



The Aerospace Industry in Romania

May 2016, Bucharest

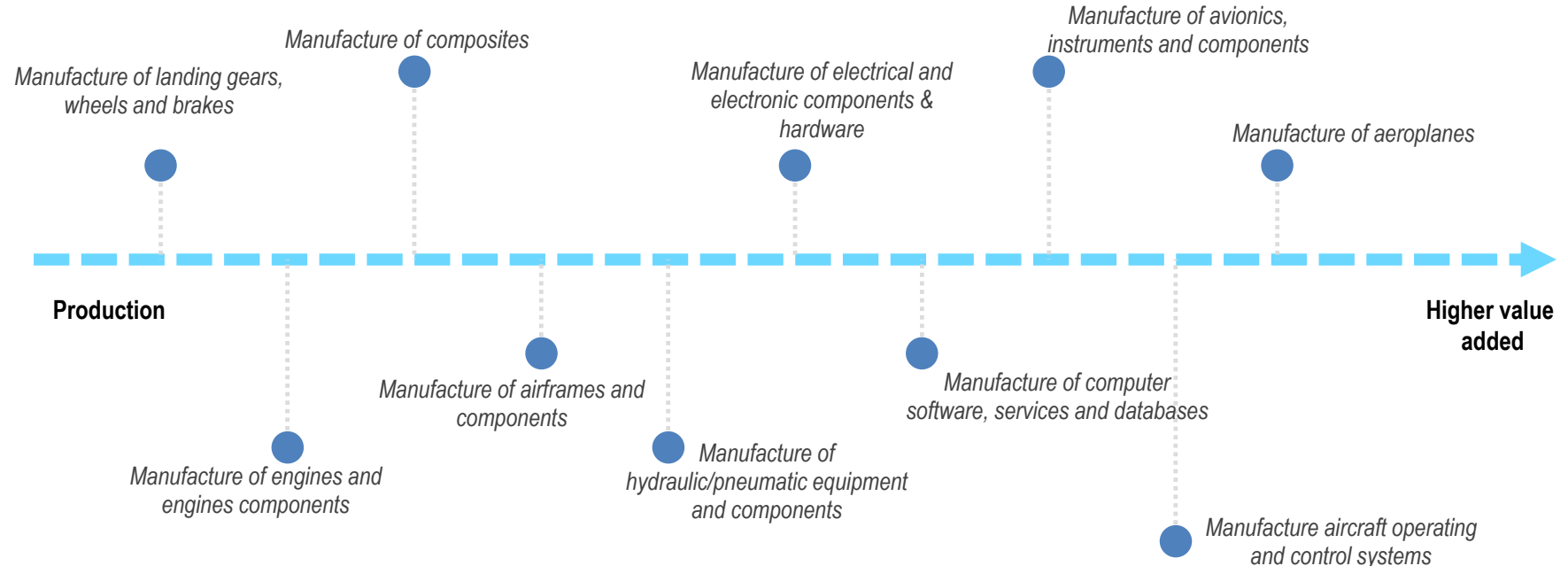
Contents

- 1. Aerospace market overview**
- 2. Aerospace main players**
- 3. Research and Development institutions**
- 4. Government support & financing options**

1. Aerospace market overview

The Romanian aerospace industry offers various capabilities in main sub-domains

Segments directly related to aerospace sector in Romania

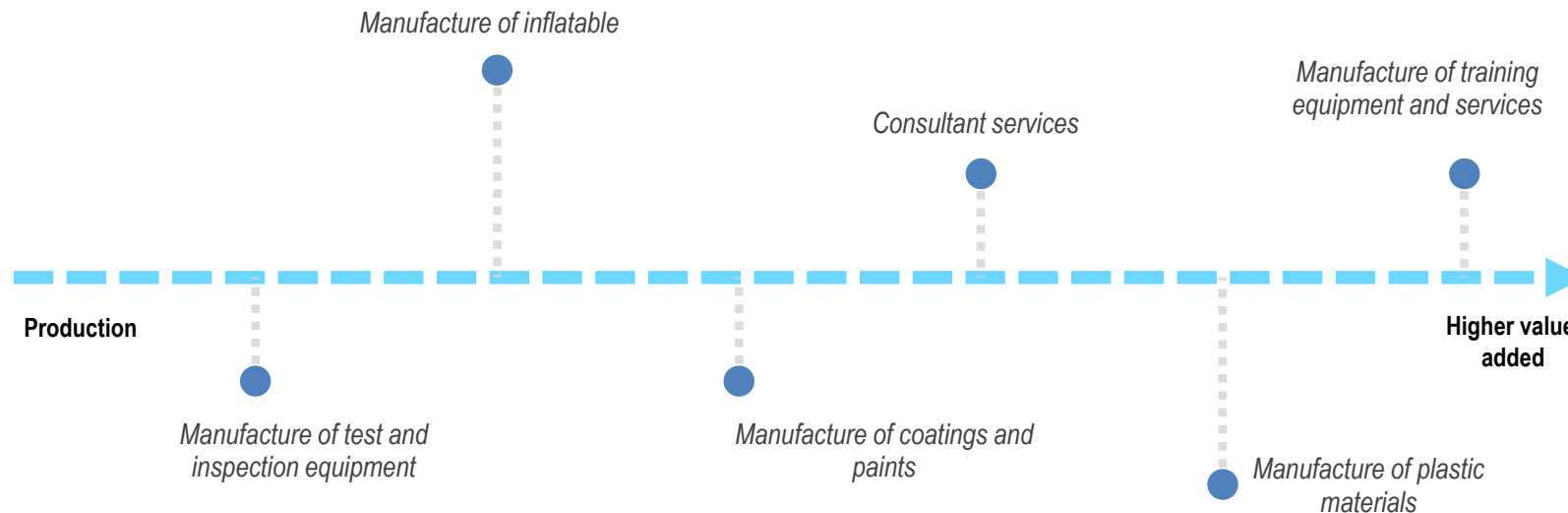


Segments with good development prospects in Romania:

- Manufacturing air traffic control systems and manufacture oxygen or fire suppression systems
- Manufacturing of windows and windshields and manufacture of interior equipment

Romanian aerospace sector offers a wide range of capabilities in main subcomponents and equipment suppliers

Segments indirectly related to aerospace sector in Romania



Segments with good development prospects in Romania:

- Manufacturing of glass and related materials
- Manufacturing of chemicals

Romanian aerospace sector offers good manufacturing facilities, highly qualified labor force and “zero error” performing products



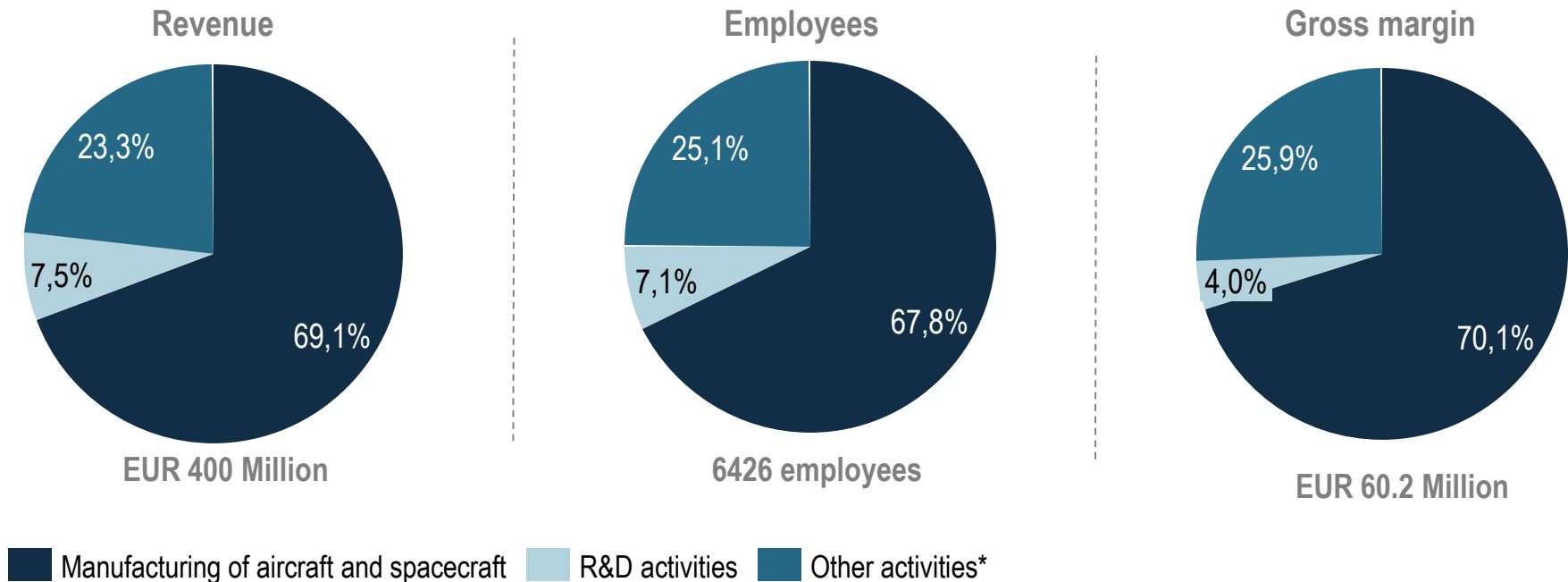
■ = City >100,000 inhabitants

● = City 50,000 – 100,000 inhabitants

- Romanian aerospace sector has a large pool of products and components that are used and bought by a number of big global companies
- The main products manufactured in Romania are:
 - Aircrafts, helicopters
 - Gliders and motor gliders,
 - Aircraft engines
 - Helicopter power plants, dynamic assemblies for helicopters, actuators and servo valves
 - Landing gears, brakes, hydro-pneumactical accessories and equipment
 - Electrical/electronic equipment
 - Parts, components and subassemblies for the these products
- Also, there are services provision for civil and military aircraft
- All products and services are supplied according to the customers' requirements and at competitive prices

There are 31 players in aerospace and auxiliary sectors, including manufacturing, R&D and other related activities

KPIs of the aerospace industry and auxiliary sectors (2014)



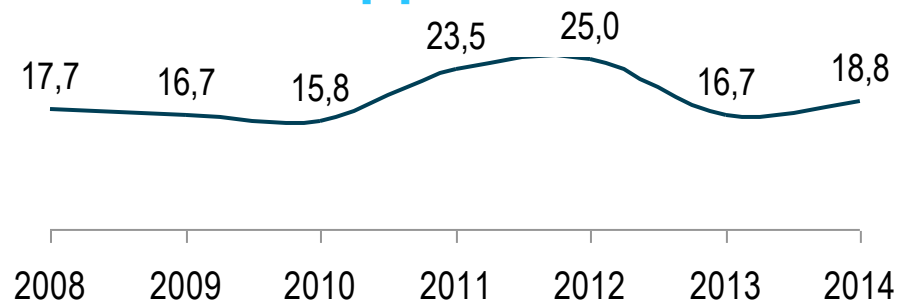
*Other related activities covers: Repair and maintenance of aircraft and spacecraft, engineering activities and related technical consultancy, manufacture of communication equipment, manufacture of textile articles, contracting activities, on a temporary basis, staff, wholesale of textiles, manufacture of metal structures and parts of structures, aluminum production, activities to develop custom software. general mechanics operations, manufacture of electronic (modules), wholesale of metals and metal ores, publishing of other software.

In 2014, there were 16 active players in manufacturing of aircraft and spacecraft while the sector concentration increased

Active companies with positive annual turnover [#]



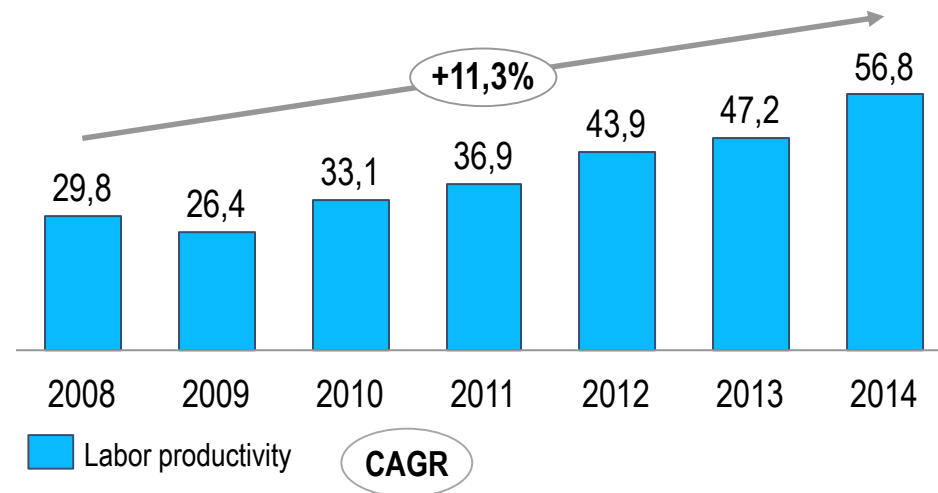
Sector concentration [%]



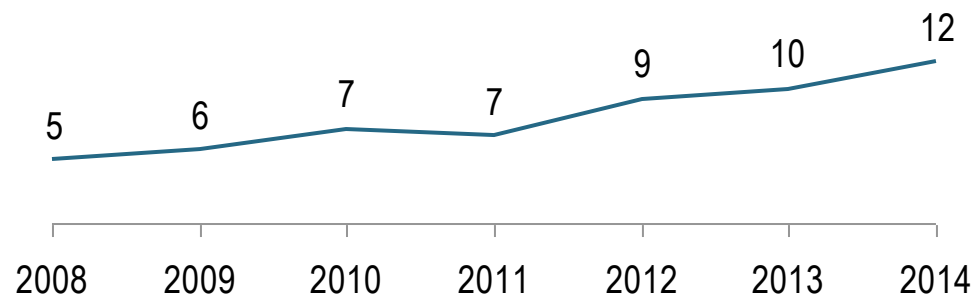
- Between 2008 and 2010 the total number of active companies in manufacturing of aircrafts and spacecraft increased from 17 to 19 players
- However, after 2010 the number of active players decreased at 16.
- At the same time, the concentration of sector increased concurrently with the declining number of companies
- Sector concentration is defined as the ratio between the number of companies covering 80% of the market and total number of companies
- Hence, there are 4 companies representing 80% of total as part of the overall 16 company market

Net margin and labor productivity in aerospace manufacturing sector constantly increased after the crisis

Labor productivity ['000 EUR / employee]



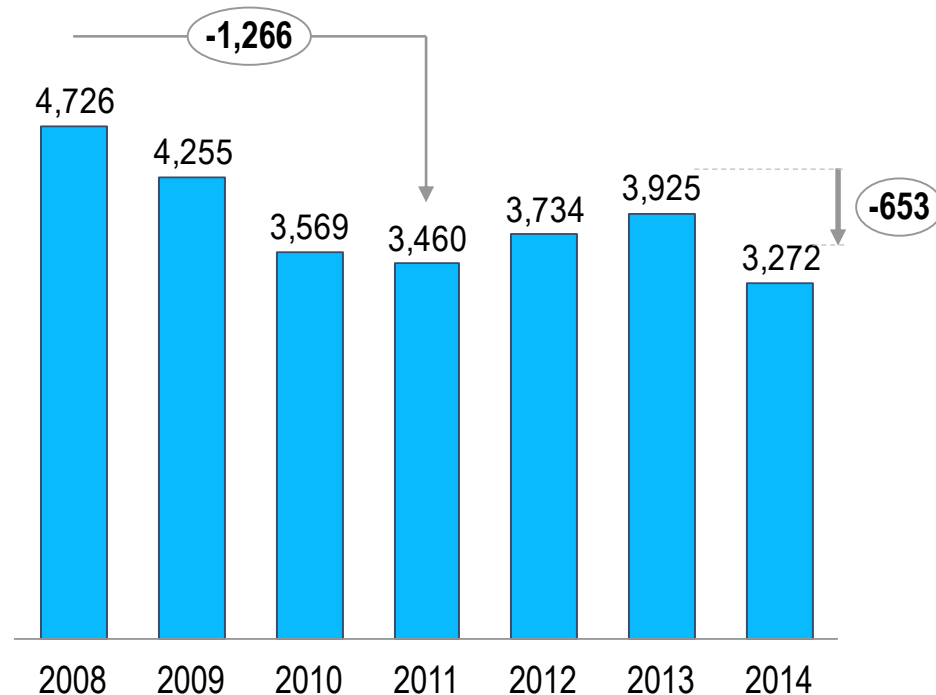
Aggregated net profit margin of aerospace companies [%]



- Comparatively with 2008 labor productivity increased by more than 90% in 2014
- An aggregate growth rate places labor productivity at 11.3% per year, which is likely to keep accelerating considering the new investments entering the country
- The main drivers of this good performance was both increasing turnover and declining number of employees
- In the same period, net profit margin significantly increased, from 4,7% in 2008 to 12% in 2014, mainly driven by export demand
- Despite a short term slump in employees, the top companies have begun intensive hiring processes to cope with demand, implying a definite potential for further investors too

Number of employees decreased during the crisis, but new investments is bound to boost new hires and further expansion

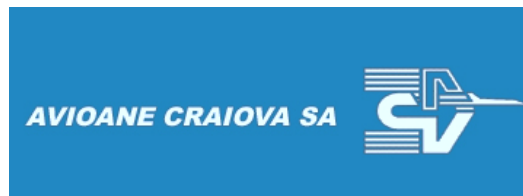
Evolution of employees in manufacturing [#]



- Employment in manufacturing of aircrafts and spacecraft sector decreased with more than 1260 persons between 2008-2011
- The new commands and exports performance increased the demand after 2011
- However, in 2014, the total number of employees was 3200, but there were important spillover effects on other components and equipment sectors
- More that 3000 employees were hired at Aerostar Bacau, IAR Brasov and Romaero SA
- Companies like Sonaca Aerospace Transilvania and Premium Aerotec announced new investment that could spur new hirings and disposable income

2. Aerospace main players

The market is quite fragmented, yet key players with strong exporting connections can be found among Romanian companies



Major companies in manufacturing and MRO segments (1/4)



AEROSTAR S.A. – Construction and repair of aircraft, Manufacturing of armament and ammunition. AEROSTAR S.A is a leading Romanian aerospace and defense company. It has a good reputation in the fields like: military aircrafts and engines maintenance, repairs and upgrades, production of light aircraft, of hydraulic equipment for aviation and piston engines, as well as the production of electronics and other specialized equipment.

2015	Aerostar Bacau
Turnover ['000 EUR]	76.582
Net profit ['000 EUR]	11.76
No. of employees	2.012
Exports ['000 EUR]	58.968

Main external partners:

- 54,4% of total sales are oriented to Europe
- 11,6% to Africa and 4,4% to Asia
- Main partners of Aerostar Bacau are Boeing (SUA) and Airbus (EU)

Major companies in manufacturing and MRO segments (2/4)



ROMAERO S.A. – The Company is an integrated facility for aircraft manufacturing, aerostructures, detailed parts, jigs & tools, providing also maintenance and repair services. Starting with 2003, ROMAERO was appointed by Government Resolution no. 375/2003 as “National Service Centre for Lockheed Martin C- 130 Hercules” and signed a strategic partnership with Lockheed Martin and Derco for maintenance and modernization of Romanian Ministry of Defense C-130 Hercules Fleet.

2014	Romaero SA
Turnover [‘000 EUR]	18.068
Net profit [‘000 EUR]	10.142
No. of employees	889
Exports [‘000 EUR]	14.093

Main external partners:

- Boeing (SUA),
- Bombardier (Canada),
- Spirit Aerosystems, Falko (UK),
- Elbit Systems Cyclone (Israel),
- Aerolean (France),
- Patria (Finland)

Major companies in manufacturing and MRO segments (3/4)



AVIOANE S.A. CRAIOVA – Industrial products manufacture at customer's request. It was established in 1972 for developing, manufacturing and providing product support to the military aircraft of Romanian Air Force. The company is certified by Airbus Helicopters Romania SA as a supplier for military products namely for maintenance works of the structure of Puma and Alouette III helicopters, PUMA helicopter equipment maintenance, manufacturing of spare parts for Puma and Alouette III helicopters, laboratory testing, metrology, and for manufacturing of spare parts and subassemblies for Airbus Helicopters, former Eurocopter SAS.

2014	AVIOANE SA Craiova
Turnover ['000 EUR]	4.689
Net profit ['000 EUR]	-2.063
No. of employees	288
Exports ['000 EUR]	-

Major companies in manufacturing and MRO segments (4/4)



IAR S.A. BRAȘOV – Manufactured under Aerospatiale-France (now Eurocopter) license by IAR S.A. Brasov as a troop carrier and a tactical support helicopter, the 330L Puma proved to be a multi-role helicopter and in financial terms became one of the most successful medium utility helicopter. IAR S.A. Brasov has manufactured and delivered more than 160 Puma helicopters, of which 57 helicopters have been exported to France, Pakistan, UAE; 104 off delivered to the Ministry of National Defense.

2015	IAR SA Brasov
Turnover ['000 EUR]	29.480
Net profit ['000 EUR]	2.694
No. of employees	314
Exports ['000 EUR]	.2980

Main external partners:

- DGP GHQ UAE Armed Forces – United Arab Emirates
- Royal Air Force Of Oman – Oman
- Lebanese Air Force – Lebanon
- Pakistani Army/ Aviation (By AEROTEH SA) – Pakistan
- Indonesian Air Force (by PT Citra Aviatama Dirgantara) – Indonesia
- Airbus Helicopters (by Airbus Helicopter Romania S.A. (former Eurocopter România S.A.) – France/ Germany

Other companies with relevant expertise are also adding value to the Romanian Aerospace industry (1/2)



Romarm SA – The national group of companies manufacturing a variety of products, including armored vehicles, air defense systems, infantry weapons, ammunition, artillery systems, rockets, powders, and explosives



ELPROF S.A. – Is a professional electronics manufacturer and has a long tradition in designing, producing and selling electronic equipment. Main activities: research, design, manufacture, technical consulting, sales, service and maintenance for military radio – communication equipment, industrial electronic equipment and medical equipment.



Romtehnica SA – Is a state-owned company and major supplier of consultancy and trading activities with foreign companies on behalf of the Ministry of Defense. Main activities are: negotiations in order to conclude export and intracommunity delivery contracts, foreign defense trade activities, high quality technical assistance, maintenance and training (aerial, naval & terrestrial fields).

Other companies with relevant expertise are also adding value to the Romanian Aerospace industry (2/2)



TURBOMECANICA S.A – Is a high integrity manufacturing and repair company focused on asserting its experience, know-how and capabilities on the international aerospace and industrial power systems markets, as well as on consolidating a competitive position by high skills, efficiency and a customer-oriented culture. Turbomecanica focuses on developing its main programs considering the new worldwide opportunities, such as: aeroengines, gearboxes and rotorheads for helicopter, accessories and equipment for the above, products and for other aircraft power plant control, sub-contractor for components of aeronautical, automotive, and transport products.



AEROFINA AVIONICS ENTERPRISE – Research, design, production of apparatus and industrial equipment in the following military aviation, armament and fighting techniques, locomotives and carriages, railway infrastructure domains.

Other companies: Automatica Bucuresti, S.C. Hesper S.A. Bucuresti, S.C. Seletron Software si Automatizari, S.C. Inav S.A. Institutul de Aviatie, SC ICPE Cercetari Avansate SA, Societatea Comerciala pentru Cercetare, Proiectare si Productie de Echipamente si Instalatii de Automatizare IPA SA, SC Roseal SA, Optoelectronica-2001 SA, S.C. Electromecanica Ploiesti S.A.

3. Research and Development

Romania has R&D institutions with extraordinary achievements performing important activities in the aerospace industry

Aerospace R&D institutions in Romania

- University POLITEHNICA of Bucharest, Aerospace Engineering Department
- The National Institute of Aerospace Research "ELIE CARAFOLI" - INCAS.
- National Institute for Theoretical and Experimental Analysis of Aerospace Structures -SC STRAERO SA
- Military Equipment and Technologies Research Agency - In-Flight Research and Test Centre – CCIZ
- National R&D Institute for Gas Turbines COMOTI

Relevant national research institutes in Romania

- Military Technical Academy
- INCAS
- National Research and Design Institute for Electrotechnics SC ICPE SA
- National R&D Institute for Textile and Leather - INCDTP
- National R&D Institute for Fine Mechanics CEFIN
- Institute for System Analysis – INAS S. A.

- Aerospace R&D is a growing industry inside the sector, with 11 institutes delivering high quality services at international level
- Several of these institutions reunite professionals from top universities worldwide, while others have developed partnerships with companies such as Airbus, Boeing or Lockheed

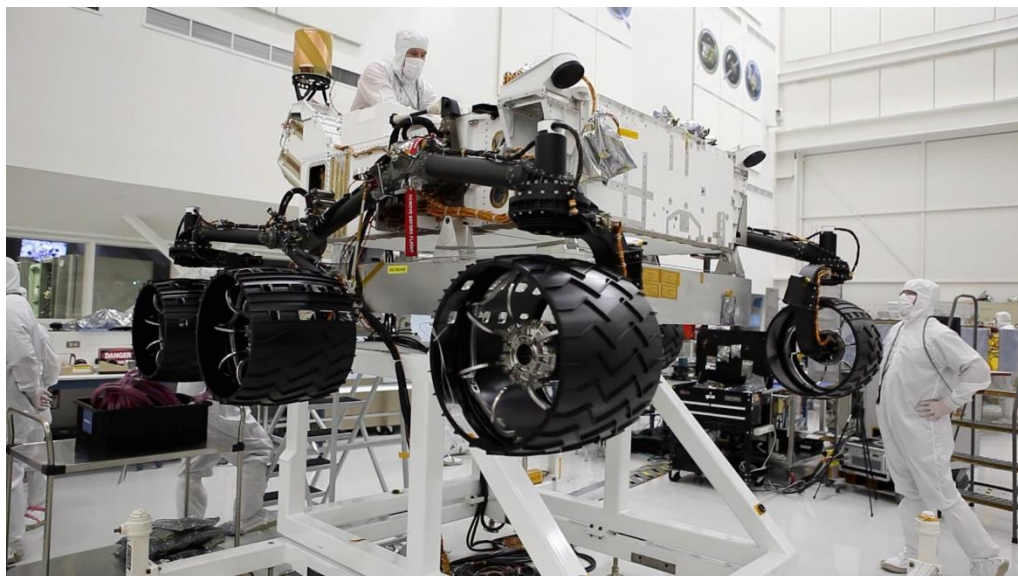
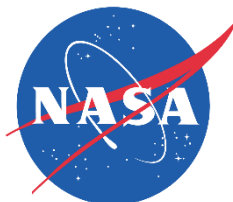
Case in point: Romanian Space Agency

- The ROSA Research Centre has been established in 1998 and is developing since 2000 as a center of excellence
- In the research area, ROSA has 20 specialists covering fields as: aeronautics, physics, remote sensing and biology
- More than 55% of the developed projects are in international cooperation, ROSA having government agreement with ESA, CNES, NASA, etc.

In fact, results of local aerospace R&D efforts can be currently found on Mars, on the Curiosity robot deployed by NASA

Case in point: Siemens – NASA partnership

SIEMENS



- Siemens Industry Software (Brasov, Romania) is one of the pioneering companies in aerospace R&D in Romania
- Offering software, hardware, engineering services and development of testing and simulation systems for mechatronics used by aerospace companies, Siemens has positioned itself as a top tier player
- Over 80 engineers in Brasov deliver high tech solutions to clients in Belgium, France, USA and the Netherlands as part of the Product Lifecycle Management software portfolio
- In fact, the local office has contributed to the development of the platform used by NASA to build the Curiosity robot, currently on MARS
- NASA used the Siemens-made software to project, simulate and virtually assemble the robot, as well as for testing purposes

4. Government support & financing options

Fiscal incentives are aimed at leveraging the local technology and R&D capabilities by incentivizing investors and employers (1/2)

Fiscal incentive

Exemption from profit tax

Short description

- 16% profit tax exemption for the reinvested profit in new technological equipment used for business purposes

Income tax exemption for IT&C employees

- An exemption on the 16% income tax is available in Romania for employees activating in IT, under conditions including:
 - Bachelor's degree in one of the 14 technical specializations available
 - Employee is hired on a software engineer/ programmer/ software analyst position
 - Annual revenue per exempted employee must be over USD 10 000

Deduction of R&D eligible expenses

- Eligible R&D expenses include: depreciation of R&D equipment, salaries for R&D personnel
- 50% of these expenses can be deducted from the taxable income

Accelerated depreciation of machinery, equipment and real estate used for R&D purposes

- A deduction of 50% from the fiscal value of the assets during the first year of use, while the remaining value may be depreciated linearly along the expected remaining lifespan
- Accelerated depreciation can be used also for equipment and/ or for research and development activities
- If a company benefits from exemption of the income tax for reinvestment it will not benefit from accelerated depreciation

Fiscal incentives are aimed at leveraging the local technology and R&D capabilities by incentivizing investors and employers (2/2)

Fiscal incentive

Foreign tax credit

Short description

- International income derived by Romanian residents is tax exempted under the following conditions:
 - There is a valid tax treaty between Romania and the relevant jurisdiction (from where the income is derived by the Romanian resident)
 - The interested party (taxpayer) can demonstrate that income tax was paid abroad on the respective income
 - The tax credit cannot exceed the Romanian tax applicable for the respective income

Industrial parks incentives

- Investors that set up manufacturing locations or offices in an industrial, scientific or technological park benefit from
 - Exemption on land, building and urban planning tax
 - Taxes charged for changing land destination


Facilities for people with serious disabilities

- Income received by people with serious disabilities can benefit from income tax exemption (e.g., for salary income, income from freelancing activities)


In a competitive market employment incentives are designed to maximize productivity of the available human resource

Employment incentives

Hiring young graduates for undetermined periods.
The incentives are granted to the employer on a monthly basis for a period of one year.



Hiring unemployed individuals with the age over 45 (for an undetermined period).
The incentives are granted to the employer on a monthly basis for a period of one year.



For both types of incentives the employers will have to take into consideration that they have to maintain working relations for 18 months.

In case of termination the employment contract before this period, the employer will return the incentive if the contract was terminated in the following conditions:

- Termination of the employment contract due to cancellation of the employees position in the company for reasons which are not related to the employee;
- In case the employee does not correspond professionally to the job he has been assigned;
- Nullity of the employment contract observed by the parties agreement or by a court decision; In case that job is occupied again by a person that was illegally fired.

State aid in Romania can be executed through 4 main methods, each being employed by various state aid schemes

- **State Resources transfer**

- Grants
- Fiscal benefits
- Guarantees

- **Selectivity**

- Oil reserves (with 600 million barrels)
- Export growth rate of R&D services
- Energy independence

State Aid policy in Romania has been developed according to EU Law in order to facilitate and stimulate foreign investment in the country

- **Economic Advantage**

- Renting or buying property from the state under the market price
- Subsidies for salary costs
- Access to infrastructure tax-free

- **Effect upon market competitiveness and trade**

- If EU law is obeyed, the skewing effect is drastically reduced, according to the Competition Council

With a budget of EURm 600 for the next 6 years, the two schemes for regional state aid aim to support value adding investments

	GD 2014/ 807	GD 2014/ 332
Aim	<ul style="list-style-type: none"> To support minimum investments valued at EUR 10 million 	<ul style="list-style-type: none"> The creation of at least 10 jobs per location, out of which 3 jobs are for unfavored workers
Eligible Costs	<ul style="list-style-type: none"> Construction of new buildings Renting costs for existing buildings CAPEX aimed at technical installations and tools Acquisition of intellectual property 	<ul style="list-style-type: none"> Salary costs registered for a 2 consecutive year period resulted as a direct consequence of the investment Salary costs are comprised of gross annual salary plus benefits
Budget	<ul style="list-style-type: none"> Total budget for the two schemes is EUR 600 million, with annual investments projected at EUR 100 million 	
Payout	<ul style="list-style-type: none"> 2015 – 2023 	<ul style="list-style-type: none"> 2015 – 2025

- The two schemes offer state aid in the form of non reimbursable grants from the state budget, capped by the limit of maximum intensity approved according to the regional map

Eligibility criteria for companies concern their financial health and their capacity to see the investment project through

Eligibility Criteria for Companies (common)

Eligibility Criteria for Companies (separate)

GD 2014/ 807

- Are registered according to company law no. 1990/31
- Execute an investment in one of the eligible sectors
- Do not have outstanding debt from the general consolidated budget
- Are not registered as enterprises in difficulty or are not debtors in an enforcement or insolvency proceeding, nor are they suspended from activity
- Are not part in a state aid recovery proceeding
- Have not benefited from regional state aid for eligible costs in the same investment project
- Have not closed a similar or even identical enterprise in the European economic area in the past two years and do not plan to do so for the next 2 years after the execution of the initial investment

- Net profitability for existing companies: > 0%
- Equity for new companies: \geq RON 100,000

GD 2014/ 332

- Net profitability for existing companies: >1%
- Equity for new companies: \geq RON 30,000

- In the case of GD 2014/ 807, payout occurs after all or part of the eligible expenses have been covered
- In the case of GD 2014/ 332, payout occurs on a quarterly basis, after all or part of eligible expenses have been covered

There are also eligibility criteria pertaining to the project itself, such as its value and viability over the short, medium and long term

GD 2014/ 807
GD 2014/ 332
**Eligibility Criteria
for Investments
(common)**

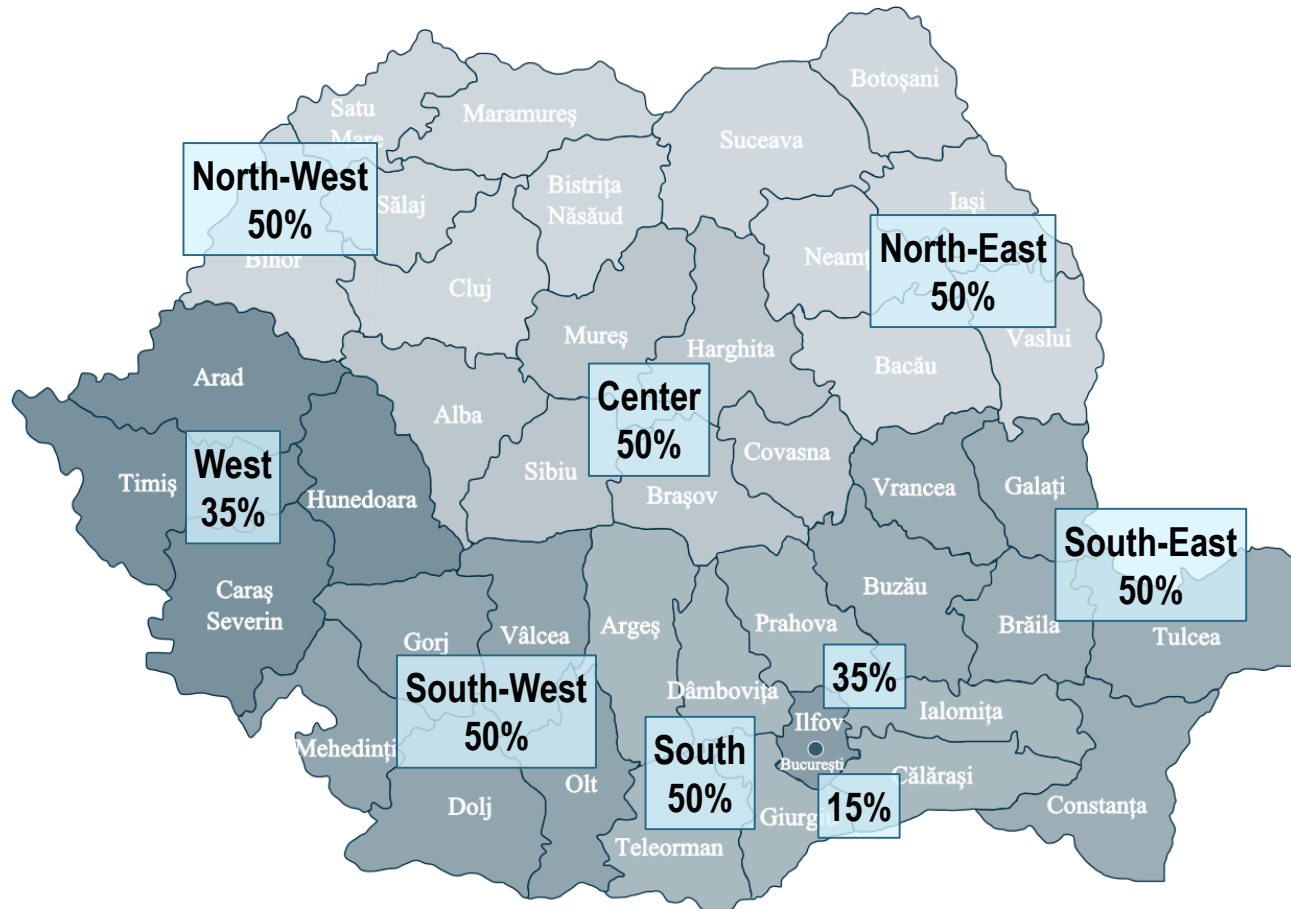
- To be considered initial investments
- In the case of large companies in the Bucharest region, investments must also develop new economic activities within the local ecosystem

**Eligibility Criteria
for Investments
(separate)**

- Minimum value: EUR 10 million
- To be viable and determine the operational efficiency of the company
- To prove the stimulating effect of state aid
- To generate contributions to regional development
- To facilitate extra investment in the region

- To lead to the creation of 10 new jobs per investment location, out of which 3 positions to be covered by unfavored workers
- To be viable and determine the operational efficiency of the company

The intensity of state aid varies according to the region, varying from 15% (in Bucharest) to 50% in most of the country



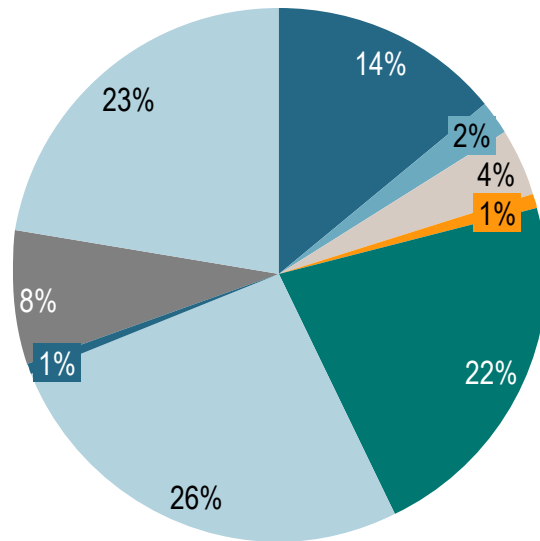
State aid intensity, according to development region:

- North West – 50%
- North East – 50%
- South East – 50%
- South – 50%
- South West – 50%
- West – 35%
- Ilfov County – 35%
- Bucharest – 15%

- State aid intensity is established as per EU and national regulations and is subject to change according to EU law on the matter
- Development regions of Romania represent a split of counties into larger regions in order to technically better target development programs and policies

European Structural and Investment Funds (ESIF) offer support for risk averse investors targeting low volatility sectors

Budget distribution on programs (%)



In total more than €30 billion in funding will be provided during the 2014-2020 Partnership Agreement

- ESIF will be provided through 5 programs
 - European Agricultural Fund for Rural Development (EAFRD)
 - European Maritime and Fisheries Fund (EMFF)¹⁵
 - European Regional Development Fund (ERDF)
 - European Social Fund (ESF)
 - Cohesion Fund (CF)
- More than €1 billion allocated to R&D and innovation (TO1), supporting the national target of 2% of GDP invested in R&D (against 0.49% in 2012)
- €3.9 billion to be invested to support the shift to low carbon economy
- €22.4 billion for Cohesion Policy (ERDF, ESF, Cohesion Fund)
- Cohesion policy will be delivered by 8 operational programs

ERDF CF ESF+YEI ESF ERDF Comp ERDF TA ERDF REG EARDF EMFF

The Investment Plan for Europe can also be a very effective financing tool for riskier projects through the EFSI*

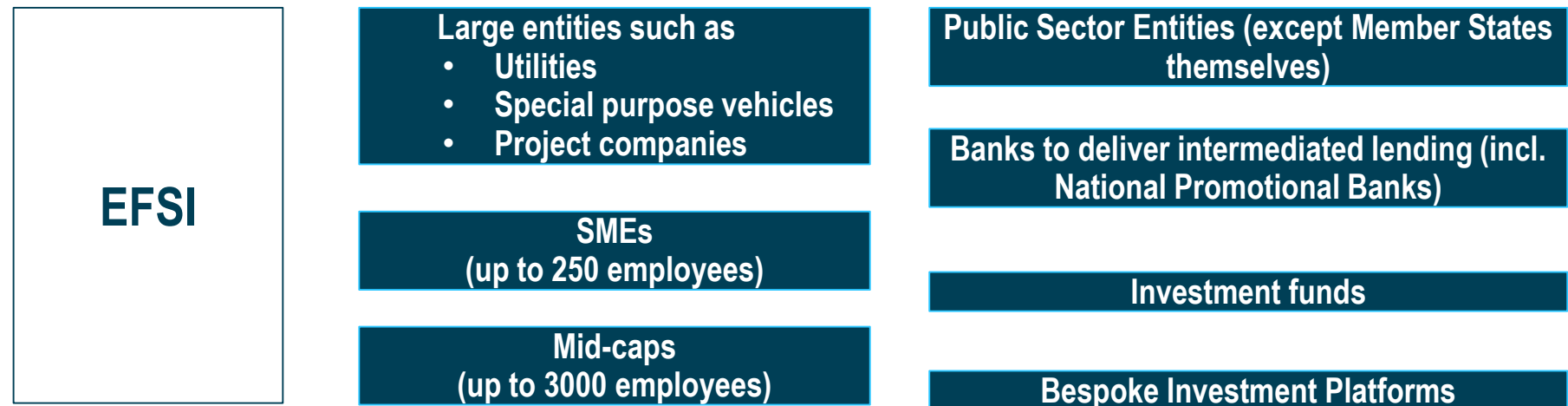
EFSI investment thesis outline

SECTORS	COMPANIES	POLICY
<ul style="list-style-type: none"> • The EFSI will target specific sectors, including: <ul style="list-style-type: none"> – Infrastructure – Education – Research – Innovation – Renewable energy – Energy efficiency 	<ul style="list-style-type: none"> • The companies targeted by the EFSI for investment must fall into one of the following two categories: <ul style="list-style-type: none"> – Small and medium enterprises (250 employees maximum) – Mid-caps (250 to 3000 employees) 	<ul style="list-style-type: none"> • Companies will also have to facilitate the following objectives: <ul style="list-style-type: none"> – Promote job creation – Long term growth – Competitiveness
<ul style="list-style-type: none"> • Besides the three filters, the criteria on which investment decisions are based include: <ul style="list-style-type: none"> – Economic viability with the support of the initiative – Sufficiently mature character in order for the business to be appraised on a global or local basis – Consistency with EU policy priorities and value adding character at European level – Maximization of private sector financing • Projects do not have to be cross border 		

* EFSI = European Fund for Strategic Investment is a EUR 21 billion guarantee fund and core of the Investment Plan for Europe dedicated to facilitating private investment across the EU

However, it is not only companies that can apply for EFSI financing; investment funds, public sector entities or banks are also welcome

Entities that can apply for EFSI financing



- There are two main ways to apply for EFSI financing:
 - Through direct contact of the EIB with the proposal, following the usual application on the EIB website for the strategic investment window – the government is not a gatekeeper in this process
 - Through the EIF financial intermediaries (dedicated to SMEs and mid-caps)

Financing options and incentives are complementary in order to be best used by any company wanting to set roots in Romania

Key fiscal and finance takeaways

Financing options and other incentives are Complementary

- A company / project can be funded by state aid, can benefit from fiscal and employment schemes; can obtain structural funds as well as financing through the EFSI
- For example, an unbankable project can apply for structural funds first and, provided it is funded, can become bankable and apply for EFSI loans

R&D activities are encouraged by the Government

- Deduction of eligible R&D expenses include: depreciation of R&D equipment, salaries for R&D personnel
- New scheme for R&D activities support is under discussion and is targeted to go live in 2017

Promoters negotiate directly with EIB for EFSI loans – low Bureaucracy

- Project promoters for negotiate directly with the financing institution (may it be EIB or the local partner)
- There are no specific obligations to be fulfilled towards the government