

INFORME ANUAL
2019
URTEKO TXOSTENA
ANNUAL REPORT



The Aeronautics and Space Cluster -Association of the Basque Country - **HEGAN** is...



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AURKIBIDEA

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1. PRESENTATION



It is an honour for me to present for the second year this annual report of the Aeronautical and Space Cluster of the Basque Country – HEGAN year 2019. After two years presidency working with the Cluster we all represent, and at a time of crisis for the sector, figures for 2019 showed a growth in aggregate employment, to exceed 15,000 direct jobs in this period (almost 3% more than in 2018), as well as an increase in turnover of over 6%. This was due to the fulfillment of the forecasts set by the sector to date with annual increases in airline traffic of around 5% that represented a growing demand for aircrafts.

However, the COVID-19 pandemic has created an unprecedented situation for commercial aviation. Unfortunately, and despite the per-

severance of all of us, of our Members, of the Administrations and of the Association team, reality has dealt us a serious challenge. First and foremost, I take this opportunity to send my most heartfelt sympathies to everyone directly affected by the health crisis.

It is clear to all the Members who make up HEGAN that this sudden economic slowdown suffered by the sector has upset all the plans we had in place, the forecasts we had envisaged and the dynamics we were carrying out. Although the competitive vectors I mentioned last year (highly qualified people, investment in RTD, cutting edge equipment, Advanced Manufacturing and Industry 4.0) remain valid, many others join them. Some, somewhat abstract, such as resilience, effort and commitment; some, more in the short-term, such as liquidity, dynamic diversification or agile management; and others, unquestionably strategic: intensity in RTD and integral and specific institutional support.

We are facing the greatest of uncertainties. The studies that are being carried out at the moment in which we are finishing writing this report do not foresee any recovery in commercial aviation before four or five years in the best case scenario, following a period of profound restructuring of the market and the value chain, and after an overwhelming drop in airline traffic, and therefore, in the demand for aircrafts.

I would like to end by underlining that this crisis will pass. And that, as a sector and as Cluster, we should continue to focus on the long term, on a future in which sustainability will play a fundamental role. This is why, despite the situation we are going through, we will continue to work towards ever more sustainable aviation, committed to technological development, and offering ever more efficient aeronautical products and services.

Carlos ALZOLA ELIZONDO
President



1. 2019ko Urteko Txostenaren aurkezpena

Ohorea da niretzat bigarren urtez HEGAN Euskadiko Aeronautika eta Espazioko Klusterraren Urteko Txostena aurkeztea (2019ko Urteko Txostena). Ordezkatzen dugun klusterrean bi urtez lehendakari lanean aritu ondoren, eta sektoreak bizi duen krisialdi honetan, 2019ko zifrek gora egin dute enplegu agregatuan, zuzeneko 15.000 enplegu baino gehiago izatera iritsi baikara epe horretan (2018an baino ia % 3 gehiago); eta fakturazioa, berriz, % 6 baino gehiago hazi da. Sektoreak ordura arte ezarritako aurreikuspenak bete zirelako lortu da hori; izan ere, aireko zirkulazioaren urteko hazkundeak % 5 ingurukoa izan zen, eta aireontzien eskariak gora egitea ekarri zuen horrek.

Hala ere, COVID-19ak eragindako pandemiak aurrekaririk gabeko egoera sortu du hegazkin komertzialen arloan. Zoritxarrez, guztiok, bazkideok, administrazioek eta elkarteko taldeak adoretu jokatzen dugun arren, errealitateak proban jarri nahi izan gaitu. Lehenik, garrantzitsuenak tribuna honetatik, gogoan izan nahi ditut osasun-krisiak zuzenean eragin dien guztiak.

HEGAN osatzen dugun bazkide guztiok argi eta garbi daukagu sektoreak bat-batean izan duen geldialdiak hankaz gora jarri dituela genituen plan guztiak, eskuartearen genituen perspektibak eta gauzatzen ari ginen dinamikak. Hala ere, ia aipatutako lehiakortasun-bektoreek (maila altuko gaitasuna duten langileak, I+G+b arloko inbertsioa, ekipamendu aitzindariak, Fabrikazio Aurreratua eta 4.0 Industria) indarrean jarraitzen dute; eta beste asko gehitu zaizkie horiei. Batzuk nahiko abstraktuak dira, erresilientzia, ahalegina eta konpromisoa, esaterako; beste batzuk, berriz, epe laburreragokoak, hala nola likidezia, dibertsifikazio dinamikoa edo kudeaketa arina; eta beste batzuk, estrategikoak, zalantzarik gabe: intentsitatea I+G arloan, eta erakundearen laguntza integrala eta espezifikoak.

Ziurgabetasun handienari egin behar diogu aurre. Txosten honen idazketa amaitzen ari garen uneotan egiten ari diren azterketetan, ez da aurreikusten hegazkintza komertziala lauzpabost urtean suspertuko denik (eta hori kasu onenean); susperraldi hori, gainera, merkatua eta balio-katea sakon berregituratu eta aire-zirkulazioa eta, beraz, aireontzien eskaera nabarmen jaitsi ondoren gertatuko da.

Krisi hau pasatuko dela azpimarratuz bukatu nahi nuke. Eta, sektore eta kluster gisa, epe luzera begiratzen jarraitu behar dugula esanez, jasangarritasuna oinarri-oinarritzakoa izango den etorkizun batean, hain zuzen. Horregatik, bizi dugun egoerari aurre eginez, lanean jarraituko dugu gero eta jasangarriagoak diren hegazkinak lortzeko, teknologia garatzearen aldeko apustua eginez, eta gero eta eraginkorragoak diren aeronautikako produktu eta zerbitzuak eskainiz.

Carlos ALZOLA ELIZONDO
HEGANeko lehendakaria

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1. Presentación Informe Anual 2019

Es para mí un honor presentar por segundo año esta memoria anual del Cluster de Aeronáutica y Espacio del País Vasco – HEGAN del año 2019. Tras dos años de presidencia trabajando con el Cluster al que representamos, y en un momento de crisis para el sector, las cifras del año 2019 mostraron un crecimiento en el empleo agregado hasta superar, en ese periodo, los 15.000 empleos directos (casi un 3% más que en 2018); y haber incrementado la facturación en más de un 6%. Todo ello se debió al cumplimiento de las previsiones que marcaba hasta la fecha el sector con incrementos anuales del tráfico aéreo que rondaban el 5% y que constituían una demanda de aeronaves creciente.

Sin embargo, la pandemia de Covid-19 ha creado una situación sin precedentes para la aviación comercial. Desgraciadamente, y a pesar del tesón de todos nosotros, de los Socios, de las Administraciones, del equipo de la Asociación, la realidad se ha empeñado en ponernos a prueba. Lo primero, lo más importante, aprovecho para transmitir desde esta tribuna mi más sincero recuerdo a todos los afectados directamente por la crisis sanitaria.

Es claro para todos los socios que formamos HEGAN que el parón repentino que sufre el sector ha trastocado todos los planes que teníamos, las perspectivas que manejábamos y las dinámicas que ejecutábamos. Si bien aquellos vectores de competitividad que comentaba el año pasado (personal altamente capacitado, inversión en I+D+i, equipamiento de vanguardia, Fabricación Avanzada e Industria 4.0) siguen vigentes; se les unen otros muchos. Unos, un tanto abstractos, como son resiliencia, esfuerzo o compromiso; otros, más en el corto plazo, como liquidez, diversificación dinámica o gestión ágil; y otros, indiscutiblemente estratégicos: intensidad en I+D y apoyo institucional integral y específico.

Nos enfrentamos a la más grande de las incertidumbres. Los estudios que se están realizando en estos momentos en los que estamos terminando de redactar esta memoria, no prevén recuperaciones para la aviación comercial antes de cuatro o cinco años en el mejor de los casos, tras un periodo de profunda reestructuración del mercado y de la cadena de valor, y tras una caída sobrecogedora del tráfico aéreo y, por ende, de la demanda de aeronaves.

Me gustaría terminar recalcando que esta crisis pasará. Y que, como sector y como Cluster, debemos seguir teniendo nuestra visión puesta en el largo plazo, en un futuro donde la sostenibilidad jugará un papel fundamental. Es por ello que, a pesar de la situación que estamos atravesando, seguiremos trabajando por una aviación cada vez más sostenible, apostando por el desarrollo de tecnología, y ofreciendo productos y servicios aeronáuticos cada vez más eficientes.

Carlos ALZOLA ELIZONDO
Presidente de HEGAN



2. THE CLUSTER ASSOCIATION



HEGAN is a private non-profit association that brings together the Basque aeronautics and space sector, created with the mission of representing and revitalising the sector, to facilitate its competitiveness in the short-, medium- and long-term through cooperation and innovation between companies and other agents, responding cooperatively to its strategic challenges.

General Assembly

This is the highest-ranking body of the Association. It is made up of all member companies and is the forum through which they can express their wishes.

Board of Directors

This is the collegiate administration and management body. Its current members, appointed by the General Assembly, are:

Carlos ALZOLA -Chairman, ITP AERO
Xabier BERASATEGI -Vice-Chairman, GRUPO TTT
José Julián ECHEVARRIA -Secretary, SENER AEROESPACIAL
Álvaro FDEZ. BARAGAÑO, ACITURRI
Ricardo CHOCARRO, AERNNOVA
Karlos BALSATEGUI, ARATZ
Jon PARDO, BURDINBERRI
Ignacio EIRIZ, CTA
Aitor KINTANA, DTK
Ana SANTIAGO, SISTEPLANT
Javier FDEZ. DE RETANA – Guest, AERNNOVA
Plácido MÁRQUEZ – Guest, ITP AERO
Javier VIÑALS – Guest, SENER AEROESPACIAL
Susana LARREA -Guest, SPRI / BASQUE GOVERNMENT
Iñaki TELLECHEA -Guest, SPRI / BASQUE GOVERNMENT

HEGAN'S Team

The members of the Association's permanent team are as follows:

Mentxu DÍAZ, Administration
Martín FDEZ. LOIZAGA, Deputy Director
Ana RODRÍGUEZ, Head of Operations
Ana VILLATE, Managing Director



HEGAN ACTIVITIES 2019

Since we started to implement the strategic challenges of our Strategic Reflection 2017-2020 (PE1720), efforts have been made to revitalize and dynamize groups of Members with shared interests in areas, mainly, of Technological Development, Non-technological Development and Internationalization; without ever forgetting the Competitive Intelligence, nor the Training of the people, nor the representation and defence of the Cluster. This is always with the aim of supporting the improvement of competitiveness through cooperation. This is how we work:



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SC1 – Value Chain Development

Main activities 2019 focused on Tech and Non-Tech development:

INNOVATION COMMITTEE: Working with various entities for the dynamisation of projects (additive manufacturing, EDM, digital and connected factory, mechanized process automation).

AEROTRENDS COMMITTEE: Delegate of the Innovation Committee. Preparing both Aerotrends 2019 and next editions.

PROJECTS:

- > Collaborative project subsidized by DFB (Elkarlanean) with AFM: for help from the clusters to support the EIT Manufacturing initiative
- > Interreg Sudoe project with some Basque clusters, ITA Aragón, regional development agencies and municipalities of Aveiro and Clermont Ferrand to develop a collaborative Sudoe platform in Blockchain applications. (Sep 2019-Sep 2022)
- > Euro-Region Aquitaine-Navarra-Euskadi Project, F-COMP on Functional Composites (integration of sensorics in composite). Microlan (Partner), Naitec, ESTIA and HEGAN. Workshop to disseminate results in the Dec19 Conference Alternatives to Conventional Machining. (January 2019 to June 2020).

TECH WORKSHOPS:

- > Results of practical R + D + i for SMEs on April 10 in Tknika, Center of the Deputy Ministry of Education dedicated to the transfer of knowledge to VET teachers and to small companies through projects.
- > Public part of the June General Assembly dedicated Technology: Presentations of EIT Manufacturing and the new BRTA
- > Energy Efficiency Conference in collaboration with the Energy Cluster (Oct 9).
- > Seminar on Alternative Technologies to Machining: Fab. Additive, EDM and Dissemination of Results of the FCOMP Project (11 Dec)
- > Hazinnova: pilot program (SPRI with Innobasque) to involve SMEs to execute a micro-project of non-technological innovation (free for SMEs, HEGAN is a mediator and takes care of the paperwork, in exchange HEGAN receives a little help). Result in 2019 (starts in Sep): 7 microprojects launched (out of 12 companies assigned to HEGAN). Until Sep 2020.



Online tool “Map of Collaboration”, a tool designed to have a platform exclusively for Partners to increase knowledge and collaboration. The tool implemented within the private area of the web, where Offers and Demands can be uploaded in order to speed up the search and obtaining solutions among the Associates; be these commercial, technological, etc. HEGAN will also make use of this tool to publish the possible demands that often come to us from clients outside the cluster.

SUPPLY CHAIN WORKING GROUP: Review Matrix of Needs and suggestion to carry out some action that can solve those of FASTENERS, FORGES and BARS; In addition, the standardization of formats of production control tools in the supply chain (which is already working on the SPACE initiative) was discussed. As a result of this meeting during the year the following actions have been developed:

Organization of the AeroTxoko 2019 (17sep). Dedicated to Supply Chain: practical and key aspects to access the supply network of large customers. Speakers: Airbus DS-Propulsion, Aciturri, Aernnova, ITP Aero and SENER Aerospace; in addition to making a presentation on the SPACE initiative.

Launch of a process to identify BARRAS suppliers: Partners survey and meeting preparation in 2020. FASTENERS suppliers developing initiative in the Bergara region.

With regard to FORJAS, and having planned the organization of an Opportunity Day, it was suspended after the request for a report on this problem by the Vice-Ministry of Industry. Executed Executive Report and presented to Deputy Minister; agreed budget for the completion of the Report in 2020.

SPACE Initiative: Monitoring and coordination of training activities, attendance at the SPACE General Assembly in Seville and presentation of the SPACE initiative at Aerotxoko19.

TEDAE: Collaboration since 2019 with active participation in the Aeronautical Commission and the R&D Commission (represents CTA). Invitation as a collaborator in the PAE since December.

Contract Risk Workshop with the aim of providing clues and clues for the reduction of risks in the signing of purchase / sale contracts.

Conference on Dimension and Alternative Financing (Jul 11) with Albia Capital and Elkargi.

SC2 – People Development

HR COMMITTEE: Conducted the training survey to prepare Aeroacademy, prepared a common aligned message that was incorporated into the PDN on Jun 6. Working initiatives for the promotion of Early Vocations and the Attraction of Talent. Collaborating with a pilot project (Hiru Sare-STEAM with Innobasque and SPRI), initiatives such as INSPIRA Steam (Univ. Deusto), etc.

Participation in the Women in Power Conference in July together with the Councilor and organization together with the COIAE of the Women in Aeronautical Engineering Conference in November.

On-line Employment Exchange Tool: in addition to the traditional Employment Exchange where external stakeholders enter their CVs, a tool has been created for the exclusive use of partners for the publication of their employment demands: the demands can only be published by Partners, being these of public access.

Aeroacademy: organization of 6 specific courses in the sector, with 80 participants from 24 HEGAN member entities and 16 non-members.

SICC: Cluster Competitive Intelligence System. Weekly *Alerts* for 300 users from all theMembers.



Master Aero of the Bilbao School of Engineering: Launched a new EIB Master's Degree in Aeronautical Master (which replaces the old Aero Classroom). The master has the same credits but spread over 2 years, in order to attract talents to the sector earlier. I start in the course of 2019, it will end in 2021. In 2020 there will be no graduates. Reviewing the agenda to update it in the 2nd course of this promotion. This master has lost the financial support of the EJGV.

Incorporation of Credits in aeronautical matters in the Metrology and Electronics specialties in the Higher Degrees of the FP Armeria Eskola School. Credits taught by CTA staff

SC3 - Internationalization



Annual Report 2018: Preparation of the same and presentation at the General Assembly

Public files Members on the web: example

Sectorial video

MISSIONS 2019:

SAFRAN Reverse Mission February. Six partners visited.

Reverse Mission RFQs SAFRAN July. Three mechanized SMEs contacted

Reverse Mission AIRBUS DS Propulsion in September. Eight companies

SHOWS 2019

Participation in Intergune May. Stand (Basque Clusters) organized by BT&I

Grouped participation in PAS19 (Le Bourget) together with 7 Members and BT&I (Basque Trade & Investment - Basque Internationalization Agency, a public company belonging to the Spri Group and the result of the merger of Spri's international services and the Directorate of Internationalization of the Development and Infrastructure department of the Basque Government). In total 9 organizations in 28m2; + 9 Partners exhibiting individually, and a dozen visiting Members. In total, 25 HEGAN Associates. Coordination with BT&I for actions 2020 and 2021.

Preparation of Intl '2020 actions. Partners Survey and Intl'20 Plan proposals

SC4 - Representation

3 Press releases prepared by HEGAN:

- June: Results of the sector 2018
- June: Participation in Paris Airshow 2019
- Oct: Aerotrends launch

Collaboration with the media in the preparation of news and big effort on Social Nets



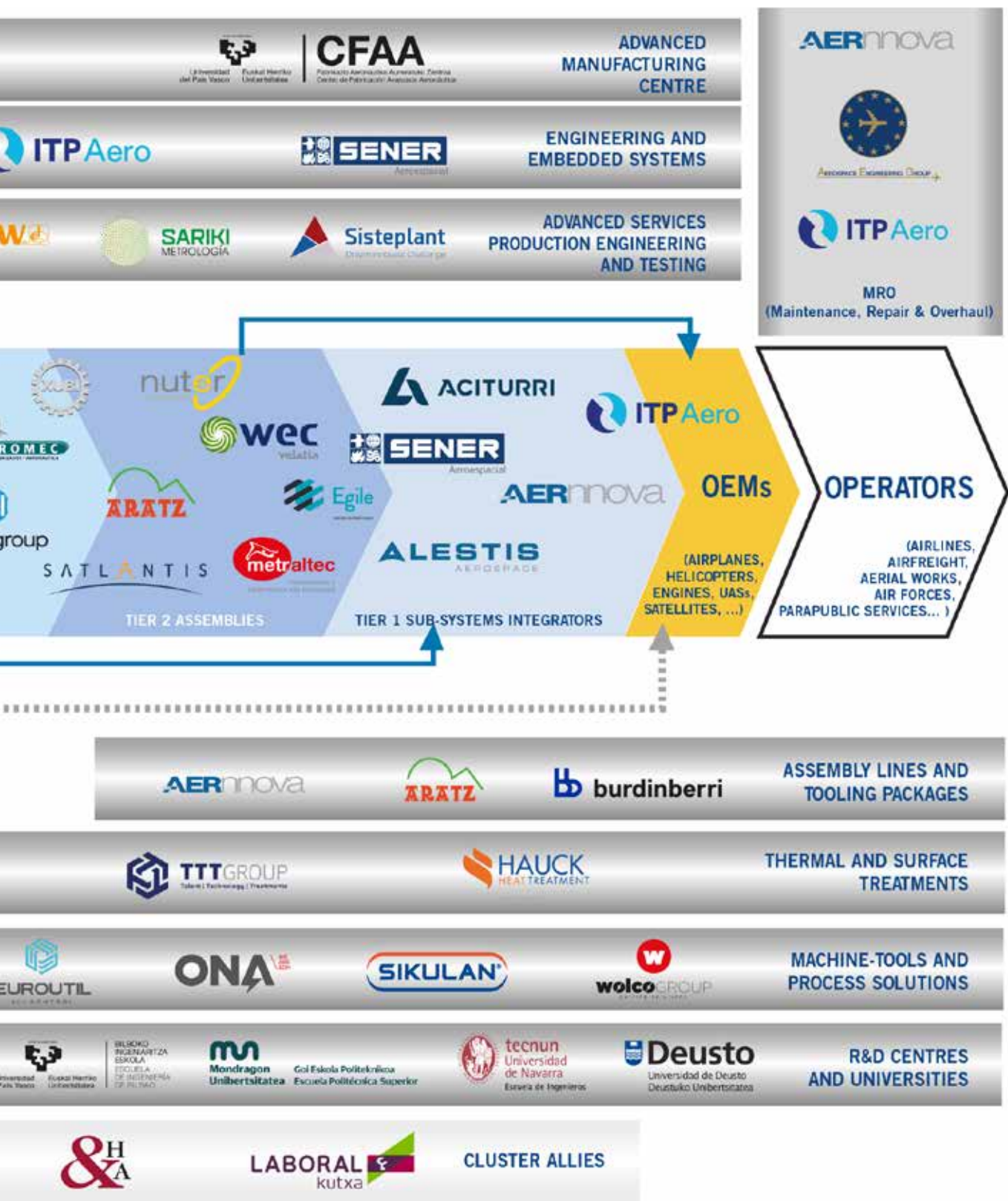


3. THE CLUSTER MEMBERS: Value Chain

The Cluster Members are key links in the global Aerospace Value Chain covering a wide



range of the same and supplying a large variety of Products and Advanced Services





3. THE MEMBERS

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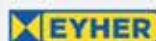


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3. The Cluster Members: ACTIVITIES 2019

AEROSTRUCTURES
ENGINES
SYSTEMS & EQUIPMENT
SPACE
MRO
RTD PROJECTS



15

AEROESTRUCTURAS
MOTORES
SISTEMAS Y EQUIPOS
ESPACIO
MANTENIMIENTO
PROYECTOS DE I+D

AIRE EGITURAK
MOTORRAK
SISTEMAK ETA EKIPOAK
ESPAZIOA
MANTENTZE LANAK
I+G PROIEKTUAK



AEROSTRUCTURES

HEGAN MEMBERS

ADVANCED SERVICES

CIDETEC
CTA
GAIKER
LTK GRUPO
RENISHAW



ENGINEERING

ALTRAN
AYESA AIR CONTROL
SISTEPLANT

TOOLING

ARATZ
BURDINBERRI
DYFA
EUROUTIL

TREATMENTS

AYZAR
GRUPO TTT
HAUCK HEAT TREATMENTS

PRODUCTION SOLUTIONS

EGAMASTER
EYHER

COMPONENTS

AEROMECA
ASTORKIA
DTK
EIBAR PRECISION CASTING
INDUSTRIAS GALINDO
KHEGAL AERONÁUTICA
MATRICI INNOVATIVE TECHNOLOGIES
MESIMA
METRALTEC
MICROLAN
NUTER
TAES

TIERs1

ACITURRI
AERNNOVA
ALESTIS



Photos courtesy: ALESTIS



CLIENTS



DIRECT CLIENTS

ACATEC
 ACITURRI
 AERNNOVA
 AIRBUS
 AIRBUS DS
 AIRBUS HELICOPTERS
 AIRBUS OPERATIONS
 ALESTIS
 BELL
 BOEING
 BOMBARDIER
 CTRM MALASIA
 DAHER-SOCATA
 DASSAULT
 EMBRAER
 FOKKER-GKN
 GROUPE LAUAK
 HELIBRAS
 HÉROUX-DEVTEK SPAIN
 INESPASA
 KHEGAL AERONÁUTICA
 LEONARDO
 PARKER
 SIKORSKY
 SKF
 SONACA
 STELIA AEROSPACE
 TAI

CURRENT PROGRAMMES

737
 777
 787
 747-81/F
 A320 / A320neo
 A330 / A330neo
 A330MRTT
 A350 XWB
 A380
 A400M
 ATR 42 / 72
 Bell 505
 BELUGA XL
 CN235, C295
 CRJ700/900/1000
 CSeries
 EC 225 /725 Super Puma
 E-jets E2
 EMB 170/175/190/195/LINEAGE 1000
 ERJ135/140/145
 FALCON 7X
 KC-390
 LEGACY Family
 NH90
 S-92 / H-92
 TIGRE
 TYPHOONCRJ700/900/1000
 CSeries
 EC 225 /725 Super Puma
 E-jets E2
 EMB 170/175/190/195/LINEAGE 1000
 ERJ135/140/145
 FALCON 7X
 KC-390
 LEGACY Family
 NH90
 S-92 / H-92
 TIGRE
 TYPHOON

ENGINES

HEGAN MEMBERS



ADVANCED SERVICES

CTA
RENISHAW
SARIKI METROLOGÍA

ENGINEERING

SISTEPLANT

TOOLING

BURDINBERRI
EUROUTIL

PRODUCTION SOLUTIONS

DANOBATGROUP
EGAMASTER
EKIN
ONA ELECTROEROSIÓN
SIKULAN
WOLCO

TREATMENTS

GRUPO TTT
HAUCK HEAT TREATMENTS

COMPONENTS

ACITURRI
AEROMEC
AIBE
ARATZ
ASTORKIA
BATZ
EGILE
EIBAR PRECISION CASTING
ELECTROHILO
IMEDUSA
INDUSTRIAS GALINDO
LAZPIUR
MATRICI INNOVATIVE TECHNOLOGIES
MESIMA
METALÚRGICA MARINA
MIZAR ADDITIVE MANUFACTURING
NUTER
TAES
TECNASA

TIER 1
ITP AERO

CLIENTS



DIRECT CLIENTS

ACITURRI
 AD GROUP
 AUBERT&DUVAL
 CFM INTERNATIONAL
 EA
 EGILE
 EPI
 EUROJET
 GENERAL ELECTRIC
 GKN Aerospace Engine Systems
 HÉROUX-DEVTEK SPAIN
 HONEYWELL
 ITP AERO
 MAINI
 MECACHROME
 MTRI
 POWERJET
 ROLLS-ROYCE
 SAFRAN AIRCRAFT ENGINES
 SAFRAN HELICOPTER ENGINES
 SAFRAN OIL SYSTEMS
 SAFRAN TRANSMISSION SYSTEMS
 SALLÉN
 SL ENGINEERING
 TURBINE JET
 WEC

CURRENT PROGRAMMES

BR725
 CF34-10
 CFM56
 EJ200
 F136
 F414
 GE90-115
 HTF7000
 LEAP 1A/B/C
 M88
 MTR390-E
 PW1000G (GTF)
 PW535E
 SaM146
 SILVERCREST
 TP400
 TRENT 1000
 TRENT 500
 TRENT 700
 TRENT 7000
 TRENT 900
 TRENT XWB

SYSTEMS & EQUIPMENT

HEGAN MEMBERS



ADVANCED SERVICES

CIDETEC
CTA
RENISHAW

ENGINEERING

ALTRAN
SISTEPLANT

PRODUCTION SOLUTIONS

DANOBATGROUP
EGAMASTER

TREATMENTS

GRUPO TTT
HAUCK HEAT TREATMENTS

COMPONENTS

ACITURRI
AEROMECH
DOILAN
EGILE
EIBAR PRECISION CASTING
IMEDUSA
INDUSTRIAS GALINDO
KHEGAL AERONÁUTICA
KORTA
LAZPIUR
MET-MEKA
METRALTEC
MICROLAN
MIZAR ADDITIVE MANUFACTURING
NUTER
SENER AEROSPAIAL
TAES
TECNASA
WEC
XUBI

TIER 1
ITP AERO

Photos courtesy:

Scope of Supply

Actuators
Air conditioning
Air Treatment Management
APUs
Architecture, critical software and hardware development
Defence Systems
Engines-Actuators-Electrical Equipments
Fuel system components
Ground equipment
Heat and surface treatments
Hydraulic system
Interiors
Landig Gear
Lubrication systems
Optronic systems TV-Thermography
Radars
Turboprop systems



CLIENTS

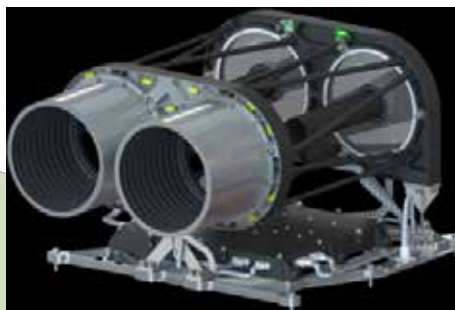
DIRECT CLIENTS

ACITURRI
AD GROUP
AIRBUS
AIRBUS DS
AIRBUS HELICOPTERS
BHR Helicopter
BOMBARDIER
BROAD TELECOM
CARBURES
CERN
DBD
EGILE
GENERAL ATOMICS
GENERAL DYNAMICS
GOODRICH
HELICOPTERES GUIMBAL
HENSOLDT
HÉROUX-DEVTEK SPAIN
HONEYWELL
IAI
INDRA
LIEBHERR AEROSPACE
MARTIN-BAKER
MBDA-UK
RAFAEL
RATIER FIGEAC
RAYTHEON
SAAB DYNAMICS
SAFRAN AEROSYSTEMS
SAFRAN ELECTRONICS & DEFENCE
SAFRAN LANDING SYSTEMS
SAFRAN POWER UNITS
SAFRAN TRANSMISSION SYSTEMS
SENER AEROESPACIAL
THALES GROUP
TÜBITAK BILGEM
WEC

HEGAN MEMBERS

ADVANCED SERVICES

CIDETEC
CTA
RENISHAW
TECNALIA



COMPONENTS

AIBE
ARATZ
BURDINBERRI
DYFA
EGILE
INDUSTRIAS GALINDO
IMEDUSA
METALÚRGICA MARINA
METRALTEC
MICROLAN
NUTER
SATLANTIS
TM TELLERÍA
ITP AERO

TIER 1

SENER AEROESPACIAL

ENGINEERING

ALTRAN
AYESA AIR CONTROL

TREATMENTS

GRUPO TTT
HAUCK HEAT TREATMENTS



Photos courtesy: SATLANTIS

CLIENTS

Scope of Supply

Actuation
Dummies
Engineering
Heat and surface treatments
Industry 4.0 solutions and Digital Factory technologies
Machined Components
Mechatronics
Observation satellites
Optical instruments
Optics
Planetary exploration
Propulsion systems
Satellite Antennas
Scientific Missions
Sections
Space imagers
Tooling manufacturing

DIRECT CLIENTS

AIRBUS DS
ANTWERP SPACE
ARIANE GROUP
ASTRANIS SPACE TECHNOLOGIES
CEA
ESA
ESO - European Southern Observatory
EUMETSAT
INDRA
LEONARDO
LUXSPACE
MAXAR
NASA
OHB-SYSTEM
OHL
ORBITAL SCIENCES CORPORATION
QINETIQ
REDUCTIA AEROSPACE
ROSCOSMOS
RUAG
SATLANTIS
SENER AEROESPACIAL
SURREY SATELLITE TECHNOLOGY
THALES
THALES ALENIA SPACE

HEGAN MEMBERS

ADVANCED SERVICES
RENISHAW



TREATMENTS
GRUPO TTT

MRO SERVICES

AERNNOVA
AEROSPACE ENGINEERING GROUP
ITP AERO

PRODUCTION SOLUTIONS
DANOBATGROUP
EGAMASTER



Photos courtesy: AEROSPACE ENGINEERING GROUP

CLIENTS



Scope of Supply

Avionics Systems
Composite & metal structure repairs
Design of GSEs
Design of repairs
Electrical Systems
Fuel Systems
Full Maintenance, Inspection and Repair of Engines
Heat and Surface Treatments
Hydraulic Systems
Inspections, special processes and re-qualifications
Machine-Tools
Maintainability, Reliability Analysis
Modifications at Final Assembly of OEMs
Retrofited CMMs
Sales of spares
Special Hand-Tools
Technical Publications

DIRECT CLIENTS

AIR FORCES
AIRBUS
BEECHCRAFT
BOMBARDIER
EMBRAER
MRO COMPANIES
OEMs
OPERATORS
SAFRAN LANDING SYSTEMS
SIKORSKY
TARMAC
TRADING COMPANIES

25

RTD PROJECTS

HEGAN MEMBERS

CLEAN SKY PARTNERS

AYESA AIR CONTROL
BATZ AEROSPACE
CIDETEC
SENER AEROESPACIAL
UPV/EHU



RTD LEADERS & PARTNERS

ALESTIS
EIBAR PRECISION CASTING
EKIN
GAIKER
GRUPO TTT
HAUCK HEAT TREATMENTS
LORTEK
METALÚRGICA MARINA
MIZAR ADDITIVE MANUFACTURING
MONDRAGON UNIBERTSITATEA
RENISHAW
SARIKI METROLOGÍA
SATLANTIS
SISTEPLANT
TEKNIKER
WEC
WOLCO

CLEAN SKY CORE PARTNERS

ACITURRI
AERNNOVA
ALTRAN
CTA
DANOBATGROUP
EGILE
IK4
ITP AERO
TECNALIA



Photos courtesy: AYESA AIR CONTROL, SE

RTD CALLS

Scope of Technologies

Aerodynamics
 Additive Manufacturing
 Advanced Manufacturing Processes
 Advanced Tooling
 Composites Engineering
 Demonstrators
 Digitalization
 Eco-Design
 Factory of the Future
 Flexible and Intelligent Processes
 Fluid dynamics
 Green Engines
 Industry 4.0
 Connected and Collaborative Manufacturing
 Joining Technologies
 Materials Engineering
 Modelization
 Monitoring
 New Manufacturing Technologies
 New Materials
 Robotics and Automation
 Sensoring
 Smart Factory
 Space Technologies
 Thermoplastics
 Treatments & Coatings

EUROPEAN

CLEAN SKY
 CLEAN SKY 2
 EIT Manufacturing
 ESA
 European - Others
 European Defense Agency
 H2020 - FoF
 H2020 - MG
 H2020 - NMP
 H2020 - SPACE
 H2020-FTI
 H2020-ICT
 H2020-IND
 H2020-SME Instrument
 INTERREG POCTEFA
 INTERREG SUDOE

REGIONAL

Andalusian Calls
 Asturias Calls
 Basque calls - Basque Industry 4.0
 Basque Calls - DFA
 Basque calls - ELKARTEK
 Basque Calls - HAZITEK
 Basque calls - Plan 3i BEAZ
 Castilla La Mancha Calls
 Castilla y León Calls
 Galicia Calls
 Madrid Calls

NATIONAL

CDTI - Innterconecta
 CDTI - CIEN
 CDTI - NEOTEC
 CDTI - PID
 CDTI Calls
 CDTI Cervera CCTT
 RETOS Colaboración
 RETOS Excelencia
 Spanish Ministry of Defence



3. FACTS & FIGURES 2019 Dimension Breakdown

70 AEROSPACE MEMBERS

5 TIER 1: Aerostructures - Engines - Space - Systems

8 Mid-Caps Subassys, Subsets, Equipment, Advanced Services, Engineering ...

41 SMEs Products, Components, Processes and Advanced Services for Aerostructures, Engines, Systems, Space and Equipment

1 AEROSPACE RTD CENTRE: Certification Testing and RTD (3 Labs)

5 RTD ENTITIES with 8 RTD labs with aerospace activities

4 UNIVERSITIES ETSIB: Master in Aeronautics, Master in Space

171 FACILITIES AROUND THE WORLD 85 in the Basque Country 58 in the rest of Spain 28 abroad (Brazil, China, Germany, India, Malta, Mexico, Poland, Romania, UK, USA)

6 CLUSTER ALLIES: M&A - Consulting - Risks & Insurance - Intellectual Property - Legal & Tax - Financing

Members aggregate **TURNOVER** and **EMPLOYMENT**:
2,615 million € and 15,273 people

| 2019 Geographical breakdown | Turnover (M€) | Δ 2018 | Employment | Δ 2018 |
|--------------------------------|------------------|-------------|---------------|-------------|
| Basque Country | 966 | -2.4% | 5,244 | 5.2% |
| Rest of Spain | 1,446 | 20.7% | 7,858 | 2.4% |
| Rest of the World | 202 | -24.9% | 2,171 | -1.0% |
| TOTAL | 2,615 | 6.4% | 15,273 | 2.8% |

| 2019 | M€ | % over Sales | Average % over Sales since 1993 |
|------------------------|-------|-----------------|------------------------------------|
| MEMBERS R&D INVESTMENT | 121 | 4.6% | 14.5% |
| MEMBERS EXPORTS | 1,830 | 70.0% | 69.2% |

CLUSTER DIMENSION (Facilities in Basque Country)

| | | | | | |
|-------------|-----------------------------|-------------|-------------------------------------------|-------------|--------------------------------------------------|
| 1.2% | of the Basque GDP (*) | 5.6% | of the Basque Industrial GDP (*) | 2.5% | of the Basque Industrial EMPLOYMENT (*) |
|-------------|-----------------------------|-------------|-------------------------------------------|-------------|--------------------------------------------------|

HEGAN MEMBERS DIMENSION (Facilities in Spain)

| | | | | | |
|---------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------|-----------------------------|
| 18.5% | 1.3% | 23.1% | 2.2% | 10.3% | 0.6% |
| of the SPANISH (**) | of the EUROPEAN (***) | of the SPANISH (**) | of the EUROPEAN (***) | of the SPANISH (**) | of the EUROPEAN (***) |
| aerospace TURNOVER | | aerospace EMPLOYMENT | | aerospace R&D INVESTMENT | |

(*) EUSTAT 2019

(**) TEDAE 2019

(***) ASD 2019



Evolution

TURNOVER ACCORDING TO SUBSECTORS

| | |
|----------------------|------|
| AEROSTRUCTURES | 53% |
| ENGINES | 41% |
| SYSTEMS & EQUIPMENTS | 3.6% |
| SPACE | 2.4% |

EXPORTS ACCORDING TO COUNTRIES

| | |
|------------------|-----|
| UK | 32% |
| FRANCE | 17% |
| USA | 16% |
| GERMANY | 15% |
| CANADA | 4% |
| OTHERS COUNTRIES | 16% |

RTD EFFORT

| | |
|----------------|-----|
| Auto-Financing | 78% |
| Public Support | 22% |

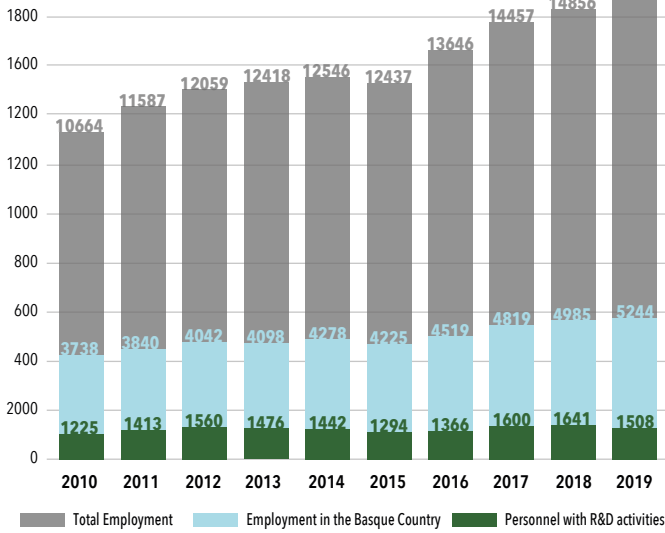
187 RTD Projects active in 2019

14 Members participating in
Clean Sky 2

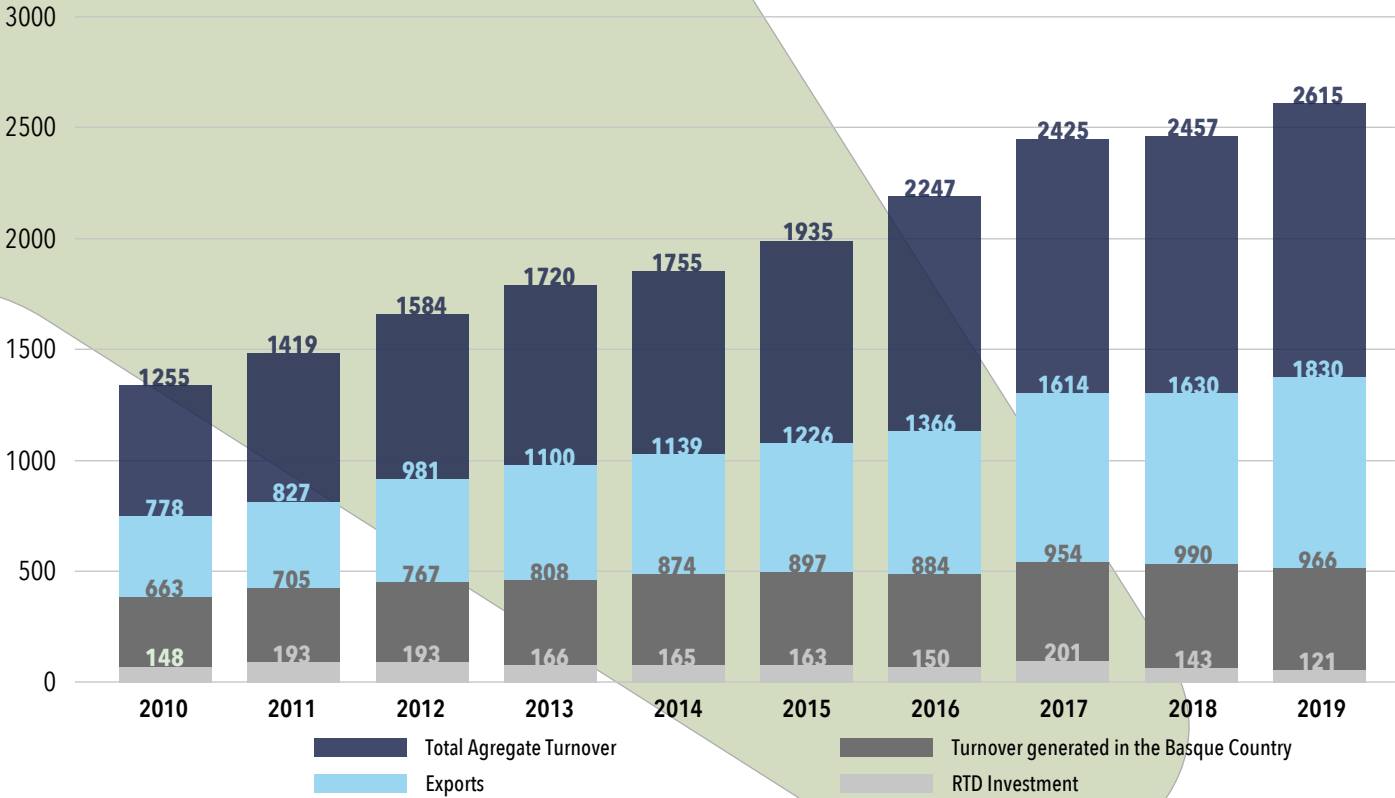
PEOPLE

| Employment According To Qualification | TOTAL | FEMALE |
|----------------------------------------------|-------|-------------|
| Managers Engineers & Graduates | 37% | 55% (1,824) |
| Technicians, Administration and Others | 24% | 35% (1,166) |
| Manual Workers | 39% | 10% (336) |
| Total FEMALE Employment | | 22% (3,326) |

EVOLUTION: PEOPLE



EVOLUTION: M€





4. ACKNOWLEDGEMENT



So many unfortunate things occurred while we were editing this Annual Report during the beginning of 2020. In the process of collecting, consolidating and drafting we went from the joy of seeing how Cluster's expectations for 2019 were being reaffirmed -exceeded once more, by growing employment and turnover figures-, to observe how the world changed in dramatic fashion.

We cannot be happy with what is happening: thousands of people affected by the disease -the worst thing of all-, the social consequences, the downturn in the economy, the terrible effects on our Industry... The slowdown has been so sudden and so unexpected that in just a few months, everything seems to have changed.

But we can show our gratitude to all who make up this Cluster of Companies, Technological Centres, Universities and Administrations. The qualities intrinsic to them -energy, work, enthusiasm, strength, sacrifice, solidarity...- are the same ones that will get us back on the path of sustainable growth that has characterised this Sector... Thank you!

4. ESKER ONEZ

2020. urte honen hasieran, Urteko Txostena idazten ari ginela, zoritxarreko gauza asko gertatu dira. Datuak hartzeko, finkatzeko eta idazteko prozesuan, 2019an pozik ikusi genuen klusterraren helburuak berresten zirela -gero eta enplegu- eta fakturazio-zifra handiagoak lortu ziren-, baina mundua modu lazgarrian nola aldatu zen ikusi genuen gero.

Ezin dugu pozik egon gertatzen ari dena kontuan hartuta: milaka lagun gaixotu dira -horixe da tamalgarriena-, ondorio sozialak ekarri ditu, gogor eragin du ekonomian, ondorio izugarriak izan ditu gure sektorean... Dezelerazioa bat-batekoa eta ustekabekoa izan da, eta hilabete gutxi batzuetan dena aldatu dela ematen du.

Baina, hala ere, eskerrak eman nahi dizkiegu enpresen, teknologia-zentroen, unibertsitateen eta administrazioen kluster hau osatzen duten pertsona guztiei. Beren bereizgarri diren ezaugarriak -ahalegina, lana, ilusioa, indarra, sakrifizioa, elkartasuna- izango baitira, hain zuzen, guztioi berriro ere sektorearen ezaugarri izan den hazkunde eutsiaren bidera itzultzeko aukera emango digutenak. Eskerrik asko!

4. AGRADECIMIENTOS

Muchas cosas, muy desgraciadas, han pasado mientras redactábamos este Informe Anual durante el comienzo de este año 2020. En el proceso de toma de datos, consolidación y redacción, pasábamos de la alegría de ver cómo en 2019 las expectativas del Cluster se reafirmaban -volviendo a ser superadas por unas cifras de empleo y facturación crecientes-, a observar cómo el mundo cambiaba de manera dramática.

No podemos estar contentos por lo que está sucediendo: los miles de afectados por la enfermedad -lo más terrible-, las consecuencias sociales, la afeción a la economía, los terribles efectos en nuestro sector... La desaceleración ha sido tan brusca y tan inesperada que en tan sólo unos pocos meses, todo ha parecido cambiar.

Pero sí podemos mostrar nuestro agradecimiento a todas las personas que componen este Cluster de empresas, centros tecnológicos, universidades y administraciones. Las cualidades que les caracterizan -esfuerzo, trabajo, ilusión, fuerza, sacrificio, solidaridad...- serán las que nos permitan a todos volver de nuevo a la senda de crecimiento sostenido que ha caracterizado al sector... ¡Gracias!



HEGAN participated in 2019 in the European projects:

BLOCK4Coop - Cooperation to promote and implement BLOCKCHAIN technology
in the development of Industry 4.0



F-COMP - Functional composites for the aerospace industry



HEGAN participated in 2019 in the regional project:

ELKARLANEAN 2019 - Development of Basque Clusters at the EIT Manufacturing



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EUSKO JAURLARITZA



GOBIERNO VASCO

EKONOMIAREN GARAPEN,
JASANGARRITASUN
ETA INGURUMEN SAILA

DEPARTAMENTO DE DESARROLLO
ECONÓMICO, SOSTENIBILIDAD
Y MEDIO AMBIENTE



www.hegan.aero

