

**TEDAE**

Defensa, Seguridad, Aeronáutica y Espacio

# 2017 ACTIVITIES REPORT

**SPACE**  
defense  
**DEVELOPMENT**

security  
COMPETITIVENESS

TECHNOLOGY

**AERONAUTICAL**

I N N O V A T I O N

**CIVIL**







# 2017

activities  
**REPORT**

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# WHAT HAS 2017 MEANT for TEDAE?

## Jaime de Rábago

PRESIDENT OF TEDAE

Undoubtedly, last year will be remembered as the year when the path of economic stability in the world, in Europe and also in Spain was recovered. In our country, employment grew 2.6%, inflation fell to 1.1% and exports increased 7.7%. The year also closed with optimistic growth projections for the industrial sectors that make up TEDAE: Defense, Aeronautics, Security and Space.

Cybersecurity and the protection of companies, infrastructure and citizens is one of governments' current priorities. The demand for new aircraft is encouraging, as well as a result of the expected growth in air traffic. The development of the Common Security and Defense Policy for Europe already has a roadmap - the European Defense Action Plan (EDAP) and the Permanent Structured Cooperation (PESCO) - and both Europe and the US are acquiring technological capabilities to face the new threats and protect the citizens and our democratic values. Likewise, space is increasingly present in people's daily lives due to the growing demand for global connectivity services, communications, earth observation applications and navigation devices, among others.



TEDAE IS FULLY AWARE OF THE ROLE IT SHOULD PLAY IN THE FUTURE TO BE THE KEY SUPPORT THEIR ASSOCIATED COMPANIES NEED THAT IS WHY WE WANT TO BECOME ONE OF THE LEADING ASSOCIATIONS IN SPAIN

But, what has 2017 meant for TEDAE, for our companies and sectors? Regarding the scope of our association of technological companies, last year represented essentially the validation of our associative model and the confirmation of the good work done by my predecessors, of the path started 9 years ago by Julian Garcia Vargas, unifying four industrial sectors closely linked by technology into a single association, and which was consolidated during the presidency of Adolfo Menendez. Thanks to the excellent work developed during these years by the team of TEDAE, by and for the associates, we have been able to confirm that together we do more than each one individually. This is evidenced by the intense activity carried out during the past year by the different technological poles, government bodies and commissions of TEDAE, as described in this Report.

TEDAE is fully aware of the role it should play in the future to be the key support their associated companies need. That is why we want to become one of the leading associations in Spain. And we also want to be a rigorous and referenced forum of analysis and research on the different aspects of our four industrial sectors' activities. Also, we want to focus, with special dedication, to communicate the many -and good- things that our companies do, and the important benefits and the economic, technological and social returns that society is getting from them. In short, we want to be a strategic tool for our associates.

To position ourselves in the best starting position and know how to turn the challenges that we face into opportunities, it is necessary that we reach the 10th anniversary of the association -in 2019- with a

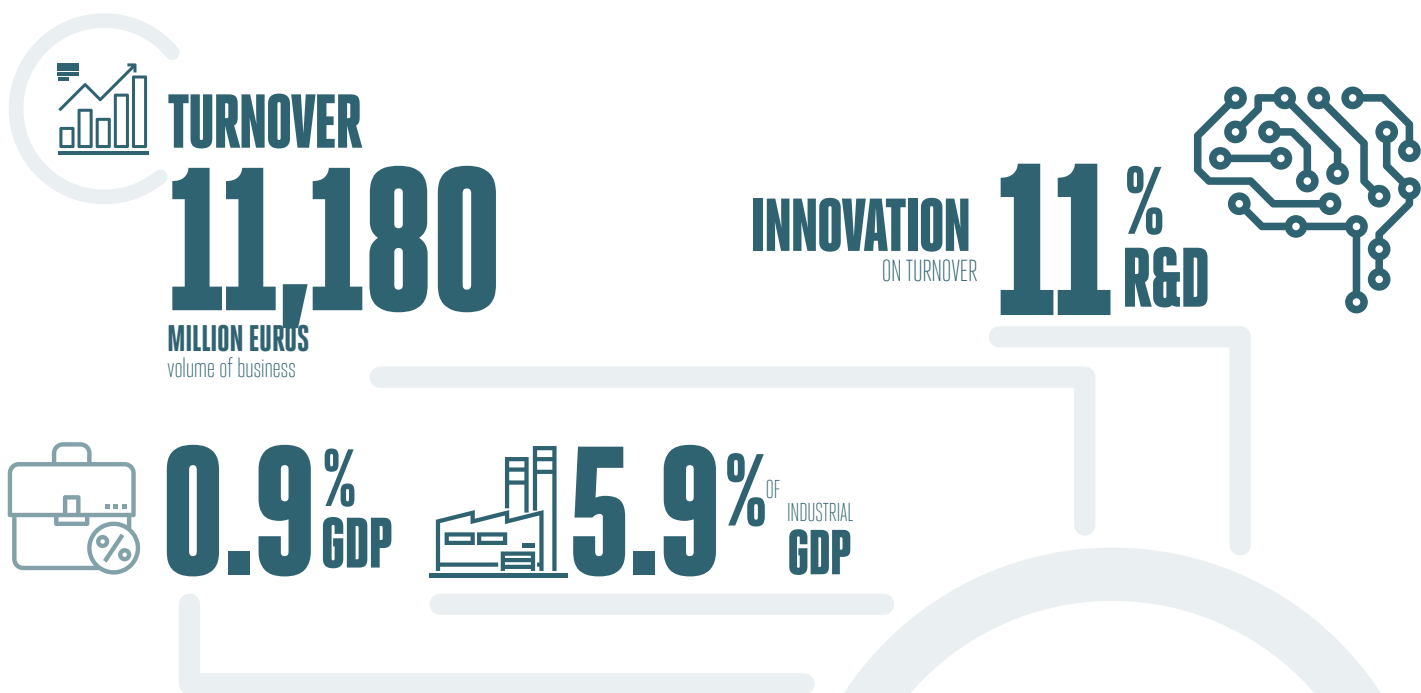
Strategic Plan. An operational guide to prepare ourselves for such decisive challenges as digitization and Industry 4.0, improving competitiveness and internationalization, the next Framework Program for Research in Europe, the Technological and Industrial Security Plan, the new investment cycle in Defense, the Agendas for the Aeronautics and Space Sectors, the Spanish National Plan for Scientific and Technical Research and Innovation, or the urgent need for society to know us better. I could go on citing issues because we have a lot of work ahead. A task certainly exciting for which, undoubtedly, we need the involvement of all who are committed to our Association.

Many thanks to all of you.



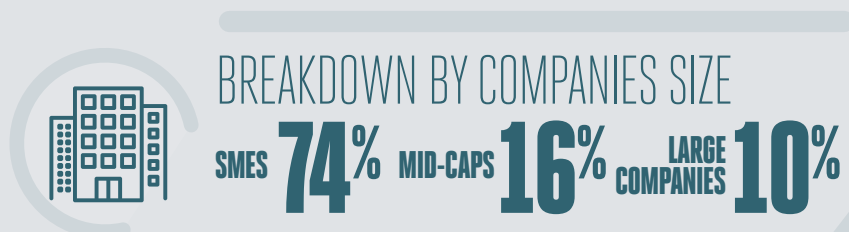


# SECTORAL FIGURES

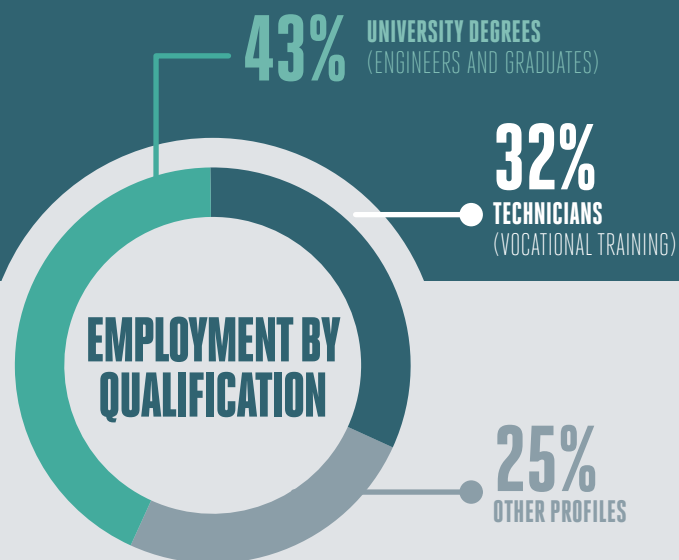
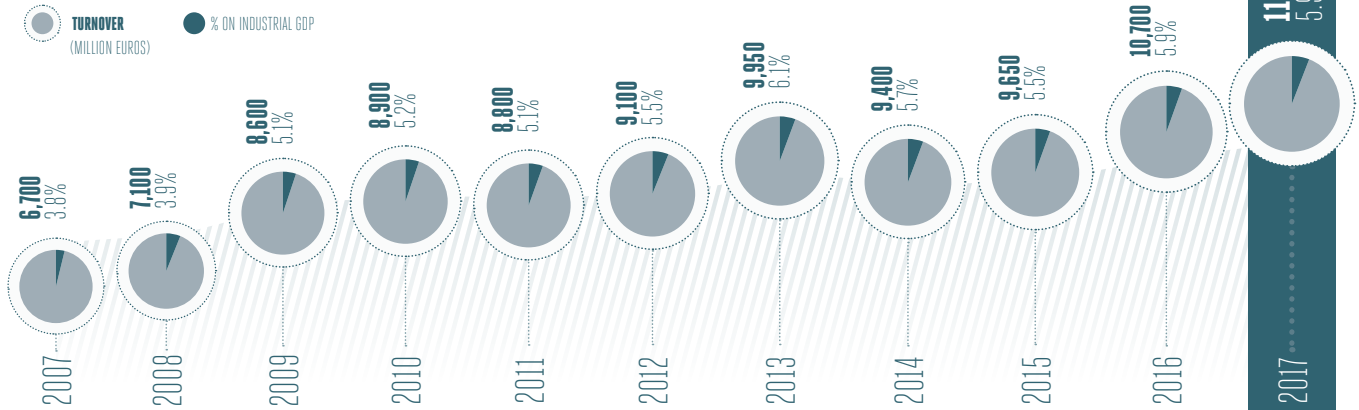


# TEDAE

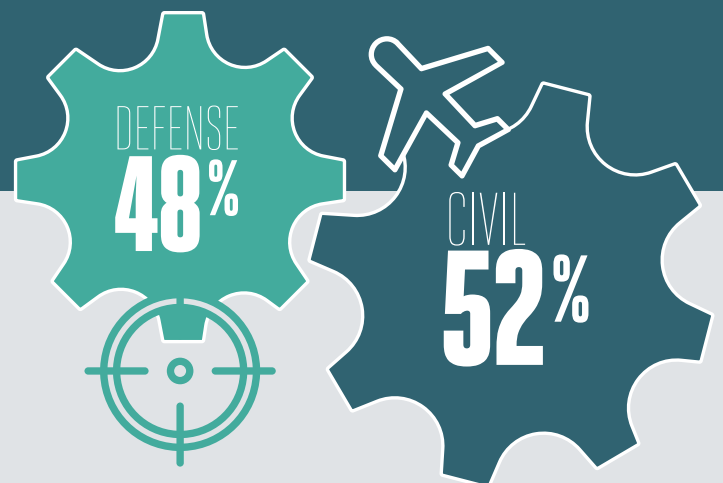
## BIG NUMBERS



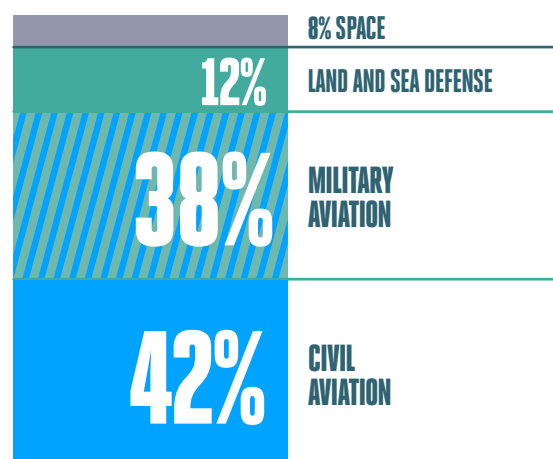
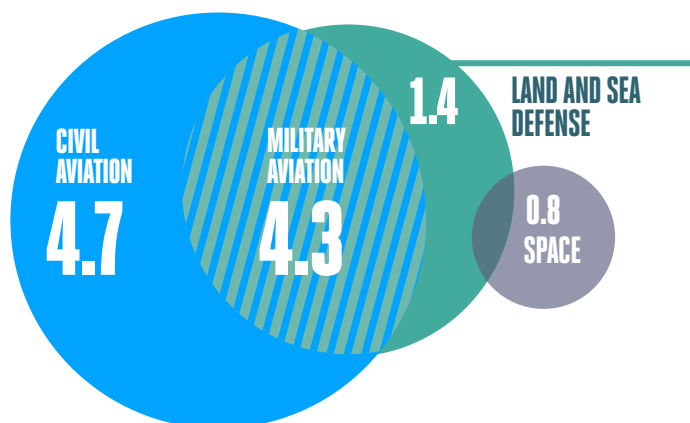
## TURNOVER OF TEDAE SECTORS



## MARKET EVOLUTION



## TURNOVER BY SECTOR (IN BILLION EUROS)





# TEDAE

## BIG NUMBERS

**DURING 2017**, sustainable growth of TEDAE sectors has been maintained based on high productivity, 3.3 times the national average, and maintaining the export rate on turnover at 83%.

The balance between the civil and defense markets remains stable, with a slight change in trend due to a rise in the defense sector and a slight drop in the civilian sector.

In turnover by sectors, the balance between civil and military aeronautics is retained (with 42% and 38%, respectively, over the total turnover of TEDAE sectors), with land and sea defense reaching

12% of the total. The space sector continues to contribute 8% to the total.

As in recent years, the TEDAE sectors have an employment configuration of high technological qualification, with 43% of university graduates and 32% of technicians with high professional qualifications.

The TEDAE sectors account for 56,404 direct jobs, and they return 10% of their turnover to society through taxes and social contributions, directly contributing to the citizens welfare.



Innovation is a cornerstone of our sectors, and to this end, our companies have consistently dedicated more than 10% of their turnover to R&D activities over the last ten years.

This continued investment positions our sectors as a fundamental key element within the national industrial capability.

On 2017, the TEDAE sectors contribution to the national industrial GDP stood at 5.9%, figure that has been steadily maintained over the last decade, and with a slight upward trend even during the worst years of the crisis.

This underlines the noncyclic characteristic of the TEDAE sectors, largely due to the high added value of their products.





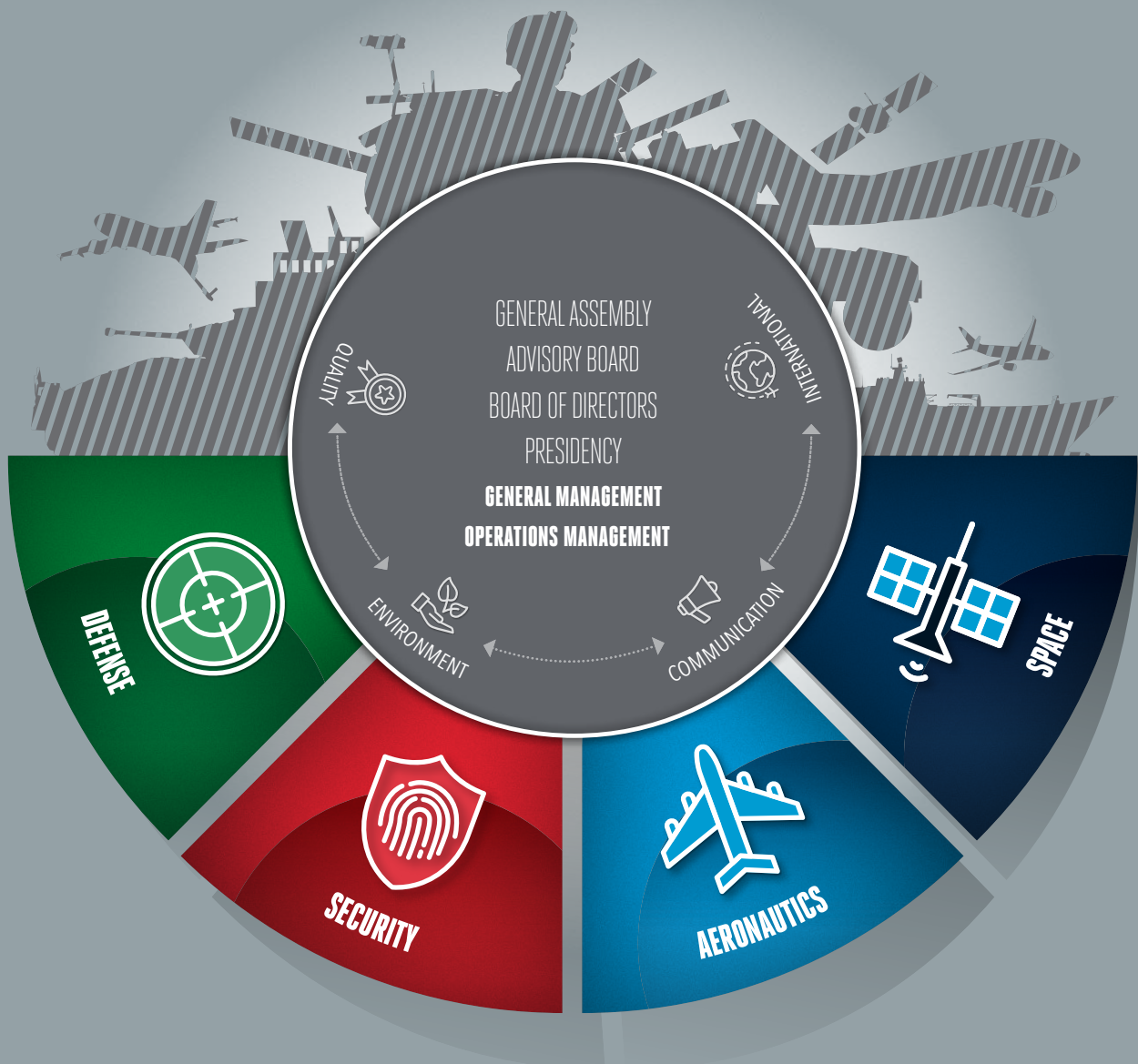
THE ASSOCIATION

# STRUCTURE AND OPERATION

The structure of TEDAE is aimed at promoting:

- **Generation of value in a global environment.**
- **Competitiveness as a whole.**
- **Industrial leadership.**
- **The common interest of the four industrial sectors, considering the diversity and singularities of each technological pole.**

The organization is structured around a vertical axis, formed by the General Assembly, the Board of Directors, the Advisory Council and the Presidency. \*



\* As of March 31, 2018

The General Assembly is formed by all its associates and meets at least once a year.

The Advisory Board is formed by promoting companies and those exceeding six times the size of SMEs according to the Recommendation of the European Commission, as well as two representatives of the Association's medium and small enterprises.

Among other roles, the Board is the highest institutional representation before the government and international organizations. It consists of:



## advisory BOARD



- **Mr. Jaime de Rábago (7)**  
*President of TEDAE*
- **Mr. Iñaki López \***  
*President of AERNNOVA AEROSPACE, S.A.*
- **Mr. Fernando Alonso \***  
*President of AIRBUS in SPAIN*
- **Mr. Alberto Gutiérrez (3)**  
*Chief Operating Officer of Military Aircraft AIRBUS DEFENCE & SPACE, S.A.U.*
- **Mr. Miguel Ángel Tapia (2)**  
*CEO of EUROPAVIA ESPAÑA, S.A.*
- **Mr. Antonio Bueno (8)**  
*Vice President for Europe y Director General of GENERAL DYNAMICS EUROPEAN LAND SYSTEMS SANTA BÁRBARA SISTEMAS, S.A.*
- **Mr. Manuel Escalante (4)**  
*Director of Defense and Security of INDRA SISTEMAS, S.A.*
- **Mr. Carlos Alzola \***  
*Director General of ITP AERO (INDUSTRIA DE TURBO PROPULSORES, S.A.)*
- **Mr. Esteban García (6)**  
*President of NAVANTIA S.A.*
- **Mr. Andrés Sendagorta (1)**  
*Vice President of SENER INGENIERÍA Y SISTEMAS, S.A.*
- **Mr. Ginés Clemente (5)**  
*CEO of ACITURRI AERONÁUTICA, S.L.*

\* Other members of the Advisory Board

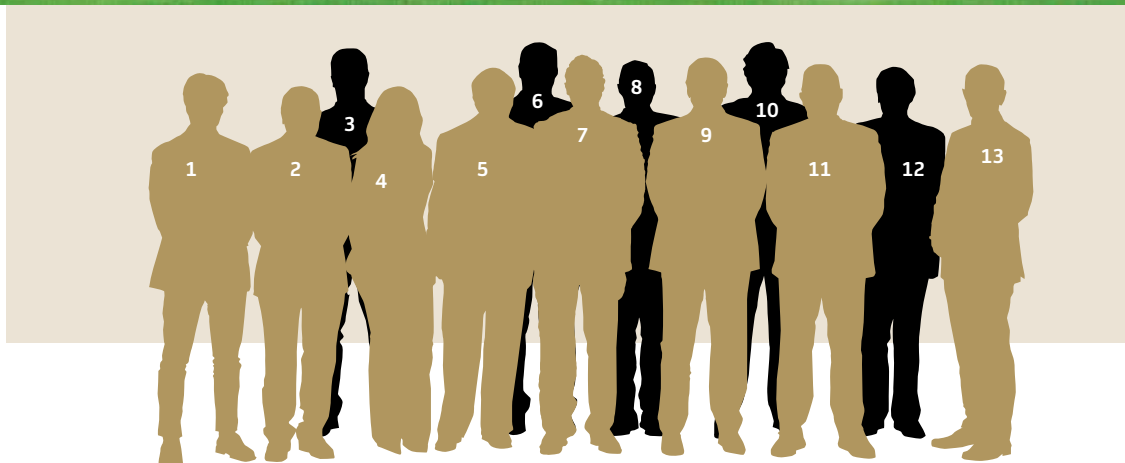


## BOARD OF DIRECTORS

The Board of Directors is the collegiate body for management and administration of the Association acting under the authority of the General Assembly.

The Board is formed by the President of the Association, the Vice Presidents of each sector, a minimum of fourteen members, who will necessarily be associated companies, and the Secretary of the Association. It consists of:

- **Mr. Jaime de Rábago (7)**  
*President*
- **Mrs. Clara Tébar \***  
*Secretary*



## VICE PRESIDENTS

- **Mr. Alfredo Martínez - Menéndez (6)**  
Vice President for Aeronautics of TEDAE. **AIRBUS OPERATIONS, S.L.**
- **Mr. Jorge Potti (13)**  
Vice President for Space of TEDAE. **GMV INNOVATING SOLUTIONS, S.L.**
- **Mr. Fernando Barbero (1)**  
Vice President for Security of TEDAE. **INDRA SISTEMAS, S.A.**
- **Mr. Javier Pradere (10)**  
Vice President for Defense of TEDAE. **NAVANTIA, S.A.**

## MEMBERS:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• <b>Mr. Miguel Ángel Castillo *</b><br/><b>AERNNOVA AEROSPACE, S.A.</b></li> <li>• <b>Mr. Carlos Gómez-Múgica (5)</b><br/><b>AIRBUS</b></li> <li>• <b>Mr. José Guillamón *</b><br/><b>AIRBUS DEFENCE &amp; SPACE, S.A.U.</b></li> <li>• <b>Mr. Alfredo Martínez - Menéndez (6)</b><br/><b>AIRBUS OPERATIONS, S.L.</b></li> <li>• <b>Mrs. María de la Malla (4)</b><br/><b>CENTUM SOLUTIONS, S.L.</b></li> <li>• <b>Mr. José Leal (11)</b><br/><b>COMPAÑÍA ESPAÑOLA DE SISTEMAS AERONÁUTICOS, S.A.</b></li> <li>• <b>Mr. Miguel Ángel Tapia (8)</b><br/><b>EUROPAVIA ESPAÑA, S.A.</b></li> <li>• <b>Mr. Ángel de Álvaro *</b><br/><b>GENERAL DYNAMICS EUROPEAN LAND SYSTEMS SANTA BÁRBARA SISTEMAS, S.A.</b></li> </ul> | <ul style="list-style-type: none"> <li>• <b>Mr. Manuel Pérez (2)</b><br/><b>GMV INNOVATING SOLUTIONS, S.L.</b></li> <li>• <b>Mr. Pedro Barco (3)</b><br/><b>INDRA SISTEMAS, S.A.</b></li> <li>• <b>Mr. Plácido Márquez (12)</b><br/><b>ITP AERO (INDUSTRIA DE TURBO PROPULSORES, S.A.)</b></li> <li>• <b>Mr. Javier Romero (9)</b><br/><b>NAVANTIA, S.A.</b></li> <li>• <b>Mr. Santiago Hernández *</b><br/><b>SENER INGENIERÍA Y SISTEMAS, S.A.</b></li> </ul> |
|--|---|

The Board meets in ordinary sessions every two months and whenever requested by at least one third of its members. It is responsible for monitoring everyday management of the Association issues.

The remaining Association's structure has a "circular" peer hierarchy, by leadership of all four technological poles, allowing greater efficiency in their results and priorities.

\* Other members of the Board of Directors







# SECTOR BY SECTOR



## TECHNOLOGICAL POLE defense

The launch of the First Call of the Preparatory Action on Defense Research (PADR), the definition of the European Defense Action Plan (EDAP) and the launch of the Permanent Structured Cooperation (PESCO), at European level, as well as the approval of the State Budgets and Special Weapons Programs (PEAs), at a national level, have marked the evolution of the Spanish defense sector in 2017.

The defense industry is aware that maintaining coordination with Public Administrations and the participation in conceiving the aforementioned

initiatives from the beginning are key aspects to guarantee the success of Spain in all of them. For this reason, the TEDAE Defense Technology Pole decided to structure its activity around them.

First, it should be noted the creation of the Interministerial Group for EDAP and the PLATIN (General Sub-directorate of Planning, Technology and Innovation of the Ministry of Defense) Coordination Group -TEDAE. The Association is involved with these two groups that were conceived with the aim of maintaining a coordination and a flow of information

that would allow for a consensual position among all the players. Currently, both groups continue to act as two reference forums for the sector.

As a result of the coordination work, the activity of the Defense R&D Committee was promoted, which addresses all EDAP research issues. In addition, TEDAE has launched various communication, information, consultation, reporting and follow-up actions related to the European Defense Action Plan.

Within the European framework, it should also be noted the participation of TEDAE in the different Strategic Groups of the Aerospace and Defence Industries

In terms of foreign support and internationalization, the TEDAE Defense Technology Pole held coordination meetings with OFICAEX (Office of External Support under the Ministry of Defense) and decided to relaunch the activity of the Internationalization Committee, to try to address all the issues related to this field in an integrated manner. It should be noted the creation of a Reflection Group on the participation of TEDAE in fairs, with the aim of carrying out an analysis exercise to optimize the organization and management model for the participation of companies in fairs coordinated by the Association. On the other hand, the Spanish Pavilions in SITDEF (Lima, Peru - May 18-21, 2017) and EXPODEFENSA (Bogotá, Colombia - December

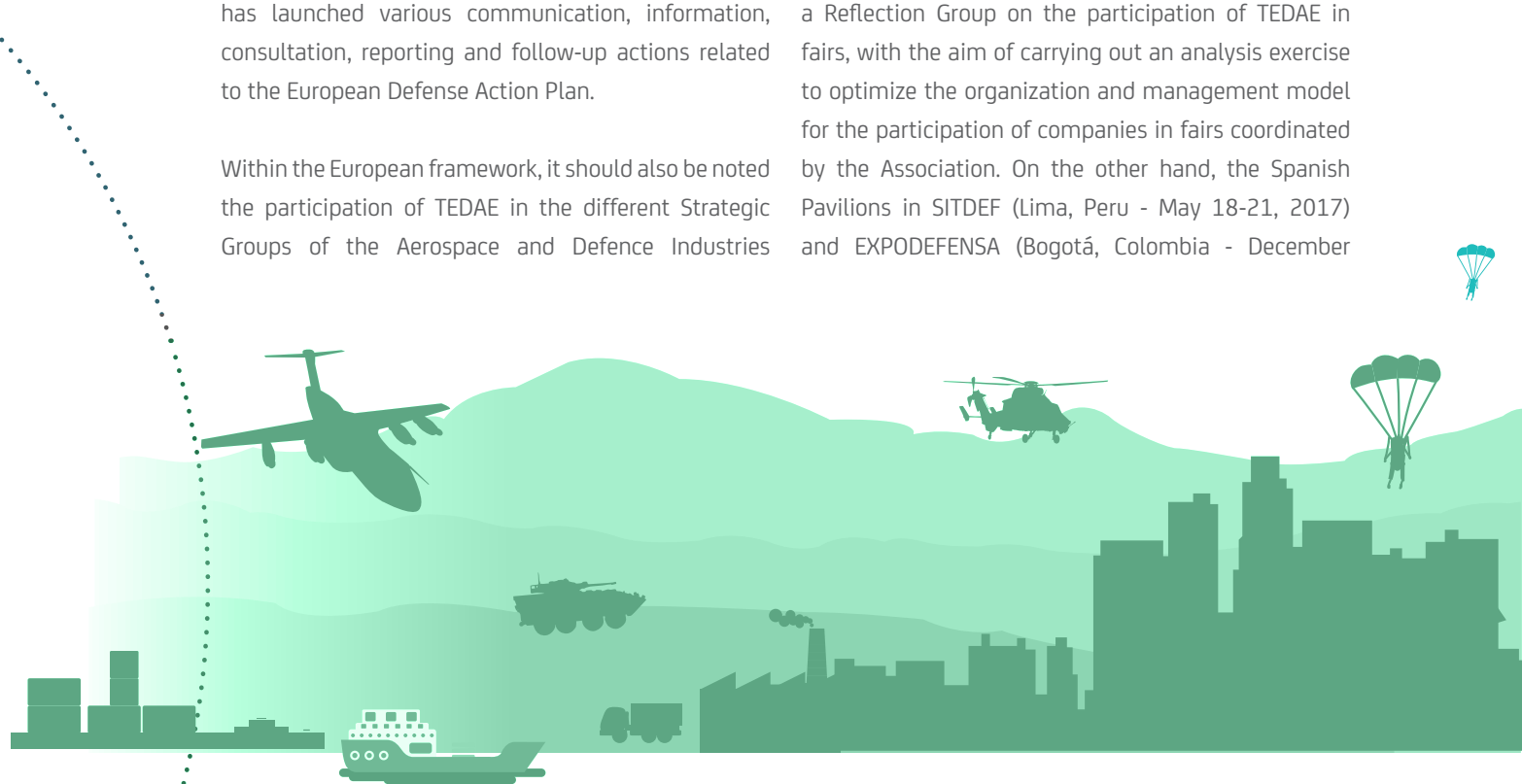
Association of Europe (ASD), the representation in the NATO Industrial Advisory Group (NIAG) and the monitoring and coordination of ongoing actions in the inter-governmental treaty "Letter of Intent" (LoI) among Germany, Spain, France, Italy, United Kingdom and Sweden, the OCCAR (treaty between the main European nations for the acquisition of defense material), NATO and EDA (European Defense Agency).

Communication in defense was also a strength during 2017. Among the most relevant actions, it should be noted the updating and consolidation of defense lines of thought as an essential tool to prepare the communication material of TEDAE, the publication of a video of the Defense sector, and the meeting with specialized journalists to report on the EDAP publication.

4-6, 2017) were coordinated. Finally, the Industrial Conference was organized once again in the 2017 Course for Defense Attachés and Counselors.

Given the situation of the State Budgets and PEAs, the Defense Commission of TEDAE also followed up their evolution in the context of the current parliamentary term.

The activities carried out on Defense by TEDAE in 2017 are completed with the presentation of sectoral figures, a communication with high added value and the coordination of industry related initiatives with OFICAEX or PLATIN.



# Javier Pradere

Vice President for Defense of TEDAE



**THE PRIORITY ISSUES** for the Defense Commission (COMDEF) during 2017 were mainly the European Defense Industry and, of course, the budgetary aspects, both also being priorities in 2018.

The first is mandatory since the launch in November 2016 of the EDAP, with budget allocation. At last, in the EU, we started talking about Defense and Security and, more importantly, funding was given through the European Defense Fund (EDF) for the two legs, research and capability, with schedules and specific amounts.

This first and main cornerstone of EDAP is joined by three other cornerstones, such as promoting investments in supply chains, strengthening the single defense market and developing broader European Union policies.

As for the second one, it is needless to say the importance of the budget follow-up, both national and European, that was carried out during 2017.

It is for all these reasons that I would like to thank the extraordinary work carried out both by the Board and the different Committees that are part of COMDEF, together with the TEDAE team for their support and collaboration and, of course, the associated companies that attend the meetings of the Commission, which enrich their work with their contributions and whose activities are described in the introduction of this Pole.

To conclude, let me say that this Pole has not only maintained, but improved, its competitiveness, despite the reduction in defense budgets and a very competitive international market. And that national sovereignty is maintained based on the investment effort on R&D&i in the defense industry, an increasingly internationalized and globalized industry that continues to generate both employment and national wealth, thus contributing to the strengthening of the European Defence Technological and Industrial Base (EDTIB), which is one of the main objectives of the European Commission for a Single Market for Defense.

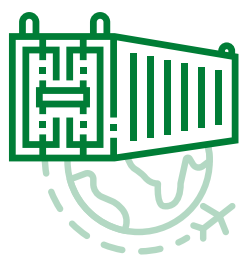
Finally, I would like to highlight the great importance of coordination between the defense industry and the Spanish Administration, especially the Ministry of Defense, to whom we very warmly thank all the support and collaboration constantly provided to us, considering the great challenge presented and the opportunities offered by the European defense market.





**“THIS FIRST AND MAIN CORNERSTONE OF EDAP IS JOINED BY THREE OTHER CORNERSTONES, SUCH AS PROMOTING INVESTMENTS IN SUPPLY CHAINS, STRENGTHENING THE SINGLE DEFENSE MARKET AND DEVELOPING BROADER EUROPEAN UNION POLICIES”**





**81%**  
**EXPORT**  
ON TURNOVER

**TURNOVER**  
**5,379**  
**MILLION EUROS**  
volume of business

**INNOVATION**  
ON TURNOVER  
**11%**  
**R&D**

# DEFENSE

## BIG NUMBERS



**2.8%**  
OF INDUSTRIAL  
**GDP**

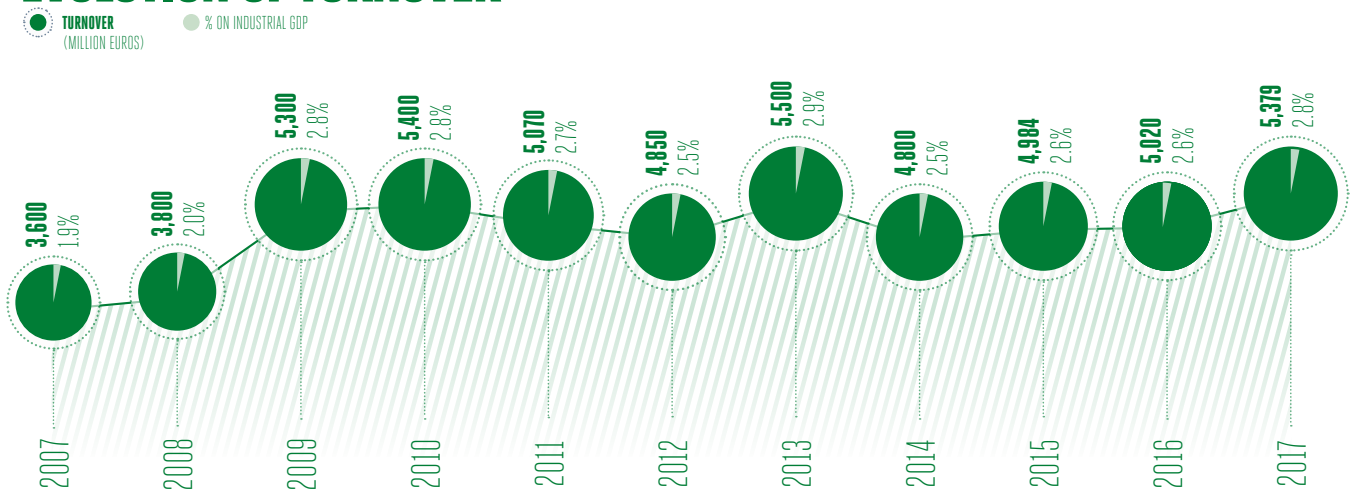


**22,812**  
**EMPLOYEES**

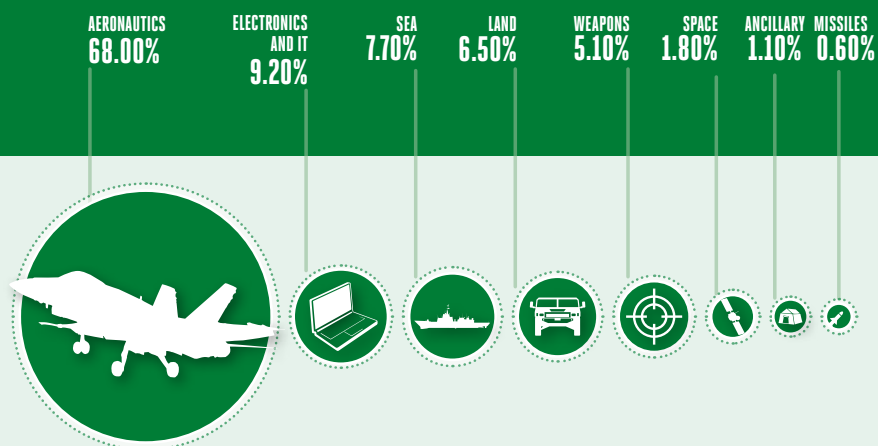


**3.8**  
**PRODUCTIVITY**  
**TIMES**  
NATIONAL AVERAGE

## EVOLUTION OF TURNOVER



## SALES BY SEGMENT

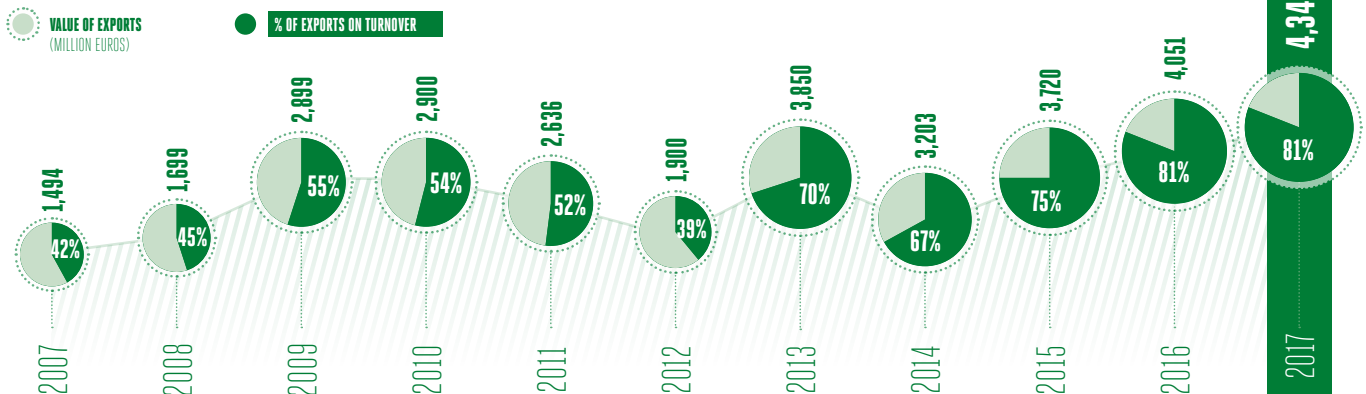


## EXPORTS BY REGIONS

1. EUROPE 84.69%
2. MIDDLE EAST AND NORTH AFRICA 8.20%
3. LATIN AMERICA 3.57%
4. ASIA-PACIFIC 1.81%
5. NORTH AMERICA 0.99%
6. REST OF ASIA 0.40%
7. REST OF AFRICA 0.34%



## EVOLUTION OF EXPORTS





# DEFENSE

## BIG NUMBERS

**2017 SET A NEW RECORD** in the consolidated turnover of the Spanish defense sector standing at €5.379 billion, representing an increase of 7.1% over the previous year, and demonstrating its strategic nature as an economic accelerator in times of crisis.

The strength of the sector is also reflected in the evolution of its contribution to Industrial GDP, which in 2017 represented 2.8%.

As for the segments in the sector, the Military Aeronautics segment stands out above all others, representing 68% of total turnover. Following are segments such as Electronics and IT (9.2%), Sea

Platforms (7.7%) or Land Platforms (6.5%). These segments are followed by Armament (5.1%), Military Space (1.8%), Ancillary Industry (1.1%) and Missiles (0.6%).

In 2017, employment in the sector grew to 22,812 jobs, which represents an increase of 2.3% over the previous year.

Once again, the sector demonstrated its high degree of internationalization by exporting 81% of total turnover. The sector has set a new export record, in nominal terms, exceeding €4.3 billion.





Europe was the main destination of exports, representing 84.7% of the total exported. This is due to the authorization of several exports in the framework of different cooperative projects. It is followed by the Middle East and North Africa with 8.2% of the total figure, Latin America with 3.6% and Asia-Pacific with 1.8%. The rest of the world regions represented 1.7%.

The defense sector has also demonstrated its high technological level by investing 11% of turnover in Research and Development.

All these figures show the consolidation of a sector whose productivity is 3.8 times the national average.



## TECHNOLOGICAL POLE

# aeronautics

The aeronautics industry has been growing at a steady pace in recent decades and all analyzes predict that this trend will not only be maintained, but it will increase. The growth outlook in the number of aircraft is very positive. It is estimated that by 2036 the world fleet of commercial aircraft will have gone from 25,000 to 47,000 and that, in this period, 35,000 new aircraft will be delivered, and some 13,000 will be withdrawn.

Also, strong growth in air traffic is expected worldwide. With an average global growth of 4.4% per year in the coming decades, the sector must be prepared to be able to double flights in 15 years.

Even with these good expectations, the Spanish aeronautics industry faces numerous challenges,

such as the importance of maintaining investment in R&D&i, the digital transformation and the transition to Industry 4.0, as well as the improvement of the supply chain competitiveness.

Aware of the need for strong support from the Administration to address these challenges, which in turn allows the sector to compete with the countries in our surroundings that have significant public support, during 2017, the Commission of Aeronautics developed an action plan to update the Aeronautics Sector Agenda document and different contacts were maintained with the Administration to promote the implementation of a Strategic Plan for the sector.

From the R&D&i Committee, various relevant actions were developed, among which the coordination with

the Spanish Aerospace Technology Platform in the development of the Strategic Aeronautics Research Agenda should be noted. In addition, comments were sent to the public consultation of the Spanish National Plan for Scientific and Technical Research and Innovation 2017-2020, a close follow-up was carried out on the European initiatives underway in R&D&i, such as the Mid-term review H2020 and the design of the 9th Framework Program, and a working breakfast was organized on the opportunities for financing R&D&i in the sector.

During 2017, the Supply Chain Committee and SMEs developed important actions, such as the organization of the Aeronautics Industry Competitiveness Day,

Committee, different debates were held regarding the practices of companies in the field of digitization in aeronautical services.

Within the Aviation Committee, the RPAs (Remotely Piloted Aircraft) Working Group was set up to represent the interests of companies of growing importance within the Aeronautical Industry in this segment. Among the actions developed by the Communication Working Group, it should be noted the video for promoting the aeronautics sector and the coordination of the relationship with the media in the different sectoral milestones. In the European context, the representatives of TEDAE participated in the Civil Aviation Business Unit and in the Commissions and

where strategic aspects for the sector were addressed such as financing, regional cooperation and case studies of aeronautics SMEs.

This Committee also developed the on-line Guide of public financing tools for the aeronautics sector, the dissemination and follow-up of sectoral participation in HADA (Advanced Digital Self-Diagnosis Tool) and the coordination with the SPACE Association in Spain for the promotion of the Supply Chain competitiveness.

From the Services Committee, it is worth highlighting the launch of the Spanish Industry Catalog of Aeronautical Services project, with its initial phase developed in 2017 and consisting in information collection and first analyzes. Also, within this

Working Groups related to aeronautics, mainly the R&D Commission.

In terms of internationalization, the Spanish Pavilion was organized in PARIS AIR SHOW 2017 (June 19 - 25), the main fair for the aerospace sector. The Spanish Pavilion was attended by 23 exhibitors in almost 700m<sup>2</sup> and it was visited by important national and international delegations during the fair.





## Alfredo Martínez

Vice President for Aeronautics of TEDAE



### AS A DELEGATE OF THE AERONAUTICS COMMISSION,

I am proud of the work carried out by the members of the Executive Commission, all of them Subdelegates of the different Committees in operation, “R&D”, “Supply Chain”, “Services” and “Aviation”, and the Communication Working Group. It is in these Committees where the real work of the Commission is performed, and the activities carried out during the year 2017 have really been a great added value for the sector.

Those responsible for these Committees, Plácido Marquez, Miguel Angel Castillo, Alberto Reguera and Cesar Fernandez, have not only led, and in many cases personally developed, the work, but have also decisively participated in the main purpose of this Commission, which undoubtedly is the implementation of the Strategic Plan for the sector. A Plan that matches the conditions enjoyed by our competitors in Europe and makes it possible to achieve the international commitments pursued by the sector.

The revision and update for publication of the “Sectoral Agenda” with the General Secretariat for Industry is a key step, since it defines the sector’s environment and the reasons for considering it strategic and must be a mandatory reference for the implementation of a Strategic Plan that provides specific funds to the sector,

with equivalent grants similar to those of our European competitors within the R&D Community Framework, as well as a time horizon and budget commitment allowing the development of research programs rather than simply projects. The implementation of this Plan is a key factor, given the international commitments pursued by the sector.

It is also important to highlight the collaboration with the General Secretariat for Science and Innovation, and mainly with the CDTI, in the implementation of the following instruments contained in the “Spanish National Plan for Scientific and Technical Research and Innovation”:

- Sectoral Strategic Initiatives of Business Innovation to overcome the challenges faced by the critical productive sectors
- A program of Centers and Institutes for Excellence in Technology (CERVERA) for the strengthening of technological groups led by technological centers in competitive calls
- Concept tests (technological demonstrators), which for the first time are included as necessary, before entering into the development phase



**“THE REVISION AND UPDATE FOR  
PUBLICATION OF THE “SECTORAL AGENDA”  
WITH THE GENERAL SECRETARIAT FOR  
INDUSTRY IS A KEY STEP, SINCE IT DEFINES  
THE SECTOR’S ENVIRONMENT AND THE  
REASONS FOR CONSIDERING IT STRATEGIC”**



**TURNOVER**



**8.947**

**BILLION  
EUROS**  
volume of  
business



**81%** **EXPORT**  
ON TURNOVER

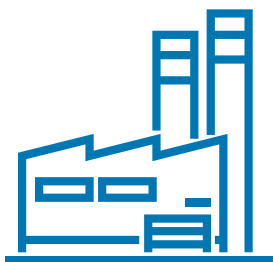
# AERONAUTICS

## BIG NUMBERS

**INNOVATION**  
ON TURNOVER

**10.5%** **R&D**

**4.7%**  
OF **INDUSTRIAL  
GDP**



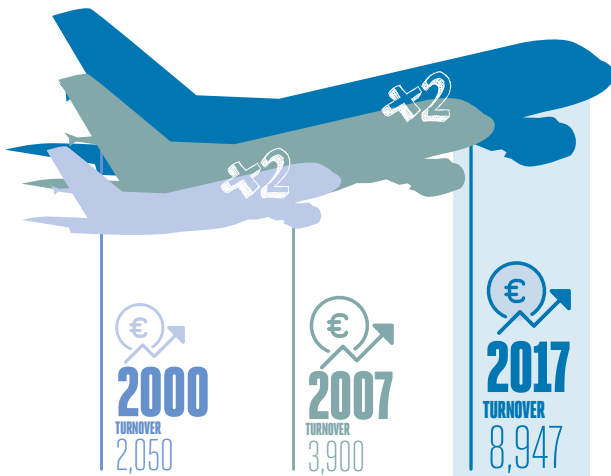
**43,128**  
EMPLOYEES



**3.4** **PRODUCTIVITY  
TIMES**  
NATIONAL AVERAGE

## GROWTH

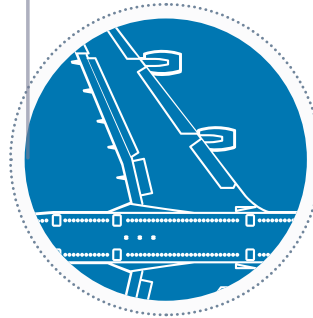
DUPLICATION OF SECTOR SIZE (MILLION EUROS)



## SALES BY SEGMENT

AEROSTRUCTURES  
AND SYSTEMS

79%



EQUIPMENT

11%



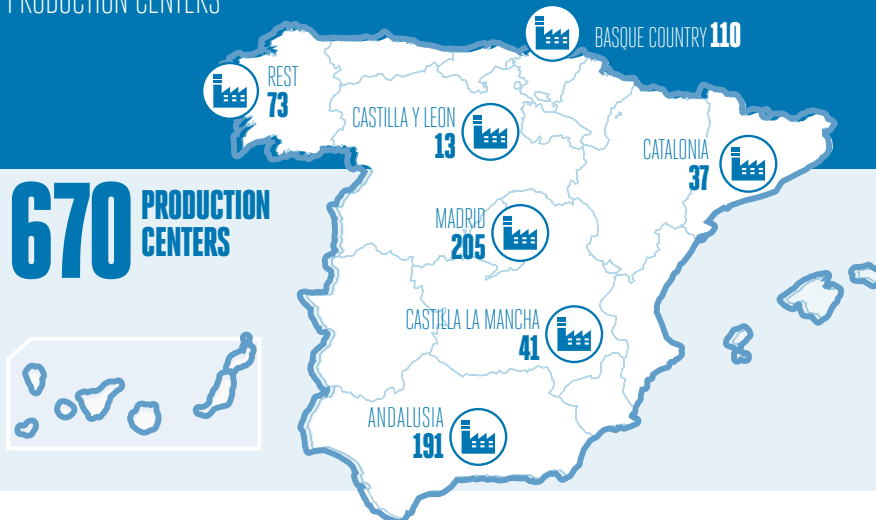
MOTORS

10%



## SPANISH COMPANIES CERTIFIED IN AERONAUTICS

PRODUCTION CENTERS



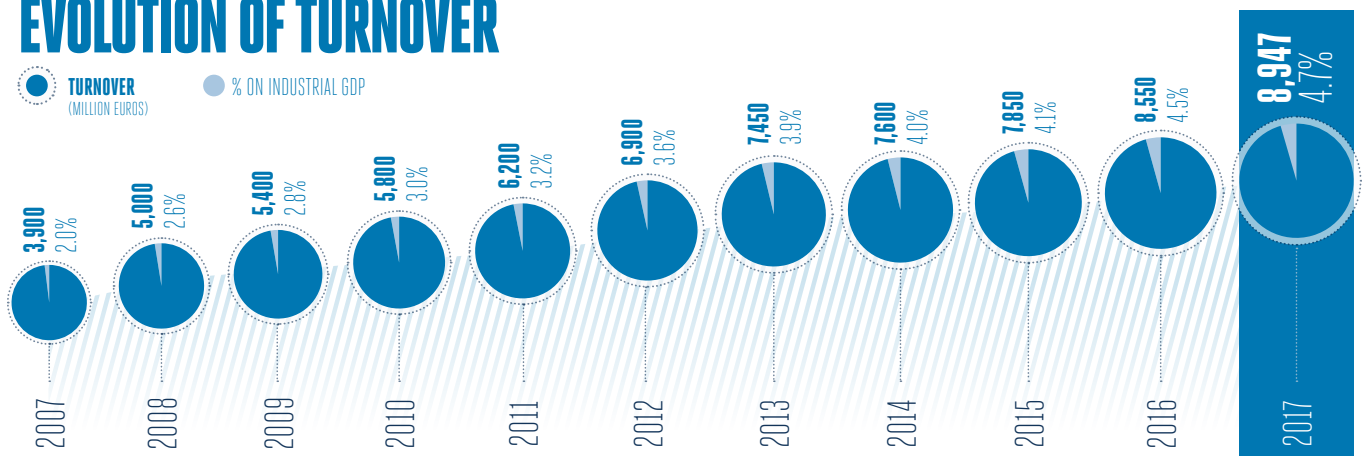
CIVIL  
52%

DEFENSE  
48%



## EVOLUTION OF TURNOVER

● TURNOVER (MILLION EUROS)  
● % ON INDUSTRIAL GDP



# AERONAUTICS

## BIG NUMBERS

**2017 SET A NEW RECORD** in the consolidated turnover of the Spanish aeronautics sector, standing at €8.947 billion, representing an increase of 4.5% over the previous year. By markets, 52% came from the civil segment and 48% from the defense segment.

This growth has been developing at a steady pace for several decades, showing the strategic nature of the aeronautics sector as an economic accelerator, since it has widely doubled 2007 turnover (€3,9 billion).

The capacity of the aeronautical sector to double volume in short periods of time is also reflected in

the evolution of its contribution to Industrial GDP, going from 2% in 2007 to 4.7% in 2017.

Once again, the sector showed its solid export capacity, with 81% coming from the foreign market turnover, as well as its strong commitment to technological development by reinvesting 10.5% of turnover (€936 million) in R&D&i activities.





In 2017, employment continued to grow in the sector, reaching 43,128 employees. The average turnover per employee reached €209,000, placing productivity 3.4 times above the national average.

• The aeronautics industrial fabric already has 670  
• production centers distributed throughout the  
• Spanish territory, mainly Madrid (205), Andalusia  
• (191), Basque Country (110), Castilla la Mancha  
• (41) and Catalonia (37).



## TECHNOLOGICAL POLE

# space

2017 was the first year of the two-year period in which Spain assumes the presidency of the ESA (European Space Agency) Ministerial Council that will conclude in 2019 when our country will be hosting the next assembly, in which the common space strategy for the 22 member states that make up the ESA will be approved.

In this context, the Space Commission of TEDAE had a very active role throughout the year in the representation of the interests of the Spanish space sector, continuing with the task of communicating the need to have a Space industrial policy, and

placing value on the position of the industry from the committees for Space Policy, R&D&i, Applications and Supply Chain, and also from the different working groups.

Meanwhile, in close cooperation with the Administration, the Space Policy Committee carried out a work plan, in which the Spanish Space Sector Agenda is being developed.

The companies of the Commission also participated in the Spanish Aerospace Platform (PAE) through the R&D&i Committee, whose members are highly

involved both in the preparation of the Strategic Agenda for Space R&D&i up to 2020 and in the different working groups. Also, after the public consultation of the Spanish National Plan for Scientific and Technical Research and Innovation 2017-2020 made by the Administration, it is worth highlighting the preparation of a document that includes the most relevant comments to the National R&D&i Plan, reflecting the feel of the industry and arguing the need for a future Space Research Plan.

In terms of communication, during 2017 work continued to disseminate the benefits that the space sector brings to our daily life and to target the general public. Evidence of this work was *THE OPEN SPACE*

During the year, several press releases were published on the participation of the Spanish space industry in the main international programs and missions, and other outstanding events, including some key milestones for our industry. In the first months of the year, within the Copernicus Earth Observation Program, the Hispasat 36W-1 satellite was launched, which will offer telecommunications services, as well as the Sentinel 2B, to complete the mission initiated in 2015 by Sentinel 2A and duplicate its coverage. In September, Amazonas 5 was launched to provide better telecommunications to the Latin American market. The year ended with the launch, in December, of four new Galileo satellites that together with the 18 satellites already in orbit will facilitate transport,

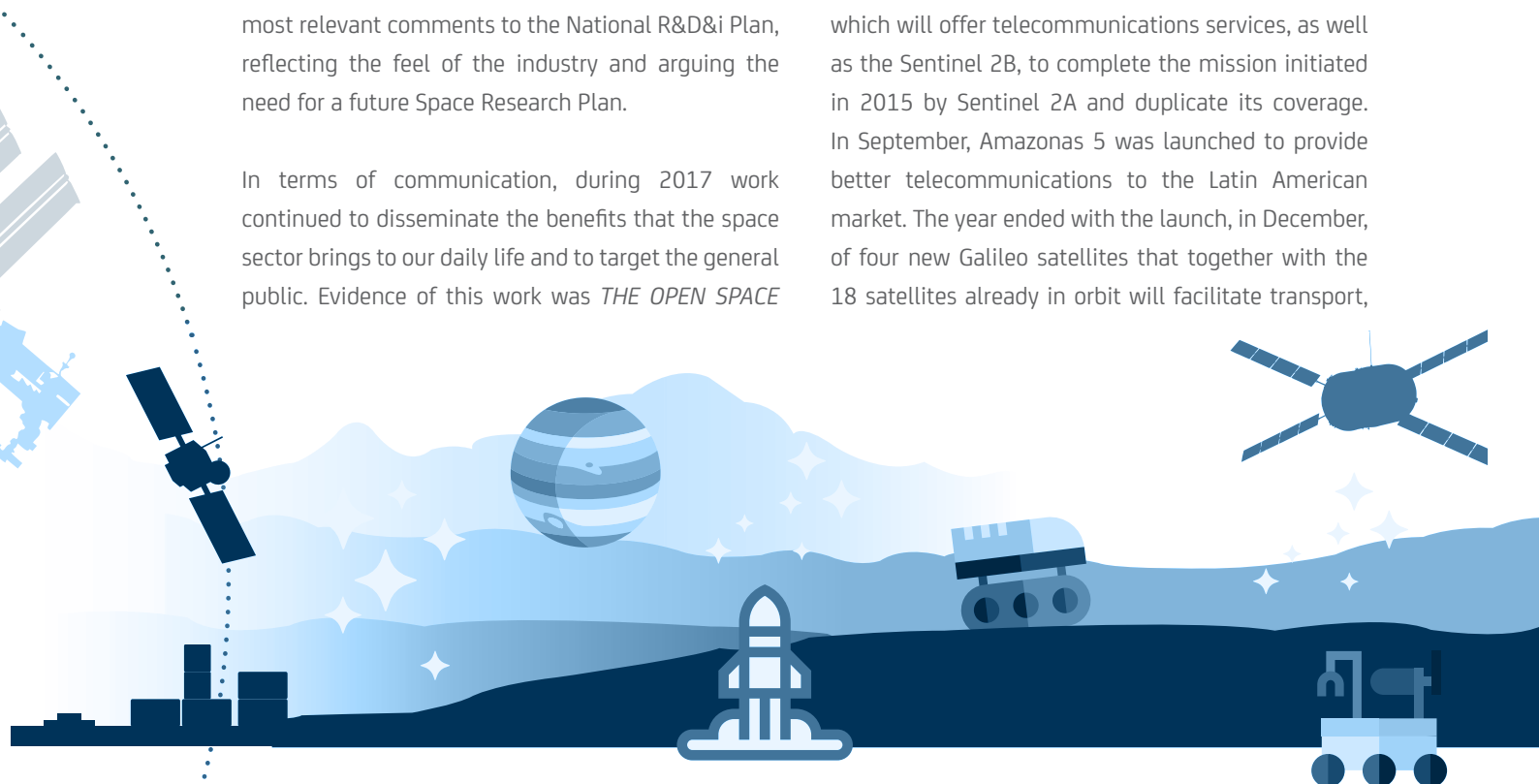
meeting held in September, which was attended by leading professionals who offered their vision of our industry, from areas as different as education, politics, the media, the military world or cinema.

Other noteworthy actions were the presentation of the Sector Statistics and the publication of the 2016 Space Yearbook, with the most important events and main players of the year.

In addition, three new issues of the proESPACIO magazine were published with features, news articles and interviews with people of interest to the sector who have different insights and discover other horizons to us.

the environment or agriculture. And we bid farewell to 2017 awaiting the imminent release of PAZ that was waiting ready at the Vandenberg base.

In October, the anniversary of the first satellite successfully launched into space in 1957 was celebrated. Sixty years later we can say that the space sector has already become essential for life on Earth and that the Spanish space industry is positioned at a place of reference for its international contribution and for its support to the improvement of daily life and of the economy of our country.



## Jorge Potti

Vice President for Space of TEDAE



**THE YEAR 2017 MARKED THE BEGINNING OF A TRANSITIONAL PERIOD** that should culminate in 2019 with the celebration in Spain of the ESA Ministerial Conference, in which our country must obtain a participation in the Agency's programs equivalent to its GDP weight. Only in this way will the Spanish space industry be able to strongly develop and have equal opportunities to compete in international markets.

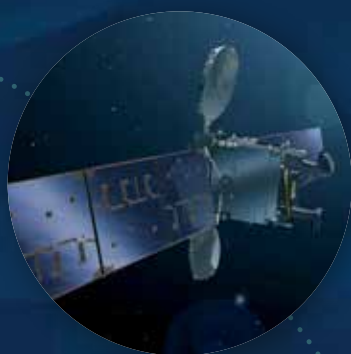
Just a few months ago, we celebrated the 60th anniversary of the launch of Sputnik, the first artificial satellite to orbit the Earth, which marked the beginning of the space age. This important event reminds us of how young the space sector is and the extraordinary advances that have taken place in only 60 years. From that small and lonely capsule of 80Kg and 60 cm in diameter, and with hardly any instrumentation on board, we have gone to populate the space with around 3,500 active satellites orbiting the Earth, which provide countless services to society and are excellent instruments to drive human progress. In just 60 years, Space has positioned at a prominent place in many strategic sectors such as communications, transport, environment, energy, agriculture or defense and security. And we have only seen a small part of what the future will bring.

The Spanish space industry has given a good example of its ambition, flexibility, competitiveness and innovativeness, with the result of a growing leadership in space programs. This is evidenced by its participation in space programs that were protagonists during the year 2017, such as Hispasat AG1, Ingenio, Paz, the Sentinels 2B and 5p of the Copernicus program, Galileo, etc. And also, our industry successfully competes in international commercial markets.

The space sector has a huge potential for the future and is unanimously considered as strategic by all the important countries in the world, which make significant investments to develop and train their industries. Spain cannot ignore this new space race and must give an important boost to the sector.



**“THE SPACE SECTOR HAS A HUGE POTENTIAL FOR THE FUTURE AND IS UNANIMOUSLY CONSIDERED AS STRATEGIC BY ALL THE IMPORTANT COUNTRIES IN THE WORLD, WHICH MAKE SIGNIFICANT INVESTMENTS TO DEVELOP AND TRAIN THEIR INDUSTRIES”**



**TURNOVER**



**851**

**MILLION  
EUROS**  
of volume  
of activity



**78%** **EXPORT**  
ON TURNOVER

# SPACE

BIG NUMBERS

**INNOVATION**  
ON TURNOVER

**12%** **R&D**



**3,479**  
**EMPLOYEES**



**0,5%** **INDUSTRIAL  
GDP**



**4** **PRODUCTIVITY  
TIMES**  
NATIONAL AVERAGE



## GROWTH

DUPLICATION OF SECTOR SIZE \*

2017

TURNOVER  
851 €

2007 TURNOVER  
493 €

\*MILLION EUROS

## SALES BY SEGMENT

FLIGHT SEGMENT

43%

OPERATORS

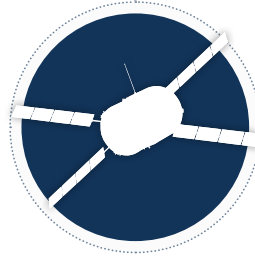
33%

GROUND SEGMENT

18%

LAUNCHERS

6%



## TOP 10 EUROPEAN COUNTRIES BY NUMBER OF EMPLOYEES



1. FRANCE (14,140)

2. GERMANY (7,830)

3. ITALY (4,963)

4. UNITED KINGDOM (3,722)

5. SPAIN (3,359)

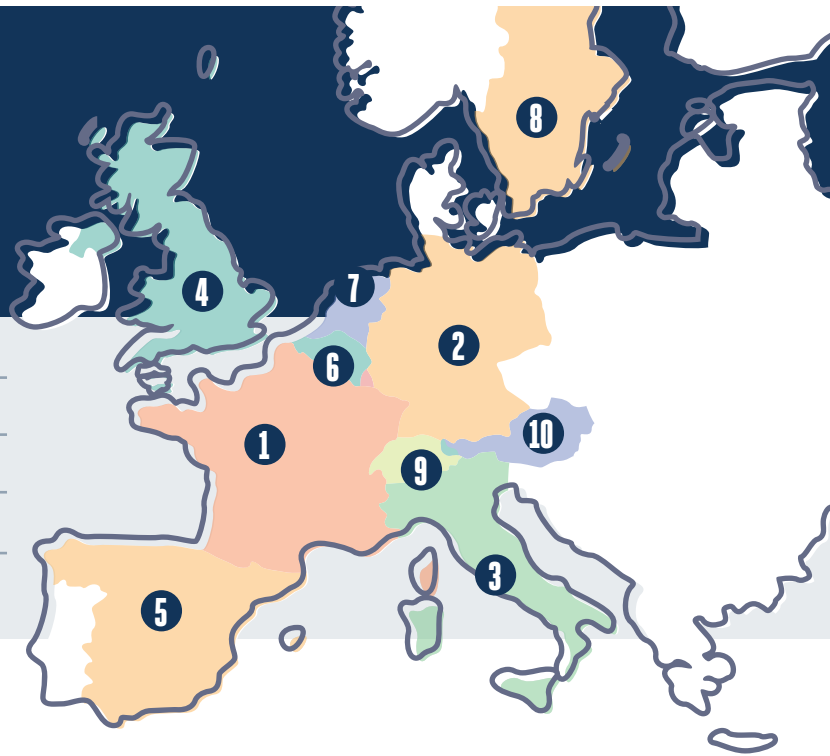
6. BELGIUM (1,752)

7. NETHERLANDS (965)

8. SWEDEN (855)

9. SWITZERLAND (821)

10. AUSTRIA (422)

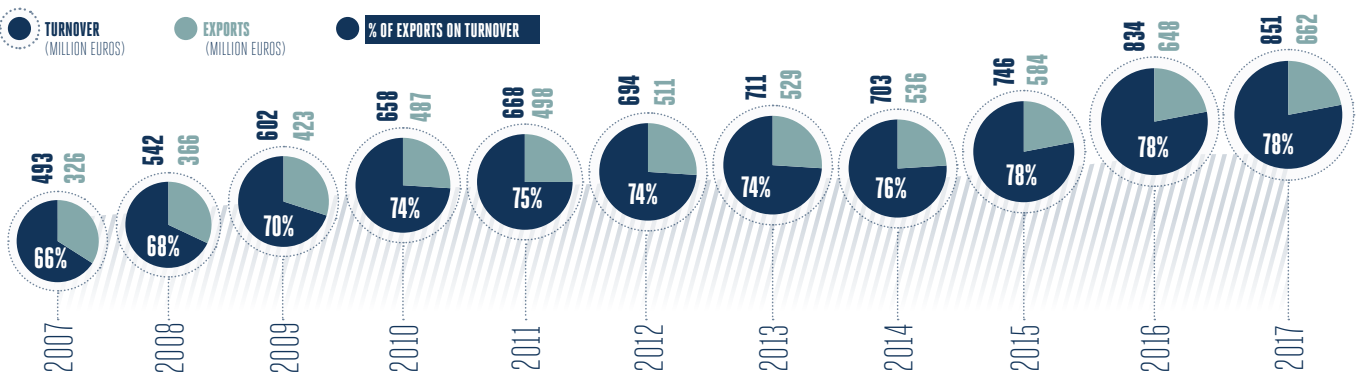


## EVOLUTION OF TURNOVER AND EXPORTS

TURNOVER  
(MILLION EUROS)

EXPORTS  
(MILLION EUROS)

% OF EXPORTS ON TURNOVER



**THE GATHERING AND CONSOLIDATION** of results of the 2017 space statistical survey highlight the relevant role that the space industry plays in our economy, being four times more productive than the Spanish average and representing 0.5% of Industrial GDP.

its proven experience in international programs and contracts with entities around the world is reflected in the exports figure, which reaches 78%, while maintaining, yet another year, its 5th position among the 10 European countries with the largest number of employees in Space.

# SPACE

## BIG NUMBERS

In 2017, Spanish space companies ended the year with a turnover of €851 million and an employment figure of 3,479 employees, continuing the progressive trend of recent years.

Turnover distribution is led by the Flight Segment with 43%, followed by Operators (33%), Ground Segment (18%) and Launchers (6%).

If we look back, the growth of the Spanish space sector in the last ten years yields unambiguous data on the growth and consolidation of its position in the ESA and other markets. Not only has its turnover increased by 42% since 2007, but

Space has a fundamental role in different areas and activities of our daily life. The differentiating element is its high technological content, and innovation is the key quantitative factor of its products and services. In this regard, the trend of the last years is maintained, in which investment in R&D&i was placed at 12%.





## TECHNOLOGICAL POLE

# security

The events that have occurred in recent years are directly impacting multiple aspects related to security, both in its operational and industrial aspects. The conversion rate of threats continues to accelerate, actively seeking new spaces and activities in which to achieve their objectives, falling back and becoming camouflaged to escape the pressure exerted by governments and security institutions in their traditional scenarios.

Our societies are highly permeable and vulnerable to these new forms of threat, and this has forced us to refocus our security strategies towards a much more comprehensive approach. Until recently, it was possible to clearly differentiate the technologies, resources and types of operations applied to

guarantee internal security, whose responsibility falls on the national Security Forces (SF), and those aimed at preventing the proliferation of threats abroad, in most cases through the Armed Forces (AF).

Reality has forced the modification of this approach. The SF have been forced to reinforce their units with more powerful operational capabilities and resources, due to the nature of their new enemies, and to participate much more actively in missions abroad. Meanwhile, the AF have seen the need to improve their capabilities in aspects related to citizen security and protection, in support of the SF.

On the other hand, the multiplicity of competences within our security organizations, with national,



regional and local players with very diverse and in most cases non-interoperable capabilities, makes it difficult to effectively face these threats.

All this presents a current and future scenario of capability building, which in some cases is urgent. Better protection, better communications and command and control systems, weapons with greater stopping power, increase of aerial means, improvement of processing systems and exploitation of information (databases, big data, artificial intelligence, biometrics, etc.), improvement of training and cybersecurity resources, etc.

All this transformation process must be approached in a structured and comprehensive way. Therefore, during 2017, TEDAE launched an initiative to draw up

technologies. For example, events such as the Legal Security Day jointly held with National Police and Civil Guard.

Contacts were also made with other players, such as the Spanish Navy, whose action is critical in certain joint areas such as maritime security. The result of these contacts was the celebration of a Conference on Maritime Security held during the HOMSEC Fair.

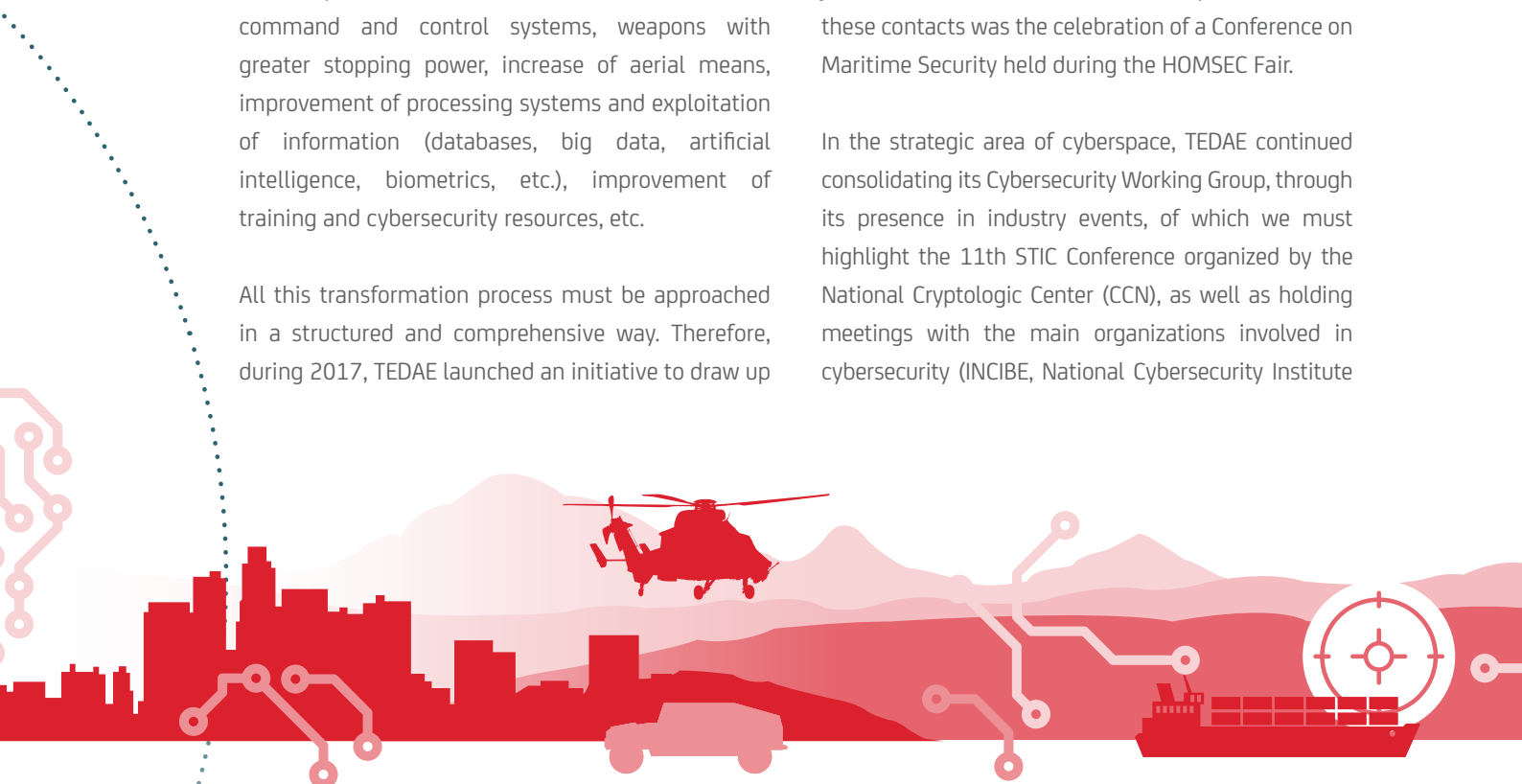
In the strategic area of cyberspace, TEDAE continued consolidating its Cybersecurity Working Group, through its presence in industry events, of which we must highlight the 11th STIC Conference organized by the National Cryptologic Center (CCN), as well as holding meetings with the main organizations involved in cybersecurity (INCIBE, National Cybersecurity Institute

an Industrial Technology Plan for National Security, in line with those already implemented in the main surrounding countries (France, Germany, Italy, United Kingdom or Sweden, among others). To that end, some fundamental strategic lines were defined, and the Plan is currently in the communication phase to the main public and private players to count on their participation and support with a view to its final definition. In this regard, contacts have already been made with the Secretariat of State for Security and the General Directorates of Police and Civil Guard.

Also, in 2017 TEDAE continued collaborating with the Ministry of Internal Affairs to keep a permanent contact between our industry and the operators of its

of Spain), CCN, CNPIC (National Center for the Protection of Critical Infrastructures), etc.

TEDAE continues betting on innovation as a fundamental element for the competitiveness of its companies, and in this area, it continued cooperating with the CDTI (Center for the Development of Industrial Technology) in the promotion of the Horizon 2020 program, and its challenge of Secure Societies, in support of its associates.





## Fernando Barbero

Vice President for Security of TEDAE



**THE TEDAE SECURITY COMMISSION** promotes the development of technological capabilities in the field of Security, to meet the needs and challenges of the Security Forces and other players with responsibilities in society protection. Considering these objectives, 2017 was a period of intense activity for the Commission.

In the scope of the actions carried out by the Association following its strategic line to promote the participation of Spanish industry in European and international R&D&i programs and initiatives, in January the Security Commission collaborated in the Horizon 2020 Infoday about the 2017 call for Secure Societies, organized by the CDTI.

In July, as an action derived from the International Days of Police and Civil Guard, the Legal Day on International Terrorism was held (Police, Civil Guard, CITCO), which meant a new opportunity to get in touch with the personnel of the Ministry of Internal Affairs and the Ministry of Justice. Throughout the year, the Cybersecurity Group of TEDAE started operations. The Group held a series of meetings to follow up on its work program. In this regard, we can highlight the meetings with the CNPIC (National Center for Protection of Critical Infrastructures), the CCN (National Cryptologic Center) and the INCIBE (National Cybersecurity Institute of Spain). The Cybersecurity Group of TEDAE also had the opportunity to participate as a cooperating organization in the 11th STIC Sessions of the CCN.

Undoubtedly, the draft of a proposal for a Security Technology Plan was one of the most important tasks of the Commission throughout 2017. The plan established five strategic axes focused on the following aspects:

- Strengthening the national security industrial base
- Autonomous actions and own capabilities
- Coordination of demand
- Improvement of competitiveness in international R&D
- Support for industry internationalization

At the end of the year, the working document was submitted to the National Contact Point (CDTI) for the H2020 Secure Societies challenge for evaluation. Additionally, the Commission organized different events aimed at strengthening its objectives. In this regard, it should be highlighted, for example, the Working Breakfast with the Director of the Spanish Institute for Strategic Studies (IEEE), GB Mr. Miguel Angel Ballesteros. A Seminar was also held on the organization of Maritime Security in Spain, in the conference room of the HOMSEC fair, in which the CN Mr. Ignacio Paz, from the Plans Division of the Navy Staff, participated as a speaker.



**“THE TEDAE SECURITY COMMISSION  
PROMOTES THE DEVELOPMENT OF  
TECHNOLOGICAL CAPABILITIES IN THE FIELD  
OF SECURITY, TO MEET THE NEEDS AND  
CHALLENGES OF THE SECURITY FORCES AND  
OTHER PLAYERS WITH RESPONSIBILITIES IN  
SOCIETY PROTECTION”**







# CROSS-SECTIONAL AREAS

## CROSS-SECTIONAL AREAS

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### QUALITY

TEDAE participates in the development of the Aerospace and Defense Certification Scheme (ICOP Scheme) - a worldwide certification scheme - leading it in Spain and establishing the terms of reference, operational policies and general requirements applicable to TEDAE's Certification Body Management Committee (CBMC) within the European Sector of the International Aerospace Quality Group (IAQG).

It also establishes the requirements applicable to the Certification Programs of Aviation, Space and Defense Quality Management Systems deployed by TEDAE, developing, where applicable, procedures and rules that complete the procedures and rules of the IAQG/EAQG, and identifying and supporting the resources needed to carry out the various activities, mainly those of monitoring and tracking. Within this system, and through the CBMC that is the Scheme's governing body in Spain, TEDAE is responsible for the approval of the certification bodies accredited by the National Accreditation Entity (ENAC.) Moreover, in Spain, TEDAE is the body responsible for auditors' authentication through the Auditor Authentication Body (AAB.)

The objectives of TEDAE on Quality during 2017 have been relaunching the activity of the Quality Committee of TEDAE and maintaining the leadership of TEDAE in the Aerospace and

Defense Certification Scheme (ICOP Scheme) promoting and supporting the activities related to this Scheme.

To meet these objectives, several lines of action were put in place, all of them carried out under the supervision of TEDAE's CBMC. In this regard, it should be noted that at the end of 2017 there were 458 certified companies in Spain, with a total of 668 certified sites.

In 2017, a total of 241 "sites" corresponding to 160 certificates were certified/renewed. In addition, TEDAE's AAB carried out a total of 88 authentications/re-authentications of aerospace auditors; surveillance activities to Certification entities and ENAC were carried out; several operating procedures developed by TEDAE were reviewed; the translation of the new courses approved by the IAQG corresponding to the 9100:2016 and 9020:2016 standards was validated, and the relationship with ENAC, the Spanish Quality Association (EAC), was maintained, among other actions, which allowed TEDAE to consolidate its Scheme managing position.





## ENVIRONMENT

In 2017, the Environment Committee, as a crosswise body under the four TEDAE Commissions, counted on the participation of 26 associated companies, and a representative of the Ministry of Defense's REACH Exemption Unit as an observer member.

The core actions of the Committee were the monitoring and dissemination of national and European legislation with impact on the defense, aeronautics, security and space sectors.

Among the actions carried out, it is worth noting the creation of a Working Group for the Regulation of Chemicals, in which a special follow-up was made to the REACH/CLP European Regulation on Chemicals on critical aspects for the sector, such as monitoring the evolution of chromates authorization dossiers, the REACH 2017 structural review or the preparation for the 2018 registration.

Other regulations of sectoral interest were also followed up, such as the Law for the Protection of the Atmosphere, the non financial information requirements, and the Regulation on Biocidal Products.

On the other hand, the representatives of the Committee participated in the following ASD bodies: Environment Commission and REACH Implementation Working Group.

During 2017, the Committee organized the following seminars and technical sessions:

- Business Breakfast: "Presentation of the conclusions of the EDA study on the impact of the REACH/CLP Regulation on the Defense Sector" (17/03/28)
- Presentation: Critical materials that are alternative to REACH in the space, naval and aeronautics industries (17/06/08)
- Presentation: News about the technical standards in the field of industrial environment (17/12/12)



## ONE YEAR OF COMMUNICATION

TEDAE has been progressively expanding its communication efforts, both to the associated companies - providing information on the subjects of interest for their activity - and citizens, trying to make them aware of the many benefits that TEDAE companies bring to society in terms of economic growth, employment, technological leadership, security or better quality of life. TEDAE knows that it must continue pursuing this objective with creativity and continuity, using the different means at its disposal to attract broader and heterogeneous audiences.

Undoubtedly, one step forward was the “TEDAE Annual Meeting - 2017 Outlook”, in which the associated companies met for the first time to analyze the national and international environment where they will develop their activity, and make them part of the objectives, projections and work priorities established for the year. This meeting was later joined by representatives of the different administrations and institutions linked to the industrial sectors of TEDAE, and was attended by the Secretary of State for Defense, Agustín Conde, and the Secretary General for Industry and SMEs, Begoña Cristeto.







The event “The Open Space” was a communication action aimed at broader audiences than the traditional ones, and its objective was to share experiences and trajectories showing how and why society is the ultimate beneficiary of space activity. This event brought together representatives from all sectors related to Space, as well as from other professional and media areas, to show them both visually and through round tables the multiple applications and services derived from the use of satellites, which we are used to receiving, but most of the time don't know where they come from and how they were generated. The event counted on the collaboration of Javier Armentia, Director of the Planetarium of

Pamplona; Roberto Braseró, Director of Tu Tiempo (weather forecast), an Antena 3 program; Pedro Pablo May, Deputy Director of EFE Futuro; representatives of the Military Emergency Unit (UME), the 112 emergency number, and the main players of three successful projects in Colombia, Mexico and Magaña (Soria) to overcome the digital divide in favor of education and development of rural areas thanks to space and satellite technology. At the closing ceremony, TEDAE's space companies paid a warm tribute to the filmmaker Javier Aguirre, Director of the film El Astronauta.

And what TEDAE is particularly satisfied with is the good work being carried out by the sectoral

communication groups - defense, aeronautics and space - in which the Directors of Communication from the associated companies participate. They make enormous efforts and provide huge collaboration. The result? Integrating communication actions, in which everyone feels represented.

2017 was also the year in which TEDAE's defense companies worked and made a video showing the capabilities of our industry, with a very special emphasis on how their technologies are at the service of society, and their citizens' welfare and security.



## WITH THE MEDIA

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In 2017, TEDAE's press releases, articles and interviews in different media were around many different subjects. In addition to the aforementioned meetings "TEDAE Outlook" and "The Open Space", other subjects the Association shared with specialized, economic and generalist media were: the General Assembly of the Spanish Aerospace Platform (PAE), in which the association participates; the presentation of the book "Regulation of the Aeronautics Industry", in which a team of jurists, economists and engineers, led by the President of TEDAE, break down all the legal aspects of aeronautical activity, and the different TEDAE Days with Spanish Defense Attachés, on Transparency

in Technological Industries, the Legal and Technological Aspects in the Fight against International Terrorism, and Competitiveness of the Aeronautics Sector.

Two space milestones also awakened the media's interest: the launch in March of the Sentinel -2B satellite and that of four Galileo satellites in December, programs in which the TEDAE space companies have an important technological participation.

The activities of the Spanish Pavilions, coordinated by TEDAE, at the SITDEF in Peru, Expodefensa in Colombia, and the Paris Air Show were widely covered by specialized journalists.

Other subjects that generated press releases were: The General Assembly of TEDAE; the 2016 big figures of defense, aeronautics and space; the Spanish Adhesion to EU's Permanent Structured Cooperation (PESCO); the 4th Aerospace Engineering Congress, and the passing of the baton in TEDAE's presidency.

The European Defense Action Plan and the analysis of projections and consequences for Spain, triggered a meeting with the media to update information and data.

## PUBLICATIONS

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Three issues of the proESPACIO magazine were published, in digital and printed versions, and in English and Spanish. Their pages have shown experts from the sector and people from other professional fields such as Eduardo Saenz de Cabezón, Patricia Martínez, Manuel González and Juan Junoy, and four of the twenty members of the Big Van group, trying to attract the interest of the public to science through their funny scientific monologues.

They also showed opinions and experiences of Xavier Lobao, responsible for future projects in the Telecommunications Department of ESA; Rafael García del Poyo, from the Spanish Center for Space Law; Antonio Peláez, Creative Director of the TV channel "Dejate de Historias"; Fernando

Marín, Mayor of Magaña (Soria); María Gladys Pulgarín, Manager of a digital kiosk in Colombia; Gilberto Rodríguez, Professor at the Autonomous University of San Luis Potosí in Mexico, and Rodolfo Arroyo de la Rosa, from the Military Emergency Unit, among other interesting celebrities.

The 2016 Yearbook of the Spanish space sector was also published, in print and digital versions, gathering the most important space milestones of the year.

Documents on the European Defense Action Plan (EDAP), the Aerospace and Defense Certification (ICOP) in Spain and the report "The Spanish Aeronautics, a Bet for the Future" were also published.

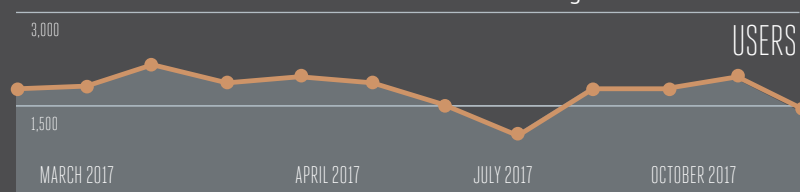


## WEB AND SOCIAL NETWORKS

The association's website received a record number of visits: 120,000. And the non-negligible amount of 19,500 new users.

And the thing is that an effort has been made throughout the year to feed it with contents of interest on the four technological sectors integrated in TEDAE, and current affairs.

www.tedae.org



### TWITTER

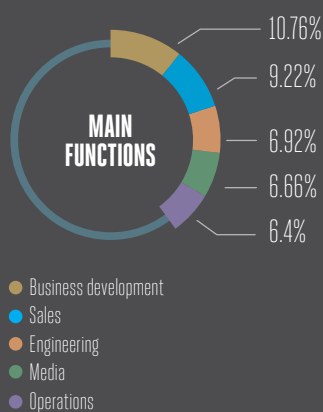
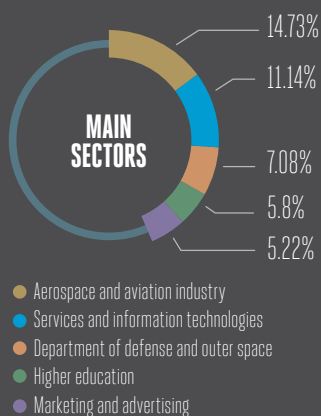
In December, the account "Revista ProEspacio @Espacio TEDAE", which is only for information purposes, was launched. In it, contents of the magazine and current events are published, and tweets are shared from ESA, NASA, universities, astronauts, and many other people and institutions linked to space activity. The welcome couldn't have been better.



### LINKEDIN

The IN website receives an average of 170 visitors a day and has added 400 new followers this year - already surpassing 800 -, who have a profile considered mostly as target audience.

The graphs describe the profile of the visitors that access TEDAE's IN page.









ACTIVITIES

# january

Among the main activities in which TEDAE participated or collaborated in the promotion of its Associates during 2017, the following stand out:

## **PARTICIPATION IN THE TECHNOLOGY DAY "CURRENT STATE OF THE ELECTRONIC WARFARE" ORGANIZED BY THE SUB-DIRECTORATE GENERAL FOR PLANNING, TECHNOLOGY AND INNOVATION (SDG PLATIN)**



The Electronic Warfare (EW) in Spain is considered a strategic area. This situation, which is recognized since the 1980s, led to encourage and enhance the participation of the national Industry and Technological Base in activities and development of EW systems.

Within this line of work, the Sub-directorate General for PLATIN organized in January the Technological Conference "Current State of the Electronic Warfare" which aimed to provide a panoramic view of the development and current state of EW in Spain, and to present current trends and future technologies with the collaboration of all the national agents involved: Armed Forces, industry, technology centers and the university, with the idea of continuing to promote and maintain a privileged position at the international level.

## **TEDAE PARTICIPATES IN THE INFODAY H2020 "SECURE SOCIETIES CHALLENGE" ORGANIZED BY THE CDTI, AND ORGANIZES THE SPANISH BROKERAGE EVENT TO PROMOTE THE PRESENCE OF THE SPANISH INDUSTRY IN EUROPE**

TEDAE participated in a new edition of the Infoday "Horizon 2020 EU Framework Programme 2017 Secure Societies Call", organized by the CDTI.

Throughout the day the different aspects of the next call for the program were analyzed, focusing on the work programs included in the Secure Societies challenge.

TEDAE opened the block of companies' quick presentations which was included

in the agenda of the day, so that companies can know each other in order to form consortia to attend the different calls.

The presentation of TEDAE was carried out by Fernando Barbero (Indra), Vice President for Security of TEDAE.

Later, bilateral meetings were held between companies and with end users.



## **VISIT TO THE NATO COMBINED AIR OPERATIONS CENTER AT THE TORREJON AIR BASE**

## PRESENTATION AT THE 37<sup>TH</sup> NATIONAL DEFENSE COURSE (CESEDEN)

The inauguration of the thirty-seventh National Defense course took place on January 23, 2017. This is a course organized annually by the Higher Staff College of The Armed Forces (ESFAS) in order to provide students with a general view of the National Defense, the foundations of the Security and Defense policy, general lines of the organization, Defense planning and the Armed Forces' missions.

This course was within the framework of the promotion and dissemination of the defense culture carried out by the Higher Center for National Defense Studies (CESEDEN) and it was attended by forty students, including Officials Generals of the Armed Forces and the Civil Guard, parliamentarians and representatives of the State Administration and other areas of society such as the university, the media, the companies and the industry.

The official inauguration was carried out by Lieutenant General Rafael Sanchez Ortega, Director of CESEDEN, who was accompanied by the DG Jeronimo de Gregorio y Monmeneu, Director



of ESFAS, and the BG Luis Melendez Pasquin, Director of the Department of Defense and Cultural Diplomacy (DCDD).

The program included lectures, individual and group work and visits to military units and centers and

facilities of interest for the Defense. It also included two trips, a domestic one to the south of the peninsula and an international one to Dublin, a country that deploys forces along with Spain in the UN mission in Lebanon.



# january

## TEDAE ANNUAL MEETING "2017 OUTLOOK"

Adolfo Menendez, President of TEDAE, brought together the directors of the more than 75 companies that make up the Association to analyze the national and international environment in which they will develop their activities, and to make them part of the objectives and work priorities established for 2017. These priorities are mainly aimed at consolidating the structures of the four technological poles: defense, aeronautics, security and space.

The President of TEDAE stated that "the expectations of the European and Spanish economy and of our sectors in the current environment, allows us to be moderately optimistic. In civil aeronautics the maintenance of the important number of commercial aircraft orders is confirmed. The sector is therefore optimistic about this industry in Spain in terms of sustained growth and maintenance of our factories' workload."

Adolfo Menendez highlighted the especially positive global scenario for the space sector, with a market that will remain at current rates and a very significant growth estimate for the applications market. Regarding the growth of the global Defense market, he estimated it at 3% and added that the Spanish sector is anxiously awaiting the fulfillment of the rescheduling contract for 2016 and 2017 annual payments related to the modernization programs of the Armed Forces, since this industry "has been hit particularly hard by budgetary adjustments during the worst years of the crisis."

Participants in the Annual Meeting of TEDAE also addressed topics such as the Preparatory Action and the future European Defense Research Program, the new financing and procurement system, the implementation and

development of the Guide for Aerospace Industry Strategy, the consolidation of the Spanish Aerospace Platform (PAE), the elaboration of a Technological-Industrial Plan for the Security Technologies industry in our country, the challenges in cybersecurity, the effort made by the Spanish Delegation in the ESA (European Space Agency) Ministerial Council held last December, increasing the level of contribution of our country in the European Space Agency or the implementation of the National Space Plan.

Agustin Conde, Secretary of State for Defense, closed the ceremony thanking the TEDAE companies for their efforts to maintain a solid industrial and technological fabric. And he highlighted that "now we need to know how to explain what this sector does for our country, because social development goes hand in hand with technological development. We have important companies that struggle to be at the forefront of technology. And they do

such an important thing as maintaining this fabric in our country, allowing us to keep our factories, technological development and ability to act here."

Meanwhile, Begoña Cristeto, Secretary General for Industry and SMEs, emphasized the effort that the Government is making since 2015 to promote Industry 4.0. "We need to work this year and beyond to take the leap into digitization of our companies, she said, in what will be the fourth industrial revolution. For this, we have made several tools available to the industry. A "meter" of the degree of companies' digital maturity, a personalized consulting program that prepares roadmaps for companies and 97 million financing to support this digital leap."

Numerous representatives of the different administrations and institutions linked to TEDAE's industrial sectors joined the meeting.





## **BUSINESS BREAKFAST ON THE NATIONAL SECURITY PLAN IN SPAIN, ORGANIZED BY TEDAE GUEST: BG MIGUEL ANGEL BALLESTEROS, DIRECTOR OF IEEE**



On January 31, the Security Commission of TEDAE held a business breakfast attended by the Director of the Spanish Institute for Strategic Studies (IEEE), Brigadier General Miguel Angel Ballesteros.

The objective of the breakfast was to analyze the current situation of the National Security Strategy (ENS) and its developments, and the importance of the industrial component within these strategies.

This action was framed within the initiative of the Security Commission of TEDAE to advance in the preparation, on the part of all bodies and agents implied, of a National Security Plan containing an industrial/technological strategy for the Security Sector in Spain.

These strategies, which have been developed for years with a focus on the defense industry, begin to move into the field of non-military security. The development of such a strategy, already implemented in many of our neighboring countries, is a fundamental part for ensuring, in the short and medium term, our national industrial and technological capabilities in the field of security, as one of the bases on which the National Security relies.

The BG Ballesteros, who is the current Director of the Spanish Institute for Strategic Studies (IEEE), is a renowned expert in the development of these strategies, has participated in the preparation and revision of the Spanish ENS since its first edition, and has published numerous articles and books in this regard.

## **CONFERENCE AT THE CULTURAL CENTER OF THE ARMIES "MARS, BETWEEN MYTH AND REALITY"**

On January 31st, the first conference of the 2017 cycle "Mars, between myth and reality. Mars and cinema", was held at the Cultural Center of the Armies. It was given by Hector Guerrero Padron (National Institute for Aerospace Technology, INTA) as a guest lecturer.

It is a thrilling adventure of the future colonization of Mars, told through successes in space exploration and science fiction cinema.



# february

## THE SPANISH AEROSPACE TECHNOLOGICAL PLATFORM (PAE) HOLDS ITS GENERAL ASSEMBLY AT THE CDTI

At the beginning of February, Placido Marquez, President of the PAE, and Juan Carlos Cortes, Director of International Programs of the Center for the Development of Industrial Technology (CDTI), inaugurated the General Assembly of the Spanish Aerospace Technology Platform -PAE-, in which the objectives of the aeronautics and space industries were addressed, as well as the big R&D lines of both universities and technology centers represented on the Platform Management Council.

The PAE currently consists of eighteen universities, twenty-eight companies in the Spanish aeronautics and space sectors, fourteen research and technology centers, the CDTI and the AEI (State Research Agency).

Placido Marquez, President of the PAE, stressed that "one of the main objectives is to create a meeting forum on Spanish R&D&I to generate



cooperation on ideas, proposals and projects. An advisory body with presence in the different national and international research and development bodies."

Also, the definition of a Strategic Agenda for Spanish Aerospace Research, and aerospace technology monitoring and forecasting, preparing reports, and proposing action plans and an early

demand map in Spain, are among the Platform's priorities.

In the coming months, the PAE will create several working groups to comply with the plan of objectives established for 2017, one of which is to increase the number of members, thus expanding the technological and industrial range represented in the Platform.

## PARTICIPATION IN THE DAY "INNOVATIVE TECHNOLOGIES IN THE AERONAUTICS FIELD. THE EUROPEAN CLEAN SKY 2 INITIATIVE" ORGANIZED BY THE SPANISH FOUNDATION CIRCLE OF TECHNOLOGIES FOR DEFENSE AND SECURITY

Spain is the 8th world power in aeronautics and continues to maintain its technical and legal capability to cover the entire cycle of aircraft design, development and production. Aeronautics is one of the sectors with the highest investment - in percentage terms - on R&D as it is a sector whose most important differentiator is based on innovation and technological leadership.

The purpose of the Conference, organized by the Foundation Circle of Technologies for Defense and Security in collaboration with the Technical School of Aeronautical and Space Engineering of the Polytechnic University of Madrid, was to publicize the

major European initiatives in the field of the aeronautical R&D, in particular the Clean Sky 2 program, and analyze how the Spanish industry and the rest of institutions face the technological challenges that arise to maintain the aeronautical leadership.



## PRESENTATION OF THE SECOND EDITION OF THE BOOK ON REGULATION OF THE AERONAUTICS INDUSTRY IN THE ENTERPRISE INSTITUTE. (MADRID AND SEVILLE)

Agustin Conde, Secretary of State for Defense, joined the presentation of the second edition of the book “The Regulation of the Aeronautics Industry”, a cooperative work directed by Adolfo Menendez, President of TEDAE, which took place at the Jose Maria Cervello Chair of the IE Law School.

After the welcome remarks by Alfonso Martinez de Irujo and the introduction of Pedro Montoya on the dynamism and innovative character of the aeronautical activity – “a sector that for inexplicable modesty is not known well enough in our country” –, Adolfo Menendez explained that the objective of the multidisciplinary team with 25 authors was to offer a complete and updated view of the Aeronautics legal framework. “A complete, organized and practical study of the subject, accessible to all operators and useful as a navigation chart, as well as an intellectual incitement for anyone who wishes to deepen in this or that aspect”, he said.

Edited by Thomson Reuters, the work addresses the main axes that guide regulation: “more competition, more



quality of service, more security and more environment”, to then deal with the different aspects of aeronautical activity.

The director of the work concluded by saying that, “in the twelve years that separate this edition from the first, the industry has been transformed and has managed to adapt to the global economic and financial crisis to continue responding to a growing demand and a more competitive scenario that always is technologically more advanced.”



## CELEBRATION OF THE BOARD OF ASD (AEROSPACE AND DEFENCE INDUSTRIES ASSOCIATION OF EUROPE) AND ITS GENERAL ASSEMBLY

## MEETING WITH THE MEDIA ON THE EUROPEAN DEFENCE MARKET, ORGANIZED BY TEDAE

## PARTICIPATION IN THE INFORMATIVE WORKSHOP “PROCESS OF TRANSITION TO NEW VERSIONS OF THE STANDARDS IN THE AEROSPACE SECTOR”, ORGANIZED BY AENOR (SPANISH ASSOCIATION OF STANDARDIZATION AND CERTIFICATION)

# february

## PRESENTATION OF THE ESA BIC CAM

The Technology Transfer Program Office (TTPO) of the European Space Agency (ESA) seeks entrepreneurs with innovative ideas that use space technology or develop applications to create new products and services in non-space environments.

The Business Incubation Centers (BIC) created by the TTPO aim to help entrepreneurs to transform their business ideas related to the space into commercial companies, and offer expert technical knowledge and support for their business development.

One of these incubators was decided to be located in Madrid, because it is where a large part of the Spanish aerospace industry is concentrated,

thus making it easier for the BIC to connect entrepreneurs with technology developers, and joining the existing one in Barcelona, inaugurated in 2014.

The center is part of the network of the ESA's Technology Transfer Program Office (TTPO) and its objective is to select and incubate, for five years, 40 companies that use technologies developed for space in non-space applications and uses. In addition, it is an initiative for the promotion of employment in the region by the Madrid Autonomous Region.





## TEDAE TRANSFERS THE INDUSTRY'S VISION OF THE EUROPEAN DEFENSE ACTION PLAN (EDAP)

On March 2, 2017, TEDAE participated in the Day "The European Action Defense Plan (EDAP) and defense research: The Preparatory Action." Organized by the Foundation Circle of Technologies for Defense and Security, the conference took place at the Army's Polytechnic School. It was attended by representatives of the Public Administration, the industry and universities related to defense.

Since its publication on November 30, 2016, the European Defense Action Plan has generated a great deal of expectation. For the first time in its history, the European Union has initiated a process to finance R&D and capabilities for Defense.

The Conference was opened by the Secretary of State for Defense, Agustín Conde, and closed by the Director General of Ordnance (DGAM), General García Montaña. During the first part of the event, the Sub-directorate General

for International Relations of the DGAM presented the most outstanding content of the EDAP. The presentation was completed by the Sub-directorate General for Planning, Technology and Innovation, under the same Directorate, which focused its presentation on the work carried out in relation to the Preparatory Action.

In a second part, the Director General of TEDAE presented the approach of the Industry to the new European framework of Defense research to the audience. The presentation allowed the defense sector to express its interest in the initiative, since it is an opportunity for the sector. But also, to show its expectation facing the evolution of the events, insisting on the need to coordinate the actions of all the sector's players. The CDTI completed the second part of the event with a presentation on the lessons learned from the European Security Program in relation to the Preparatory Action.

# EDAP

El Plan de Acción  
Europeo de la Defensa



The high level of participation and interest shown by the defense sector, in general, showed the importance of the moment the defense industry is experiencing in the context of the European Union.

## TEDAE MODERATES THE TABLE "DISRUPTIVE TECHNOLOGIES AND THEIR APPLICATION IN THE FIVE DOMAINS" IN HOMSEC 2017

TEDAE chose the International Exhibition of Security and Defense Technologies (HOMSEC 2017) to bring together its Defense and Security Commissions, taking advantage of the professional environment offered by this international forum that was held in Madrid, and in which companies in these technology sectors have their main meeting every two years.

The sixth edition of the HOMSEC Fair again featured a program of lectures and roundtables in parallel to the exhibition. On the afternoon of the inauguration, Cesar Ramos, Director General of TEDAE, moderated the roundtable on Disruptive Technologies and their application in the five domains. Gonzalo de Arechaga of Thales, Guillem Abril of National Instruments, Miguel Iribarren of Indra and David Robles of GDELS Santa Barbara Sistemas addressed the issue from different perspectives.



# march

**PARTICIPATION IN THE BUSINESS BREAKFAST WITH BRITISH COMPANIES FROM THE SECURITY SECTOR. "SANTANDER-UK COMMERCIAL MISSION"**

**PARTICIPATION IN THE IE BUSINESS SCHOOL FORUM "ECONOMIC GROWTH: AN OPPORTUNITY FOR THE QUALITY OF EMPLOYMENT AND ENTREPRENEURSHIP" PRESENTED BY JOSE MARIA FIDALGO VELILLA, PRESIDENT OF FORO NEGOCIA**

**MEETING WITH JORQUE DOMECO, EXECUTIVE DIRECTOR OF THE EDA (EUROPEAN DEFENCE AGENCY)**

**PARTICIPATION IN THE DAYS "THE SPANISH ARMY AND FUTURE CHALLENGES"**



The Minister of Defense, Maria Dolores de Cospedal, accompanied by the Chief of Staff, Army General Jaime Dominguez Buj, inaugurated the third edition of the conference "The Spanish Army and Future Challenges" on the subject of the hybrid war.

In the two-day seminar, the role of land forces in the current conceptual framework of hybrid war was analyzed in depth through the presentations of researchers from the Elcano Royal Institute, the Spanish Institute for Strategic Studies, the War College, the Intelligence Center of the Armed Forces, the National Distance Education University and the Army Staff.

**CELEBRATION OF TEDAE'S INDUSTRIAL DAY IN THE 2017 COURSE FOR SPANISH DEFENSE ATTACHÉS AND COUNSELORS**

Yet another year, the 2017 edition of the Course for Defense Attachés and Counselors dedicated a Day to learn

about the technological developments and services developed by Spanish defense companies, and their business objectives in the different regions of the international market.

Organized by TEDAE in collaboration with the DGAM (Directorate General of Ordnance) and the DIGENPOL

(Directorate General of Defense Policy), the Conference was inaugurated by General Manuel Luis Lopez, Chief of the Foreign Support Office (OFICAEX), accompanied by Cesar Ramos, Director General of TEDAE, and brought together the military attachés that would soon be destined for Spanish embassies in more than 30 countries and international institutions.



As in previous editions, the participating Spanish defense companies had a meeting session with military attachés, distributed in different tables organized by geographical zones. The Industrial Day ended with an interesting discussion between the attachés and engineers and executives of the participating companies.

One more year, organizers and participants were satisfied with the exchange of experiences that allowed this Industrial Conference to be held, with a view to a greater international projection of Spanish companies.

## TEDAE ORGANIZES A PRESENTATION OF THE EUROPEAN DEFENSE AGENCY (EDA) STUDY ON THE IMPACT OF THE REACH/CLP REGULATIONS IN THE DEFENSE SECTOR

On March 28, the Environment Committee of TEDAE, in collaboration with the REACH Exemptions Unit of the Ministry of Defense, organized the Business Breakfast: "Presentation of the conclusions of the EDA study on the impact of the REACH/CLP Regulation on the Defense Sector."

The day was attended by more than 40 participants, including representatives of the sector's companies and the Ministry of Defense, who had the opportunity to learn about the main conclusions of the study commissioned by the European Defense Agency (EDA) on the impact of



REACH/CLP chemicals regulation in the Defense Sector.

The Delegate of the Environment Committee, Juan Jose Benito (Responsible for Environment of AIRBUS), began the day with the welcome remarks.

In the first place, there was the presentation of C.F. Eng. Juan Felipe Lopez Merenciano (Head of the REACH Exemptions Unit, Ministry of Defense),

who talked about the fundamental aspects of the study and the improvement proposals that it contains.

Later, Carmen Gonzalez Gonzalez (Design Engineering R&D, GDELS SBS), focused her presentation on the Risk Management Option Analysis (RMOA).

Once the presentations were finished, a conversation was started among the attendees.

## DAY ORGANIZED BY TEDAE ON "TRANSPARENCY IN TECHNOLOGICAL INDUSTRIES"

On March, a conference on Transparency in Technological Industries was held in Oviedo, organized by TEDAE. The meeting brought together representatives of technology companies, lawyers and members of different Administrations related to these four industrial sectors in the Espacio Circus ONTIER facilities. The event was attended by speakers Adolfo Menendez, President of TEDAE; Jorge Alvarez, Secretary of TEDAE and partner of ONTIER, and Bernardo Martinez-Almeida, responsible for Ethics of Santa Barbara. Bernardo Gutierrez de la Roza, CEO of ONTIER, opened the event highlighting the importance of transparency in today's business world. "We are in a fascinating period of history in which technology has transformed our lives. Hyperconnectivity and exchange of information is today critical to position and compete in markets, in which

entrepreneurs must be willing to open doors and be transparent."

Adolfo Menendez, President of TEDAE, addressed Transparency as an industrial value, "an essential commitment to business management completely assumed by the companies that make up this Association from both a local and global perspective."

A practical case was not absent: the application of transparency and the code of conduct in a defense and technology company such as General Dynamics European Land Systems Santa Barbara Sistemas. The presentation was made by Bernardo Martinez-Almeida, responsible for Ethics at company-wide level. In his conference with the title "The application of Transparency. The Santa Barbara Systems Code of Conduct", Martinez-Almeida reviewed the regulatory context and the varied regulations that affect Santa Barbara Sistemas in this matter, and explained in detail its Code of Conduct, formed by principles

that govern the performance of all its employees - known internally as Ethos - and specific regulations known as the Blue Book, guidelines and procedure and other specific guides.

The day ended with a debate that led to important conclusions such as, for example, that the companies that make up TEDAE are always committed to transparency not only by regulatory demand but by conviction. That transparency has limits derived from the protection of intellectual property and the discretion required by the security and defense markets. That it must be a standard legally determined and equal for all, not excluding those standards that promote competitiveness and improve the brand and reputation voluntarily set by each company. And also, that the business transparency must go parallel to that of the Public Administrations and that its rules must be dynamic, but without exhaustive variability that generates regulatory risk.

april

### **BUSINESS BREAKFAST WITH THE AMBASSADOR OF INDIA. "COLLABORATION WAYS WITH SPANISH INDUSTRY"**

### **MEETING OF THE CYBERSECURITY GROUP OF TEDAE WITH REPRESENTATIVES OF THE NATIONAL CRYPTOLOGIC CENTER (CCN)**

### **PARTICIPATION IN THE 25TH COURSE OF HIGH LOGISTICS MANAGEMENT "THE ASSOCIATIONS OF DEFENSE COMPANIES" OF THE HIGHER CENTER FOR NATIONAL DEFENSE STUDIES (CESEDEN)**



### **LECTURE IN THE 4<sup>TH</sup> AEROSPACE ENGINEERING CONGRESS: "NATIONAL AERONAUTICS AND SPACE STRATEGY"**

Cesar Ramos, Director General of TEDAE, participated in the first day of the 4th Aerospace Engineering Congress, in a roundtable moderated by Estefania Matesanz, Dean of the Official College

of Aeronautical Engineers of Spain (COIAE), on the national strategy for the aeronautics sector in all its branches.

The companies of TEDAE had an important participation in the edition of the Congress organized by the COIAE that was inaugurated in Madrid. Representatives of AIRBUS Defence and Space, AERTEC Solutions, AERNNOVA,

TECNATOM, CESA, FADA-CATEC, GMV, EUROPAVIA, ITP, Indra, SENER, ARQUIMEA, ALTRAN and HISPASAT took part in the debates and conferences on New Technologies in the Aerospace Industry, Models of Airport Management and Air Navigation Management, Space Projects in Spain and Evolution of Air Transport, among others.

### **BUSINESS BREAKFAST "LAUNCH OF THE TEDAE QUALITY COMMITTEE"**

On the occasion of the re-launching of the Quality Committee of TEDAE, on April 24, 2017, a Business Breakfast was held that brought together the representatives of the Quality Departments of the Association's companies.

Firstly, Cesar Ramos, Director General of TEDAE, presented the Association. Secondly, Jose Vilar, Head of the Quality Committee of TEDAE, presented the past, present and future of TEDAE's activities in Quality, with the aim of presenting the activities related to TEDAE's Quality and the possible initiatives for the launch of the Quality Committee, with particular emphasis on the issues related to the transition to the Series of 9100:2016 Standards. A colloquium ended the event in which several aspects relevant to the launch of the Committee were discussed.

The TEDAE Quality Committee's mission is to identify, develop and make available those initiatives that lead to the improvement of quality and cost reduction in the entire value chain of aerospace and defense products and services to TEDAE companies.

On the occasion of the breakfast, a TEDAE's Quality Activities Report in 2016 was published, which was distributed therein.





## **TEDAE ORGANIZES A BUSINESS BREAKFAST TO PRESENT THE DOCUMENT "AN INDUSTRIAL STRATEGY FOR DEFENSE: CONSIDERATIONS FOR A REVIEW" PUBLISHED BY THE ALTERNATIVAS FOUNDATION**



The Alternativas Foundation convened TEDAE companies on April 25 to publicize the work "An Industrial Strategy for Defense. Considerations for a review".

Carlos Marti Sempere, author of the study, analyzes the "EID-2015 Industrial Strategy for Defense." An important aspect of this work is the evaluation of the aforementioned strategy within the actions aimed at the consolidation and integration of the European technological and industrial base and the formation of a European defense market.

## **6<sup>TH</sup> ACCENTURE AEROSPACE & DEFENSE MEETING WITH THE PARTICIPATION OF AGUSTIN CONDE, SECRETARY OF STATE FOR DEFENSE**

Agustin Conde, Secretary of State for Defense, participated in the 6th Accenture Aerospace & Defense Meeting, organized by Accenture, Avanade and Executive Forum. During the meeting, which was held at the Palace Hotel in Madrid, Conde made special emphasis on the importance of the innovative factor in the Defense sector.

Julio Juan Prieto, Managing Director of the Aeronautics and Defense Sector at Accenture Europe presented the event and introduced the Secretary of State. "Technology advances and the boundaries between the digital and the physical world are blurring", commented



Prieto, which would be an "incredible opportunity" for the defense sector to lead this revolution. We would add to

this challenge the desire to make Spain one of the countries that sets the pace of growth in science and innovation.

**PARTICIPATION IN THE BUSINESS BREAKFAST ORGANIZED BY THE SPANISH CONFEDERATION OF DIRECTORS AND EXECUTIVES (CEDE) WITH THE PRESENTATION OF FRANCISCO MARIN, DIRECTOR GENERAL OF THE CDTI**

**MEETING WITH THE BUSINESS COUNCIL ALLIANCE FOR IBERO-AMERICA (CEAPI)**

may

### **PARTICIPATION OF TEDAE IN THE 4<sup>TH</sup> SPECIALIZED MEETING ON THE AERONAUTICS INDUSTRY ORGANIZED BY EXPANSION AND AIRBUS**

On May 11, the 4<sup>th</sup> Specialized Meeting on the Aeronautics Industry took place, in which the most innovative industrial challenges were addressed. The event was held at the Lazaro Galdiano Foundation, in Madrid. Organized by Expansion and sponsored by AIRBUS, the Meeting had the collaboration of TEDAE.



### **CELEBRATION OF THE BUSINESS BREAKFAST "FINANCING OPPORTUNITIES FOR INVESTMENTS IN COMPANIES OF THE TEDAE SECTORS" WITH THE CONSULTING FIRM IMPULSO**

On May 16, in collaboration with the consulting firm IMPULSO, TEDAE organized the Business Breakfast "Financing opportunities in the TEDAE sectors" to inform the companies about the scenario of public grants and subsidies.

The day began with welcome remarks from Plácido Marquez, Delegate of the Aeronautics R&D&i Committee (ITP) and Jorge Suarez, CEO of IMPULSO.

Throughout the session, the main characteristics of public financing instruments for investment projects were presented in a practical way, highlighting the grants for reindustrialization and strengthening of industrial competitiveness, the regional incentive programs and the innovation direct line.



## 50<sup>TH</sup> ANNIVERSARY OF SENER IN SPACE "DIALOGUES OF SPACE"



On May, as part of its 50th anniversary in Space, SENER organized the conference cycle "Dialogues of Space."

In the second one, dedicated to Rosetta, Luisa Lara, Scientific Researcher of the CSIC at the Institute of Astrophysics of Andalusia, and Diego Rodríguez, Director of Espacio at SENER, made their presentations.

### Conference: "Rosetta Mission: science and technology beyond borders"

In this talk, the importance of the Rosetta mission was unveiled as a tool to understand what a comet is and what we want to learn from them in relation to the genesis and evolution of the Solar System.

Rosetta, the European Space Agency's scientific mission, has been a pioneer in many ways: the first to orbit a comet's nucleus, the first to fly along with this type of celestial bodies on its journey through the Solar System and the first to land a space probe, called Philae, on a comet's surface.

**CELEBRATION OF THE BOARD OF ASD (FORMED BY REPRESENTATIVES FROM ASSOCIATIONS AND PRESIDENTS OF COMPANIES)**

**PRESENTATION OF THE CYBERSECURITY GROUP TO THE DIRECTOR OF THE NATIONAL CYBERSECURITY INSTITUTE OF SPAIN (INCIBE)**

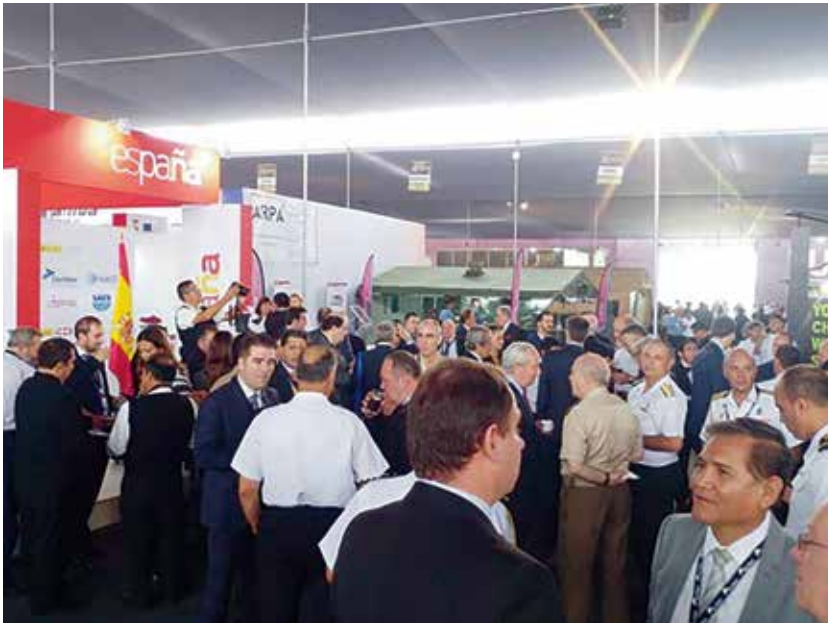
**TEDAE'S PRESENTATION AT THE DAY WITH THE DEFENSE INDUSTRY - EU SESSION - DGAM, BRUSSELS**

**ATTENDANCE TO THE 2<sup>ND</sup> INDUSTRIAL DAYS AT THE NATO HEADQUARTERS IN BRUSSELS**



may

## SPAIN PAVILION AT SITDEF 2017



With the participation of ICEX, once again TEDAE coordinated the Spanish Pavilion at the 6<sup>th</sup> International Exhibition of Technology for Defense and Disaster Prevention, SITDEF 2017, in Lima (Peru).

TEDAE and the Spanish companies participating in SITDEF 2017 celebrated the Spain Day accompanied by the Ambassador of Spain to Peru, Ernesto de Zulueta, the Defense Attaché, Captain Ignacio Villarrubia, the Chief

of the OFICAEX Foreign Support Office, Brigadier General Luis Manuel Lopez Gonzalez, and high positions of the Peru Army. They shared the celebration with other Spanish authorities, with political, police and Armed Forces representatives of different Latin American countries, and with industrial partners and local and international companies active in the sectors of Defense, Security and Natural Disaster Prevention.

This international fair took place at the facilities of the Peruvian Army General Headquarters in Lima and is undoubtedly one of the most important industrial meetings in Latin America. Jointly organized by the Ministry of Defense and the Peruvian Armed and Security Forces, every two years the event gathers the most important national, regional and international companies that develop technology and manufacture products for Defense and Security, including the prevention of natural disasters.

The group pavilion was shared by AERTEC SOLUTIONS, ESCRIBANO MECHANICAL & ENGINEERING, HISDESAT, INDRA, INSTALAZA and SAES, which showed their products and technological capabilities until May 21st.

The 6<sup>th</sup> edition of SITDEF reached the figure of a hundred exhibitors from 27 countries and was attended by more than 40,000 professional visitors from around the world, 600 representatives of the Armed Forces and official delegations from various countries.



## PARTICIPATION OF TEDAE IN THE CONFERENCE CYCLE OF THE RAMON ARECES FOUNDATION ABOUT SPANISH AERONAUTICS



The Ramon Areces Foundation organized a series of conferences on Spanish aeronautical engineering, coordinated by Professor Amable Liñan and Jose Manuel Hesse, to address their recent achievements and future challenges.

After the presentation of the scientific program and the speakers of the day by Professor Liñan, in his conference on the present and future of the Spanish aeronautical industry, Adolfo Menendez, President of TEDAE, stressed that Spain has become one of the leaders of the aeronautical industry competing with France, Germany, the United Kingdom or Italy. "We are present and with successful products since the inception of this industry, more than one hundred years ago. And in 2015, the Spanish aeronautics sector contributed €22 million daily to the Spanish economy, with an average growth of 6.4% in recent years and returned the equivalent of 10% of its turnover to the State via taxes." And he pointed out that it must not be forgotten that, as it is an industry with a very long cycle, the successes reaped today are the result of sound decisions made at least a decade ago and of an effective public-private collaboration.

"To guarantee the future growth of the sector, constant innovation is required, companies must take their on risks and we need strong support from the Administrations, developing a State policy, a strategy that goes beyond parliamentary terms", added the President of TEDAE.

Next, Juan Carlos Cortes, Director of Programs of the CDTI, explained the relevant role that national and international administrations have played in the development and growth of the Spanish industrial sector, and the role they will play to enhance its future and encouraging the participation of research centers.

In the second part of the Conference, two case studies on the design and manufacture of aircraft and aero-engines were presented. The first was presented by Manuel Huertas, Vice President of Airbus 350, and the second by Jose Ignacio Ulizar, Technology Director of ITP, and Raul Vázquez, of Rolls-Royce.

## PARTICIPATION IN THE 18<sup>TH</sup> COURSE OF STAFF OF THE ARMED FORCES



The purpose of the Course of General Staff of the Armed Forces, of Higher National Defense Studies, is training officers in the Army, the Navy, the Air Force, the Civil Guard and the Common Corps of the Armed Forces, as well as officers from allied and friendly countries, to carry out their own functions in specific, joint and combined staffs and in national and international security and defense organizations.

The duration of the course is one academic year, from September to June. The course consists of four phases: A Basic phase, a National Defense and Operations Planning phase, a Specific phase for each of the Armies and Civil Guard, and an Application phase.

## SPAIN PAVILION AT THE PARIS AIR SHOW 2017

PARIS AIR SHOW, the International Aeronautics and Space Show, is the largest event dedicated to the technological creation of these sectors. In its 52<sup>nd</sup> edition, which was held from June 19 to 25, 2017, at Le Bourget Airport in Paris, the event brought together the main references on the latest technological innovations in the world industry.

Organized by TEDAE with the support of ICEX, the Spanish Pavilion gave the opportunity to the most important international players to know the latest innovations in the different segments of the aeronautical activity of our companies, in its almost 700 m<sup>2</sup>.

The Fair brought together companies from all over the world to show and know first-hand the products and technological know-how from large aircraft manufacturers, and also from an innovative component and ancillary industry. For the Spanish aeronautical industry, it is the international reference event, where they meet every two years with their customers, suppliers and partners.

On the day of the Spanish Aeronautics, Agustin Conde, Secretary of State for Defense, visited the Spanish companies present at the Paris Air Show, expressly thanking the efforts made to innovate



and demonstrate the high level of the aerospace technology in our country.

The European Commissioner for the Internal Market, Industry, Entrepreneurship and SMEs, Elzbieta Bienkowska, also attended the Spanish Pavilion on the Spanish Aeronautics Day to show her support to the Spanish aerospace industry. The celebration was also joined by a significant number of representatives of the Embassy of Spain in France, the Ministry of Defense, members from the Governing Council of Castile-Leon, and from Governments from the Autonomous Regions of Navarra, Murcia, Madrid and Andalusia, and delegations from different countries.

The 24 exhibitors in the Spanish Pavilion showed their latest developments and products and met with their customers, suppliers and partners until Sunday, June 25. The exhibitors were ACITURRI, AERTEC SOLUTIONS, ALESTIS, APPLUS+ LABORATORIES, ARITEX- LOXIN, CARBURES AEROSPACE&DEFENSE, CESA, EBAS TECHNOLOGIES, ELIMCO, EXTENDAAGENCIA ANDALUZA DE PROMOCIÓN EXTERIOR, GAPTEK, GRABYSUR, INESPASA, INMAPA AERONÁUTICA, INSYTE, INSTITUTO NACIONAL DE TÉCNICA AEROESPACIAL, ITP, MADES, OSVIMA, REDUCTIA, SOFITEC, TECNATOM and TECNOBIT, as well as the cockpit structure demonstrator of Clean Sky.

## CELEBRATION OF THE GENERAL ASSEMBLY OF THE SPANISH SPACE LAW CENTER (CEDE) AT TEDAE'S HEADQUARTERS

In June 2015, the Spanish Space Law Center (CEDE) undertook a new journey within TEDAE. However, the CEDE is an organization with a certain experience in the world of space, since it started its activities in April 1992, a year declared by the UN as the International Year of Space.

The CEDE was born as a result of the compromise reached between the European Space Agency (ESA) and the Spanish Ministry of Foreign Affairs which that year hosted the ESA's Ministerial Meeting in Granada. In this context, the Space Agency expressed its intention to establish a European network of National Contact Points with an active relationship with the European Center for Space Law (ECSL), belonging to ESA. Therefore, it was necessary to establish contact bodies in each member country of the ESA, to maintain a dissemination and informative flow of Outer Space Law.

As a founding member state of ESA, Spain undertook to create the CEDE as a National Contact Point in our country. Since then, and for that purpose, the CEDE works as an independent forum in the form of scientific, cultural and non-profit association. The CEDE was established, therefore, with the objective and commitment to promote the study and teaching of the Outer Space Law, in order to serve as a source of information on the work carried out within the framework of national and international programs related to space law in Spain, and also to channel these activities towards the Latin America countries.

## 39<sup>TH</sup> EDITION OF THE AIR FORCE AWARDS



The Air Force convened the 39<sup>th</sup> edition of the 2017 Air Force Awards in the following categories: Painting, Air Schoolroom, Aeronautical Modeling, University Aerospace Research, Aeronautical Photography, Aeronautical Videos, Articles "Journal of Aeronautics and Astronautics", Literary Creation, Promotion of Aeronautical Culture and Excellence in Sports.

These awards are intended to contribute to the mutual knowledge between institutions and the Spanish society they serve. Promote aeronautical culture in its different aspects, artistic creation and the values of the Armed Forces are some of their most prominent purposes.

The Air Force Awards are a magnificent showcase to achieve recognition, encourage mutual knowledge and develop intellectual and social dialogue, being also a space to share and reward the most outstanding experiences.

## INVITATION TO THE HISDESAT CONFERENCE ON GOVERNMENT SATELLITE SERVICES



## COMMEMORATIVE COCKTAIL "SLI, 40 YEARS AT THE SERVICE OF THE SPANISH ARMED FORCES"

## 40<sup>TH</sup> ANNIVERSARY OF THE SPANISH CONFEDERATION OF BUSINESS ORGANIZATIONS (CEOE)

## CELEBRATION OF THE GENERAL ASSEMBLY OF TEDAE

TEDAE held its General Assembly in Madrid, which was closed by the Minister of Defense, Maria Dolores de Cospedal, affirmed that “the Innovation – Defense – Industry triangle is already a reality. A future realistic and efficient defense policy to safeguard the national interests must always have a close collaboration with the industry, which provides the necessary equipment and systems for the defense to be successful. And, in my humble opinion, it does it excellently.”

The Minister added that Spain has gone from just being a user of systems to planning, developing, executing and operating complex weapons systems, autonomously or together with our European partners. This autonomy to decide what we need, where we deploy it and how we do it is critical, since it also creates a competitive business fabric.

Cospedal highlighted the economic weight of the Defense, Aeronautics, Security and Space industry, with a total business figure of €10,7 billion in 2016, an increase of 10.2%, and 55,800 highly qualified professionals employed. “These figures indicate that an excellent work is being done, that the sector is committed to the future of Spain and, therefore, its development should be a strategic commitment.”

Juan Rosell, President of the CEOE, opened the Assembly, which was attended by the Director General of Industry and the Director General of Ordnance, among other representatives of the CDTI, ICEX, institutions, embassies and the Armed Forces.

In his speech, the President of the CEOE referred to the need to build a strong Europe that works politically, economically and socially, stressing

that Spain is living an important moment. “We are growing at a rate of over 3%. We’ve done our homework quite well, but we must continue making reforms that, although difficult, are absolutely necessary for the welfare of society. And one of the imbalances that we still have to solve is the reduction of the public deficit.”

Adolfo Menendez thanked Cospedal, Rosell and the rest of the authorities and guests for their presence in the TEDAE Assembly, in recognition of the efforts made by the Defense, Aeronautics, Security and Space industrial fabrics that make up the Association, contributing to the growth and welfare of Spain, and to its defense and security.

The General Assembly of TEDAE approved the accounts of the previous year and ratified the incorporation to the Association of Segula Technologicals, Relats, Ayesa Engineering and Rhode Schwarz Spain. It also identified as priorities for the Association in the current year: follow-up of the European Defense Action Plan, new contracting system for the modernization programs of the Armed Forces, a Strategic Agenda for the aeronautics sector, consolidation of the Spanish Aerospace Platform as an instrument to boost R&D&i, reinforcement of the supply chain, elaboration of the Technological-Industrial Plan for the Spanish Security sector, and implementation of the National Space Plan, as well as the achievement of maximum return for our industry from the effort made by the Spanish Delegation in the last Ministerial Council of the European Space Agency.





## ATTENDANCE AT THE "FORO ESPAÑA INNOVA" BREAKFAST-CONFERENCE

Nueva Economía Fórum and Orange organized a breakfast-conference of the forum 'Foro España Innova', which was attended by Francisco Marín, Director General of the Center for the

Development of Industrial Technology (CDTI) and presented by Inmaculada Riera, Director General of the Chamber of Commerce of Spain.



## PARTICIPATION AT THE DAY ORGANIZED BY THE FOUNDATION CIRCULO UNDER THE TITLE "INSTITUTIONAL SUPPORT FOR THE INTERNATIONALIZATION OF THE DEFENSE INDUSTRY"

The General Directorate of Ordnance (DGAM) organized a day to present and value the work done to boost the institutional support for the Internationalization of the Defense Industry.

With the support of the Higher Center for National Defense Studies (CESEDEN), in coordination with the Foundation Circle of Technologies for Defense and Security, the Spanish Association of Defense, Aeronautics and Space Technology Companies (TEDAE), and the Association of Contractor Companies with Public Administrations (AESMIDE), with the presence of institutional guests from the Armed Forces and other ministries, and with companies from the Defense sector,

the event was intended to provide an adequate framework to expose what has been done to date and the experience acquired, and develop a colloquium to obtain a return that values the results and allows to improve this important support for the development of the defense industrial fabric considered an interest of the State.



## july

## PRIZE-GIVING CEREMONY OF THE ASSOCIATION OF DEFENSE JOURNALISTS (APDEF), IN WHICH TEDAE COLLABORATES

The President of the Association of Defense Journalists (APDEF), Emilio Andreu, and the President of TEDAE, Adolfo Menendez, renewed their collaboration agreement for the sponsorship of the Annual Awards granted by this Association.

In its latest edition, already the eighth, the APDEF awarded the Association of Relatives of Yak-42 Crash Victims, the Director of the Institute for Strategic Studies, General Miguel Angel Ballesteros, and the Head of the High Readiness Headquarters (Land) at Betera, Jose Gan Pampols.



## MEETING WITH REPRESENTATIVES OF UNOOSA. VISIT TO SPAIN OF THE PRESIDENT OF UNOOSA (OFFICE OF THE UNITED NATIONS FOR THE OUTER SPACE)

## INCORPORATION OF RODHE & SCHWARZ

## INCORPORATION OF AYESA AIR CONTROL

## INCORPORATION OF RELATS



## PRESENTATION OF THE REPORT "ANALYSIS OF THE BUDGETS FOR DEFENSE AND SECURITY OF SPAIN IN 2017" PREPARED BY IDS

On July, IDSolutions presented its Analysis of the Budgets for Defense and Security of Spain in 2017 to the TEDAE companies.

Two of the authors, the General of the AF Quartermaster Corps and Doctor of Economic Science, Jose Lorenzo Jimenez Bastida, and the Lieutenant Colonel of Quartermaster Corps and Bachelor of Economic Science, German

Martin Casares, along with the editor of the work, the Defense journalist, Gines Soriano, explained the different budget items for 2017 destined for the Ministries of Defense and Interior, analyzing the anticipated expenditure in Defense and Security for this year and its evolution in recent years, and making a comparison with European countries and the NATO environment.

## CELEBRATION OF THE FORUM "BUSINESS AND TECHNOLOGICAL COLLABORATION OPPORTUNITIES FOR THE INDUSTRY IN NATO", ORGANIZED BY TEDAE

On July 5, 2017, TEDAE organized a business breakfast at the Club Financiero Genova to present the organizations and agencies that act as speakers with the industry and contracting organizations, as well as the opportunities for participation in their activities.

Francisco Gonzalez Mene, NIAG HoD, emphasized the actions in the initial/

pre-competitive phases that allow improving future industrial positions and he made a description of the basic procedures of the NATO Industrial Advisory Group (NIAG) and the Science and Technology Office (STO), and the collaboration with the Allied Command Transformation (ACT).



## TEDAE PARTICIPATES IN THE NATIONAL INFODAY ON THE 2017 WORK PROGRAM FOR THE PREPARATORY ACTION ON DEFENSE RESEARCH

TEDAE participated in the National Infoday on the 2017 calls for the Preparatory Action on Defense Research, which was held at the CDTI headquarters and organized by the Sub-directorate General for Planning, Technology and Innovation, in collaboration with the CDTI.

Jose Ramon Sala, representative of the SDG PLATIN, presented the initiative emphasizing the most outstanding aspects. This part was completed by Maite Bollero (CDTI) who presented the experience in the case of Security and differences and similarities with the Preparatory Action.

In a second part, the AESMIDE and TEDAE Associations, along with the ELCANO Royal Institute, presented the work they are doing around the initiative. During his speech, Cesar Ramos Villena, Director General of TEDAE, highlighted the role of the Ministry of Defense in leading the coordination of the players related to the Preparatory Action in order to position national interests in Europe. In his speech, he also stressed that “together, everyone gets more” for the success of our participation.

Finally, the institutions and the companies could present their capacities and hold meetings with each other on common issues or with representatives of Public Administrations.



## CONFERENCE ON LEGAL AND TECHNOLOGICAL ASPECTS IN THE FIGHT AGAINST INTERNATIONAL TERRORISM, ORGANIZED BY TEDAE WITH THE COLLABORATION OF THE CIVIL GUARD AND THE NATIONAL POLICE

TEDAE, with the collaboration of the Directorate General of the Police and the Civil Guard, held a Conference on Legal and Technological Aspects in the Fight against International Terrorism, at the Club Financiero Genova, in Madrid, with the participation of outstanding experts from the judicial field, the Spanish Security Forces and INTERPOL.

The Director General of the Civil Guard, Jose Manuel Holgado, stressed that during this day the many tools we have to mitigate terrorist threats were shown, and emphasized that it is necessary to make a judicial, police, economic and social effort by institutions, agencies and associations to achieve full development of the inherent rights to human condition. He also stressed that much progress has been made in forensic practice or with the interception of telecommunications, following the guiding principles of specialty, exceptionality, suitability, necessity and proportionality.

In the first part of the Day, the Legal Limits of the Application of New Technologies in the Investigation of International Terrorism were analyzed. At the opening, the President of TEDAE highlighted “the challenge posed by the

persecution of these organizations that operate transnationally using the most modern technologies. This, together with the permeability of our borders and societies, and the digitization of our daily lives, forces us to combat them with the most advanced technologies applicable in the field of intelligence.” The Supreme Court Judge, Fernando Pignatelli, was responsible for moderating this first roundtable, with the participation of the Prosecutor of the Supreme Court Chamber, Javier Zaragoza, the General Commissioner of Information, Isabel Castanedo, and the Commander of the Information Central Office of the Civil Guard, Jesus Fernandez, addressing where to place the legal limit in the application of these technologies, without violating our legal framework and our own freedoms.

Next, Paula Monge, Deputy Director General of International Legal Cooperation of the Ministry of Justice, moderated a second roundtable in which the Legal Aspects of International Police and Judicial Cooperation in relation to Terrorism were analyzed. Speakers such as Pablo Ruz, Magistrate of the Court of Instruction No. 4 of Mostoles, the Chief Inspector of INTERPOL, Jose Antonio Puebla, the Chief Inspector Laura Baos, and the Lieutenant Colonel of the Civil Guard, Francisco Pulido, coincided in highlighting the fundamental role of international cooperation to fight against terrorism, and the significant progress made in this direction.



# september



**OPENING CEREMONY OF THE FOURTH EDITION OF THE YOUTH MEDITERRANEAN DIALOGUE, ORGANIZED BY THE SPANISH YOUTH ATLANTIC TREATY ASSOCIATION WITH THE COLLABORATION OF TEDAE**

**CREATION OF A HIGH-LEVEL COMMITTEE ON EDAP (EUROPEAN DEFENSE ACTION PLAN), OF WHICH TEDAE IS A MEMBER**

**INCORPORATION OF SEGULA SEGURIDAD**

## **10<sup>TH</sup> SEMINAR "SATELLITES AS A KEY COMPONENT FOR SECURITY AND DEFENSE IN GOVERNMENT APPLICATIONS", ORGANIZED BY HISDESAT**

Hisdesat and Acorde organized the 10th edition of the Seminar of the Association of Electronics, Information and Communications Technologies, Telecommunications and Digital Content Companies (AMETIC) held in Santander in September, in this occasion dedicated to security and defense in the space sector. The objective was to understand the Spanish space outlook from the governmental applications point of view, and there was a debate around the security and defense industry communications.

This is the tenth year that this event is celebrated, in which the Spanish space industry meets to share and discuss about

the tools, the redefinition of strategies and future projects in a key sector such as space. It is a key moment for the Armed Forces since, due to their constant evolution, they need new approaches to industry strategies related to security and defense. The 10th AMETIC Seminar seeks to provide solutions and generate new R&D&i ideas from the Spanish space industry and administration.

In the course of the seminar, different conferences were held with moderators from the DGAM, INTA, Cestic and Segenpol, among others. Companies and technology centers such as Airbus DS, Thales Alenia Space Spain, Indra, Hisdesat and TEDAE, and other

organizations such as EDA and NATO also participated in the event.

Meanwhile, four roundtables were organized around cyberspace and the new domain for military operations, and the challenges for the defense space industry in the 12th parliamentary term.

In addition, for the first time in ten years, a conference was held on new developments in the space field for security and defense, in which technological aspects of interest were addressed through the proposals presented by the companies Inster, Telefonica, Sener, Indra, Deimos and Aicox, and the University of Alcala de Henares.





## TEDAE ORGANIZED THE EVENT "THE OPEN SPACE"

At the end of The Open Space Day, the President of TEDAE and the Vice-President of the Space Commission handed over a commemorative plaque to Javier Aguirre, Director of the film "El Astronauta" (1970), as a tribute paid to him by the companies of the Spanish space sector.

It was the first time that the Spanish Association of Defense, Aeronautics and Space Technology Companies convened a forum of these characteristics to share experiences and trajectories that allow visualizing how and why society is the ultimate beneficiary of space activity.

At the Giner de los Rios Foundation, in Madrid, The Open Space brought together representatives from all sectors related to the Space and other professional fields and the media, and had the participation of Big Van, scientists on wheels.



In his opening lecture, the Director of the Planetarium of Pamplona, Javier Armentia, underlined the importance of spreading space achievements to citizens, so that they know and participate in their progress.

Then, in a first roundtable, the direct protagonists of how space technology -satellites- helps overcome the digital divide in favor of education and rural development explained three successful projects in Colombia, Mexico and Magaña (Soria).

The issue of Emergency Management was addressed by representatives of the Emergency Military Unit, UME, and 112, who answered the questions of the attendees. The debates were moderated by Roberto Brasero, Director of the Antena 3 program Tu Tiempo (weather forecast), and Pedro Pablo May, Deputy Director of EFE Futuro.



# september

## INFODAY ON THE GLOBAL SOF ANNUAL CONFERENCE – EUROPE 2018, AT TEDAE HEADQUARTERS



In September, a briefing session took place at the headquarters of TEDAE on the 2018 Global SOF Symposium – Europe, an international conference specializing in Special Forces and focusing in this edition on Europe, North Africa and America Latina special operations communities and the shared problems they face. This event, which takes place in Madrid and has the support of the Spanish Joint

Special Operations Command (MCOE), is an opportunity to meet other players related to this field.

The event is organized by the Global SOF Foundation, which is a North American, Florida-based, non-profit organization focused on the special operations community. Its purpose is to act as a think tank and to promote the importance of having well-prepared

and well-equipped Special Forces (SOF) among the political and industrial players, and to provide support to the community of active and retired SOF members. Its members are organizations with interests in this field and individuals, many of them active or retired members of the Special Operations Corps, from more than 50 countries.

Global SOF, through its president, Stuart Bradin (retired Colonel of the US-SOF), and the Spanish Joint Special Operations Command (MCOE) formally requested TEDAE to support this event in Madrid.

## FIRST CONGRESS "CONNECTED INDUSTRY 4.0" ORGANIZED BY THE MINISTRY OF ECONOMY, INDUSTRY AND COMPETITIVENESS

The first edition of CIC4.0 brought together more than 700 guests at the North Convention Center of IFEMA, in the first meeting of all professionals, institutions and companies committed to the digital transformation of our industry. With more than 30 top-level speakers and four parallel thematic

rooms, the Connected Industry 4.0 Congress was launched in 2017 with the ambition and vocation of being the reference annual event in the 4th Industrial Revolution, which is strategic for companies, citizens and country.



### SEMINAR "A TWO-SPEED BETTER EUROPE: GREATER INTEGRATION IN THE DEFENSE?" ORGANIZED BY THE SPANISH ATLANTIC ASSOCIATION

In September, the seminar "A two-speed better Europe: Greater integration in the defense?" organized by the Spanish Atlantic Association, was held at the facilities of the European Commission Representation in Spain. Its President, Pedro Argüelles Salaverria, opened the event with a brief review of the EU's history from its inception till today, focusing on the meaning of "a two-speed Europe" and deepening in

Europe's Security and Defense and the contribution of Spain to it.

The subsequent roundtable focused on the new scenario of risks and threats to the security of Europe and how these threats can be addressed, which have led to the Permanent Structured Cooperation (PESCO), highlighting the participation of Spain in multiple missions both for Europe and NATO.



### 7<sup>th</sup> EDITION OF THE NAVAL WEEK OF THE ARMADA "INFLUENCE OF MARITIME TERRORISM IN NAVAL STRATEGIES"



On September 7, the 7<sup>th</sup> Edition of the Naval Week was presented at the Madrid Naval Museum. A series of conferences was organized between September 15 and 24, in order to make the Spanish Navy known to all citizens and spread the Defense Culture and Awareness.

The Armada is an institution that develops its main activities many kilometers away, but has important work centers in the capital, such as the Armada Headquarters, the Logistics Support Headquarters and the Marine Infantry Group in Madrid.

The theme of the week focused on celebrating 100 years of Naval Aviation. The program developed by the Spanish Navy involved a series of events, including exhibitions, forums and seminars, designed for an audience of all ages.



# october

## COLLABORATION AND PARTICIPATION IN THE 2ND CHILE-SPAIN AEROSPACE FORUM "OPPORTUNITIES OF COOPERATION, INNOVATION AND BUSINESS" HELD IN SEVILLE

In October, the Chile-Spain Foundation held its second aerospace meeting at the auditorium of the Aerospace Technology Park of Andalusia, Aeropolis, located in Seville.

The participants had the opportunity to analyze and discuss business and investment opportunities in the aerospace sector, encouraging the cooperation of aeronautics and space



companies, technological and research centers and other organizations related to the sector in Chile and Spain.

Also, the 2018 International Air and Space Fair (FIDAE) was presented to future attendees and exhibitors.

## TEDAE'S PRESENTATION AT THE DAY "PAST, PRESENT AND FUTURE OF SPANISH MILITARY ENGINEERING", ORGANIZED BY ISDEFE

The Main Hall of the Faculty of Law at the University of Zaragoza hosted the Day "Past, Present and Future of Spanish Military Engineering", organized by the Spanish Association of Military Writers (AEME), in which the status of military engineering in our country and the challenges it must respond to in the future were analyzed.

The Day was opened by the Technical Secretary General of the Ministry of Defense, together with the Dean of the Law School of Zaragoza and the President of AEME. The organizers had the collaboration of the TEDAE and AESMIDE Associations, the Ministry of Defense and ISDEFE, and the University of Zaragoza, among others.

Throughout three roundtables with the participation of prominent members of the Armed Forces, military engineers, university professors and representatives of the business sector, the great issues of this engineering branch, with a long and



brilliant tradition in Spain, were addressed with the objective of designing and developing the most effective support to the armies.

The naval engineer Jose Manuel Sevilla, Captain Jose Blanco, the Secretary of the Royal Geographical Society, Julia Bordonado, and the Professor of Law History, Juan Francisco Baltar, made a historical tour through the great milestones in military engineering in Spain until present.

Next, Lieutenant General Luis Villanueva; the Director General of TEDAE, Cesar

Ramos; the Deputy Director General for Earth Systems at INTA, Manfredo Monforte; the President of Instalaza, Leoncio Muñoz, and the Sales Manager of Tecnové, Julian Sanchez, identified the major issues of this engineering branch as of today. Lieutenant General Luis Feliu was in charge of the future of military engineering, along with Ricardo Torron, Academician of the Royal Academy of Engineering; Jesus Manrique, Deputy Director General of Planning, Technology and Innovation of the DGAM (Directorate General of Ordnance); Javier Canal, ITP's Chief Engineer, and Jesus Alonso, Director of Business Development at ISDEFE.



### **CEREMONY OF THE 20<sup>TH</sup> ANNIVERSARY OF THE F-100 AEGIS PROGRAM – LOCKHEED MARTIN – NAVANTIA**

The anniversary of the Navantia and Lockheed Martin alliance was celebrated on October 26, coinciding with the anniversary date of the collaboration between the two companies to equip the Spanish Navy with the AEGIS Combat System in the F-100.

### **NAVANTIA NEW MEMBER OF ASD**

The European Association of Aerospace and Defense Companies welcomed Navantia as one of the 15 companies that make up ASD, together with 25 national associations from 19 countries in Europe.

According to the Secretary General of ASD, Jan Pie, the integration of Navantia will strengthen the naval component of the Association's defense area.

### **4<sup>TH</sup> FCT (FOREIGN COMPARATIVE TESTING) DAY, WITH PARTICIPATION OF DEFENSE ASSOCIATED COMPANIES**

### **PRESENTATION OF GALILEO TO IBERO-AMERICAN EMBASSIES, ORGANIZED BY THE MINISTRY OF FOREIGN AFFAIRS / EUE**

### **MEETING ON THE BREXIT AND THE EU DEFENSE AND SECURITY: AN OPPORTUNITY TO DEEPEN IN EUROPEAN COOPERATION, ORGANIZED BY THE INSTITUTE CHOISEUL – CESEDEN**



### **PARTICIPATION OF TEDAE IN THE MEETING FLY NEWS SPACE INDUSTRY - SPAIN IS THE FIFTH EUROPEAN SPACE POWER**

In a professional meeting dedicated to the space industry, Fly News brought together the most important players in this area in Spain: Juan Ureña, Coordinator of Space Projects of the CDTI; Jose Guillaumon, Head of EO, Navigation and Science at Airbus Defence and Space; Jorge Potti, Director General of GMV Espacio and Vice President of the Space Commission of the Spanish Association of Defense, Aeronautics and Space Technology Companies (TEDAE); Pedro Luis Molinero, Operations Manager at Hispasat, and Ignacio F. Tourne, Director for Business Development at Elecnor Deimos.

In this business breakfast, three main topics were analyzed: Current moment of the space industry in Spain; the paradigm shift that we are witnessing in this sector due to the entry of new players with capacity to make large investments, or the so-called New Space, and the appearance of new start-ups in the space arena, especially in the field of applications.

All attendees agreed that the Spanish presidency of the ESA Ministerial Conference is a recognition to the level reached by the domestic industry in 30 years, resulting from the Strategic Plan for Space which was in force between 2007 and 2011 and that, among other achievements, enabled the development of Paz and Ingenio, among other measures.

Regarding the challenges, the participants explained that Spain must continue to maintain its competitiveness, detecting new market niches, increasing the value chain in space systems, and ensuring the entry of Spain into major future programs. And regarding the weaknesses, the Spanish industry, a leader in subsystems and equipment, has a great unsettled issue in the development and supply of complete systems.

# october

## PRESENTATION OF THE BOOK OF THE 17<sup>TH</sup> CONFERENCE ON TECHNOLOGIES FOR DEFENSE AND SECURITY, ORGANIZED BY THE CIRCLE OF TECHNOLOGIES FOR DEFENSE AND SECURITY FOUNDATION



The book of the 17th Conference on Technologies for Defense and Security: "Intelligent Defense and security. Technologies and systems for the digital transformation" was presented on October 25 at the Auditorium of the Casa de la Moneda Museum, the same place where the conference was held a year earlier.

The event was chaired by the Minister of Defense, Maria Dolores de Cospedal Garcia. She was accompanied by the President - Director General of the National Factory of Currency and Stamp, Jaime Sanchez Revenga, and the President of the Circle of Technologies for Defense and Security Foundation, Vicente Ortega Castro, who made a summary of the book.

In her speech, the Minister stressed that the conclusions reached in the 17th Conference of the "Circle Foundation" confirm the obligation, the need and the requirement to develop our own capabilities for response and reaction, Defense and protection in line with the evolution of the environment and its threats.

High representatives of the Ministry of Defense attended the call, highlighting the presence of the Secretary of State for Defense, Agustin Conde Bajen; Admiral General Chief of Staff of the Navy (AJEMA), Teodoro Lopez Calderon, and Admiral Second Chief of Staff of the Navy (AJEMA), Manuel Garat Caramé, among others.

## 4<sup>TH</sup> CIVIL GUARD-COMPANIES DAY AND CEREMONY OF THE "AHUMADA DUKE" AWARDS FOR CORPORATE SECURITY, ORGANIZED BY THE CIVIL GUARD

During the closing ceremony of the 4<sup>th</sup> Civil Guard-Companies Day that took place at the Directorate General of the Civil Guard, its General Director, Jose Manuel Holgado, presented the Ahumada Duke Awards for Corporate Security.

The Director General thanked the companies for attending this Conference, framed within the General Plan of Collaboration with the Private Security Sector, which has been developed by the Civil Guard for years, in order to collaborate, to exchange good practices and to jointly search solutions for the benefit of citizen security.



## PARTICIPATION OF TEDAE IN THE 2<sup>ND</sup> NATIONAL DAYS OF COMMUNICATION AND DEFENSE



In October, the 2<sup>nd</sup> National Days of Communication and Defense took place, organized by the Official College of Journalists of the Region of Murcia and the Delegation of Defense of this region.

The event began with the speech of the Delegate of Defense of the Region of Murcia, Jose Ignacio Marti Scharfhausen, accompanied by the Dean of the Journalists Association of the Region of Murcia, Juan Antonio de Heras, and the Director of the Conference, Gines Soriano, and brought together more than twenty experts in journalism, communication, defense and protocol to try to respond to the current concerns of communication related to the Armed Forces.

# november

## 20<sup>TH</sup> ANNIVERSARY OF AERTEC SOLUTIONS AND PRESENTATION OF THE COMMEMORATIVE BOOK "THE DREAM OF FLYING", WITH THE PARTICIPATION OF TEDAE

The company AERTEC Solutions, an international engineering consultancy specializing in aeronautics, presented the book "The dream of flying", published by the company itself, at the Espacio Bertelsmann in Madrid. The event had the participation of the President of TEDAE, Adolfo Menendez; the founders of AERTEC, Antonio Gomez-Guillamon and Vicente Padilla, and the author of the book, Luis Utrilla.

The work pays homage to the creators of the magazine Motoavion, a publication launched in 1928 and specialized in the dissemination of aeronautical knowledge.

With this event the company closed a comprehensive commemorative program of its twentieth anniversary, carried out since the beginning of the year.



## TEDAE'S PRESENTATION AT THE 10TH NATIONAL DEFENSE SEMINAR "PEACE, SECURITY AND DEFENSE: NEAR THREATS AND INCREASING RISKS", ORGANIZED BY THE UNIVERSITY REY JUAN CARLOS/CESEDEN

## DAY ON COMPETITIVENESS OF THE SPANISH AERONAUTICS SECTOR, ORGANIZED BY TEDAE WITH THE COLLABORATION OF FIDAMC



"In the aeronautics industry, the capacity of the supply chain is increasingly important to be able to compete internationally. It is therefore our responsibility to define the conditions that will improve our competitiveness. Our goal in the future is to ensure a framework that allows us to establish innovation strategies shared with the Administration. It is about preserving our technological credibility, and this will only be achieved together." With these words, Adolfo Menendez, President of TEDAE, opened the conference on Competitiveness of the Aeronautics Sector, organized by the Association with the collaboration of FIDAMC, that brought together more than a hundred executives of companies and entities with which the aeronautics sector share goals.

Manuel Huertas, President of AIRBUS OPERATIONS, presented his vision on the supply chain, which has more than 2,000 suppliers in Spain, with a turnover of €1,8 billion in 2016. Huertas explained that commercial aviation was generating great expectations, since 40,000 new aircraft will be needed by 2035 because air traffic doubles every 15 years. And he stated that a change in the gravity center towards the Asia Pacific area was taking place which represented a challenge for the Spanish

supply chain in terms of leading the work packages that could be allocated to that region.

Then, the transition to Industry 4.0 was the topic addressed by the Deputy Director General of Industry Digitalization and Collaborative Environments, Fernando Valdes. The representative of the Ministry of Economy, Industry and Competitiveness presented the sectoral results of the HADA Tool (Advanced Digital Self-Diagnostic Tool).

The conference also had the participation of funding organizations such as Banco Sabadell, Popular or AvalMadrid to discuss the financing opportunities of the sector, the regional clusters with which TEDAE shares efforts to improve the competitiveness of the Spanish aeronautics sector, and companies such as CENTUM, CIMPA, INSYTE and TECNATOM that shared their success experiences.

Miguel Angel Castillo, Delegate of the Supply Chain and SMEs Committee of TEDAE and Director of Technological Development at AERNOVA, was in charge of closing the Conference.



# november

## PRIZE-GIVING CEREMONY OF THE 55<sup>TH</sup> EDITION OF THE 2017 ARMY AWARDS

In November, the Army War College hosted the prize-giving ceremony of the 55<sup>th</sup> edition of its Awards.

The gala was chaired by the Minister of Defense, Maria Dolores de Cospedal, and the Chief of Staff of the Army (JEME), Army General Francisco Javier Varela Salas. The event was attended by the Director General of Ordnance (DGAM), Lieutenant General Juan Manuel Garcia Montaño, and the Chief of the Logistics Support Command, Lieutenant General Ramon Pardo de Santayana, among other prominent civil and military authorities.

The Army has been organizing the Army Awards annually since 1945, promoting and disseminating literary creation and art, and ultimately, the Defense culture.

## PARTICIPATION IN THE DAY "EUROPEAN DEFENSE ACTION PLAN (EDAP) AND DEFENSE INDUSTRIAL DEVELOPMENT PROGRAM", ORGANIZED BY THE CIRCLE OF TECHNOLOGIES FOR DEFENSE AND SECURITY FOUNDATION

In November, the Day "European Defense Action Plan (EDAP) and the Defense Industrial Development Program" was held at the Army Polytechnic School, organized by the Circle of Technologies for Defense and Security Foundation.

The objective of the day was the maximum possible dissemination of the requirements and conditions that must be met to participate in these initiatives. It was therefore a day of

great interest for our technological and industrial base due to the impact that both the European Defense Action Plan (EDAP) and the European Defense Industrial Development Program (EDIDP) can have on it.

The speakers of the meeting were from the Directorate General of Ordnance of the Ministry of Defense; the Ministry of Economy, Industry and Competitiveness, and the sector's associations TEDAE and AESMIDE.



## COLLABORATION AND PARTICIPATION OF TEDAE AT THE DAY "BUSINESS OPPORTUNITIES IN THE SPANISH AND EUROPEAN DEFENSE, AERONAUTICS AND SPACE INDUSTRY", ORGANIZED BY CESUR (SOUTHERN SPAIN ENTREPRENEURS)

On November 21, a conference on "Business Opportunities in the Spanish and European Defense, Aeronautics and Space Industry" took place at the General Headquarters of the Army Land Forces in Seville, organized by CESUR, the association of entrepreneurs of Southern Spain.

With this day, the association sought to inform Andalusian companies about the singularities, regulation and entry

requirements for the sector. In addition, the different European programs, such as the European Defense Fund promoting business cooperation among the different EU countries were presented.

The presidents of TEDAE and AESMIDE gave an overview of the Defense sector in Spain, and the Deputy Director General of Inspection, Regulation and Defense Industrial Strategy of the Directorate General of Ordnance (DGAM) addressed the requirements to work in this sector.

The Procurement Management at the Ministry of Defense and the European Defense Action Plan (EDAP) were also part of the content of the program.

To close the event, there was a discussion table on Business Experiences and Strategies to get positioned in Spain and Europe in the medium and long term.

The Secretary of State for Defense was in charge of closing the day.





## **PARTICIPATION OF TEDAE IN THE 2<sup>ND</sup> SPACE ENGINEERING CONGRESS – ROUNDTABLE ON STRATEGY, HELD AT THE COIAE**



In November, the 2<sup>nd</sup> Space Engineering Congress was held in Madrid, at the Spanish Institute of Engineering.

The congress was organized by the Official College of Aeronautical Engineers of Spain (COIAE) and the

Association of Aeronautical Engineers of Spain (AIAE), from its Espacio group, and brought together more than 70 speakers, with three roundtables: one on national strategy, another on innovation and the last one as a tribute to the pioneers in Spanish space engineering, to analyze the present and future of space engineering and industry in Spain.

Among the objectives of this space engineering congress were the following:

Promote contact and collaboration among the different national and international agents involved in the development of programs and space technology (companies, universities, public bodies, SMEs and financing agencies).

Identify and promote aspects of improvement for the interrelation among the different national agents in the Space sector and encourage the development of business in this sector.

Facilitate visibility and publicize the Spanish participation and capabilities and those of our professionals in national and international missions, allowing an assessment of the sector's current situation.

Attract and promote public and private investment in the space sector, so that there is an increase in investment.

Raise awareness in R&D&i developments and increase social interest in the space sector. Promote the interrelation of aeronautical engineers in the different applications of the space engineering field.

## **PARTICIPATION OF TEDAE IN THE DAY "THE VALUE OF THE AEROSPACE INDUSTRY IN SPAIN", ORGANIZED BY THE OFFICIAL COLLEGE OF AERONAUTICAL ENGINEERS (COIAE) AND FLYNEWS**

During the day, leading industry representatives discussed the importance of our country being the fifth aeronautical power within Europe and its impact at a technological and employment level.

Estefania Matesanz, Dean of the Official Association of Aeronautical Engineers of Spain (COIAE) opened the day which

included five presentations and a roundtable.

The economic, social and R&D impact of Airbus in Spain was analyzed by Teresa Busto, Director of the Airbus Illescas plant. The future of the Defense industry was addressed by Isdefe's Director of Business Development, Jesus Alonso. Antonio Gomez-Guillamon, CEO and founder of Aertec Solutions, conducted an analysis of the Spanish aeronautical fabric and its economic impact. The General of Division and Deputy Director General of Coordination and Plans at INTA, Moises Fernandez Alvaro, presented the needs of the Spanish defense for the aeronautics industry. Finally, the Secretary General of the PAE, Vicente

Gomez, made the presentation "PAE: a sectoral forum on Aerospace R&D&i in Spain."

The day concluded with the roundtable "Demands of the Spanish aeronautics industry", moderated by the Dean of COIAE, and Esther Apesteguia, Editorial Coordinator of Fly News. Participants included: Teresa Busto (VP HO Illescas Plant, Airbus), Antonio Gomez-Guillamon (CEO and founder of Aertec Solutions), Jesus Alonso (Director of Business Development, Isdefe), Antonio Padin (senior consultant), Unai Lopez (Director General of Aerospace Engineering and Systems, Sener) and Ignacio Eiriz (Director General of CTA and President of the AIAE's North Delegation).

## **PARTICIPATION OF TEDAE IN THE 4<sup>TH</sup> COURSE OF HIGHER DEFENSE STUDIES FOR HIGHER OFFICIALS OF MIDDLE EAST AND NORTH AFRICA (CESEDEN)**

## **PARTICIPATION OF TEDAE IN THE INFODEFENSA FORUM "EMPLOYMENT AND INVESTMENT IN THE DEFENSE INDUSTRY"**

# december

## PARTICIPATION OF TEDAE IN THE BUSINESS DAY "THE DEFENSE INDUSTRY: NEW BUDGETARY SCENARIO", ORGANIZED BY EL ECONOMISTA AND THE ASSOCIATION FOR THE PROMOTION OF STRATEGIC TECHNOLOGIES AND INDUSTRIES (APTIE)

On December 5, the Business Conference "The Defense Industry: New Budgetary Scenario" was held in Madrid, organized by El Economista and the Association for the Promotion of Strategic Technologies and Industries (APTIE).

Angel Benguigui, CEO of Econocom Spain, together with Amador G. Ayora, Director of El Economista, welcomed the attendees to the opening presentation of the Minister of Defense, Maria Dolores de Cospedal.

Next, a roundtable was held in which executives of companies related to the defense sector discussed the most complex issues of the new scenario.



## SPAIN PAVILION AT EXPODEFENSA 2017

Spain had its own Pavilion at Expodefensa 2017 (from December 4 to 6 in Bogotá, Colombia), the Land, Sea and Air Defense and Security Fair, which was opened by the Colombian Minister of Defense, who took the opportunity to say that "the current political and military context change in the country, with the arrival of peace and its subsequent strengthening, has led the Colombian defense and security industry to develop technology with a more international vision, in order to accompany organizations such as the United Nations, the Organization of American States OAS, the European Union and NATO in their peacekeeping missions."

The Spanish companies integrating the Spanish Pavilion coordinated by TEDAE, with the support of ICEX, AERTEC SOLUTIONS, ESCRIBANO MECHANICAL & ENGINEERING, HISDESAT, INSTALAZA, ITP, SAES and SENER, showed their products, developments and technological capabilities and had the institutional support of the Ambassador of Spain in Colombia, Pablo Gomez de Olea; the Director General of Ordnance, Lieutenant General Garcia Montaña, and the Chief of the OFICAEX External Support Office, among others.

The celebration of the Spain Day was also shared with other authorities and representatives of the Spanish Embassy in Colombia, and representatives from the political arena, the police and the Colombian Armed Forces, as well as from different countries of Latin America and the Caribbean, industrial partners and local and international companies.

This international fair is one of the most important specialized meetings in the region, and with the support of the Colombian Ministry of Defense aims to become the reference platform for Defense and Security of all Latin America and the Caribbean countries. A fair for which the Vice-Minister of Defense, General Javier Perez, specified that "Colombia is entering the post-conflict and to face this new scenario its organizations are transforming and modernizing from the hand of companies in the defense sector which, in the scientific and technological development present at Expodefensa, see the strengthening of their capabilities and the best tool to innovate."

The 6th edition of Expodefensa 2017 brought together more than 300 exhibitors who showed the latest technologies and products for defense and security adapted to regional requirements, around 70 official delegations and more than 13,000 high-level visitors from some thirty countries.



## 40<sup>TH</sup> ANNIVERSARY OF THE CDTI



In December, the celebration of the 40th anniversary of the Center for the Development of Industrial Technological (CDTI) took place at the National Music Auditorium in Madrid.

The objective of this event was to propose a reflection on the path traveled and on the real impact of innovation on society in the immediate

future. To this end, accompanied by the 500 most active companies in business R&D&i and some of the most relevant players of the national ecosystem, the CDTI organized a National Meeting of Innovative Companies, in which the present reality and the future of innovative activity in its contribution to society were analyzed.







TEDAE IN  
CONTACT

# TEDAE IN CONTACT

**FOR TEDAE**, when carrying out its work, it is essential to maintain ongoing dialogue with all administrations and public and private organizations, both national and international, involved in the development of industrial strategies and policies affecting the defense, aeronautics, security and space sectors.

As there can be no other way, TEDAE maintains a fluid dialogue with people responsible at different

bodies of the Ministries of Defense; Economy, Industry and Competitiveness; Foreign Affairs and Cooperation; Internal Affairs; Treasury and Public Function; Congress and Senate.

And also, the Association participates, is present at and exchanges perspectives and experiences with other associations and institutions at national and international levels.



## PAE

**THE SPANISH** Aerospace Technology Platform (PAE) has been in existence since 2006 and has entered a new stage since 2016. Since its inception, TEDAE has assumed the role of the platform's Technical Secretariat and, especially since 2016, when the foundations of the new stage were laid, and growth began in representativeness of the entire sector and collaboration with the first departments of the Public Administration. TEDAE is part of the PAE's Management Council, along with 8 industries, 4 universities and 4 research centers. The Secretary General of the PAE is from TEDAE and its President is the person in charge of the Aeronautics R&D Commission at TEDAE.

The PAE is a forum for meetings among all Spanish organizations interested in Aerospace R&D&i (at the moment, it gathers more than 90 organizations, with more than half being large companies and SMEs) whose objectives are:

1. Defining a Strategic Agenda for Spanish Aerospace Research (based on the existing one developed in the PAE's first stage and the Aeronautical and Space Strategic Guidelines prepared by TEDAE.) Work has been done in two parallel groups and the Executive Summaries of the AEIA (Strategic Agenda for Aeronautical Research) and AEIE (Strategic Agenda for Space Research) will be presented at the April 2018 Assembly.
2. Conducting technological surveillance studies on specific issues such as:
  - Industrial priorities related to R&D in aeronautical and space application materials: from a first

version only considering the aeronautical application, a new version is being prepared including space applications and research areas from universities and technology centers.

- Industrial priorities related to R&D in additive manufacturing from its aeronautical and space application point of view.

Both documents will be published in the first quarter of 2018.

3. Studying the necessary professional skills in the short, medium and long term in the sector's industries and how they could be fulfilled: a first competence model for a "Collaborative Interdisciplinary Engineer" has been prepared and submitted to discussion in the value chain industries.
4. Elaborate - following the classification defined in the taxonomies - a catalog of capabilities and infrastructures applicable to our sector at a national level: based on a self-classification of the entities made by the PAE, in 2018 progress will be made in the publication of this catalog.
5. Cooperating with other Spanish and European Technology Platforms.
6. Being a Spanish counseling body with presence in Aerospace R&D&i national and international forums.

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**ASD**



*LoI*





## CEOE

**THE ASSOCIATION** joined the Spanish Confederation of Business Organizations (CEOE) to foster its international expansion.

The aim is to achieve a unified action to optimize the expansion of defense, aeronautics and space companies into the competitive international markets, maintaining their participation and activity in the different areas and forums in defense of the industrial interests of the associated companies, and thereby revitalizing the Spanish economy.

## THE ASSOCIATION OF DEFENSE JOURNALISTS (APDEF)

**THE APDEF** was founded in 2009 by a group of journalists specialized in defense, with the aim of promoting the technical training for professionals who cover this field of information, and to increase institutional relations with the Ministry of Defense and the military authorities. According to the Founding Charter of the association, these objectives seek to “guarantee the dignity of the journalist and defend their professional interests.”

In addition to organizing seminars and informative meetings with representatives of the Ministry of Defense, the three armies and defense companies, the APDEF organizes these annual awards to honor the

people and institutions related to its information activity.

TEDAE maintains a collaboration agreement with the Association of Defense Journalists (APDEF) for the sponsorship of its Annual Awards, whose presidents renewed their positions in July 2017.

In the latest edition of the Awards, already the eighth, the APDEF awarded the Association of Relatives of Yak-42 Crash Victims, the Director of the Institute for Strategic Studies, General Miguel Angel Ballesteros, and the Head of the High Readiness Headquarters (Land) at Betera, Jose Gan Pampols.





## INTERNATIONAL SCOPE

2017 HAS BEEN A YEAR of transition, though decisive for the implementation of European policies to support the defense industry: EDF (European Defence Fund), EDIDP (European Defence Industrial Development Program). The launch of the PESCO (Permanent Structured Cooperation) initiative led by Spain together with the European powers: France, Germany and Italy, later extended to 25 countries, means the activation of the most powerful cooperation instrument for the Union on Defense.

EU and NATO are seeking ways to develop the 2016 Warsaw Agreements based on common interests and challenges: Transatlantic Cooperation,

Development of a Technological and Industrial Defense Base, and Exchange of Information with the Industry in critical Cyber areas.

The synergies are evident. Industry is an essential part in acquiring national, European and NATO capabilities, which must necessarily be unique.

A NATO/EU shared priority is the entry of new players: SMEs and non-traditional companies. The Cyber, AI, Robotics, Cloud, Big Data and IoT technologies are critical components in the new developments. The business models of the new economy must be incorporated in the acquisition of Weapons Systems.

The Ministry of Defense has assumed a leading role in the European Defense. The role of the industry is decisive for its viability. TEDAE is actively supporting the Ministry's initiatives by being a part of the inter-ministerial working groups, transferring the interests of the companies, and facilitating scenarios and opportunities for international collaboration.



## ASD

**THE EUROPEAN** Aerospace and Defense (ASD) Association is the reference partner with the European institutions in all industrial issues related to the defense, aeronautics, security and space sectors.

ASD's main mission is to promote the competitive development of the industries it represents in Europe, creating and maintaining a close relationship with European institutions and international organizations.

As a member of ASD, TEDAE coordinates and positions national industry interests in Europe, actively participating in the various decision-making bodies, Business Units, Committees and Working Groups.

Through TEDAE's participation in ASD, the position of the Spanish industry is taken into account in all those initiatives that are defining the European market, thus contributing to the leadership commitment that Spain has in Europe.

The role of Spain in ASD is reinforced by the presence of INDRA and NAVANTIA, as members of the Association.

In this regard, TEDAE has transferred the national industrial point of view on issues that are so relevant to the future of the TEDAE sectors such as the EDAP; the Preparatory Action and the future European Framework Program for Defense, H2020; the definition of the 9th Framework Program; Clean Sky II; the Support Policies for SMEs; the relations of the European Commission with the European Space and Defense

Agencies; the processing of Industrial Property Rights, and the presence of the Spanish industry in international consortia for industrial cooperation, among others.

In 2017, more than 50 Spanish industry experts actively participated in the various forums organized by the European Association.







**THE NIAG** (NATO Industrial Advisory Group) is a working group of NATO's Conference of National Armaments Directors (CNAD) at the level of the Main Armament Groups (MAG.) The NIAG gives access to NATO to more than 5,000 companies, of which 80% are SMEs. TEDAE channels and promotes the Spanish participation.

The NIAG is the industrial interlocutor to NATO in the pre-competitive phases of the NATO Defense Planning Process (NDPP). The NIAG actions result in feasibility studies and high level consultancy to NATO's decision-making bodies. In 2017, the NIAG brought together more than 500 industry experts to analyze NATO's priorities in critical areas: Integrated Air and

Missile Defense, Antiaircraft Defense, Multimission Systems and Platforms, Cyber, and Impact of Big Data on NATO systems and operations.

The NIAG channels the relationship of the industries with the NCIA and NSPA agencies, and is the industrial interlocutor of the Allied Command Transformation, ACT. NIAG and the Scientific and Technical Organization (STO) exchange information and coordinate their agendas. The NIAG collaborates with the Defense Investment (DI) in the Framework for NATO Industry Engagement (FNIE) and the Transatlantic Defense Industry Cooperation (TADIC).

TEDAE is a member of the CNAD's preparatory Follow-up Commissions (COMSE) of the Directorate General of

Ordnance (DGAM) through the Spanish national delegation in NIAG.

In 2017, the participation of the TEDAE companies in studies of the NIAG had an upward trend, with greater degree of responsibility in the management of the projects. The SG 224 study on "Target Material" was started under the leadership of Navantia as an extension of the SG201 Target Mensuration. The collaboration of the Industry with the GELOG 121 of the Army in support of the ICGIF (subgroup of Artillery) of the NAAG (Land Armament group) is already a reference model for other working groups.



## EDA

**THE EUROPEAN DEFENCE** Agency (EDA) is an intergovernmental body under the European Council, responsible for harmonizing the Defense capabilities of the Member States and facilitating coordination of procurement programs. The role of the EDA and its relevance in the development of European defense capabilities has been increasing during 2017. The EDA has an instrumental role by delegation of the EC for the launch of the Preparatory Action and the development of the EDAP with the application of the EDFs.

The launch of the PESCO and the relationship of the Capabilities programs with the CARD (Coordinated Annual Review on Defense) place the EDA, as the Secretariat responsible for the actions, at the core of the

coordination efforts and, at the time, of management and governance of procurement projects for European Defense Capabilities.

In 2017, the main axes in the relationship of the EDA with the Industry were: Prioritization of R&D and Innovation, SES/SESAR, KSA (Key Strategic Activities).

The EDA has promoted actions to improve the access of the industry to the European Funds and has emphasized the support to the SMEs as part of the policy of improving access to the transnational supply chains of the European Primes.

As a NDIA (National Defense Industry Association) and as a member of ASD, TEDAE has channeled national interests

in the work program and the themes of the EDA calls. TEDAE's actions with EDA, the Commission and ASD are coordinated with the Ministry of Defense in periodic meetings and through continuous information exchange. In 2017, TEDAE maintained its support to the industry for the application of FEDER funds in dual projects certified by the EDA: The USMA/MICENAS Project of SAES, and collaborated in support studies for SMEs.

The main capability acquisition programs being monitored by EDA are: AAR (replenishment in flight), MALE RPAS (support for the development of the European remotely piloted aircraft program), Cybersecurity and Satellite Communications.





## LOI

**THE INTER-GOVERNMENTAL** treaty “Letter of Agreement” (LOI) among Germany, Spain, France, Italy, United Kingdom and Sweden, aims to coordinate Defense industrial policies to improve the Defense Technological and Industrial Base in Europe. The LOI is actively involved with the European Commission to shape the development actions for Community directives, and adequacy of the EDAP to the characteristics of the Defense sector and national competences.

TEDAE participates as a National Defense Industry Association (NDIA) in the meetings of the EXCO and in the Collaborative Industry Matters (CIM) group of the Working Groups (IWG.) During 2017, the LOI focused on the impact of EC policies (EDAP) on the Defense industries. In particular, the consequences of BREXIT.

## OCCAR

**OCCAR** is a treaty among the main European nations for the procurement of defense materials. By the nations’ mandate, the OCCAR-EA (Executive Agency) is responsible for system acquisitions (variable scope in each case): The OCCAR appears in the new European EDAP and PESCO developments as a preferred partner for the governance of acquisitions. The OCCAR and the EDA are the instruments to develop the EU/NATO collaboration.

TEDAE is part of the OCCAR Defense Industry Group (ODIG) along with the NDIA’s of Belgium, France, Germany, Italy, and the United Kingdom. The ODIG collaborates with OCCAR-EA through the work of the OICP (Contracts) and OILSP (Logistics) subgroups.







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## AERNNOVA AEROSPACE

Aernnova is a leading company specializing in the design and manufacture of aerostructures and components such as wings, fuselages, stabilizers and mobile surfaces for leading OEMs. Aernnova assumes full responsibility for the programs at any stage of the product life cycle, including conceptual and detail design; prototype manufacturing, testing and certification processes; mass production; international supplier relationship management, and after-sales service. To meet the specific needs of our clients, we also adopt a partial approach to each of these activities. Aernnova is the leading aerostructure TIER 1 in Spain.



## AERTEC SOLUTIONS

AERTEC Solutions is an international engineering and consultancy company specializing in aeronautics. It was founded in 1997, and today operates in airports and aeronautics and defense industries.

The company is present in more than 130 airports spread across 40 countries on the five continents. Currently, its international projects represent more than 80% of the company's airport business volume.

AERTEC Solutions is a preferred supplier (Tier 1) of the Airbus Group in manufacturing engineering and program management services for its civil and military aircraft. It should be noted its participation in the major global aeronautical programs, such as Beluga, A380, A350XWB, A400M, A320 or A330MRTT, among others.

The company designs aerospace systems for aircraft, unmanned aerial platforms and high dynamic vehicles both for the civil and military fields. It has light tactical RPAS with own design and technology, such as TARSIS 75 and TARSIS 25, for observation and surveillance applications.

Its staff is made up of a team of more than 550 professionals specialized in aeronautics and has offices in Spain, the United Kingdom, Germany, Colombia and the United States.



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## AIRBUS

Airbus is a world leader in aeronautics, space and related services. In 2017, the company generated revenues of €67 billion (€4.5 billion in Spain, in 2016) with a workforce of about 130,000 employees, of which more than 12,000 are in Spain.

Airbus offers the most complete range of passenger aircraft from 100 seats to more than 600. It is also a leading European manufacturer of combat, transport, refueling and mission aircraft, as well as the first European space company. In addition, Airbus provides the world's most efficient solutions in civil and military helicopters.

Airbus is the first aeronautical manufacturer to obtain an ISO14001 certificate covering its facilities, products and services.

## AIRBUS

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## ÁLAVA INGENIEROS

Alava Ingenieros offers innovative solutions by applying new technologies to capture data from the physical world. We generate value-added information for decision making by providing efficiency, quality, reliability, security and sustainability, all this leading to an improvement of business results for our clients. We commercialize advanced technological products and solutions, and provide the associated services (distribution, counseling, start-up, training, maintenance and support.) The company has 7 areas: Communications, Testing, Photonics & Image, Nanotechnology, Security, Instrumentation and Calibration, and Marine, Terrestrial and Environment Technologies.



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## ALTER TECHNOLOGY TÜV NORD

ALTER TECHNOLOGY is a quality-focused company offering electronic components and systems' provisioning, engineering and testing services for space applications and other hostile environments where failure is not an option. We operate in diverse markets, such as aerospace, transport, emergency services and security, among others.



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## ALTRAN ESPAÑA

As an international leader in the sector of engineering and R&D services, Altran offers its customers a new way of innovating by developing the products and services of tomorrow. Altran works closely with its clients in every link of the value chain of their projects, from design to industrialization. For more than thirty years, the Group has put its experience at the service of key players in the aeronautics, automotive, defense, energy, finance, life science, telecommunications and rail sectors, among others. In 2017, the Altran Group recorded revenues of €2.282 billion. Altran is present in more than 20 countries, with a workforce of more than 33,000 employees.

## APPLUS+ LABORATORIES

Applus+ is a leading company in testing, inspection and certification. Its Applus+ Laboratories division is a strategic testing and engineering supplier to the major aeronautical manufacturers and their Tier 1 suppliers.

Applus+ has a structural testing laboratory that is a leader in its segment and specialized in high load testing. It also has a network of laboratories of Nadcap accredited materials, and recognized by the major aircraft manufacturers.

The company's engineering teams develop turnkey projects for test benches and facilities, automated non-destructive inspection systems, and forming processes.



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ARITEX was founded in 1961 as a leading supplier of tools, equipment and automated solutions for the automotive industry. In 2001, the company diversified its activity and began to work also for the aeronautical sector, currently being TIER 1 SUPPLIER for both sectors, delivering turnkey automatic assembly lines that include automatic measurement, automatic drilling and riveting machines, and AGVs, and integrating leading technologies for carbon fiber application solutions. ARITEX is a member of the AVIC GROUP since 2016.



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## ARQUIMEA INGENIERÍA

ARQUIMEA develops and markets its own radiation resistant microelectronic products (microcircuits, ASICS and FPGAs) and mechanical products (reusable low-impact actuators and mechanisms) for space applications. ARQUIMEA products are currently present in different ESA and international flight projects. The company's R&D and business development policy includes the transfer of space technologies to other sectors such as industrial, automotive and health.



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## ASSYSTEM TECHNOLOGIES

ASSYSTEM TECHNOLOGIES is a leading international group in Engineering Services, with an annual turnover of €1 billion and 14,000 people operating in 27 countries. ASSYSTEM IBERIA develops engineering activities in Spain and Portugal for large industrial groups in the Aerospace and Defense, Automotive and Transportation sectors, and specializes in the different stages of the product life cycle: Product Engineering, Manufacturing Engineering, Quality and Supply Chain, as well as post-commissioning operations.



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## AUTEK INGENIERÍA

Autek is a Spanish cybersecurity company. Since 1998, we are developing tailored projects and solutions in the field of information security for organizations in the public, defense and critical infrastructure sectors. We specialize in secure exchange of information between security domains. We design, develop and integrate our own product line, the PSTgateways and data diodes.



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## AYESA AIR CONTROL

Ayesa Air Control is a company dedicated to the provision of aeronautical engineering services. Our technical capabilities cover the whole life cycle of the product, from design (which we can certify under our DOA EASA Part21J accreditation), to manufacturing engineering (our true specialty) and after-sales and MRO services. We work in all Airbus programs and some important programs of Boeing and Embraer such as 777, 737, 787 and E-190. We are a reference in the sector in process consulting and transformation of assembly lines, including industry 4.0 concepts.



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## CARBURES AEROSPACE & DEFENSE

Carbures Aerospace & Defense encompasses three business units:

- Systems: Development of tailored electronic products:
  - Test systems.
  - Equipment on board, under civil (DO160, DO178, DO254) and military (DEF-STAN) regulations.
  - Maintenance.
- Engineering Services, integrating technologies in:
  - Development of test software and defense systems.
  - Production engineering: ITs, final inspection, production control.
  - Definition of aerostructures, interiors and tooling.
- Manufacture of composite parts and sub-assemblies, in Hand Lay-up, RTM and Resin Infusion technologies. We have production plants in Spain and China, autoclaves from 1.5 to 15 meters, clean room and ultrasonic inspection.



## CELESTICA VALENCIA

Celestica is the undisputed leader in Aerospace and Defense, supplying solutions for critical and complex missions to our clients.



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## CENTUM

CENTUM is a group of companies with presence in Spain, Germany and Brazil, with over 10 years of experience in the development of services, solutions and technological engineering products, specializing in communication, control and signal intelligence activities for the Aerospace, Defense, Emergency, Security and Telecommunications sectors.



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## CESA - COMPAÑÍA ESPAÑOLA DE SISTEMAS AERONÁUTICOS

Design, manufacture, assembly, certification, repair and product support for equipment and accessories (own and third parties) in civil and military programs.

Development of hydraulic, mechanical and pneumatic systems, landing gear, flight controls, fuel equipment, wheels and brakes, launchers and in-flight refueling for the aerospace and defense industry.



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**sopra  steria**

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## CIMPA / SOPRA STERIA

CIMPA is one of the main players in Product Lifecycle Management (PLM) services throughout Europe and since 2015 is a subsidiary of Sopra Steria, European leader in digital transformation with one of the most comprehensive commercial portfolios in the market. Sopra Steria provides its customers with Aeroline, a transnational organizational structure to respond to the needs of the aerospace sector, which has recently been reinforced with the incorporation of CIMPA. Sopra Steria and CIMPA are digital technology and strategy partners of the main manufacturers and suppliers in the European aerospace business.

# Crisa

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## CRISA (AN AIRBUS DEFENCE AND SPACE COMPANY)

Crisa, an Airbus Defence and Space company, is one of the leading suppliers of complex on-board electronics for space. More than 30 years of experience and 900 flight units put into orbit on nearly 200 missions support Crisa's capabilities in the design and manufacture of complex electronic equipment for satellites and launchers.

# DAS

 **Photonic**

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## DAS PHOTONICS

DAS Photonics is a technology-based company focused on the development of innovative products based on proprietary photonic technology for high performance sectors such as Defense, Aeronautics and Space. DAS Photonics covers all phases of the product life cycle, from design to manufacturing, integration and commercialization. Its portfolio includes complete solutions for application areas such as Electronic Warfare and Electronic Intelligence in the Defense sector, and photonic frequency converters, optical antenna shapers and optical links for Space applications.

## DEIMOS IMAGING

Deimos Imaging is a geoinformation company that owns and operates the Deimos-1 and Deimos-2 satellites. In addition, Deimos Imaging provides access to a virtual constellation of more than 30 optical and radar Earth observation satellites, and processes and distributes a wide range of geographic information products and customizable solutions.



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## DELTA VIGO – DELTA GROUP SPAIN

We are experts in providing the maximum added value to our customers through Integral Solutions for Industrialization of Productive Processes.

We are also Tier 1 of the main OEM's in the manufacture of flight parts (Metallic and Composites).



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## DF NÚCLEO

With over 50 years of experience, DF Nucleo provides technological solutions through turnkey projects based on technology and own products for the Security and Defense, Aeronautics, Maritime, Energy, and Intelligent Infrastructure Control industries.

The company, which belongs to the group Duro Felguera, is currently focused on engineering and implementation of communication and control systems around three major areas: Security and Defense, Aeronautical and Maritime Systems, and Energy and Industrial Control Systems.



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## EINSA, EQUIPOS INDUSTRIALES DE MANUTENCIÓN

EINSA is a Spanish company founded in 1979, with over 30 years of experience in the aviation industry. During this time, the company has positioned as a leader in the design, development, manufacture, installation and after-sales services for the most advanced ground support equipment both for civil and military aircraft.



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## ELECNOR DEIMOS

Elecnor Deimos participates in most ESA programs, implementing solutions for systems engineering, ground segment, mission analysis and design, on-board software and satellite integration, in the fields of Science and Exploration, Satellite Navigation, Earth Observation, Knowledge of the Space Environment and Launchers. In addition, we develop UAV platforms, and provide turnkey systems for aeronautical and maritime applications, both civil and military, and solutions and services for the transport sector, digital transformation, industrial process optimization and localization services.



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## ELEMENT SEVILLE

Element Seville is a company focused on the technical support for the aerospace industry in materials, structures and non-destructive tests. We are one of the few laboratories in Europe with the capabilities and certifications needed to carry out tests on aeronautical components. The Element group has a global presence in various sectors. The company has a team of more than 6,200 professionals and 195 laboratories around the world.



## ESCRIBANO MECHANICAL AND ENGINEERING, S.L.

ESCRIBANO MECHANICAL AND ENGINEERING, S.L., a world reference company in high precision machining for the aerospace and defense sectors, designs, develops and manufactures complex defense systems at its facilities in Alcala de Henares.

Remote Control Weapons Stations for small- and medium-caliber land, naval and air applications, and electro-optical systems for advanced observation and tracking, security and border surveillance applications are among its main business lines.

Escribano has mechanical, optical and electronic manufacturing capabilities with facilities that in 2019 will double the current 14,000 m<sup>2</sup> and with a current staff of more than 250 people.



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## EUROPAVIA ESPAÑA

Europavia is a company specializing in MRO logistics management, maintenance of aeronautical equipment, and distribution and commercial promotion of high technology equipment and systems in the Spanish aeronautics, defense, space and infrastructure markets. Since 1965, the company serves the main clients in the markets where it is present. With a substantial products and services portfolio, EUROPAVIA has numerous references in all market segments where the company operates.



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## EVERIS AEROSPACIAL, DEFENSA Y SEGURIDAD

Everis Aeroespacial, Defensa y Seguridad is a company that offers global solutions for the implementation of critical systems, integrating innovative technologies coming both from its own development, directly or through its participated SMEs, and technological partners with whom the company has strategic alliances. The company combines the strength of the everis brand with the flexibility and adaptability of its technological SMEs to offer leading products and services to the market, in areas such as unmanned systems, C4ISR solutions, special vehicle development, monitoring and intelligence systems, critical infrastructure protection, cybersecurity, airport infrastructure management and advanced simulation tools.



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## EXPAL SYSTEMS

EXPAL Systems develops, manufactures, integrates and maintains a complete range of high performance products, systems and services for the land, sea and air Armies. As a supplier to Ministries of Defense, Armies, international organizations and other leading defense companies, EXPAL provides products and services in more than 60 countries. EXPAL manages the entire life cycle of ammunition and explosives. Its offering includes weapon systems, ammunition and propellants, technological systems and applications, and maintenance services for aeronautical and demilitarization systems, and land cleaning.



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## FORMECAL

Formecal is a company with 35 years of experience in forging, high precision machining and component assembly, with important clients in the aeronautics, railway and automotive industries. Our strength is the quality of our products manufactured in pieces of high responsibility, making us a company capable of undertaking projects of aeronautical components with high technical requirements.

## GENERAL DYNAMICS

European Land Systems  
Santa Bárbara Sistemas

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## GDELS-SANTA BÁRBARA SISTEMAS

GDELS-SBS performs the design, production, commercialization and maintenance of defense equipment such as armored vehicles, artillery, missiles, weapons and ammunition. The company is integrated into General Dynamics European Land Systems (GDELS), also based in Madrid, being the European branch of General Dynamics' Combat Systems Division. We perform our commercial activity and provide customer service worldwide, but especially in NATO countries.



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## GMV

Development of advanced technology solutions, providing integrated systems and specialized products and services: consultancy and engineering, software and hardware development, turnkey systems integration and operations support for the space, aeronautics, defense, cybersecurity, health, transport and information technology sectors.

## GTD

With over 30 years of experience, we are a worldwide high-technology company committed to the design, integration and operation of complex mission-critical applications and systems. We have an experienced team that develop projects of great technical difficulty and next generation systems for the space, aeronautics, energy, scientific facilities, and critical and maritime port infrastructure sectors, who make GTD to be an ideal option for our clients' projects.

The quality policy, the excellence and the team strength have always been our priorities.



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## HISDESAT

An operator of government satellite services for the areas of defense, security, intelligence and foreign affairs. The company provides secure satellite communications services to government bodies in different countries (in X and Ka bands), through SpainSat and Xtar-Eur. It also offers satellite Earth Observation capabilities, with PAZ and Ingenio satellites, which provide day and night images in all weather conditions. The satellite Maritime Traffic Information System (AIS) provides information on the situation of world maritime traffic in real time. Ground control centers of the satellites are operational 24x7x365.



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## HISPASAT

HISPASAT consists of companies with presence in Spain and Latin America, where its Brazilian subsidiary HISPAMAR is located. HISPASAT is a leader in the dissemination and distribution of audiovisual contents in Spanish and Portuguese, including streaming of important direct-to-home (DTH) satellite TV and high-definition television (HDTV) digital platforms. HISPASAT also provides broadband and connectivity satellite services including Internet access, mobility and extension of cellular networks, and other value-added solutions to governments, corporations and telecom operators in America, Europe and North Africa. HISPASAT is one of the leading companies worldwide for revenues in its sector and the main communications link between Europe and America.



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## HV SISTEMAS

Design, development and manufacture of advanced electronic equipment and systems for the defense, aeronautics and space sectors.



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## IBERESPACIO (IBÉRICA DEL ESPACIO)

IberEspacio supplies products based on biphasic components such as "Heat Pipes" and "Loop Heat Pipes" for thermal control of satellites and other space vehicles, as well as structural equipment with thermal capabilities. IberEspacio carries out the conceptual design, engineering, manufacturing and testing of thermal systems for current satellites, and the development and qualification of new systems for the next generation of satellite platforms.

The company exports 90% of its production to 17 countries.



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## INDRA

Indra is one of the leading global consulting and technology companies, and a technology partner of its clients around the world for key business operations. It is a leading global provider of proprietary solutions in specific segments of the Transportation and Defense markets, and the leading company in Information Technology in Spain and Latin America. The company has a comprehensive range of proprietary solutions and advanced technology services with high added value, which combines with a unique culture of reliability, flexibility and adaptation to the needs of its clients. Indra is a world leader in the development of integral technological solutions in fields such as Defense and Security, Transport and Traffic, Energy and Industry, Telecommunications and Media, Financial Services, Electoral Processes, and Public Administrations and Health. Minsait is Indra's digital transformation business unit. In the fiscal year 2017, Indra had a turnover of €3.011 billion, 40,000 employees, local presence in 46 countries and commercial operations in more than 140 countries.



## INESPASA

INESPASA is a company specializing in the design and development of tooling projects, and manufacturing of mechanized components and structural assemblies for aircraft. The company began its activity in 1986, in Seville (Spain), and soon began to grow both nationally and internationally.

Currently, INESPASA has modern and extensive facilities that include a center dedicated to R&D&i projects, with a total area of around 10,000m<sup>2</sup> within the Aeropolis Business Park.



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## INSTALAZA

INSTALAZA is a leading-edge company that uses the latest technologies in the design, development and manufacture of equipment and materials to offer effective solutions to the Infantry. Founded in 1943, the professional experience of Instalaza is widely proven as a supplier to the Spanish Armed Forces and to countries around the world. Its products have always been subjected to the most demanding quality controls to offer the maximum performance at all times, even in the harshest conditions. In addition, the armed forces of countries around the world are equipped with Instalaza's equipment and products, with highly satisfactory outcomes and maximum operability and efficiency.



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## INSYTE

INSYTE is a specialist (for 30 years) in the industrialization and manufacturing of electronic cards, and finished electronic products for the avionics, defense, naval, medical and industrial sectors (IPC Class 3). We also make wiring harnesses and cabinets and racks wiring. Insyte offers a customized service to its clients: support in design, industrialization and manufacture of electronic equipment with state-of-the-art resources in production and quality control with 3D inspections. These services include the purchase of all the components of the product. Conducting all types of tests including pre-certification.



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## ITP AERO

ITP Aero is a leading company in its market segment, currently being the ninth company in the world of aeronautical engine and components by sales, and one of the top one hundred companies in the aeronautical industry (Top 100 Aerospace Companies, PwC and Flight International). The company has production centers in Spain, Great Britain, Malta, the United States, India and Mexico, and a workforce of more than 3,600 employees.

ITP Aero's activities include the design, research and development, manufacturing and casting, assembly and testing of aeronautical engines. Within the Service Support segment, it provides services for a wide range of regional aviation engines, and for helicopters, industrial engines and defense applications. ITP Aero operates as a corporate unit within the Rolls-Royce Group.



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## MADES

ELECTRONIC MANUFACTURING SERVICES. Established in 1990, MADES is a leading supplier for precision electronic systems and subsystems for the Aerospace, Defense and Industrial markets. Our services include the development, industrialization, manufacturing, testing, integration and life cycle support of electronic systems. Our modern world-class facility located in Malaga, Spain, encompasses over 5,000 square meters and employs over 100 skilled engineers, technicians and operators.

MADES manufactures complex systems for its clients, including actuation systems, communications, control electronics, sensors, mission systems, surveillance, telemetry, radar, radiofrequency, power electronics, electro-optics, identification of objectives, etc.



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## MASA

MECANIZACIONES AERONAUTICAS, SA (MASA) is specialized in the manufacture of finished and equipped metal parts for the aerospace industry. The high degree of excellence provided by the different departments of MASA allows offering a complete process in the production of parts for the aeronautical industry, thanks to an extensive team of engineers responsible for their management, design and calculation; a manufacturing process with high-speed leading technology, and the production of parts through surface treatment and painting processes. A great team that works together to offer a comprehensive and professional service, according to the most demanding quality standards.

## MBDA

MBDA is the leading European company in the missile and missile systems sector, and one of the three largest companies in the sector worldwide. MBDA is the only group capable of operating throughout the entire life cycle of its products (45 missile systems and countermeasures products) covering the full range of operational needs of the three Armed Forces. Two of MBDA's main strengths are a multinational cooperation in Europe for the development of joint projects and continuous support to the Ministry of Defense in the development and fulfillment of its national defense policies. MBDA is owned by AIRBUS (37.5%), BAE SYSTEMS (37.5%), and LEONARDO (25%).



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## MECÁNICA DE PRECIÓN TEJEDOR

MECANICA DE PRECISION TEJEDOR S.A. manufactures a full range of CNC machining, mechano-welded assemblies and mounting for the military industry. Ground platforms: Different tower components, night vision equipment and lifting systems for battle tanks and other vehicles. Ammunition: Involved in various missile programs, the company produces components for bombs, shells and grenades of different calibers. Navy: Manufacturing of mechanical parts for periscopes (Percosub program). Aeronautics: Involved in the manufacture of various components for unmanned aircraft. The company has the following certifications: UNE-EN ISO 9001-2008 and PECAL/AQUAP 2120.



**MECÁNICA DE PRECIÓN TEJEDOR, S.A.**  
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## MTORRES

MTorres is made up by a group of companies specializing in the design, manufacture and installation of tool machines specific for manufacturing aircraft components, and their tooling and assembly systems. Our products range from machining of individual components to the final product assembly, both in metal and composite materials.



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## MYC

MYC is a company focused on aeronautical production, specializing in production engineering and assembly. We provide comprehensive management support to production projects, covering all activities: process engineering, design and manufacture of tools, manufacturing and logistics management of basic components, assembly, delivery and certification of the final product.

MYC's activity also focuses on other industrial sectors such as space, automotive, rail and defense, providing experience, flexibility, quality, speed and mobility.



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## NAMMO PALENCIA

Nammo Palencia supports the Spanish Armed Forces and their allies with small and medium caliber combat and training ammunition.

Our cutting-edge products manufactured on the basis of dedication, precision and attention, drive innovation in all sectors. The company is part of the Nammo Spain operations, within the Nammo Group with worldwide presence.



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## NAVANTIA

Navantia is well-established in the military shipbuilding industry and one of the few companies capable of offering design, development, construction, integrated platform control system, propulsion and combat systems.

The company offers a global customer service including life cycle support, thus extending the vessel's service life. Navantia's main customers include the maritime forces of Spain, the United States, Australia, Turkey, Norway, Malaysia, Venezuela and India. During the last 10 years Navantia has built frigates, LHDs and OPVs.



## OTO MELARA IBÉRICA

OTO MELARA IBERICA S.A.U. is a Spanish company specializing in the production of stations for weapons of various calibers. The company belongs to the Italian Leonardo group and has gained a great reputation in the market as a solid company in the defense sector. In addition, the company is supported by the solid experience of Leonardo S.p.A. in the field of military products. Its main objective is to develop products and services for the different sectors of the Spanish Army, and expand outside the Spanish borders to achieve a significant presence in other geographical areas.



OTO Melara Ibérica

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## PROYTECSA SECURITY

Proytecса Security is a Spanish company with a clear international outlook headquartered in Madrid and with its main factory in Huesca. Our mission is to design, develop, produce and sell our own technological solutions: robots, access control and smart fences, which adapt to the specific Security and Defense needs of our national and international clients. PROYTECSA has been closely collaborating with national security forces and agencies, financial entities, railway companies, public administrations and private corporations for over 25 years. This has allowed us to position ourselves as a prestigious company worldwide and a benchmark in the security sector.



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## RELATS

Relats is a highly internationalized Catalan family business founded in 1957 in Caldes de Montbui (Barcelona) by Vicenç Relats Arimon.

Relats is present in five continents through its five production plants (Catalonia-Spain, China, Mexico, Morocco and Vietnam), technical and commercial offices throughout the world (United States, Germany, France and Australia) and a distribution center in Japan.

Relats works with companies that supply the main components of global brands in the aerospace, automotive, rail, electricity, household appliances and renewable energy industries.



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## RODRISER IAE

RODRISER is a family SME founded in the 1980's that currently develops various activities and services in the defense and aeronautics sectors:

- Manufacturing of metal parts, including final processes.
- Assembly and bench testing of equipment and assemblies.
- MRO services, aircraft installation and engineering support.



**ROHDE & SCHWARZ**

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## ROHDE & SCHWARZ ESPAÑA

Rohde & Schwarz is an international group of companies headquartered in Munich (Germany), with presence in more than 70 countries in the world. It has a staff of 10,000 employees and an annual turnover of €1.9 billion. With over 85 years of experience, R&S develops, manufactures and integrates communications and intelligence solutions for national security and defense in the civil and military fields, as well as cybersecurity solutions and equipment, and test and measurement systems for the correct functioning and maximum performance of radar, navigation, communications, electronic warfare and ATC systems. The company has a technical assistance and calibration center in Madrid, and an engineering team specialized in the development of "turnkey" projects that include integration, installation, start-up, test protocols and training.



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## SAES - S.A. DE ELECTRÓNICA SUBMARINA, S.M.E.

With over 28 years of experience in the naval sector, we provide high technology and tailored solutions to the military and civil sectors. Our systems, which are in service all over the world, are characterized by cost-effectiveness and reliability.

- Sonar systems for submarines and surface ships.
- Intruder detection sonars for underwater protection and surveillance.
- Acoustic classification and intelligence systems.
- ASW systems for air and sea platforms.
- Underwater signature measurement, control and simulation.
- Multi-influence naval mines and mines for special forces.
- Simulation and training.
- Engineering services and courses.

## SAFRAN ENGINEERING SERVICES

A company of the SAFRAN Group with more than 3,000 engineers that operates in the aerospace and automotive sectors, covering the entire product life cycle: design, calculation, testing, modeling, simulation, processes, materials, production support, and after-sales service. Innovation and continuous improvement are part of the building blocks of SAFRAN ENGINEERING SERVICES.



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## SAINSEL SISTEMAS NAVALES

A company participated by Navantia and Indra. Sainsel is a leader in integrated navigation systems (ECDIS/WECDIS) and wheelhouses both for military and merchant ships and Search and Rescue (SAR) Surveillance Systems. Sainsel is also a supplier of equipment and solutions for the modernization of combat systems for surface ships and submarines. For the aeronautical sector, the company has a range of special processing and display equipment to be used on board aircraft, including 3D and panoramic monitors, cockpit displays, EFBs and mission processors.

## Sainsel

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## SAPA PLACENCIA

SAPA PLACENCIA is the oldest Spanish company in the defense sector (1575). The company develops and produces its own products in the field of armored vehicles. Specifically, it has its own high-performance transmission technology, electric power generation and management systems and auxiliary power units. It also modernizes and manufactures antiaircraft artillery guns (35/90).

## SAPA PLACENCIA

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## SEGULA TECHNOLOGIES ESPAÑA

Since 2002, Segula Technologies Spain is an engineering consultancy with a strong focus on research, innovation and development. Currently, the company has more than 1,000 employees distributed in 13 offices near to its customers. It belongs to the French engineering group Segula Technologies, an international benchmark with more than 11,000 employees distributed among 28 countries. Segula stands out for operating in the aeronautics, defense, automotive, rail, oil & gas, energy and industry, PLM and naval sectors, among others.



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## SENER

SENER is a private engineering and technology group established in 1956, which seeks to offer the most advanced technological solutions to its clients, and enjoys international recognition for its independence and commitment to innovation and quality.

SENER has become a world reference company in the aerospace, infrastructure and transport, renewable energy, power, oil & gas, and naval sectors. In 2017, SENER celebrated 50 years in Space, with more than 275 equipment and systems successfully delivered to satellites and space vehicles for the US (NASA), Europe (ESA), Japan (JAXA) and Russia (Roscosmos) agencies.



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## SERTEC

Sertec is a Spanish company with 20 years of experience. Its main activities are focused on engineering, structure testing and instrumentation, composites, tooling and control systems, as well as automation and systems (UAVs, antennas). Sertec's activity focuses on turnkey projects including engineering services such as analysis, design, development, management and control of systems manufacturing, equipment, tools and complex structures for the aeronautics, aerospace, defense, simulation, railway, naval, automotive and nuclear industries.



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## SISTEPLANT

Sisteplant is an industrial engineering company founded in 1984, whose main activity is the implementation of advanced manufacturing technologies and predictive and intelligent solutions to implement Industry 4.0, especially in the aerospace and defense industries. Sisteplant offers support in the transformation of the business model in the entire value chain (design, manufacturing, MRO and dismantling), creating Smart Manufacturing environments that hybridize productive technologies, the talent of people, and technological solutions for the digital factory (MES, GMAO, IoT, machine learning, virtual reality, AI, big data, etc.)



## TECNALIA

We are a benchmark Research and Technological Development Center in Europe. We collaborate with companies so that they become more competitive and generate wealth and employment.

And we achieve it thanks to a team of people committed and passionate about technology, and our high potential in R&D&i and advanced services.

Our mission unites us: Transforming technology into GDP. And our vision makes us different: To be agents of the industry transformation.

- Propulsion
- Launchers
- Advanced systems for satellite structures
- Packaging
- Technology transfer
- Tribology mechanisms
- Microgravity instruments for orbital infrastructure



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## TECNATOM

Tecnatom is a Spanish multinational company specialized in engineering, with presence in 32 countries and over 60 years of experience in Non Destructive Testing (NDT.) It has its own state-of-the-art technology for ultrasonic and induced currents inspection, which is constantly updating and improving through its R&D activities.

The Tecnatom Group has managed to position as a reference company in the aeronautical and industrial market, thanks to the supply of automated inspection systems, NTD instruments and technical services.



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## TECNOBIT - GRUPO OESÍA

TECNOBIT is the advanced engineering division of the Oesia Group for the Avionics, Security and Defense sectors. Throughout its more than 40 years of experience in the market, it has become an international reference providing services and equipment at the forefront of technology.

TECNOBIT carries out the design, development, production and maintenance of the most innovative systems within its main business areas: Vision Computing, Optronics, Tactical Communications, Encryption, Embedded Avionics and Simulation.



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## TELESPAZIO IBÉRICA

Telespazio Iberica, the Spanish subsidiary of the Telespazio Group, offers services that cover the complete management cycle of assets related to terrain, from the generation of cartographic data with the latest aerial and satellite technologies, to the development of IT solutions. These applications combine GIS and mobility, and include geo-referencing and loading of business data, as well as the generation of orthophotos and thematic maps from satellite images. The broad product portfolio of Telespazio Iberica covers markets with a great technological vocation (Energy and Utilities, Public Administrations, Defense, Transport or Emergencies), providing solutions in the fields of geo-information, satellite communication and comprehensive services management to the user of satellite navigation systems.



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## THALES ALENIA SPACE ESPAÑA

Thales Alenia Space Spain is a leading company in the space sector with 30 years of experience in the design, development and commercialization of advanced space systems and equipment. The company has participated in more than 500 satellites, probes and space vehicles for telecommunication, Earth observation, science, exploration, navigation and orbital infrastructure, for satellite operators and space agencies around the world. The company offers a wide range of solutions covering the whole value chain: equipment, subsystems, payloads and systems for the ground segment.



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## THALES PROGRAMAS DE ELECTRÓNICA Y COMUNICACIONES

Thales Programas de Electronica y Comunicaciones is a wholly-owned subsidiary of Thales Spain that develops activities in the fields of defense, security and aeronautics.

Activities, design, production, integration and maintenance of:

- Command, Control and Communications Systems (C4I)
- Systems for protection of forces
- RPAS systems
- Intelligent surveillance (ISR) and counter unmanned aircraft systems (CUAS)
- Aeronautical and air navigation radio aids systems

Thales is a leader in technological solutions applied to defense, aeronautics, security, transport and space. Thales Spain is a competence center for Space, Critical Infrastructure Security, and Transport.

## TRYO AEROSPACE

TRYO Aerospace, a merger between RYMSA Espacio and the space activities of Mier Comunicaciones, is an international reference provider of RF antennas, equipment and subsystems on board satellites. With more than 30 years of presence in the space sector, the company has participated in more than 550 space missions and launchers, with 6,900 flight equipment contracted by the main players in the sector at an international level.



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## URO, VEHÍCULOS ESPECIALES (UROVESA)

URO, Vehículos Especiales, S.A. (UROVESA) is a company whose main activity is focused on designing, manufacturing and commercializing special all-terrain vehicles for military and/or industrial use. The company has a full range of tactical vehicles, off-road trucks, high mobility vehicles, armored vehicles, etc. The technical assistance of our off-road vehicles (ground platform), including their equipment and spare parts, is also one of the main activities of the company.



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## COLLABORATING ORGANIZATIONS

### HEGAN

HEGAN, the Aeronautics and Space Cluster Association of the Basque Country, is a private non-profit association that brings together the Basque aeronautical and space sectors. It was created with the mission of representing and invigorating the sector to facilitate its competitiveness in the short, medium and long term through cooperation and innovation between companies and other agents, by providing cooperative responses to their strategic challenges.



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### FUNDACIÓN HÉLICE

Established in 2004 as an Andalusian aerospace cluster, the Foundation encompasses the representation of all stakeholders: Universities, Technology Centers, SMEs, Airbus, Regional Government, Business Organizations and Trade Unions. The Helice Foundation was created to spread the knowledge of Andalusian aerospace activities and aeronautics culture, so that the voice of the Andalusian Aerospace Cluster could be heard in national and international forums and to coordinate the strengthening of the cluster. Its activities include: Trade missions and international events, publications and training cycles, evaluation studies and electronic management.



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