by harnessing knowledge transfer and innovative products in the socio-economic environment. It must move to a qualitatively new stage in the process of education and scientific research that it matches the values system of international education and research. The three universities coordinate complementary activities - education, research and innovation and require a reconsideration of touch with society and adapt their performance according to selected universities and priorities and available resources and objectives.

The social dimension takes on new facets of education and democracy requires people able to learn, to seek and develop new complex subjects in the new knowledge-based society.

Meanwhile, in addition to the objectives of increasing public funding, private question, mentioned in the policy research and development and innovation (RDI), an important goal in post-accession period is to increase the impact of research & development and innovation in the economy (orientation results). From this perspective, it is essential to develop / deepen partnership "business environment - universities - research institutes, both in terms of application of research / innovation and access to results.

The Bologna process is a far-reaching reform, involving currently 45 countries, which aims at the creation of a European Higher education Area by 2010. Major steps in that direction, currently underway, include the creation of a comparable structure of academic degrees, mutual recognition of diplomas and course units, the assessment of academic institutions and programs based on common quality standards, and direct incentives to geographical mobility of students and staff. [5]

The results of the study that the predominant issues or challenges encountered by the respondents can be divided in five categories with the following three most important frequent experiences: 1) problems regarding the students and their level of knowledge and experience, which was the most frequent issue raised by the professors; 2) curricula problems with regards to the adaptability to the new system requirements and 3) the lack of knowledge and enough information for both the students and the academic staff in what concerns the Bologna Process and its differences with the old system. The other two categories are close related to one another and refer to the people mentality and resistance to change as well as the bureaucracy and administrative problems existing in the Romanian faculties.

Faculty indicated that the predominant current challenges/issues centered on the shifts in paradigm, process planning issues, coordination of the Bologna Process whit accreditation issues and limited resources, lack of student information and the shortened cycles for each of the three degree levels. In the long term a noted superficiality and lack of leadership were of concern. With regard to benefits faculty currently perceived there to be career opportunity, mobility, wider choices and program improvement with both national and international benefits.

With regard to the use high tech technology in military and civilian aeronautics, for to remain competitive and to increase the level of participation for Romania the overall circuiteul idea in this field is necessary to take into the following aspects: it is necessary to don’t forget the fundamentals (training in mathematics and physics); for susteneible growth of the efficiently of tehnological transfer is necessary to participate more actively at Europian
partnerships; it is necessary a better governmental support in the field of aeronautics by using different types of grands/ notional competitions of projects and a dedicated stimulation of innovative SMEs which activate in aeronautical industry.

4 CONCLUSIONS

In terms of aviation higher educational institutions education is based more on teaching and learning and less or not at all the research. Achilles heel is lack of assessment of Romanian research, many scientists argue that the vital Romanian research funding but not how to do the assessment results. "Hundreds of thousands of dollars paid in the budgets of collective facilities resulting either broken or the same quality work with the '90s, when research funding was almost non-existent. In this sense, especially for true revival of the research system in Romania is desirable efficiency audit of spending". [6]

An objective and fair assessment of the situation of higher education in accordance with the reality of Romania in the European context, one can only be a collective complex of several fields, where a decisive role it should have experts from Ministry of Education and academics with experience. University funding is a major integrated into a building complex which includes, inter alia, national education policies, sectoral policies developed and implemented by the Ministry of Education, its relationship with social partners represented by unions, civil society and specific policies proposed by the Advisory Councils.

The results of research and technological development is scientifically innovative solutions will be subject to patents in accordance with national legislation on intellectual property protection and respect of copyright.

Invested, there was never invested, and not even now invests in research and neither offers support for young aviation enthusiasts. Prospects are, as before, very good. We are, however, the same old dilemma: how to fund research and aviation industry? Follows another period of decline? Continued the missed opportunities? Or accept what they say European papers, we try a new road at the long-term sustainable development, the recovery of existing capacity and develop new science and technological progress, the elimination of the standard of living gap with the West, the they support and accept the resignation of hundreds of years? Europe says that where there is the aviation industry, is sustainable.

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