

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

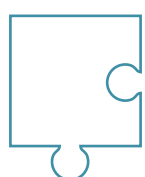
...Member of



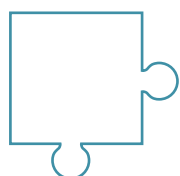
...Registered at

...Collaborator of

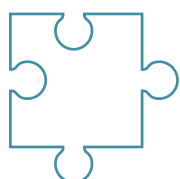




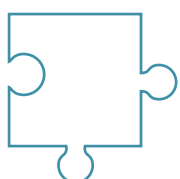
**1. PRESENTATION**  
**AURKEZPENA**  
**PRESENTACIÓN**



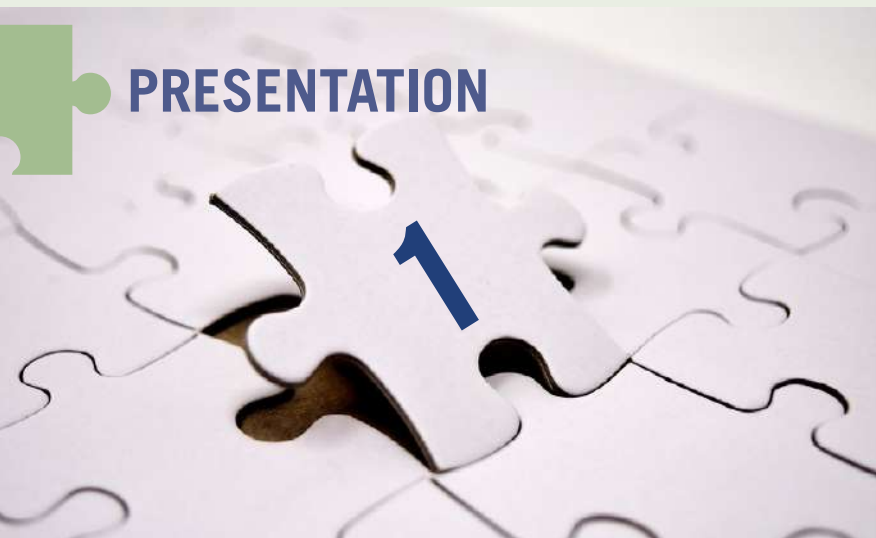
**2. THE CLUSTER ASSOCIATION**  
**2.1. The Association: HEGAN**  
**2.2. HEGAN Activities 2023**



**3. THE CLUSTER MEMBERS**  
**3.1. The Members**  
**3.2. Basque Aerospace Value Chain**  
**3.3. Members Activities 2023**  
**3.4. Facts & Figures 2023**



**4. ACKNOWLEDGEMENTS**  
**ESKER ONEZ**  
**AGRADECIMIENTOS**



This the second time I have presented the Annual Report for HEGAN-Basque Aerospace Cluster as its president. Last year I presented the report on our 25th anniversary, at a time when the sector was still recovering. This year, there has been significant growth.

The year 2023 ended with the positive news that air traffic had recovered to pre-pandemic levels after three years of gradual growth. This, coupled with growth in the Space industry, and the emergence of new projects and programmes linked to new mobility and aviation decarbonisation, means the year ended well for the sector both globally and here, in the Basque Country. The Members of HEGAN are testament to this, employing 15,400 people and turning over almost 2.9 billion euros. Both figures are a record for the Cluster that I represent today.

In terms of R&D, this is an exciting time but one of great challenges too, owing to several factors: expiration of the grants rolled out to combat the crisis; development cycles for new platforms and for important technologies needed for the sustainability of industrial processes; and new digital challenges. In 2023, the Members of HEGAN invested 195 million euros in R&D&I, demonstrating a clear commitment to being more competitive and more respectful of the environment.

There are challenges ahead: a drawback that HEGAN Members face is the supply chain tensions caused by ramp-ups in production; there are still issues with supply and cost of raw and other materials; we need to improve and digitise our processes and our operational excellence to boost our competitiveness; and our biggest concern is the imbalance between supply and demand of qualified professionals. The skills shortage is widespread, affecting practically all value-based sectors, including ours: Aeronautics and Space. We have been labouring this last point for a while (lack of early vocational training and difficulties in attracting, hiring and retaining staff). It is hard for our Members to find enough people.

By tackling these challenges across our Sector, we will be able to keep improving the Cluster's market position. We will have a cutting-edge industry which is strategically important for the country, and we will be able to protect the highly-skilled jobs already generated by this sector and those which will surely be generated in the coming years.

**José Julián ECHEVARRÍA AGUIRRE**  
President of HEGAN



## Aurkezpena

HEGAN Aeronautika eta Espazioko Klusterraren lehendakari naizenetik, Urteko Memoria aurkezten dudana bigarren aldia da. Iaz, gure hogeita bosgarren urteurrena ospatzearekin batera egin nuen, suspertze-garaian ginenen. Aurten, sektorean hazkunde nabarmena izan dela egiazta dezaket.

2023an, albiste positibo bat izan genuen, aire-trafikoa pandemiaren aurreko kopuruetara itzuli baitzen berriro, hiru urtez pixkanaka gora egiten joan ondoren. Horrekin batera, industria espazialaren gorakadari eta mugikortasun berriarekin eta hegazkingintzaren deskarbonizazioarekin lotutako proiektu eta programa berrien agerpenari esker, sektorearen jarduera-maila ona izan da urte amaieran, bai globalki bai Euskadin. Izan ere, HEGANeko bazkideek 15.400 pertsonari eman zieten enplegu zuzena, eta ia 2.900 milioi euro fakturatu zituzten. Bi zifra horiek errekorrak hautsi dituzte ordezkatzeko dudana kluster honetan.

Era berean, I+G arloak jarduera eta erronka handiko unea bizi du, hainbat faktoreri esker: krisiei aurre egiteko hedatutako laguntzen indarraldia, industria-prozesuen jasagarritasunari lotutako teknologia garrantzitsuen eta plataforma berrien garapen-zikloak, eta erronka digital berriak. Oro har, 2023an, HEGANeko bazkideek 195 milioi euro inbertitu zituzten I+G+b arloan, eta lehiakorragoak izateko eta ingurumenarekiko errespetu handiagoz jokatzeko konpromiso argia erakutsi zuten.

Bestalde, beste erronka batzuei ere aurre egin beharko diegu: HEGANeko bazkideek une honetan duten zailtasun bat hornidura-kateetako tentsioa da, hain zuzen ere, ramp-upen eta ekoizpen-hazkundeen ondorioz; lehengaien eta materialen hornidurarekin eta kostuarekin lotutako arazoak daude oraindik; lehia-eskakizunak direla-eta, gure prozesuak eta gure bikaintasuna hobetzeko eta digitalizatzeko ahalegina egin behar dugu; eta profesional kualifikatuen eskaintzaren eta eskariaren arteko desoreka ere hor dago. Azken hori da, hain zuzen ere, gure kezka nagusia gaur egun. Profesional falta hori orokorra da, eta baliozkoak diren jarduera-sektore ia guztiei eragiten die, besteak beste, gureari: aeronautikari eta espazioari. Azken puntu horretan, lehendik ere adierazten ari ginen kezka hori (bokazio goiztiarrik ez izatea eta langileak erakartzeko, lotzeko eta atxikitzeko zailtasunak izatea) erronka handia da, bazkideak profesional kopuru egokia lortzeko izaten ari diren zailtasunengatik.

Erronka horiei hainbat arlotan aurre egiteak aukera emango du klusterrak merkatuan duen posizionamendua hobetzen jarraitzeko eta, hala, abangoardiako industria bat izateko, funtsezkoa eta estrategikoa baita herrialdearentzat, bai eta sektore honek sortu duen eta datozen urteetan sortuko duen kualifikazio handiko enplegua babesteko ere.

José Julián ECHEVARRÍA AGUIRRE  
HEGANeko lehendakaria

## Presentación

Esta es la segunda vez que presento, como presidente de la Asociación-Cluster de Aeronáutica y Espacio - HEGAN, la Memoria Anual. El año pasado, tuve la ocasión de hacerlo celebrando nuestro vigesimoquinto aniversario y en pleno periodo de recuperación. Este año, puedo atestiguar un notable crecimiento en el sector.

2023 culminó con la positiva noticia de la recuperación del tráfico aéreo a cifras prepandémicas, después de tres años de paulatino crecimiento. Esto, unido al auge de la industria espacial y a la aparición de nuevos proyectos y programas relacionados con la nueva movilidad y la descarbonización de la aviación, ha propiciado que el año haya concluido con un feliz momento de actividad para el sector a nivel global y, también, en Euskadi. De hecho, los socios de HEGAN dieron empleo directo de 15.400 personas, facturando casi 2.900 millones de euros. Ambas cifras suponen un récord para este Cluster al que hoy represento.

Del mismo modo, el campo de la I+D vive un momento de gran actividad y grandes desafíos por un conjunto de factores: la vigencia de las ayudas desplegadas para combatir las crisis, los ciclos de desarrollo de considerables tecnologías ligadas a la sostenibilidad de procesos industriales y de nuevas plataformas, y los nuevos retos digitales. En conjunto, en 2023 los socios de HEGAN invirtieron 195 millones de euros en I+D+i, mostrando su claro compromiso de ser más competitivos y respetuosos con el medio ambiente.

Por otro lado, también observamos desafíos que debemos afrontar: un hándicap al que se enfrentan los socios de HEGAN es la tensión en las cadenas de suministro debido, precisamente, a los ramp-ups y a los aumentos de producción; a ciertos problemas aún con el suministro y coste de materias primas y materiales; a unas exigencias competitivas que requieren un esfuerzo en mejorar y digitalizar nuestros procesos y nuestra excelencia operacional; y, lo que es hoy nuestra gran preocupación, al desajuste entre la oferta y la demanda de profesionales cualificados. Esta escasez de profesionales es generalizada, afecta a prácticamente todos los sectores de actividad de valor, entre ellos el nuestro: la aeronáutica y el espacio. En este último punto, la preocupación que veníamos transmitiendo (falta de vocaciones tempranas y dificultades en la atracción, vinculación y retención del personal) es todo un desafío por las dificultades que están experimentando los socios para contar con el número adecuado de profesionales.

Combatir estos retos en múltiples ámbitos permitirá seguir mejorando el posicionamiento del Cluster en el mercado, contar con una industria de vanguardia, clave y estratégica para el país, y proteger el empleo altamente cualificado que este sector ha conseguido generar y que, seguro, seguirá generando en los años venideros.

José Julián ECHEVARRÍA AGUIRRE  
Presidente de HEGAN

## The Cluster Association

2



### 2.1 The association: HEGAN

HEGAN is a private non-profit association that brings together the Basque Aeronautics and Space Cluster, created with the mission of representing and revitalising the sector, to facilitate its competitiveness through cooperation and innovation among companies and other agents, answering 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.



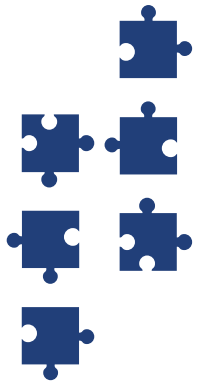
#### // Strategic Map 2021-2024

Generated within our Strategic Plan 2021-2024, it includes all the actions that are deployed from the Association that give value to our Members.

#### // HEGAN's CREW

Mentxu DÍAZ, Administration  
Martín FDEZ LOIZAGA, Deputy Director  
Ana RODRÍGUEZ, Head of Operations  
Javier PIÑÁN, Head of Innovation  
Ana VILLATE, Director





**AeroAcademy:** Technological and Non-Technological Workshops & Specific Training Courses. In 2023: 337 Trainees from 66 entities (65% Members)



## 2.2 HEGAN Activities 2023

// Strengthening the Value Chain



Participation in JEPE 2023 UPV/EHU Young Employment Event (Bilbao Engineering School)  
- Action plan 2023 to promote Early Vocations  
- join forces in STEAM initiatives, EVA northern delegation. Job opportunities and job selection tools... **HR Committees...**



**STEAM SARE KATALOGOA / 2023-2024 IKASTURTEA**  
STEAM hezkuntzako jarduerak, programak eta tailerrak



Gaps in the Value Chain.  
Workshops on Excellence in supplying. SPACE/Airbus initiative Members. Alignment with the policies and processes of the National Sector. Competitive Intelligence...  
**Supply Chain WGs...**



## // Developing collaborative R&D

Infodays and Conferences: Aerospace grants in collaboration with SPRI/EEN and CDTI. Conference on Decarbonization in the Aerospace Sector (SPRI), Smart Industry Challenges Conference in collaboration with Siemens. Special Processes WG: Monitoring and trying to organize training and information actions. REACH Forum.... **Innovation Committees...**



Cluster Technology Agendas Phase 2, dynamization of Work Groups to generate projects and in Coordination with the Aeronautics Piloting Group. 1st Workshop on January o present the results of the Phase 1 carried out in 2022. A Space Specific Working Group was created. Decarbonization Roadmaps in collaboration with SPRI and in coordination with the ZERO CO2 project (Circular SME) for the measurement of Environmental Footprints... **Involved in 4 R&D Projects in 2023...**



## // Reinforcing Members market positioning

Internationalization, Missions, B2Bs, Shows, Diversification...



## // Toughening Cluster influence

Representation, Advocacy,  
Promotion, Communication...

# The Cluster Memmbers

3

AERNNOVA



ITP AERO



SENER



ANTERAL



ARATZ GROUP



ASTORKIA



DTK



DYFA



EGA MASTER



EYHER



GEMINYS



HEXAGON



MATRICI



MESIMA



METALURGICA MARINA



NUTER



ONA ELECTROEROSION



RENISHAW



TTT GROUP



TUBACEX GROUP



URETA



CIDETEC



CTA



GAIKER



UNIV. DE DEUSTO



UPV/EHU



MONDRAGON UNIB.



GU



HERRERO Y ASOCIADOS



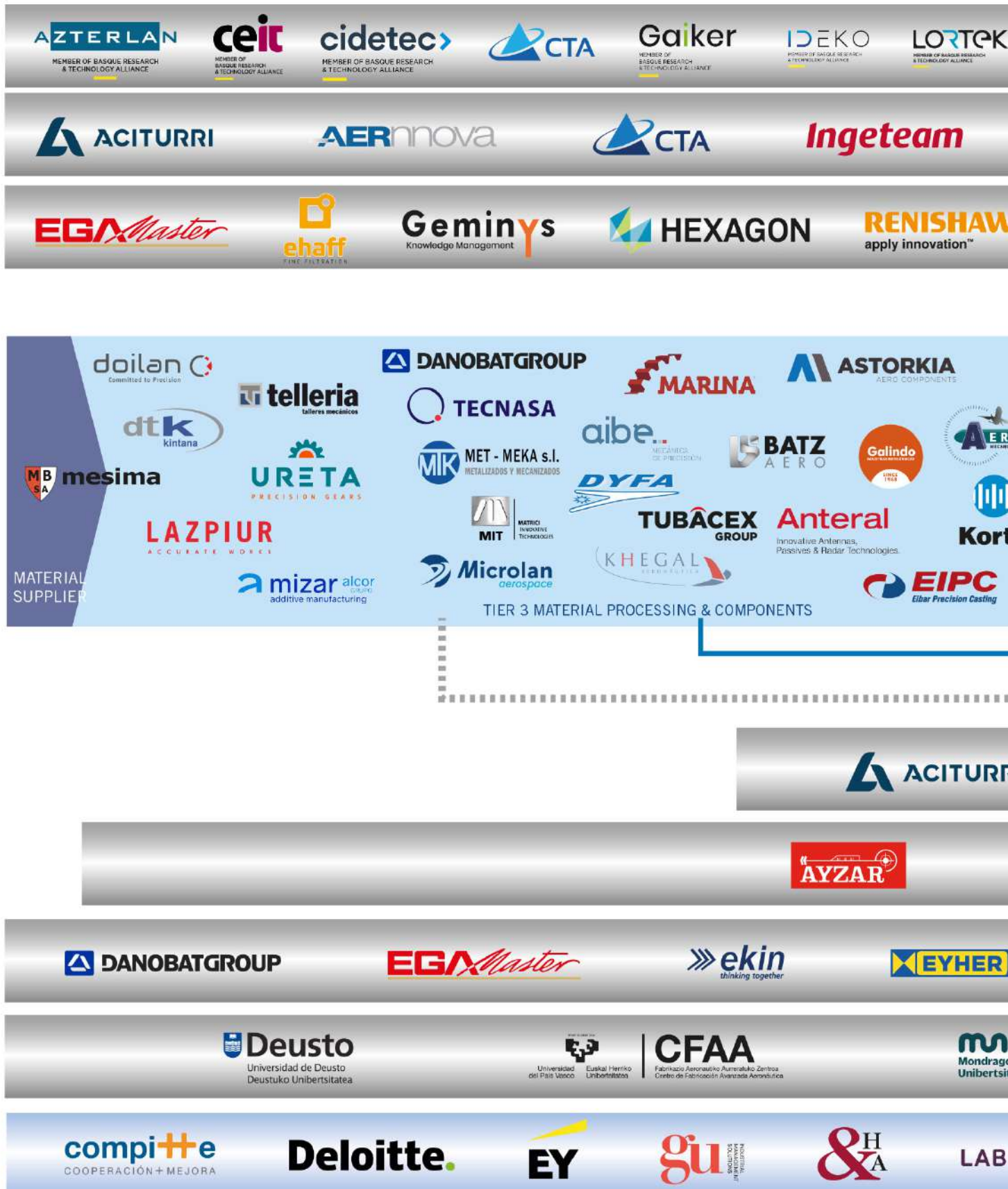
LABORAL KUTXA



<b>AALBERTS S. T. TEY</b> 	<b>ACITURRI</b> 	<b>AEROMEC</b> 	<b>AEROSPACE ENG. GR.</b> 	<b>AIBE</b> 
<b>AYZAR</b> 	<b>BATZ</b> 	<b>BURDINBERRI</b> 	<b>DANOBATGROUP</b> 	<b>DOILAN</b> 
<b>EGILE</b> 	<b>EHAFF</b> 	<b>EIBAR PRECISION CASTING</b> 	<b>EKIN</b> 	<b>EUROUTIL</b> 
<b>INDUSTRIAS GALINDO</b> 	<b>INGETEAM</b> 	<b>KHEGAL AERONAUTICA</b> 	<b>KORTA</b> 	<b>LAZPIUR</b> 
<b>MET-MEKA</b> 	<b>METRALTEC</b> 	<b>METROLOGÍA SARIKI</b> 	<b>MICROLAN AEROSPACE</b> 	<b>MIZAR ADDITIVE</b> 
<b>SATLANTIS</b> 	<b>SIKULAN</b> 	<b>SISTEPLANT</b> 	<b>TECNASA</b> 	<b>TM TELLERIA</b> 
<b>WEC</b> 	<b>WOLCO</b> 	<b>XUBI GROUP</b> 	<b>AZTERLAN</b> 	<b>CEIT</b> 
<b>IDEKO</b> 	<b>LORTEK</b> 	<b>NAITEC</b> 	<b>TECNALIA</b> 	<b>TEKNIKER</b> 
<b>TECNUN</b> 	<b>UPNA</b> 	<b>COMPITTE</b> 	<b>DELOITTE</b> 	<b>ERNST AND YOUNG</b> 
<b>SMARTLOG</b> 	<b>Key Partners for a Reliable FUTURE...</b>			
<b>&gt; Industry</b>	<b>&gt; R&amp;D. Org</b>			
<b>&gt; Universities</b>	<b>&gt; Allies</b>			

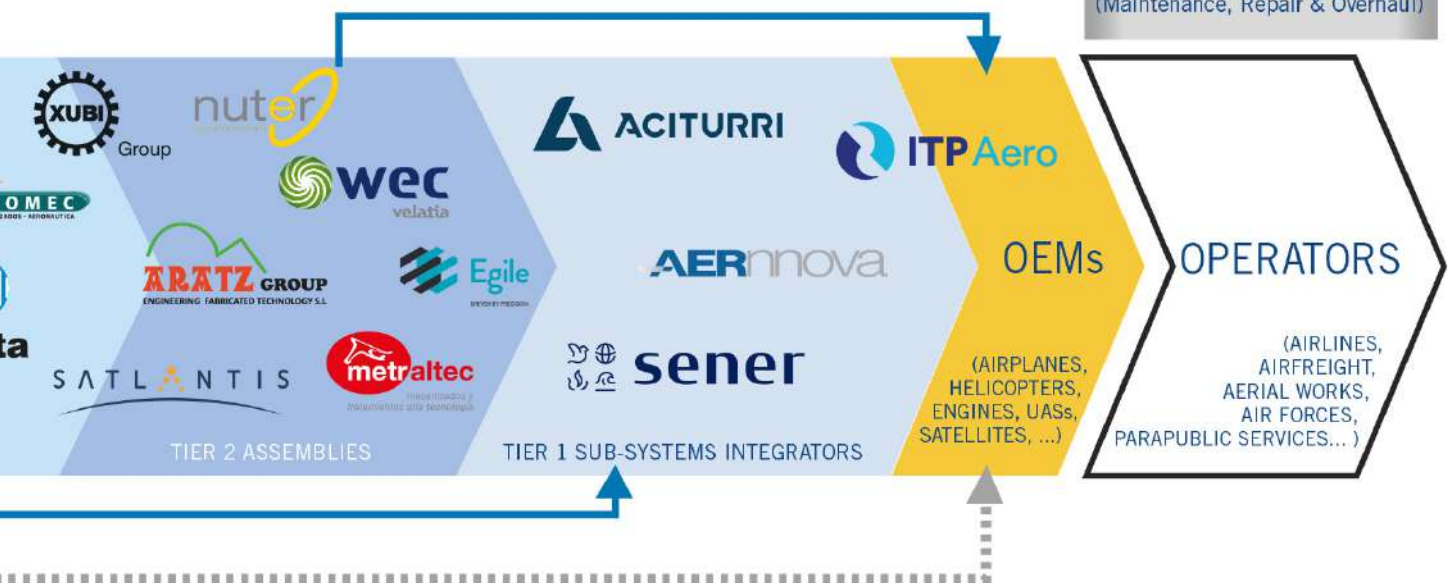
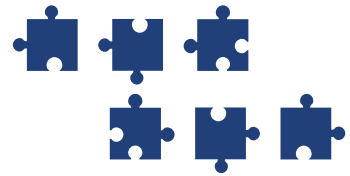


## 3.2 Basque Aerospace Value Chain



Reliable Suppliers certified to the Sector's standards: N9100 Nadcap EN9110 EN9120 Part 21



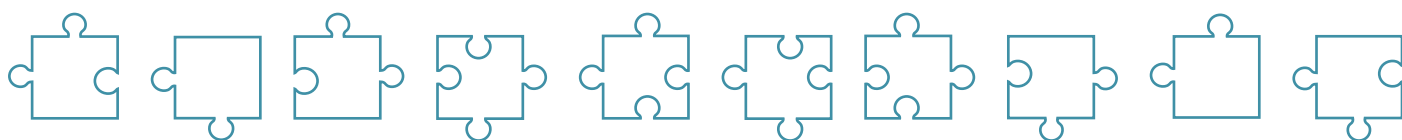


DOA Part 21 POA AS13001 ISO14001 Part 145 PECAL ISO45001 ...



### 3.3 Members Activities 2023

-  Aerostructures
-  Engines
-  Systems & Equipment
-  Space
-  MRO
-  R&D Projects





*Courtesy Boom Supersonic*



## GENERAL DESCRIPTION OF THE PRODUCT/SERVICE

### AALBERTS SURFACE TECHNOLOGIES TEY

Heat treatments

Heat treatments

Heat treatments

Heat treatments

Heat treatments

Heat treatments

### ACITURRI

Rudder Components & Subassembly

FLAPERONS CFRP PANELS

Aileron

Keel Beams CFRP Parts cargo floor

EDGE BANDS

Winglet & Wingstub

HTP

VTP Dorsal Fin

HTP Torsion box

Leading edge panels and LEX of HTP

TIP's HTP

Trailling Edge Panels HTP

Airr Duct S19.1

Leading edge of HTP

Passenger door

CFRP Spar Outboard Aileron

TIP's HTP

Ribs HTP

Wing Assembly Conversion

VTP

Internal structure of S19

Belly Fairing - Risk Partner

S19.1 -Tail Cone



	DIRECT CLIENT	OEM	PLATFORMS
	AIRBUS DS	AIRBUS DS	AIRBUS DS families
	ACITURRI	AIRBUS	AIRBUS families
	EMBRAER	EMBRAER	C-390 Millennium
	AERNNOVA	DASSAULT	FALCON 7X/8X
	AERNNOVA	AIRBUS HELICOPTERS	NH90
	HÉROUX-DEVTEK SPAIN	SIKORSKY	S-92
	AIRBUS DS	BOEING	737
	BOEING	BOEING	777
	AIRBUS DS	BOEING	777
	BOEING	BOEING	787
	BOEING	BOEING	787
	EMBRAER	EMBRAER	190/195
	AIRBUS CANADA	AIRBUS	A220
	AIRBUS AEROSTRUCTURES	AIRBUS	A320/320neo
	AIRBUS OPERATIONS	AIRBUS	A320/320neo
	AIRBUS OPERATIONS	AIRBUS	A320/320neo
	AIRBUS OPERATIONS	AIRBUS	A320/320neo
	AIRBUS OPERATIONS	AIRBUS	A320/320neo
	AIRBUS OPERATIONS	AIRBUS	A320/320neo
	AIRBUS DS	AIRBUS	A330/330neo
	AIRBUS OPERATIONS	AIRBUS	A330/330neo
	AIRBUS OPERATIONS	AIRBUS	A330/330neo
	AIRBUS DS	AIRBUS	A330/330neo
	AIRBUS	AIRBUS	A330/330neo
	AIRBUS DS	AIRBUS DS	A330MRTT
	AIRBUS AEROSTRUCTURES	AIRBUS	A350 XWB
	AIRBUS OPERATIONS	AIRBUS	A350 XWB
	AIRBUS OPERATIONS	AIRBUS	A350 XWB
	AIRBUS OPERATIONS	AIRBUS	A350 XWB

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
ACITURRI
Belly Fairing (Zones 0,1, 2, 3.1, 3.2, 3.3 y 4)
MLGD / S19.1 / Rear Fairing
Belly Fairing (panels)
Auxiliary Fin & HTP Box Extension
CFRP Rudder Spar
Sponsons
Wing to Fuselage Fairing
Flap CFRP parts and Vanes assembly
Elevator & Cowlings
Elevator
Cowlings
Auxiliary Fin & HTP Box Extension
Ventral Fin
WING
Empennage
Fuselage
Central WING Box: structural assembly and equipment & Tip wings integration
WING Integration
WING LEADING EDGE
Rear fuselage
HTP / VTP
Upper and Belly Fairing Panels
WING Movables
Rudder and elevators
Rudder and Elevators
HTP Spars Assembly
Landing Gear Doors / Tail Cone
Elevators
HTP Parts



	DIRECT CLIENT	OEM	PLATFORMS
	AIRBUS DS	AIRBUS	A380
	AIRBUS OPERATIONS	AIRBUS	A380
	AIRBUS OPERATIONS	AIRBUS	A380
	DAHER-SOCATA	AIRBUS DS	A400M
	AIRBUS ATLANTIC	AIRBUS DS	A400M
	DAHER SOCATA	AIRBUS DS	A400M
	AIRBUS	AIRBUS DS	A400M
	AIRBUS OPERATIONS	AIRBUS DS	A400M
	AIRBUS DS	AIRBUS DS	A400M
	AIRBUS DS	AIRBUS DS	A400M
	AIRBUS DS	AIRBUS DS	A400M
	AIRBUS OPERATIONS	AIRBUS	BELUGA XL
	AIRBUS OPERATIONS	AIRBUS	BELUGA XL
	CALIDUS	CALIDUS	C250
	CALIDUS	CALIDUS	C250
	CALIDUS	CALIDUS	C250
	AIRBUS	AIRBUS DS	C-N235, C-295
	AIRBUS	AIRBUS DS	C-N235, C-295
	AIRBUS	AIRBUS DS	C-N235, C-295
	AIRBUS DS	AIRBUS DS	C-N235, C-295
	AIRBUS DS	AIRBUS DS	C-N235, C-295
	DAG	DAG	D328 ECO
	DAG	DAG	D328 ECO
	DAG	DAG	D328 ECO
	AIRBUS DS	DASSAULT	FALCON 10X
	AIRBUS DS	DASSAULT	FALCON 10X
	DASSAULT AVIATION	DASSAULT	FALCON 10X
	AIRBUS DS	DASSAULT	FALCON 7X/8X
	AIRBUS DS	DASSAULT	FALCON 7X/8X

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
ACITURRI
Ailerons
Wing to Fuselage Fairing
Central Fuselage
Empennage & Wings
Composite parts
Fuselage
Sponsons and Vertical Tail
Empennage
CFRP Fairings
AERNNOVA
Large and Complex Machined parts and Assemblies
Engineering support to Center Wing Box and Wing ribs optimization
Large and Complex Machined parts and Assemblies
Design of Swing zone & Latching mechanism
Engineering of Wing box, Spars & Stringers
Engineering of Spoilers, Ailerons & Fuselage Sect 42
MMA Wing Pylon
Floor assembly & Mid-cabin assembly
Forward fuselage assembly & Tailboom
Design and Build Center Wing Box & Tail Cone
Engineering support to front and mid fuselage
VTP
MGL Doors & Elevators
Cabin interiors: "Dado" panels
MLG Doors
Elevator components
Karman fairings
Design and Build Rear upper fuselage & Dorsal fin
Design and Build Fish Tail & VTP fairing



	DIRECT CLIENT	OEM	PLATFORMS
	FOKKER-GKN	DASSAULT	FALCON 7X/8X
	EMBRAER	EMBRAER	C-390 Millennium
	EMBRAER	EMBRAER	LEGACY450/500
	EMBRAER	EMBRAER	LEGACY450/500
	EMBRAER	EMBRAER	LEGACY450/500
	LILIUM	LILIUM	LILIUM JET
	FOKKER-GKN	AIRBUS HELICOPTERS	NH90
	BOOM	BOOM	OVERTURE
	AIRBUS DS	EUROFIGHTER	TYPHOON
	SPIRIT	BOEING	777
	BOEING	BOEING	787
	SPIRIT	BOEING	737NG / MAX
	BOEING	BOEING	747 LCF
	BOEING	BOEING	747-8 I/F
	BOEING	BOEING	747-8 I/F
	BOEING	BOEING	787 vP8
	BELL	BELL	505 JET / RANGER X
	BELL	BELL	505 JET / RANGER X
	AIRBUS	AIRBUS	A220
	AIRBUS	AIRBUS	A220
	AIRBUS	AIRBUS	A220
	AIRBUS	AIRBUS	A320
	AIRBUS	AIRBUS	A320
	AIRBUS	AIRBUS	A330
	AIRBUS	AIRBUS	A330
	AIRBUS	AIRBUS	A330
	AIRBUS	AIRBUS	A330XL Beluga
	AIRBUS	AIRBUS	A330XL Beluga

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
AERNNOVA
MDCD
Design and Build of Wing fixed Traiting Edge & Elevators
Design and Build of HTP & MLG Bay Bulkhead
Rudder & Aii inlet bulkhead
Pax. Doors & Pylon Spar (composite)
Design and Build Sect. 19
Design and Build Horizontal Stabilizer
Ailerons Skins & Sect.19-19.1 pannels assembly
Design & Build Probe & TE
HTP Ribas & Engine cowlings
Metallic parts & FAL Support
Engine cowlings Assy & NLG Doors & Elevators
Design and Build Horizontal & Vertical Stabilizers
Forward fuselage
Components & Assembly Horizontal Stabilizer
Components & Assembly Flaps
Components & Assembly Wing Skins Panels, Spars and Ribs
Design and Build of Complete Empennage and Rear Fuselage
Rear fuselage skins
Tail boom, lower & upper structure (floor to floor)
Components & assemblies
Flaps, Aileron, Spoilers D&B
HTP, VTP, Rudder & Elevator
Design and Build Wing movables & Rudder
HTP Composite components
Design of Rear fuselage I and II & Cargo Ramp and Door
Detail design of Wing Main Box and Pylon
Components & Assembly Horizontal & Vertical Stabilizer
Components & Assembly Wing Skins panels and spars



	DIRECT CLIENT	OEM	PLATFORMS
	AIRBUS	AIRBUS	A350F
	AIRBUS	AIRBUS	A350XWB
	AIRBUS	AIRBUS	A350XWB
	AIRBUS	AIRBUS	A350XWB
	AIRBUS	AIRBUS	A350XWB
	AIRBUS	AIRBUS	A380
	AIRBUS	AIRBUS	A380
	AIRBUS	AIRBUS	A380
	ADS	AIRBUS DS	A400M
	AIRBUS DS	AIRBUS DS	A400M
	AIRBUS DS	AIRBUS DS	A400M
	AIRBUS DS	AIRBUS DS	CN-235, C-295
	EMBRAER	EMBRAER	E2
	EMBRAER	EMBRAER	E2
	EMBRAER	EMBRAER	E2-175
	EMBRAER	EMBRAER	E2-175
	EMBRAER	EMBRAER	E2-175
	EMBRAER	EMBRAER	EMB170/190
	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	H135
	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	H225 SUPER PUMA
	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	H225 SUPER PUMA
	HONDA	HONDA	HA-480
	HONDA	HONDA	HA-480
	EMBRAER	EMBRAER	C-390 Millennium
	EMBRAER	EMBRAER	C-390 Millennium
	EMBRAER	EMBRAER	C-390 Millennium
	EMBRAER	EMBRAER	C-390 Millennium
	EMBRAER	EMBRAER	C-390 Millennium
	EMBRAER	EMBRAER	C-390 Millennium

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
<b>AERNNOVA</b>
Components & Assembly Wing Tip
Engineering support to HTP, VTP and Passenger doors
FLAP PROPULSION SYSTEM D&B
WING D&B
Rear fuselage & Tail boom
Front fuselage composite panels
Design and engineering of Complete and Equipped wings
Components & Assembly Horizontal & Vertical Stabilizer
Components & Assembly Ailerons and Spoilers
Components & Assembly Rat and cargo doors
Components & Assembly Tail cone
Components & Assembly Wing Box
Design and build of Rear fuselage / Aft transition tailcone
Assembly Canopy
Rear fuselage & Horizontal stabilizer skins & components
Design and Build of Flare Dispenser
<b>AEROMEC</b>
Wing ribs structure
Wing ribs structure
<b>ARATZ</b>
Assembly Tooling
Composite Tooling
Composite Tooling
Lay Up Tooling
Composite Tooling
Lay Up Tooling
Assembly tooling
Assembly tooling
Composite Tooling
Assembly tooling
Composite Tooling



	DIRECT CLIENT	OEM	PLATFORMS
	EMBRAER	EMBRAER	C-390 Millennium
	BOMBARDIER	BOMBARDIER	LEARJET 85
	LILIUM	LILIUM	LILIUM JET
	LILIUM	LILIUM	LILIUM JET
	LEONARDO	NH INDUSTRIES	NH-90
	LEONARDO	NH INDUSTRIES	NH-90
	PILATUS	PILATUS	PC24
	EMBRAER	EMBRAER	Praetor 500/600
	EMBRAER	EMBRAER	Praetor 500/600
	EMBRAER	EMBRAER	Praetor 500/600
	EMBRAER	EMBRAER	Praetor 500/600
	EMBRAER	EMBRAER	Praetor 500/600
	SIKORSKY	SIKORSKY	s-92
	BAE	BAE	T-45
	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	TIGRE
	EUROFIGHTER	EUROFIGHTER	TYPHOON
	non-disclosure	AIRBUS	A320
	non-disclosure	AIRBUS	A350XWB
	SPIRIT AEROSYSTEMS	AIRBUS	A220
	SPIRIT AEROSYSTEMS	AIRBUS	A220
	AIRBUS	AIRBUS	A321XLR
	AIRBUS	AIRBUS	A321XLR
	AIRBUS	AIRBUS	A350XWB
	AIRBUS	AIRBUS	A350XWB
	AIRBUS	AIRBUS	AIRBUS families
	DASSAULT	DASSAULT	Falcon family
	DASSAULT	DASSAULT	Falcon family
	DASSAULT	DASSAULT	Raffale family
	DASSAULT	DASSAULT	Raffale family

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
<b>ASTORKIA</b>
Machined Components
Machined Components
Machined Components
<b>AYZAR</b>
Heat treatments
<b>BURDINBERRI</b>
Leading Edges Assembly Tooling
Leading Edges Curing Tooling
OMEGAS S16-18 Curing Tooling
COCKPIT, UPPER, BOTTOM, NOS, Toolings
Leading Edges, Flaps Curing Toolings
<b>CIDETEC</b>
Repocessability, Repairability and Recyclability of composites
Repocessability, Repairability and Recyclability of composites
Surface Treatments
Surface Treatments
Testing
<b>CTA</b>
Stringer runout
Wheel flange impact test
Fire certification tests of interior materials
Fire certification tests of interior materials
Fire certification tests of interior materials
Fire certification tests of interior materials
Fire certification tests of interior materials
Fire certification tests of interior materials
Fire certification tests of interior materials
Fire certification tests of interior materials
Fire certification tests of interior materials



	DIRECT CLIENT	OEM	PLATFORMS
	non-disclosure	BOEING	747 / 787
	AERNNOVA	AIRBUS	AIRBUS families
	AERNNOVA	EMBRAER	EMBRAER families
	ACITURRI	AIRBUS	miscellaneous
	SPIRIT	AIRBUS	A220
	ACITURRI	AIRBUS	A320
	PREMIUM AEROTEC	AIRBUS	A350F
	ACITURRI	LILIUM	LILIUM JET
	PLYABLE	BOEING	Non-Disclosure
	SOFITEC	AIRBUS	AIRBUS families
	AIRBUS	AIRBUS	AIRBUS families
	M&M GROUP	AIRBUS	AIRBUS families
	IDEC	AIRBUS	AIRBUS families
	TITANIA	AIRBUS	AIRBUS families
	AIRBUS OPERATIONS	AIRBUS	A350XWB
	AIRBUS OPERATIONS	AIRBUS	A350XWB
	BOEING R&T EUROPE	BOEING	Airliners
	AIR NOSTRUM LAM	Several	Airliners
	DIEHL AEROSPACE	Several	Airliners
	IACOBUCCI HF AEROSPACE	Several	Airliners
	HUTCHINSON-CR	Several	Airliners
	COMPOSITE INDUSTRIES	Several	Airliners
	PMV INDUSTRIES	Several	Airliners
	JCB AERO	Several	Airliners
	INDUSTRIAL NEO-TEX	Several	Airliners

## GENERAL DESCRIPTION OF THE PRODUCT/SERVICE

### CTA

Fire certification tests of interior materials

Fire certification tests of interior materials

Fire certification tests of interior materials

Fire certification tests of interior materials

Fire certification tests of interior materials

E2 Flap Supports Structural Test

Air components structural testing

Tail boom frame tests

Wing structural tests

### DTK

Landing gear trap components

Stabilizer components

Machined Components

### EHAFF

Post-processes: Air/Fluid Filtration & Chips Treatments

Cutting Fluids & Coolants

### EIBAR PRECISION CASTING

Secondary structure components

Secondary structure components

Secondary structure components

Secondary structure components

### EUROUTIL

Forging Dies

### EYHER

Transfer Cart AGVs for Aeronautical production

Pallet turnersf for Aeronautical production

Load dumpers for Aeronautical production

Tailored made lifting platforms for work in heights



	DIRECT CLIENT	OEM	PLATFORMS
	PINTA INSULATION	Several	Airliners
	VELCRO EUROPE	Several	Airliners
	ROMTEX ANJOU AERONAUTIQUE	Several	Airliners
	SN CENTRAIR	Several	Airliners
	DESSO	Several	Airliners
	ASCO INDUSTRIES	EMBRAER	E-Jets E2
	AERNNOVA	Non-Disclosure	Non-Disclosure
	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	RACER
	HAL	AIRBUS HELICOPTERS	RACER
	AERNNOVA	AIRBUS	A320
	AERNNOVA	AIRBUS	A350XWB
	FIGEAC AERO	several	miscellaneous
	Several	Several	miscellaneous
	Several	Several	miscellaneous
	TAI	AIRBUS	A320neo/ A330neo
	AIRBUS DS	AIRBUS DS	CN-235
	AIRBUS DS	AIRBUS DS	C-295
	AIRBUS DS	AIRBUS DS	EUROFIGHTER TYPHOON
	Aubert & Duval	Several	miscellaneous
	non-disclosure	Several	miscellaneous
	non-disclosure	Several	miscellaneous
	non-disclosure	Several	miscellaneous
	non-disclosure	Several	miscellaneous

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
<b>IDEKO</b>
Testing dry fabrics lamination with ADMP proprietary technology
Digitalization solutions for process optimization and data gathering of plants
Robotics for manufacturing and assembly technology, based in modeling, vision systems and others
<b>INDUSTRIAS GALINDO</b>
Tooling manufacturing
Tooling manufacturing
Tooling manufacturing
<b>KHEGAL</b>
Elementary components Machining
Elementary components Machining
Fuselage Holders for assembly line and Tooling for test bench
Elementary components Machining
<b>MATRICI INNOVATIVE TECHNOLOGIES</b>
Metallic Forming Components (casings, leading edges, tips)
Metallic Forming Components (casings, leading edges, tips)
Metallic Forming Components (exhaust cowl)
<b>MESIMA</b>
Materials management and supply
<b>METRALTEC</b>
Manufacturing of metallic parts (including special processes)
Manufacturing of metallic parts (including special processes)
Manufacturing of metallic parts (including special processes)
Manufacturing of metallic parts (including special processes)
<b>MICROLAN</b>
Machined components for Assembly Jigs and Fixtures
<b>MIZAR ADDITIVE</b>
Drilling and Positioning Tooling of TDL Reinforcement
Tooling for the assembly of the support structures of the waste water tanks in section 18 at AG1
Scale model aircraft wing for wind tunnel testing: wing, flaps and steel fittings



	DIRECT CLIENT	OEM	PLATFORMS
	non-disclosure	non-disclosure	non-disclosure
	Several	Several	miscellaneous
d	Several	Several	miscellaneous
	non-disclosure	BOEING	787
	non-disclosure	AIRBUS	A350XWB
	non-disclosure	EMBRAER	E-JET family
	non-disclosure	ATR	42/72
	non-disclosure	AIRBUS	AIRBUS families
	non-disclosure	AIRBUS	AIRBUS families
	non-disclosure	DASSAULT	Falcon family
	ACITURRI	AIRBUS	A320
	ACITURRI	AIRBUS	A350
	LAUAK	EMBRAER	C-390 Millennium
	AIRBUS DS	AIRBUS DS	miscellaneous
	AERNNOVA	AIRBUS	A220/320/350XWB
	ACITURRI	AIRBUS	A320/350XWB
	AERNNOVA	EMBRAER	C-390 Millennium, E170/190, E2
	ACITURRI	EMBRAER	C-390 Millennium
	ARITEX	AIRBUS	BELUGA XL
	AIRBUS DS	AIRBUS	A330 MRTT
	AIRBUS DS	AIRBUS	A330 MRTT
	CTA	Non-Disclosure	Non-Disclosure

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
<b>MIZAR ADDITIVE</b>
Drilling jigs for HTP and VTP assembly (Extension)
Rivet Nut Orientation Templates
<b>NAITEC</b>
Application development through functional materials
<b>NUTER</b>
Machined Components
Machined Components
Machined Components
Machined Components
Machined components
Machined Components
<b>RENISHAW IBÉRICA</b>
Interferometric Laser and Optical Encoders for measuring positional data: wing-panel assembly machines
<b>TTT GROUP</b>
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface Treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and Surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments
Heat and surface treatments



DIRECT CLIENT		OEM	PLATFORMS
AIRBUS DS	AIRBUS	Falcon 10X	
INESPASA	AIRBUS	Falcon 10X	
AIRBUS DS	Several	miscellaneous	
AERNNOVA	AIRBUS	A220	
MPB	AIRBUS	A-350	
AERNNOVA	EMBRAER	ERJ family / E-JET family	
AERNNOVA	LILIUM	LILIUM JET	
WALLAIR	AIRBUS	miscellaneous	
AERNNOVA	SIKORSKY	S-92	
Several	Several	miscellaneous	
non-disclosure	BOEING	737 / 777 / 787	
AERNNOVA	BELL	505	
MITSUBISHI CORPORATION	AIRBUS	A220	
SPIRIT	AIRBUS	A220	
ACITURRI	AIRBUS	A380	
ACITURRI	AIRBUS DS	A400M	
AIRBUS DS	AIRBUS DS	AIRBUS DS families	
AERNNOVA	AIRBUS	AIRBUS families	
SONACA	AIRBUS	AIRBUS families	
AERNNOVA	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS families	
AERNNOVA	EMBRAER	EMBRAER families	
SONACA	DASSAULT	FALCON family	
non-disclosure	EMBRAER	C-390 Millennium	
PARKER	Several	miscellaneous	
SKF	Several	miscellaneous	
AERNNOVA	SIKORSKY	S-92	



# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>AALBERTS SURFACE TECHNOLOGIES TEY</b>	
Heat treatments	ACITURRI
Heat treatments	ITP AER
Heat treatments	EGILE
Heat treatments	SAFRAN
Heat treatments	WEC
Heat treatments	SAFRAN
<b>ACITURRI</b>	
Fan structures	SAFRAN
Turbine transmissions & Structures	SAFRAN
Engine Brackets and System Components	SAFRAN
Nozzle Guide Vanes	SAFRAN
Blades	SAFRAN
Guide Vane Segments	SAFRAN
Turbine transmissions & Structures	ITP AER
Rear Frame Structural components	ITP AER
Engine Brackets and System Components	ITP AER
Engine Pipe End - Fittings	ITP AER
Engine Pipe End - Fittings	ITP AER
Engine Brackets and System Components	ITP AER
Engine Pipe End - Fittings	ITP AER
Engine Pipe End - Fittings	ITP AER
Compressor Shrouds	ITP AER
Turbine and Combustor Casings	ROLLS-F
Fan and Compressor Casings	ROLLS-F
Rear Frame Structural components	ROLLS-F
Turbine transmissions & Structures	ITP AER
Turbine Structures	ROLLS-F
Fan and Compressor Casings	ITP AER
Rear Frame Structural components	ITP AER



CLIENT	OEM	ENGINE MODEL
RI	ROLLS-ROYCE	TRENT 1000
O	ROLLS-ROYCE	TRENT family
	SAFRAN HELICOPTER ENGINES	miscellaneous
HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	miscellaneous
	several	miscellaneous
AERO BOOSTERS	several	miscellaneous
AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
O	EPI	TP400
O	EPI	TP400
O	EPI	TP400
O	EPI	TP400
O	EPI	TP400
O	EUROJET	EJ200
O	EUROJET	EJ200
O	EUROJET	EJ200
O	PRATT & WHITNEY	miscellaneous
ROYCE	ROLLS-ROYCE	Bussines Jet aplications
ROYCE	ROLLS-ROYCE	Bussines Jet aplications
ROYCE	ROLLS-ROYCE	Bussines Jet aplications
O	ROLLS-ROYCE	TRENT family
ROYCE	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family



# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>ACITURRI</b>	
Engine Brackets and System Components	ITP AER
Engine Pipe End - Fittings	ITP AER
Engine Pipe End - Fittings	ITP AER
Nozzle Guide Vanes	ITP AER
Blades	ITP AER
Guide Vane Segments	ITP AER
Nozzle Guide Vanes	AVIO AE
Blades	AVIO AE
Guide Vane Segments	AVIO AE
<b>AEROMECH</b>	
Engine TBH	non-dis
LPT rings	non-dis
Turbine casing & Thermal	non-dis
Engine TBH	non-dis
Engine exhaust Zone.	non-dis
Engine exhaust Zone.	non-dis
<b>ARATZ</b>	
Machined Components	ITP AER
Machined Components	ITP AER
<b>ASTORKIA</b>	
Machined Components	ITP AER
Machined Components	ITP AER
Machined Components	ITP AER
<b>BATZ</b>	
Hot formed panels for special alloys	ITP AER
Hot formed panels for special alloys	SALLEN
Hot formed panels for special alloys	WEC
Hot formed panels for special alloys	WEC
Hot formed panels for special alloys	WEC
Hot formed panels for special alloys	ITP AER
Hot formed panels for special alloys	ITP AER



CLIENT	OEM	ENGINE MODEL
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
ERO	several	miscellaneous
ERO	several	miscellaneous
ERO	several	miscellaneous
closure	EPI	TP400
closure	EUROJET	EJ200
closure	GENERAL ELECTRIC	miscellaneous
closure	PRAT & WHITNEY	PW1500G
closure	ROLLS-ROYCE	TRENT XWB
closure	ROLLS-ROYCE	TRENT 1000
O	ROLLS-ROYCE	TRENT 700
O	ROLLS-ROYCE	TRENT 900
O	EPI	TP400
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT XWB
O	EPI	TP400
AVIACIÓN	ROLLS-ROYCE	TRENT 7000
	ROLLS-ROYCE	TRENT XWB
	ROLLS-ROYCE	TRENT 900
	ROLLS-ROYCE	TRENT 1000
O	ROLLS-ROYCE	BR715
O	ROLLS-ROYCE	TRENT 900

# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>CTA</b>	
Aerodynamic Technology Acquisition Rig Programme	ITP AERO
<b>DANOBATGROUP</b>	
Vertical grinding Machine-Tools for aeroengine manufacturing	GENERAL
<b>EGAMASTER</b>	
Torque control traceability and permit system	ITP AERO
Remote Asset localization system	ITP AERO
<b>EGILE</b>	
Carter parts	ITP AERO
Carter parts	ITP AERO
Engine actuation systems	HÉROUX
Main shaft Ge90	AUBERT
Heat Shields	ITP AERO
NGVs	ITP AERO
NGVs	ITP AERO
Bearing housings	SAFRAN
Fourreaux	SAFRAN
Gears and shafts	SAFRAN
Gears and shafts	SAFRAN
Main transmission gears	SAFRAN
Accessory transmission gears	SAFRAN
Shaft	ITP AERO
<b>EIBAR PRECISION CASTING</b>	
Castings Components	ITP AERO
Castings Components	ITP AERO
Castings Components	ITP AERO
Castings Components	ITP AERO
<b>EKIN</b>	
Broaching Tools for the manufacture of Fir Tree turbine discs	ITP AERO



CLIENT	OEM	ENGINE MODEL
O	Several	miscellaneous
AL ELECTRIC	several	miscellaneous
O	several	miscellaneous
O	several	miscellaneous
O	CFM INTERNATIONAL	CFM56
O	CFM INTERNATIONAL	LEAP 1A/B
K-DEVTEK SPAIN	EUROJET	EJ200
&DUVAL	GENERAL ELECTRIC	GE90
O	PRAT & WHITNEY	PW1000G
O	ROLLS-ROYCE	TRENT 1000
O	ROLLS-ROYCE	TRENT XWB
TRANSMISSION SYSTEMS	SAFRAN AIRCRAFT ENGINES	LEAP 1A/1B
TRANSMISSION SYSTEMS	SAFRAN AIRCRAFT ENGINES	LEAP 1A/1B
AERO BOOSTERS	SAFRAN AIRCRAFT ENGINES	LEAP 1A/1B
HELICOPTER ENGINES	SAFRAN AIRCRAFT ENGINES	M88
HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	ALL RANGE
HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	ALL RANGE
O	SAFRAN HELICOPTER ENGINES	MTR390-E
O	ROLLS-ROYCE	TRENT 1000
O	ROLLS-ROYCE	TRENT XWB
O	ROLLS-ROYCE	PEARL700
O	ROLLS-ROYCE	ULTRAFAN
O	several	miscellaneous



# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>ELECTROHILO</b>	
Inner vanes stubs machining (spark erosion) and Vanes edge cutting (wire)	ITP AER
TEC segmentation	ITP AER
Edging of VANES and BCVs	ITP AER
Separation Top Core Vane, Vanes erosion, Top Core Vane manufacture	ITP AER
Segments wire-cut	ITP AER
wire-cut, machining and sheet-metal works - Segments wire-cut	ITP AER
<b>EUROUTIL</b>	
Press Tools	SAFRAN
Press Tools	SAFRAN
<b>IDEKO</b>	
Digitalization solutions for process optimization and data gathering of plants	non-disc
<b>ITP AERO</b>	
Lost wax casting super alloys for Turbine	SAFRAN
Lost wax casting super alloys for Turbine	MTU
Design and manufacture of low pressure turbine (LPT) - Member of EPI Consortium	AIRBUS
Design and manufacture of the Front Frame and Exhaust System - Member of the EPI Consortium	AIRBUS
Manufacture of Externals - Member of EPI Consortium	AIRBUS
Final assembly of engine - Member of EPI Consortium	AIRBUS
Lost wax casting super alloys for intermediate pressure turbine	ROLLS-R
Lost wax casting super alloys for the LPT	ROLLS-R
Design and manufacture of the Diffuser cones and By-Pass Module - Member of the EUROJET Consortium	NETMA
Design and manufacture of the post burner duct and variable nozzle - Member of the EUROJET Consortium	NETMA
Manufacture of Externals - Member of the EUROJET Consortium	NETMA
Final assembly of the engine - Member of the EUROJET Consortium	NETMA
Lost wax casting super alloys - nozzle	NETMA
Lost wax casting super alloys - low pressure turbine	NETMA



CLIENT	OEM	ENGINE MODEL
O	EPI	TP400
O	EUROJET	EJ200
O	ROLLS-ROYCE	TRENT 1000/7000
O	ROLLS-ROYCE	TRENT 900
O	ROLLS-ROYCE	TRENT XWB
O	ROLLS-ROYCE	ULTRAFAN
AIRCRAFT ENGINES	several	miscellaneous
NACELLES	several	miscellaneous
losure	several	miscellaneous
AIRCRAFT ENGINES	CFM INTERNATIONAL	CFM56
	EA	GP7000
DS	EPI	TP400
DS	EPI	TP400
DS	EPI	TP400
DS	EPI	TP400
DS	EPI	TP400
ROYCE	EPI	TP400
ROYCE	EPI	TP400
	EUROJET	EJ200
	EUROJET	EJ200
	EUROJET	EJ200
	EUROJET	EJ200
	EUROJET	EJ200
	EUROJET	EJ200

# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>ITP AERO</b>	
Components	GENERA
Manufacture of rear turbine structure	GENERA
Structural components	HONEYV
Design and manufacture of three LPT - Member of the MTRI Consortium	AIRBUS
Final assembly of the engine - Member of the MTRI Consortium	AIRBUS
Lost wax casting super alloys - low pressure turbine	AIRBUS
Lost wax casting super alloys for Turbine	SAFRAN
Modules manufacturing	PRATT &
Components manufacturing	PRATT &
Components manufacturing	PRATT &
Parts of external equipment of engine	ROLLS-F
Design and validation of the ROLL POST	ROLLS-F
Design and manufacture of low pressure turbine (LPT) - Risk Partner	ROLLS-F
Design and manufacture of Rear Frame - Risk Partner	ROLLS-F
Lost wax casting super alloys for the LPT	ROLLS-F
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-F
Design and manufacture of low pressure turbine (LPT) - Risk Partner	ROLLS-F
Assembly of the LPT and component manufacture	ROLLS-F
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-F
Design and manufacture of the low pressure turbine (LPT) - Risk Partner	ROLLS-F
Design and manufacture of the low pressure turbine (LPT) - Risk Partner	ROLLS-F
Design and manufacture of the Rear Frame - Risk Partner	ROLLS-F
Lost wax casting super alloys for the LPT	ROLLS-F
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-F
Design and manufacture of the low pressure turbine (LPT) - Risk Partner	ROLLS-F
Design and manufacture of the Rear Frame - Risk Partner	ROLLS-F
Lost wax casting super alloys for the LPT	ROLLS-F
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-F
Development of the intermediate pressure turbine and the rear structure	ROLLS-F



CLIENT	OEM	ENGINE MODEL
AL ELECTRIC	GENERAL ELECTRIC	CF34-10
AL ELECTRIC	GENERAL ELECTRIC	GE90-115
WELL	HONEYWELL	HTF7000
HELICOPTERS	MTRI	MTR390-E
HELICOPTERS	MTRI	MTR390-E
HELICOPTERS	MTRI	MTR390-E
AIRCRAFT ENGINES	POWERJET	SaM146
& WHITNEY	PRATT & WHITNEY	PW1000G
& WHITNEY CANADA	PRATT & WHITNEY	PW535E
& WHITNEY CANADA	PRATT & WHITNEY	PW800
ROYCE	ROLLS-ROYCE	BR725
ROYCE	ROLLS-ROYCE	F136
ROYCE	ROLLS-ROYCE	TRENT 1000
ROYCE	ROLLS-ROYCE	TRENT 1000
ROYCE	ROLLS-ROYCE	TRENT 1000
ROYCE	ROLLS-ROYCE	TRENT 1000
ROYCE	ROLLS-ROYCE	TRENT 500
ROYCE	ROLLS-ROYCE	TRENT 700
ROYCE	ROLLS-ROYCE	TRENT 700
ROYCE	ROLLS-ROYCE	TRENT 7000
ROYCE	ROLLS-ROYCE	TRENT 900
ROYCE	ROLLS-ROYCE	TRENT 900
ROYCE	ROLLS-ROYCE	TRENT 900
ROYCE	ROLLS-ROYCE	TRENT 900
ROYCE	ROLLS-ROYCE	TRENT XWB
ROYCE	ROLLS-ROYCE	TRENT XWB
ROYCE	ROLLS-ROYCE	TRENT XWB
ROYCE	ROLLS-ROYCE	TRENT XWB
ROYCE	ROLLS-ROYCE	ULTRAFAN



# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>LAZPIUR</b>	
Machined components	non-dis
<b>MATRICI INNOVATIVE TECHNOLOGIES</b>	
Metallic Forming Components (vane)	ITP AER
Metallic Forming Components (cones)	ITP AER
Laser Cutting (inner & outer)	ITP AER
Metallic Forming Components (cone)	ITP AER
Metallic Forming Components (baffle)	ITP AER
Metallic Forming Components (cones)	ITP AER
Metallic Forming Components (vane)	ITP AER
Metallic Forming Components (mixers & lpt fairing)	ITP AER
Metallic Forming Components (vane)	ITP AER
<b>MESIMA</b>	
Materials management and supply	ITP AER
Materials management and supply	ITP AER
Materials management and supply	WEC
<b>METRALTEC</b>	
Special processes (surface treatments, Penetrant, Paint)	ASTORK
Special processes (surface treatments, Penetrant, Paint)	MATRIC TECHNO
<b>METROLOGÍA SARIKI</b>	
Measurement Equipment maintenance, training and software programming	EGILE
Measurement Equipment Consultancy-supply	ITP AER
Measurement Equipment maintenance, training and software programming	ITP AER
<b>MIZAR ADDITIVE</b>	
Instrumentation Rakes (Inconel 718) to test aeroengines in a production line.	ITP AER
<b>NUTER</b>	
Fittings	ITP AER
Fittings	ITP AER
Fittings	ITP AER
Airfoils & Small parts	ITP AER



CLIENT	OEM	ENGINE MODEL
closure	several	miscellaneous
O	EPI	TP400
O	MTRI	MTR390-E
O	PRATT&WITHNEY	PW815
O	PRATT&WITHNEY	PW814
O	ROLLS-ROYCE	TRENT 900/1000
O	ROLLS-ROYCE	TRENT 1000
O	ROLLS-ROYCE	TRENT XWB
O	ROLLS-ROYCE	PEARL 700
O	EPI	TP400
O	GENERAL ELECTRIC	miscellaneous
O	ROLLS-ROYCE	miscellaneous
	several	miscellaneous
IA	ITP AERO	miscellaneous
I INNOVATIVE OLOGIES	ITP AERO	miscellaneous
	several	miscellaneous
O	several	miscellaneous
O	several	miscellaneous
O	ROLLS-ROYCE	miscellaneous
O	EPI	TP400
O	EUROJET	EJ200
O	GENERAL ELECTRIC	miscellaneous
O	PRATT & WHITNEY	PW800



# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>NUTER</b>	
Small Parts & Fittings	ITP AER
Nozzles	ITP AER
Fittings	ITP AER
Fittings	ITP AER
Fittings	ITP AER
Small Parts	ACITUR
Fittings	ITP AER
<b>ONA ELECTROEROSIÓN</b>	
Die-Sinking EDM Machine-Tools	GENERA
Wire EDM Machine-Tools	MEYER
Wire EDM Machine-Tools	MEYER
Die-Sinking EDM Machine-Tools	ITP AER
Die-Sinking EDM Machine-Tools	GENERA
<b>RENISHAW IBÉRICA</b>	
Measurement data for the production and repair of blades and bladed disks: Blade tip refurbishment, in-process blade measurement and root blending of bladed disks. Contact and non-contact tool setting systems to detect and adjust to the condition or wear of cutting tools.	several
Precision sensors for fast, accurate acquisition of component dimensions and surface data. They include blade-specific software applications.	several
Component set up, tool setting and in-cycle gauging and first off component inspection for accurate machining processes.	several
Precise and rapid gauging of complex parts, tracking trends in machining and enabling automatic process adjustments to account for changing variables like thermal drift.	several
Measurement data for the production and repair of blades and bladed disks: Blade tip refurbishment, in-process blade measurement and root blending of bladed disks. Contact and non-contact tool setting systems to detect and adjust to the condition or wear of cutting tools.	several
<b>TM TELLERIA</b>	
Processes Tooling	several



CLIENT	OEM	ENGINE MODEL
O	PRATT & WHITNEY	PW1000G
O	PRATT & WHITNEY	PW1000G
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	ULTRAFAN
O	ROLLS-ROYCE	PEARL 10X
RI	SAFRAN AIRCRAFT ENGINES	miscellaneous
O	EPI	TP400
AL ELECTRIC VERNOVA	GENERAL ELECTRIC	miscellaneous
TOOL	GENERAL ELECTRIC	miscellaneous
TOOL	PRATT & WHITNEY	miscellaneous
O	Rolls-Royce	miscellaneous
AL ELECTRIC VERNOVA	GENERAL ELECTRIC	miscellaneous
	several	miscellaneous
	several	miscellaneous
	several	miscellaneous
	several	miscellaneous
	several	miscellaneous
	several	miscellaneous

# Engines

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT
<b>TTT GROUP</b>	
Heat and Surface treatments	ITP AER
Heat and surface treatments	ITP AER
Heat and surface treatments	SAFRAN
Heat and surface treatments	SAFRAN
<b>TUBACEX</b>	
Precision tubes	non-dis
<b>WEC</b>	
Parts of external equipment of engine	SAFRAN
Parts of external equipment of engine	SAFRAN
Parts of external equipment of engine	ITP AER
Structural parts	ITP AER
Exhaust nozzle parts	ITP AER
TEC parts	ITP AER
Parts of external equipment of engine	ITP AER
Parts of external equipment of engine	SAFRAN
Rings, annular components, combustion chamber components	HONEYV
Parts of external equipment of engine	ITP AER
TEC Front Cases	GKN Ae
Structural parts	ITP AER
Parts of external equipment of engine	ITP AER
Dynamic seals components	ITP AER
Parts for engine cooling devices	SAFRAN
<b>WOLCO</b>	
Special Cutting Tools	ITP AER



Courtesy ITP Aero



CLIENT	OEM	ENGINE MODEL
O	EUROJET	miscellaneous
O	ROLLS-ROYCE	miscellaneous
AIRCRAFT ENGINES	SAFRAN AIRCRAFT ENGINES	miscellaneous
HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	miscellaneous
closure	several	miscellaneous
AIRCRAFT ENGINES	CFM INTERNATIONAL	CFM56
AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP 1A/B
O	EPI	TP400
O	EPI	TP400
O	EUROJET	EJ200
O	EUROJET	EJ200
O	EUROJET	EJ200
AIRCRAFT ENGINES	GENERAL ELECTRIC	GE90-115k
WELL	HONEYWELL	miscellaneous
O	PRATT & WHITNEY	PW814
ospace Engine Systems	ROLLS-ROYCE	miscellaneous
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
O	ROLLS-ROYCE	TRENT family
AIRCRAFT ENGINES	SAFRAN AIRCRAFT ENGINES	SILVERCREST
O	several	miscellaneous



Courtesy CFM



## Systems & Equipment

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIREC
<b>AALBERTS SURFACE TECHNOLOGIES TEY</b>	
Heat treatments	ACITU
Heat treatments	ITP A
Heat treatments	EGILE
Heat treatments	SAFR
Heat treatments	WEC
Heat treatments	SAFR
<b>ACITURRI</b>	
Fan structures	SAFR
Turbine transmissions & Structures	SAFR
Engine Brackets and System Components	SAFR
Nozzle Guide Vanes	SAFR
Blades	SAFR
Guide Vane Segments	SAFR
Turbine transmissions & Structures	ITP A
Rear Frame Structural components	ITP A
Engine Brackets and System Components	ITP A
Engine Pipe End - Fittings	ITP A
Engine Pipe End - Fittings	ITP A
Engine Brackets and System Components	ITP A
Engine Pipe End - Fittings	ITP A
Engine Pipe End - Fittings	ITP A
Compressor Shrouds	ITP A
Turbine and Combustor Casings	ROLL
Fan and Compressor Casings	ROLL
Rear Frame Structural components	ROLL
Turbine transmissions & Structures	ITP A
Turbine Structures	ROLL
Fan and Compressor Casings	ITP A
Rear Frame Structural components	ITP A



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
URRI	ROLLS-ROYCE	TRENT 1000
ERO	ROLLS-ROYCE	TRENT family
	SAFRAN HELICOPTER ENGINES	miscellaneous
AN HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	miscellaneous
	several	miscellaneous
AN AERO BOOSTERS	several	miscellaneous
AN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
AN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP
ERO	EPI	TP400
ERO	EPI	TP400
ERO	EPI	TP400
ERO	EPI	TP400
ERO	EPI	TP400
ERO	EUROJET	EJ200
ERO	EUROJET	EJ200
ERO	EUROJET	EJ200
ERO	PRATT & WHITNEY	miscellaneous
S-ROYCE	ROLLS-ROYCE	Business Jet applications
S-ROYCE	ROLLS-ROYCE	Business Jet applications
S-ROYCE	ROLLS-ROYCE	Business Jet applications
ERO	ROLLS-ROYCE	TRENT family
S-ROYCE	ROLLS-ROYCE	TRENT family
ERO	ROLLS-ROYCE	TRENT family
ERO	ROLLS-ROYCE	TRENT family



## Systems & Equipment

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRE
<b>ACITURRI</b>	
Engine Brackets and System Components	ITP A
Engine Pipe End - Fittings	ITP A
Engine Pipe End - Fittings	ITP A
Nozzle Guide Vanes	ITP A
Blades	ITP A
Guide Vane Segments	ITP A
Nozzle Guide Vanes	AVIO
Blades	AVIO
Guide Vane Segments	AVIO
<b>AERNNOVA</b>	
FuelTanks	EURO
<b>AEROMECH</b>	
Nose landing gear components	non-c
Main landing gear components	non-c
<b>CIDETEC</b>	
Non Destructive Inspection	EGILE
Surface Treatments	ELH
Testing	GRUP
<b>CTA</b>	
RAM Air Channel tests	AIRB
Primary Cooling System	AIRB
Electrovalve Tests	CIRCO
Flow servovalve tests	COLL
Inert Gas Generation System Tests	STELI
<b>DANOBATGROUP</b>	
Grinding Machine-Tools for Landing Gears	SAFR
Machine tools for aerocomponents manufacturing	non-c
<b>DOILAN</b>	
Component machining	non-



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
ERO	ROLLS-ROYCE	TRENT family
ERO	ROLLS-ROYCE	TRENT family
ERO	ROLLS-ROYCE	TRENT family
ERO	ROLLS-ROYCE	TRENT family
ERO	ROLLS-ROYCE	TRENT family
ERO	ROLLS-ROYCE	TRENT family
AERO	several	miscellaneous
AERO	several	miscellaneous
AERO	several	miscellaneous
DFIGHTER	EUROFIGHTER	TYPHOON
disclosure	Landing Gear	AIRBUS DS C295
disclosure	Landing Gear	AIRBUS DS C295
E	Landing gear	Miscellaneous
CO	Landing gear	Miscellaneous
PO TTT	Landing gear	Miscellaneous
US OPERATIONS	RAC	AIRBUS ZEROe
US UPNEXT	Non Propulsion System	AIRBUS ZEROe
OR	Electrovalve	AIRBUS A350 XWB
INS AEROSPACE	Electrovalve	PW1100G
A AEROSPACE	IGSS	AIRBUS A350 XWB
AN LANDING SYSTEMS	Landing gear	Miscellaneous
disclosure	Several	Miscellaneous
-disclosure	Landing Gear	Miscellaneous



## Systems & Equipment

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIREC
<b>EGILE</b>	
Gears and shafts	AIRBU
Lubricant Pumps	AIRBU
Gears and shafts	AVIO
Carters and main rotor shaft	HELIC
Landing gear components	HERO
Actuation systems	HÉRO
Landing gear components	HÉRO
Flight control & actuation systems	HÉRO
Actuation systems	HÉRO
Carters and main rotor shaft	non-c
Slider	SAFR
Rack	SAFR
Cylinder & Piston	SAFR
Shock Absorber	SAFR
Shock Absorber	SAFR
Bogey kit	SAFR
Balancier équipé	SAFR
Shock Absorber	SAFR
Shock Absorber	SAFR
Gears and shafts	SAFR
Gears and shafts	SAFR
<b>EIBAR PRECISION CASTING</b>	
Fuel system components	AIRBU
Optronic equipment housings (Lost wax casting aluminum)	ELBIT



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
US HELICOPTERS	MGB and AGB	AIRBUS HELICOPTERS H145/H160/H175/AS332/...
US HELICOPTERS	MGB and AGB	AIRBUS HELICOPTERS H160/H175/RACER
Aero	AGB	RACER
OPTERES GUIMBAL	Main rotor	GUIMBAL CABRI G2
UX DEVTEK UK	Landing Gear	SAAB GRIPEN
UX-DEVTEK SPAIN	Several	AIRBUS DS CN235/C295
UX-DEVTEK SPAIN	Balancier	AIRBUS HELICOPTERS TIGRE
UX-DEVTEK SPAIN	Several	EUROFIGHTER TYPHOON
UX-DEVTEK SPAIN	Several	SIKORSKY S-92
Disclosure	Main rotor	AIRBUS HELICOPTERS VSR700
AN LANDING SYSTEMS	NLG	AIRBUS A320
AN LANDING SYSTEMS	NLG	AIRBUS A320
AN LANDING SYSTEMS	RETRACTION ACTUATOR MLG	AIRBUS A330
AN LANDING SYSTEMS	MLG	AIRBUS A330/A340
AN LANDING SYSTEMS	MLG	AIRBUS A350
AN LANDING SYSTEMS	MLG	AIRBUS A350
AN LANDING SYSTEMS	Landing Gear	AIRBUS HELICOPTERS SUPER PUMA
AN LANDING SYSTEMS	MLG	BOEING 787
AN LANDING SYSTEMS	NLG	BOEING 787
AN POWER UNITS	APU	DASSAULT RAFALE
AN POWER UNITS	APUs	Miscellaneous
US	Several	AIRBUS A320neo/330neo
SYSTEMS	Optronic systems TV- Thermography	Miscellaneous



## Systems & Equipment

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIREC
<b>EIBAR PRECISION CASTING</b>	
Radar housings (Lost wax casting aluminum)	INDR
Conduits- Air Fittings (Lost wax casting superalloys)	LIEBH
Conduits- Air Fittings (Lost wax casting superalloys)	LIEBH
Actuator equipment housings (Lost wax casting aluminum)	SAFR
Optronic equipment housings (Lost wax casting aluminum)	SAFR DEFE
Carter Air (Lost wax casting aluminum)	SAFR
Optronic equipment housings (Lost wax casting aluminum)	THAL
<b>EUROUTIL</b>	
Composite Molds	SAFR
Composite Molds	EURO
<b>GEMINYS</b>	
S1000D Support for technical publications using a common source database	non-c
Support Engineering Services ( ILS, RAMS, LCC,...)	non-c
<b>INDUSTRIAS GALINDO</b>	
Tooling manufacturing	non-c
<b>INGETEAM</b>	
Hybridization and electrification	non-c
<b>KHEGAL</b>	
Oil tanks Elementary components Machining	AD G
<b>KORTA</b>	
Worm Screws	HERO
Ball Screws	SAFR
Ball Screws	SENE



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
A	Radars	EUROFIGHTER TYPHOON
HERR AEROSPACE	Air conditioning	AIRBUS A220/320neo/ceo, BOEING 787
HERR AEROSPACE	Air conditioning	COMAC / KC395 / EJET / G7000
AN AEROSYSTEMS	Engines-Actuators-Electrical equipment	AIRBUS A320/330
AN ELECTRONICS AND NCE	Optronic systems TV- Thermography	Miscellaneous
AN POWER UNITS	APUs (Auxiliary Power Units)	AIRBUS HELICOPTERS SUPERPUMA
ES GROUP	Engines-Actuators-Electrical equipment	AIRBUS A320/330, NHI NH90, BOEING B737MAX
AN SEATS	Several	Miscellaneous
PE TECHNOLOGIES	Several	Miscellaneous
Disclosure	SEVERAL	MISCELLANEOUS
Disclosure	SEVERAL	MISCELLANEOUS
Disclosure	Several	Miscellaneous
Disclosure	Several	Miscellaneous
GROUP	Lubrication systems	AIRBUS A350XWB
UX DEVTEK UK	Actuators	Miscellaneous
AN GROUP	Actuators	Miscellaneous
R	Actuators	Miscellaneous



## Systems & Equipment

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRE
<b>METRALTEC</b>	
Special processes (surface treatments, Penetrant, Paint)	EIPC
<b>MICROLAN</b>	
components for mechanical actuators	non-c
<b>MIZAR ADDITIVE</b>	
Electronic countermeasures (ECM) components	INDR
Radome Mock-up	INDR
Domes for Directional Infrared Counter Measure (DIRCM)	INDR
Aircraft Tooling Sets & Components	ITP A
Different types of Specimens	ITP A
Aircraft Tooling Sets & Components	SONC
Electrical Connectors	AERT
Aircraft Tooling Sets & Components	ITP A
Box for housing electrical circuitry	INGE
<b>NUTER</b>	
Machined Components	HÉRC
Machined Components	HÉRC
Machined Components	HÉRC
<b>RENISHAW IBÉRICA</b>	
Raman spectroscopy technology for the material make-up of specialist components and the quality of component surface coatings	Sever
Magnetic Encoders to control position of compartment doors	Sever
<b>SENER</b>	
SiRTAP Narrow Band LoS Datalink	AIRB
IFF Mode 5 Rotary Wing Upgrade	AIRB
GREASE CARTRIDGES	BAYA ENGI
AM RECEIVERS ZL-ZC	DGAN
Scater ZL-ZC	DGAN
RSL02330 4M MSSR ANTENNA	EASA
RSL2730 8M MSSR ANTENNA	EASA LIMIT
WARNING LIGHT CLUSTER	EURO



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
	Fuel pipes	AIRBUS A320
disclosure	LILIUM	LILIUM JET
A	non-disclosure	Miscellaneous
A	non-disclosure	Miscellaneous
A	non-disclosure	Miscellaneous
ERO	non-disclosure	Miscellaneous
ERO	non-disclosure	Miscellaneous
DIVISION Toulouse	Several	Miscellaneous
EC	AIRBUS	Miscellaneous
ERO	non-disclosure	Miscellaneous
TEAM	non-disclosure	Miscellaneous
DUX-DEVTEK SPAIN	Several	AIRBUS A330/350XWB
DUX-DEVTEK SPAIN	Several	AIRBUS DS A400M
DUX-DEVTEK SPAIN	Several	EUROFIGHTER TYPHOON
al	Several	Miscellaneous
al	Several	Miscellaneous
US DS	Control Systems	Miscellaneous
US HELICOPTERS SPAIN	Control Systems	Miscellaneous
NAT AIRPORTS NEERING & SUPPLIES	ATC Secondary Radars	Miscellaneous
M	Control Systems	Miscellaneous
M	Control Systems	Miscellaneous
T RADAR SYSTEMS	ATC Secondary Radars	Miscellaneous
T RADAR SYSTEMS TED	ATC Secondary Radars	Miscellaneous
OPAVIA	Control Systems	Miscellaneous



## Systems & Equipment

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIREC
SENER	
NATO Pod	GENE
AFSC-RRFS	GENE AERO
Q-SING	GEOM
LVA 8m MSSR ANTENNA	HENS
SUBASSY, REFLECTOR ROD	HENS
SPARE PARTS	HENS
SUPPLY OF 1 UNIT RSL-2731A & FAT WITH WITNESSING O	HENS
RSL-273A MODIFICATION - Netherlands	HENS
RADIATING COLUMN FOR LVA 8M. SSR ANTEN	HENS
SPARE PART POWER DIVIDER D1	HENS
INSTALLATION MOUNTING HARDWARE ANTENNAS RSL-2731A	HENS
HADR PROJECT	HENS
RSL-2130+RT-211 OVERHAULING; TAUFKIRCHEN	HENS
RSL-2130 REFLECTOR ASSY	HENS
RT-211 SPARE PARTS	HENS
Overhauling antennas RSL-2730A ESLi & NWAi	HENS
Portable Antennas	INDR.
Mixed Columns	INDR.
SPARE PARTS	INDR.
SAAR 20VV Pedestal	INDR.
UPPER RADOME D-VOR ANTENNA	INDR.
LVA ANTENNA, PEDESTAL AND SPARE PARTS	INDR.
OPEN PEDESTAL HOSE	INDR.
RSL-2330 ANTENNA FIXINGS	INDR.
STROMAG CLUTCH	INDR.
FLEXIBLE GASKET SETS	INDR.
ANTENNAS OPEN PEDESTALS & TESTS	INDR.
ANTENNA DVOR	INDR.
CSL-M ANTENNA PROBES	INDR.



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
RAL ATOMICS	Control Systems	Miscellaneous
RAL ATOMICS NAUTICAL SYSTEMS INC	Control Systems	Miscellaneous
NUMERICS	Control Systems	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT	ATC Secondary Radars	Miscellaneous
OLDT AUSTRALIA	ATC Secondary Radars	Miscellaneous
OLDT AUSTRALIA	ATC Secondary Radars	Miscellaneous
OLDT AUSTRALIA	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous



## Systems & Equipment

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRE
<b>SENER</b>	
MODULO RF	INDR
DVOR REFERENCE ANTENNA	INDR
FAT 2XANTENA CSL-M VERSION C	INDR
ANTENAS CSL-M VERSION C	INDR
Interfaces Antena CSL-M C	INDR
45x Columnas CSL-M Versión C	INDR
2xFAT antenna & pedestal	INDR
Antenna CSL-M Version Verde	INDR
SUPPLY OF A SSR ANTENNA MODEL RSL-2330+	INTER
8m LVA SSR ANTENNA, MODEL RSL-2730A	INTER
LVA 8m MSSR Antenna, model RSL-2730(A)	MITS
EURODRONE DATALINKS	non-c
L-BAND TEST ARRAY	non-c
8m LVA MSSR ANTENNAS, MODEL RSL-2730A	NRPL
ANTENNA LVA MK2	RAYT
DARS Spare Parts	RAYT
SPARE PART	ROH
Stabilized Mirror Unit (SMU) of the sight	SAAB
RBS70NG SMU	SBD
RSL-2730A TEST PROBE	THAL
<b>TECNASA</b>	
Components	MARTI
<b>TTT GROUP</b>	
Heat and surface treatments	SAFRA
Heat and surface treatments	SAFRA
Heat and surface treatments	WITZE



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
A	ATC Secondary Radars	Miscellaneous
RSOFT	ATC Secondary Radars	Miscellaneous
RSOFT	ATC Secondary Radars	Miscellaneous
UBISHI ELECTRIC EUROPE	ATC Secondary Radars	Miscellaneous
disclosure	Control Systems	Miscellaneous
disclosure	ATC Secondary Radars	Miscellaneous
AERO	ATC Secondary Radars	Miscellaneous
HEON	ATC Secondary Radars	Miscellaneous
HEON	ATC Secondary Radars	Miscellaneous
DE & SCHWARZ	ATC Secondary Radars	Miscellaneous
S DYNAMICS	Control Systems	Miscellaneous
	Control Systems	Miscellaneous
ES NEDERLAND	ATC Secondary Radars	Miscellaneous
N-BAKER	Seats	Miscellaneous
N LANDING SYSTEMS	Landing Gear	AIRBUS families
N LANDING SYSTEMS	Brakes	AIRBUS families
NMANN	Wing leading edge ventilation	AIRBUS families

## Systems & Equipment

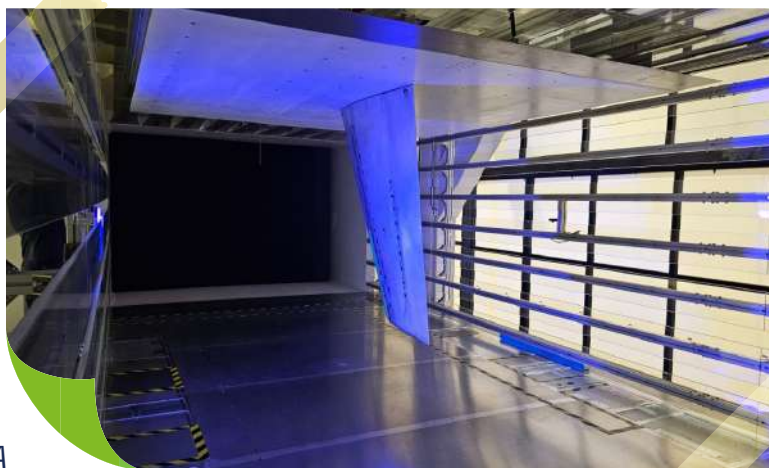
GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRE
<b>TTT GROUP</b>	
Heat and surface treatments	HEROU
Heat and surface treatments	IAI
Heat and surface treatments	non-dis
Heat and surface treatments	GOODR
Heat and surface treatments	SAFRA
Heat and surface treatments	non-dis
<b>WEC</b>	
Air Bleed equipment parts	LIEBHE
Air Bleed equipment parts	HONEY
Air Bleed equipment parts	LIEBHE
Air Bleed equipment parts	LIEBHE
Air Bleed equipment parts	HONEY
Air Bleed equipment parts	LIEBHE
<b>XUBI</b>	
Rotating transmission	GENER
Actuation systems/linear actuator	IAI
Gear transmission	IAI
Rotating transmission	IAI



*Courtesy Aciturri*



CT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
X DEVTEK	Landing Gear	KAI platforms
	Several	Miscellaneous
closure	Ventilation / LIEBHERR	Miscellaneous
RICH	Several	Miscellaneous
N TRANSMISSION SYSTEMS	Several	Miscellaneous
closure	Landing Gear	SIKORSKY platforms
RR	Air Treatment Management	AIRBUS A220/320/330/400M
WELL	Air Treatment Management	AIRBUS A320/330
RR	Air Treatment Management	AIRBUS A320neo/330neo
RR	Air Treatment Management	BOEING 747-8
WELL	Air Treatment Management	DASSAULT F7X
RR	Air Treatment Management	DASSAULT F7X
AL DYNAMICS	Azimet	Miscellaneous
	Control systems	Miscellaneous
	Control systems	Miscellaneous
	Radar	Miscellaneous



*Courtesy CTA*



## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>AALBERTS SURFACE TECHNOLOGIES TEY</b>	
Development of solutions (process, materials adaptation)	no
Development of solutions (process, materials adaptation)	no
Development of solutions (process, materials adaptation)	no
<b>ACITURRI</b>	
Components	PD
<b>AERNNOVA</b>	
Large and Complex Machined parts and Assemblies	SP
Large and Complex Machined parts and Assemblies	SP
<b>ANTERAL</b>	
System antennas	AE
System antennas	AL
System antennas	AM
System antennas	AR
System antennas	CA
System antennas	GM
System antennas	IM
System antennas	IN
System antennas	KE
System antennas	NT
System antennas	PA
System antennas	QU
System antennas	SA
System antennas	SP
System antennas	TE
Safety Subsystem antennas	TH
<b>ARATZ</b>	
Machined Components	no
Components for satellite antennas	no



PROJECT CLIENT	OEM	PLATFORMS
on-disclosure	Launchers/Rocket Engines	Miscellaneous
on-disclosure	Launchers/Rocket Engines	Miscellaneous
on-disclosure	Launchers/Rocket Engines	Miscellaneous
OL SPACE	several	Launcher
ACE X	several	FALCON 9
ACE X	several	FALCON HEAVY
ERTEC	In cabin flight communications	miscellaneous
L SPACE	Ground equipment	miscellaneous
N4 GROUP	Ground equipment	miscellaneous
QUIMEA	SAR subarray	miscellaneous
AST - MKR	QON	CAST
MV	TT&C Antennas	MIURA 1
PULSE	USA Government	miscellaneous
DRA SISTEMAS	Electronic warfare	miscellaneous
PLER SPACE	BPF-SAT-KU-01-SMA	AETHER
TL LANBASE	Ground equipment	miscellaneous
RADIGMA	K/Ka & Q band systems	ORBITGUARD 2
UADSAT	Quad SAT system	miscellaneous
NTANDER TELEPORT	Ground station	miscellaneous
ACE NORWAY	SAR Feed Horns	MICRO SAR
CH-INTER	Ground equipment	miscellaneous
IALES ALENIA SPACE	Safety Antennas	SPACE RIDER
on-disclosure	several	miscellaneous
on-disclosure	Satellite Antennas	miscellaneous



## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>BURDINBERRI</b>	
LVA Curing Tooling	AI
Lay Up Tooling	AI
<b>CIDETEC</b>	
Surface treatments	FI
<b>CTA</b>	
Multi-Payload Component Static Tests	AI
Controller shock tests	CR
Solar panels	DF
Heat pipes system	IB
Satellite structures	IC
Mechanisms	SE
<b>DANOBATGROUP</b>	
High precision mechanical components	SE
<b>INDUSTRIAS GALINDO</b>	
Tooling manufacturing	no
<b>ITP AERO</b>	
Components for Engines	SA
<b>METRALTEC</b>	
Heat Treatments	AC
Heat Treatments	PL
<b>MICROLAN</b>	
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	AM
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	AS
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	EN
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	EC



PROJECT CLIENT	OEM	PLATFORMS
ARBUS DS	several	ARIANE 6
ARBUS DS	several	ARROW
INITEC ELECTROLISIS	Satellite	Miscellaneous
ARBUS DS	Structure	miscellaneous
ISA	Flight Control	miscellaneous
HV	Power	miscellaneous
ERESPACIO	Thermal Protection System	miscellaneous
EYE	Structure	miscellaneous
NER	Telecom	miscellaneous
NER	HGAG Antenna	miscellaneous
n-disclosure	Collars	CSO
FRAN AIRCRAFT ENGINES	Shuttle	ARIANE
CITURRI	several	Launcher
D SPACE	several	Launcher
TERAL	several	miscellaneous
TRONIKA	several	miscellaneous
IDUROSAT	several	miscellaneous
SOL	several	miscellaneous



## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>MICROLAN</b>	
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	G
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	PA
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	RE
manufacturing of components for antennas, radars, shuttles, cube sat, mechanical actuators, jigs and fixtures etc.	SE
<b>MIZAR ADDITIVE</b>	
3D components in various materials	IN
<b>NUTER</b>	
Machined Components	SE
Machined Components	SE
<b>RENISHAW IBÉRICA</b>	
Metal 3D printing systems	se
<b>SATLANTIS</b>	
Delivery of an iSIM-170 payload	BA
Embedded solution for methane emissions detection and quantification	ES
Copernicus Contributing Mission (CCM) service in the Category 1 for the detection and quantification of methane emissions (Atmospheric Composition Domain)	ES
Cubesat Mission Framework: LACO U-90: Pre-Launch and Commissioning of Urdaneta-90 satellite	ES
iSIM SWIR for extended short wave infrared camera based on iSIM technology	ES
Feasibility study of three key components for ARRAKIHS mission	ES
iSIM-90 Flight Campaign for methane detection tests	ES
Earth Observation Full Solution for Small Satellite	GE
Delivery of Electro Optical Camera	TÜ



PROJECT CLIENT	OEM	PLATFORMS
NAV	several	miscellaneous
OSQUALI MW	several	miscellaneous
OWIRE	several	miscellaneous
NER	several	miscellaneous
DRA	several	miscellaneous
NER	several	miscellaneous
NER	several	METEOSAT THIRD GENERATION
veral	several	miscellaneous
E	iSIM-170 Flight Model and Engineering Model	miscellaneous
SATELLITE VENTURES	GEI-SAT precursor (North-American orbits)	CubeSat
A	GEI-SAT precursor	miscellaneous
A	Isimi-90	miscellaneous
A	iSIM 90 / SWIR and extended SWIR	CubeSat
A	iSIM-170	miscellaneous
A	Isimi-90	miscellaneous
ECOSMOS CJSC	iSIM-SAT 16U and Product services	CubeSat
BITAK	Isimi-90 in panoramic panchromatic configuration	Customer platform-microsat



## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>SENER</b>	
Design of the four Hatches and the internal secondary structure	AI
PROBA-3 SOLAR ARRAY MECHANISMS	AI
DTA-1201 SERIES PRODUCTION	AI
ISAAC Robotic Assembly	AI
ExoMars RFM LLA	AI
TRUTHS-SPC	AI
ENVISION - High Gain Antenna Assembly	AI
ARIEL MGAMA	AI
TEST CAPS FOR CO3D PROGRAM	AI
SENTINEL 1 NG	AI
ALYAH 4&5	AI
MSR ERO TPM	AI
Spainsat-NG DSSPA & DLNA	AI
Badr-8 Tcr Equipment	AI
EUTELSAT 36X TCR equipment	AI
CO3D X-BAND ANTENNA	AI
LO MetOp 2G	AI
Output Power Distribution Network	AI
Tcr Equipment	AI
RAS	AI
OPDN (output Power Distribution Network)	AI
S-BAND ANTENNAS	AI
LO	AI
Thuraya Lna's	AI
Thuraya Tcr Equipment	AI
Smile Payload Module (plm) X-band Antenna	AI
Gw-v Development	AI



PROJECT CLIENT	OEM	PLATFORMS
RBUS	Future space station in lunar orbit	LOP-Gateway lunar mission
RBUS	SOLAR ARRAY MECHANISMS	PROBA-3
RBUS	Actuator	miscellaneous
RBUS DS	Equipment	ISAAC
RBUS DS	Equipment	EXOMARS
RBUS DS	Equipment	TRUTHS
RBUS DS	Equipment	ENVISION
RBUS DS	Equipment	ARIEL
RBUS DS	Equipment	CO3D PROGRAM
RBUS DS	Equipment	SENTINEL
RBUS DS	Equipment	miscellaneous
RBUS DS	TPM	MSR ERO
RBUS DS	NG DSSPA & DLNA	Spain sat
RBUS DS	Badr-8 Tcr Equipment	miscellaneous
RBUS DS	Equipment	EUTELSAT
RBUS DS	ANTENNA	miscellaneous
RBUS DS	LO MetOp 2G	Metop
RBUS DS	Opdn G2g	miscellaneous
RBUS DS	Tcr Equipment	BADR-8
RBUS DS	RAS	BIOMASS
RBUS DS	OPDN	GALILEO 2ND GEN.
RBUS DS	S-BAND ANTENNAS	METOP
RBUS DS	LO	METOP 2G
RBUS DS	Thuraya Lna's	miscellaneous
RBUS DS	Thuraya Tcr Equipment	miscellaneous
RBUS DS	Payloads & Antennes	Miscellaneous
RBUS DS	Equipment	ONESAT



## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>SENER</b>	
Cpsu	AI
Gw-Ina Development	AI
Tcr Antennas	AI
USER BEAM LNAs Ku-Ka BAND	AI
DTA10-104 rotary actuators	AI
Reflector Pointing Assembly	AI
S-band and X-band Tcr Global Horn	AI
Ka-band Feeders Chains and Global Horn	AI
X-band Dra Radiating Chains	AI
Spainsat Phase 1 (Govsatcom)	AI
METOP-SG SAS HDRM DLM	AI
Spainsat-ng X-band Dra Radiating Chains	AI
Additional Test Caps For GPS	AI
GPS ANTENNAS	AI
Design of the docking and berthing mechanisms between the I-HAB and the various modules, which will be assembled in orbit	AI
TMANT Exploitation	AR
THEMIS GFS: T1H+ Feasibility Phase	AR
AST GATEWAY ANTENNA	AS
Astranis bloque 3	AS
VNE phase CDE1	AV
TDRS Antennas	AV
NAVIGA	AV
Spherex Program	BA
SPACE WEATHER FOLLOW-ON (SWFO)	BA
GLIDE S-BAND MGA & FILTERS	BA
Saphir-NG Pre-development	CN



PROJECT CLIENT	OEM	PLATFORMS
IRBUS DS	Equipment	ONESAT
IRBUS DS	Equipment	ONESAT
IRBUS DS	Tcr Antennas	ONESAT
IRBUS DS	Equipment	ONESAT
IRBUS DS	Telecommunications platforms	ONESAT / EUROSTAR NEO
IRBUS DS	Equipment	SPAINSAT
IRBUS DS	Equipment	SPAINSAT
IRBUS DS	Equipment	SPAINSAT
IRBUS DS	Equipment	SPAINSAT
IRBUS DS	Equipment	SPAINSAT
IRBUS DS	Equipment	METOP
IRBUS DS	Ng X-band Dra Radiating Chains	SPAINSAT
IRBUS ONEWEB	Tests	ONEWEB
IRBUS ONEWEB USA	ANTENNAS	ONEWEB
IRBUS / THALES ALENIA SPACE	Future space station in lunar orbit	LOP-Gateway lunar mission
ARIANE GROUP	TELEMETRY ANTENNA (TMANT)	ARIANE 6
ARIANE GROUP	Equipment	THEMIS
AST & SCIENCE LLC	Antenna	AST
ASTRANIS SPACE TECHNOLOGIES	Equipment	miscellaneous
AVIO SPA	Equipment	NAVIGA
AVIO SPA	Antennas	VEGA
AVIO SPA	Navigation Equipment	VEGA-C
BAE SYSTEMS AEROSPACE	Equipment	miscellaneous
BAE SYSTEMS AEROSPACE	Equipment	miscellaneous
BAE SYSTEMS AEROSPACE	Antenna	miscellaneous
BAE SYSTEMS	Equipment	miscellaneous



## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>SENER</b>	
JANUS PSM-MCM	CS
Advanced Receiver for L-Band Radiometer	ES
Assembly and testing of actuator	ES
KU-BAND GLOBAL ANTENNAS	ES
Design, manufacture and test a prototype of the HDRA (Hold Down and Release Actuator) mechanism	ES
Design, manufacture and test the Instrument Selection Mechanism (ISM)	ES
Analysis of different alternatives for planetary vehicle landing gear	ES
Design, manufacture and test devices for assembly of the Biomass satellite	ES
ISL Antenna	ES
DEMPCOS	ES
Clamping mechanism for the B1 phase	ES
MGSE	ES
Development of fluid connectors for refueling between DSG (Deep Space Gateway) modules connected by IBDM (International Berthing and Docking Mechanism)	ES
Fixation Box for a vegetal biology experiment to be performed at the ISS	ES
C-BAND HORN MADE OF CFRP	ES
DFACS assessment and prototyping	ES
S-band deployable antenna integrated into the lunar ascent module	ES
Technical and engineering assistance in the project	ES
Ku	ES
Main contractor of the entire program	ES



PROJECT CLIENT	OEM	PLATFORMS
IC	PSM-MCM	JANUS
A	Advanced Receiver for L-Band Radiometer	miscellaneous
A	REFOCUSING MECHANISM DERISKING	ARIEL
A	KU-BAND	ARTES C&G
A	Scientific Mission	ATHENA
A	Scientific Mission	ATHENA
A	Planetary exploration / Scientific Mission	AURORA - Mars Sample Return Mission
A	Scientific Mission	BIOMASS
A	ISL Antenna	COMET
A	DEMPCOS	DEMPCOS
A	Mission to combat the space debris problem	E-Deorbit
A	Mechanical ground support equipment	ELECTRA
A	REFUELING INTERFACE DEVELOPMENT	ESPRIT
A	FixBox	ISS - International Space Station
A	C-BAND HORN	ITI
A	Equipment	LISA
A	Future space station in lunar orbit	LOP-Gateway lunar mission
A	life-support system for long duration missions	MELISSA
A	Ku	NEXT GENERATION ARTES-34
A	Phases C/D and E1	PROBA 3



GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>SENER</b>	
AOCS ENHANCED VERIFICATION	ES
ENVISION SRS - BB BOOM ANTENNA	ES
SPADS	ES
PODIUM	ES
SCRIPT	ES
ARTIFICIAL INTELLIGENCE TEC. for GNC DESIGN	ES
HIPERGA - Future High Perf. Gyros. Techno for AOCS	ES
DTK	ES
THORMUX - Photonic RF Demux	ES
HDRM Roadmap	ES
In-flight demonstration study of all the functions of the mechanism and Guidance, Navigation and Control system (GNC)	ES
Hard Capture System (HCS) of the IBDM (International Berthing and Docking Mechanism)	ES
Delivery of the Engineering Qualification Models (EQM) of the Ice Cloud Imager (ICI) Back End Receivers	ES
Main contractor of the formation flying system	ES
Scan assembly (FCI and IRS SCA) and the Calibration and Obturation Mechanism (FCI and IRS COM)	ES
Prime contractor for Euclid's AOCS/GNC	ES
High Gain Antenna Gimbal	ES
Design and construction of the cells of the secondary (M2) and tertiary (M3) mirrors	ES Ob
Design and construction of the cells for the fifth mirror (M5)	ES Ob
Miniaturized Uhf Antennas For Planetary (mapp)	ES
AMFORASS ADDITIVE MANUF.FOR SELECTIVE SURFACES	ES
AERIAL	ES
ARIEL M2M PHASE CD	ES
De-Spin mechanism pre-development	ES



PROJECT CLIENT	OEM	PLATFORMS
A	AOCS	ESA
A	Antenna	Envision
A	SPADS	miscellaneous
A	PODIUM	miscellaneous
A	SCRIPT	miscellaneous
A	Equipment	miscellaneous
A	Equipment	miscellaneous
A	Equipment	DTK
A	Equipment	THORMUX
A	Equipment	Miscellaneous
A / ESTEC	Docking / joining mechanisms - Navigation	ISS - International Space Station
A / ESTEC	Docking / joining mechanisms - Navigation	ISS - International Space Station
A / EUMETSAT	Equipment	METOP SG
A / GMV	Equipment	PROBA 3
A / KAYSER-THREDE	Observation satellite	METEOSAT THIRD GENERATION
A / THALES ALENIA SPACE	Scientific Mission	EUCLID
A / THALES ALENIA SPACE	Scientific Mission	EUCLID
O - European Southern Observatory	Infrared optical telescope	E-Extreme Large Telescope
O - European Southern Observatory	Infrared optical telescope	E-Extreme Large Telescope
TEC	Antennas	miscellaneous
TEC	Equipment	miscellaneous
TEC	Equipment	AERIAL
TEC	Mechanism	ARIEL
TEC	Mechanism	ESA



GENERAL DESCRIPTION OF THE PRODUCT/SERVICE
SENER
CPTR L-Band Feed
ISL EQM Ph 2
Magnetorheological Semi-Active Vibration Damping
AEOLUS2-EBEX
REVOLUTE
Radiating Element for Smal Nadsat's
HARMONY Phase B1
ACLICS
DEPLOYMENT MECHANISM FOR ELECTRA DPR
ARIEL M2 Phase B
Comet-I Instruments Fase B
Loutch Svm
SKIF-D Ka-Band Receiver
S-band Antennas For Cas500 3,4 & 5
DTJ Phase CD
FLEX FLORIS INSTRUMENT OPTICAL MODULE STRUCTU
Platino FMA
LM400 FILTERS
COUGAR PASSIVES
SDA T2 Beta
NG OPIR Ka-Band OMUX
COULIS C-Band LNA
Gateway XORI Fluid Transfer
AMOS 8 ANTENNAS



DIRECT CLIENT	OEM	PLATFORMS
ESTEC	Antenna	miscellaneous
ESTEC	Equipment	ISL
ESTEC	Equipment	miscellaneous
ESTEC	Equipment	AEOLUS
ESTEC	Equipment	miscellaneous
ESTEC	Equipment	miscellaneous
ESTEC	Equipment	HARMONY
ESTEC	Equipment	miscellaneous
IBERESPACIO	DEPLOYMENT MECHANISM	ELECTRA
IEEC	Equipment	ARIEL
INSTITUTO DE ASTROFÍSICA DE ANDALUCÍA	Equipment	Comet-I
ISS-RESHETNEV	Equipment	miscellaneous
ISS-RESHETNEV	Equipment	miscellaneous
KOREA ASTRONOMY SPACE SCIENCE INSTITUTE	Antennas	miscellaneous
LEONARDO	Equipment	PROSPECT
LEONARDO	Optics	FLEX
LEONARDO	Equipment	PLATINO
LOCKHEED MARTIN	FILTERS	miscellaneous
LOCKHEED MARTIN	Active RF	miscellaneous
LOCKHEED MARTIN	Equipment	miscellaneous
LOCKHEED MARTIN	Equipment	miscellaneous
MACDONALD, DETTWILER ASSOCIATES -MDA	Equipment	miscellaneous
MACDONALD, DETTWILER ASSOCIATES -MDA	XORI Fluid Transfer	Gateway
MACDONALD, DETTWILER ASSOCIATES -MDA	ANTENNAS	miscellaneous



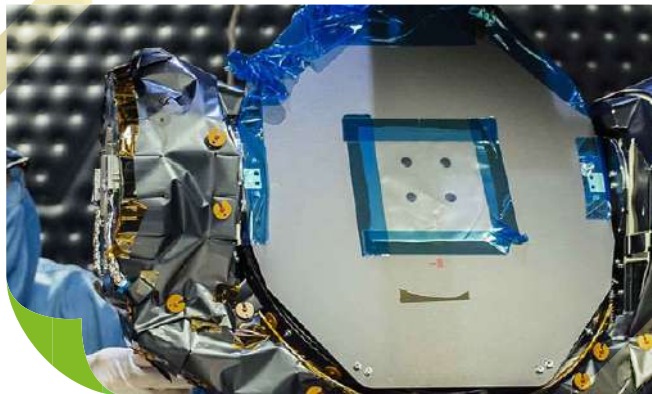
## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>SENER</b>	
THUNDER C-BAND LNA	M
C-band	M
Power Propulsion Element	M
SIRIUS XM 9&10	M
Power Propulsion Element	M
SIRIUS XM 11&12	M
Echostart-25 Power Dividers and Test Couplers	M
PPE3 - Power Propulsion Element	M
WSO/UV/PDD	M
EMIRATES LUNAR ROVER MAST & GIMBAL	M
COPERNICUS HPCM CIMR Mission	no
C-band Program	NO
MEP Ku-Band	NO
MRV C-Band	NO
HALO PASSIVES	NO
MRV S-Band	NO
Optus X filters and test couplers	NO
Halo Antennas	NO
Mechanical ground support equipment (MGSE) for assembly of BIOMASS Space Mission	OH
COMET-Interceptor Probe B2	OH
COMET INTERCEPTOR MGSE	OH
COMET INTERCEPTOR HGA AND LGA ANTENNAS	OH
OPSAT REPOINTING MECHANISM	OH
CHIME RMU	OH
PLATO PSHF	OH
OPTSAT TTC S-BAND ANTENNAS	OH
FORUM Scan and Pointing Units	OH



PROJECT CLIENT	OEM	PLATFORMS
ACDONALD, DETTWILER ASSOCIATES -MDA	Active RF	miscellaneous
AXAR	Equipment	INTELSAT
AXAR	Propulsion	miscellaneous
AXAR	Equipment	miscellaneous
AXAR	Passive RF	miscellaneous
AXAR	Equipment	ARIEL
AXAR	Equipment	miscellaneous
AXAR	Equipment	miscellaneous
INECO	WSO/UV/PDD	WSO
MOHAMMED BR	Equipment	miscellaneous
Non-disclosure	Equipment	COPERNICUS
ORTHROP GRUMMAN	C-band Program	miscellaneous
ORTHROP GRUMMAN	Antenna	miscellaneous
ORTHROP GRUMMAN	Antenna	miscellaneous
ORTHROP GRUMMAN	Passive RF	HALO
ORTHROP GRUMMAN	Antenna	miscellaneous
ORTHROP GRUMMAN	Passive RF	miscellaneous
ORTHROP GRUMMAN	Equipment	HALO
HB ITALIA	MGSE	BIOMASS
HB ITALIA	Equipment	COMET I
HB ITALIA	Equipment	COMET I
HB ITALIA	Antenna	COMET I
HB SYSTEM AG	Equipment	OPSAT
HB SYSTEM AG	RMU	CHIME
HB SYSTEM AG	Equipment	miscellaneous
HB SYSTEM AG	ANTENNAS	OPTSAT
HB SYSTEM AG	Scan and Pointing Units	FORUM

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>SENER</b>	
Space Logistics Proof of Concept-1 (PoC-1): In-Orb	OH
MTG SCAN ASSEMBLY	OH SP
I-Hab HCS-IBDM (International Berthing and Docking Mechanism)	RE
S-BAND ANTENNAS	RE
SARANT SLIs for Galileo Batch-3	SU
Humming Sat RLNA CPSU	SV
Prototyping of Spacecraft Refueling	TH
Hera Hga & Lga Antennas	TH
TT&C Global horn Ant. & Test couplers	TH
ESPRIT HYBRID FTC	TH
TELKOM 13 CBAND ANTENNAS & FILTERS	TH
SES 24 ANTENNAS	TH
Koreasat 6A	TH
Exomars RFM DM Backshell Anten. and Separation Sys	TH
Iride Nimbus	TH
Reflector	TH
Lunar Communication System	TH
Assessment on the motorized Hatch, the communication antenna pointing mechanism and the robotic arm interfaces	TH
Interfaces for the robotic arms (external and internal)	TH
Navigation Filters (navflt)	TH



*Courtesy Sener*

PROJECT CLIENT	OEM	PLATFORMS
THALES ALLENIA SPACE	Equipment	miscellaneous
THALES ALLENIA SPACE	SCANNER	METEOSAT THIRD GENERATION
THALES ALLENIA SPACE	Mechanism	ISS - International Space Station
THALES ALLENIA SPACE	Antennas	PROBA-3
THALES ALLENIA SPACE	Equipment	GALILEO
THALES ALLENIA SPACE	Equipment	miscellaneous
THALES ALLENIA SPACE France	Systems	miscellaneous
THALES ALLENIA SPACE France	Antennas	Hera
THALES ALLENIA SPACE France	Equipment	SES-23
THALES ALLENIA SPACE France	Mechanism	ESPRIT
THALES ALLENIA SPACE France	Antenna	miscellaneous
THALES ALLENIA SPACE France	Antenna	miscellaneous
THALES ALLENIA SPACE France	Antenna	miscellaneous
THALES ALLENIA SPACE Italy	Equipment	EXOMARS
THALES ALLENIA SPACE Italy	Equipment	miscellaneous
THALES ALLENIA SPACE Italy	Reflector	HALO
THALES ALLENIA SPACE Italy	Communications	HALO
THALES ALLENIA SPACE Italy	Future space station in lunar orbit	LOP-Gateway lunar mission
THALES ALLENIA SPACE Italy	Future space station in lunar orbit	LOP-Gateway lunar mission
THALES ALLENIA SPACE Italy	Equipment	GALILEO 2ND GEN.



*Courtesy Airbus DS*



## Space

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DI
<b>SENER</b>	
Galileo G2 SARP	TH
SPACE RIDER	TH
EUCLID AOCS	TH
EXM18 AOC GNC SCOE	TH
LISA MECHANISM	TH
CIMR-MCA	TH
METEOSAT THIRD GENERATION	TH
ATHENA MAMD	TH
NG UHF OMUX	TH
Eutelsat-36x- Uhf Filters	TH
CIMR	TH
I-Hab HCS-IBDM (International Berthing and Docking Mechanism)	RE
<b>TECNALIA</b>	
Novel structural components for launchers/satellites applications by additive manufacturing	ES
Corrosion protective hybrid coating for space	ES
Citric acid as a green alternative for the passivation of stainless-steel tubes	ES
Application of Surface Functionalization in Space Mechanisms	ES
Investigation of additive manufacturing of improved ceramic packages for detectors	ES
Collaboration in eXTP-WFM Instrument development	IC
AMARE- Characterization of magnetorheological systems for dumping applications in the space sector	SE
<b>TTT GROUP</b>	
Heat and surface treatments	AI
Heat and surface treatments	SE
<b>TUBACEX</b>	
Development of solutions (process, materials adaptation)	no



PROJECT CLIENT	OEM	PLATFORMS
ITALIALES ALENIA SPACE Italy	Equipment	GALILEO
ITALIALES ALENIA SPACE Italy	Equipment	SPACE RIDER
ITALIALES ALENIA SPACE Italy	AOCS	EUCLID
ITALIALES ALENIA SPACE Italy	Equipment	EXOMARS
ITALIALES ALENIA SPACE Italy	MECHANISM	LISA
ITALIALES ALENIA SPACE Italy	Equipment	CIMR
ITALIALES ALENIA SPACE Italy	Equipment	MTG
ITALIALES ALENIA SPACE Italy	Equipment	ATHENA
ITALIALES ALENIA SPACE Spain	Equipment	SPAINSAT
ITALIALES ALENIA SPACE Spain	Filters	Eutelsat
ITALIALES ALENIA SPACE Spain	Equipment	CIMR
EUROPEAN SPACE AGENCY	Mechanism	ISS - International Space Station
ESA	Instrument / Optics	miscellaneous
ESA	Spacecraft Structures	REACH
ESA	Spacecraft Structures	REACH
ESA	Structures / Mechanisms	miscellaneous
ESA	Instrument / Electronics	miscellaneous
ESA-ESR	Instrument / Optics	miscellaneous
ESA	Structures / Mechanisms	miscellaneous
ESA-ESR	Propulsion systems	ARIANE Family
ESA	Systems	Miscellaneous
ESA-ESR	Launchers/Rocket Engines	Miscellaneous

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT C
<b>ACITURRRI</b>	
Rudder & Elevators	AIRBUS
S19.1 Ducts & Housing	AIRBUS
Wing Assembly Conversion	AIRBUS
MRO A400M	AIRBUS
<b>AENNOVA</b>	
Technical Publications, SRM, AMM, ITEM, SB, etc	IAI
Technical Publications, SRM, AMM, ITEM, SB, etc	SIE
Maintainability, Reliability Analysis, MSG3	IAI
Support to FALs with Workfoce	AIRBUS
Technical assistance & Sales of spares 24H/365d	AIRBUS
Composite & metal structure repairs	AIRBUS
Technical assistance & Sales of spares 24H/365d	AIRBUS
Composite & metal structure repairs	LEARJET
Technical assistance & Sales of spares 24H/365d	LEARJET
Technical assistance & Sales of spares 24H/365d	MHI
Composite & Metal structure repairs	EMBRAE
Composite & Metal structure repairs	EMBRAE
Composite & Metal structure repairs	EMBRAE
Technical assistance & Sales of spares 24H/365d	EMBRAE
Maintainability, Reliability Analysis	OEMs
Technical Publications, SRM, AMM, ITEM, SB, etc.	OEMs
Modifications at Final Assembly of OEMs	OEMs
Design of repairs	OEMs &
Design of GSEs	OEMs &
Inspections, special processes and re-certification on site and in house	Operator
Technical assistance & Sales of spares 24H/365d	Operator
Composite & metal structure repairs and modifications	Operator



CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
OPERATIONS	SPARES	AIRBUS A380
OPERATIONS	SPARES	AIRBUS A380
DS	Several	AIRBUS DS A330MRTT
DS	Several	AIRBUS DS A400M
	P2F conversions	AIRBUS A320
	P2F conversions	AIRBUS A330
	P2F conversions	AIRBUS A330
DS	Fuselage, Wings, Antennes, Retrofits, Interiors...	AIRBUS DS A330MRTT
	MLGD, HTP, Fuselage, Wings...	AIRBUS families
	MLGD, Elevators, tips, Leading edges, Flaps...	AIRBUS families
	MLGD, HTP, Fuselage, Wings...	AIRBUS HELICOPTERS families
	Tips, fairings, panels, etc	CRJ Families
	Empennage, fairings, elevators	CRJ Families
	Empennage, fairings, elevators	CRJ Families
R	Elevators, Rudders	EMBRAER 170/190
R	Elevators, Rudders	EMBRAER E-JET families
R	Flaps, Ailerons, Wing tips, MLGD, etc	EMBRAER ERJ145/135/Legacy
R	Structures and mobile surfaces	EMBRAER families
	Several	Miscellaneous
	Several	Miscellaneous
	Several	Miscellaneous
Operators	Several	Miscellaneous
Operators	Several	Miscellaneous
rs	Several	Miscellaneous
rs	Several	Miscellaneous
rs	Several	Miscellaneous



## MRO

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT C
<b>AENNOVA</b>	
Support MROs with Workforce	AIRNOST
Support MROs with Workforce	CESSNA
Support MROs with Workforce	Operator
Technical assistance & Sales of spares 24H/365d	LEONAR
Composite & Metal structure repairs	SIKORSK
Technical assistance & Sales of spares 24H/365d	SIKORSK
<b>AEROSPACE ENGINEERING GROUP</b>	
Components Maintenance, Repair & Overhaul	IBERIA M
Components Maintenance, Repair & Overhaul	LUFTHAN
Components Maintenance, Repair & Overhaul	TURKISH
Components Maintenance, Repair & Overhaul	AIRBUS I
Components Maintenance, Repair & Overhaul	BRITISH ENGINEE
Components Maintenance, Repair & Overhaul	SABENA ENGINEE
<b>DANOBATGROUP</b>	
Grinding Machine Retrofitting	MRO Op
Machine tools for landing gear MRO	MRO Op
<b>EGAMASTER</b>	
FOD Tool Control system	GLOBALI
Electronic Kanban systems	GLOBALI
<b>ITP AERO</b>	
Resolving incidents	ROLLS-R
Resolving incidents	ROLLS-R
Resolving incidents	ROLLS-R
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence



CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
TRUM	Several	Miscellaneous
	Several	Miscellaneous
rs	Several	Miscellaneous
DO	Fuselage	NHIndustries NH90
Y	Shields, cowlings, stabilizers	SIKORSKY S-92
Y	Cowlings, stabilizers	SIKORSKY S-92
MAINTENANCE	power generation/hydraulics/avionics/fuel	A320F/A330/A340/B737/B767/B777
NSA TECHNIK	power generation/hydraulics/avionics/fuel	A320F/A330/A340/B737/B767/B777
TECHNIK	power generation/hydraulics/avionics/fuel	A320F/A330/A340/B737/B767/B777
DS	power generation/hydraulics/avionics/fuel	AIRBUS DS CN-235/C-295/MRTT
AIRWAYS ERING	power generation/hydraulics/avionics/fuel	BOEING 777
ERING	power generation/hydraulics/avionics/fuel	LOCKHEED MARTIN F-16
erators	Engines	Miscellaneous
erators	Landing gear	Miscellaneous
A	Several	Miscellaneous
A	Several	Miscellaneous
OYCE	RR Trent 700	AIRBUS A330
OYCE	RR Trent 500	AIRBUS A340
OYCE	RR BR717	BOEING 717
Ministry of	GE F404	BOEING F/A-18

GENERAL DESCRIPTION OF THE PRODUCT/SERVICE	DIRECT C
<b>ITP AERO</b>	
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Several
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Spanish Defence
Full Maintenance, Inspection and Repair, modules and components & engine and accessories test	Royal Air
Resolving incidents	ROLLS-R
<b>METRALTEC</b>	
Manufacturing of metallic parts (including special processes)	AERNNO
<b>ONA ELECTROEROSIÓN</b>	
Die-Sinking EDM Machine-Tools	SAFRAN ENGINES
Die-Sinking EDM Machine-Tools	AIA
Wire EDM Machine-Tools	AIA
<b>RENISHAW IBÉRICA</b>	
Measurement machine (CMM) with multiple instruments to measure blades, and components	Several



CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
Ministry of	HONEYWELL TFE731	CASA C-101
Ministry of	HONEYWELL TPE331	CASA C-212
Ministry of	SNECMA ATAR	DASSAULT MIRAGE Families
	P&W PW206	EUROCOPTER EC135
Ministry of	EUROJET EJ200	EUROFIGHTER TYPHOON
Ministry of	RR T56	LOCKHEED MARTIN C-130
Ministry of	RR T56	LOCKHEED MARTIN P-3
Ministry of	GE J85	NORTHROP F-5
Force	HONEYWELL TPE331	SHORT TUCANO
ROYCE	RR Trent 700	AIRBUS A330
VA	Several	AIRBUS families
AIRCRAFT	Engines	CFM56 / LEAP 1A
	Engines	Miscellaneous
	Engines	Miscellaneous
	Several	Miscellaneous



PROJECT	SUMMARY
<b>AALBERTS SURFACE TECHNOLOGIES TEY</b>	
ITP AERO projects	Heat Treatments
<b>ACITURRI</b>	
H2ELIOS	Hydrogen Lightweight & Innovative Tank for Zero
HERWINGT	Hybrid Electric Regional Wing Integration Novel C
NEWBORN	Next Generation High Power Fuel Cells For Airbo
FASTERH2	Fuselage, Rear Fuselage and Empennage With Ca Technologies for H2 Integration
EWIRA	Manufacturing, assembly and integration of exte
SOFIA	Test Methods for analysis of infusion panels
DOMMINIO	Digital method for improved manufacturing of m
RLIGHTBIOCOMP	New Bio-Based and Sustainable Raw Materials E Lightweight Biocomposites
OVERLEAF	LH2 composite storage solutions for aviation app
NEOTAIL	Rudder development in thermoplastics
VALORH2	Research into new technologies, materials and p
CRYOTANK-LOX	LOX composite storage solutions for space applic
SHERPA	Sustainable & Competitive Solutions for Small Sp
COPERNICO	Development of structural parts by RTM
FEINA	Development of structural parts by WAAM
HIDRÓGENO	Depósitos de Hidrógeno a alta presión
DOMAIN	Demostradores tecnológicos en materiales aeron regionales y business jets
AERCOST	Advanced technologies for composite airframe c
MULTIGLIDE	Flexible forming for highly integrated airframe co
AIRE	Innovative Aerostructures aimed at Reducing Em
LIDER	Disruptive Helicopter of the Future
TIANA	Tecnologías Industriales para una Aeronáutica so
COMPCOAT	Coating solutions to improve composites resistan



	CALL
	Others
-Emission Aircraft	European-CLEAN AVIATION
Green Technologies	European-CLEAN AVIATION
rne Applications	European-CLEAN AVIATION
abin and Cargo Architecture Solution Validation and	European-CLEAN AVIATION
nded wing for a regional aircraft	European-CLEAN SKY 2
	European-CLEAN SKY 2
multifunctional airframe parts	European-H2020-MG
enabling Circular Value Chains of High Performance	European-Horizon Europe - C4
lications	European-Horizon Europe - C5
	National - CDTI - CIEN
rocesses associated with the hydrogen value chain	National - CDTI - MISIONES
ations	National - CDTI - PID
ace Launcher Payload Fairings	National - CDTI - PID
	National - CDTI - RETOS
	National - CDTI - RETOS
	National - CTA
áuticos multifuncionales integrados para aviones	National - IDEA
omponents	National - PTA 2021
mponents	National - PTA 2021
issions	National - PTA 2022
	National - PTA 2022
stenible y Competitiva	National - PTA 2023
nce to temperatures	Regional - Castilla y Leon Calls



PROJECT	SUMMARY
<b>AERNNOVA</b>	
UPWING	Droop nose composite leading edge
FASTER H2	LH2 aircraft and airframe integration
HERA	Digital and sustainability activities for Hybrid Elec
HERFUSE	New Empennage Joining Solutions of Hybrid Elec
CLEAN SKY 2	Airframe ITD: Morphing composite winglet, adva
CLEANSKY 2	LPA, HLFC HTP and WING: hybrid composite met
CLEANSKY 2	LPA, REAREND: 100% composite rear fuselage ar processes
CLEANSKY 2	LPA, THERMOPLASTIC PANELS: cargo door surrou
ENGRT	Low observability and impact resistant fairings fo
MOLDAM	Large composite tools enabled by additive manu
S2R PIVOT 2	Development of new structural components in c
FENIX	Composite panels for air-mobility and other tran conductivity
SEER	SHM and structural airframe developments
DIDEAROT	Aerospace manufacturing operations digital twin
GENEX	Generative digital models
GRAPHENE 3	Primary structure characterization when compos
MASTERLY	Large components automatic manipulations in a
LASERWAY	New laser manufacturing process for micromillin
TRANSCEND	Advanced Air Mobility
AEROBOTICS	Aerospace assembly operations robotization and
REFORCE	Metrology technologies for wing movables hinge
CAPMAM	Characterization of new composites material for
DIGIFORM	New metallic forming manufacturing process and
E-FLIGHT	Electric airframe technologies development
Quick-UT	Robotics solution for non destructive testing
HYPERSCALE	Smart System for positioning and sealing aerostr



	CALL
	European-CLEAN AVIATION
	European-CLEAN AVIATION
Electric Aircraft	European-CLEAN AVIATION
Electric Regional Aircraft	European-CLEAN AVIATION
Flap kinematics	European-CLEAN SKY 2
Allic architectures for leading edges with laminarity	European-CLEAN SKY 2
Architecture with advanced materials and manufacturing	European-CLEAN SKY 2
anding structure, stingers, etc	European-CLEAN SKY 2
or high-speed helicopter	European-EDF
ufacturing	European-EIT Manufacturing
omposite for railway rolling stock	European-H2020
sport modes, fire resistant, improved acoustic and thermal	European-H2020
	European-Horizon Europe
s	European-Horizon Europe
	European-Horizon Europe
ite materials graphene doped	European-Horizon Europe
n aerospace industrial assembly line	European-Horizon Europe
g components	European-Horizon Europe
	National - CDTI PTA 2021
l digitalization	National - CDTI PTA 2022
e line	National - MICINN
Avance Air Mobility	National - MICINN
d digital IA enhanced twins	National - MICINN
	Regional - Basque Calls - HAZITEK
	Regional - Basque Calls - HAZITEK
uctures assemblies	Regional - Basque Calls - HAZITEK

PROJECT	SUMMARY
<b>ANTERAL</b>	
ADRIENNE	Validation of Additive Manufacturing technologies
ARTS	New broadband communications and resilience
DRONELINKPLUS	Research on new connectivity technologies for s
QON-Space	Quasioptical systems for space observation
LANs-6G	New lens antenna technologies for New Space a
REDRONAV	Develop and integrate innovative technologies in process data in a massive and intelligent way
<b>AZTERLAN</b>	
HIDROSOL	New aluminium products for aeronautics with hi
HIPERION II	Generation of knowledge and capabilities for ne
MINERVA	Advanced design and development of materials energy and mobility using modeling and data an
ADISAM	Aluminium components produced by ablation ca
MODELAN	Technologies for advanced and connected integr
Client Developments	Technologies for a ZERO Emission Aircraft Operat
<b>CEIT</b>	
HIVOMOT	High power and VOLTage operation of electric M
AssAssiNN	Development of a multifunctional system for cor Network
<b>CIDETEC</b>	
U-CROSS	Early detection, monitoring and prediction of cor application of calibrated Ultrasonic CorROSion S
STELLAR	Development of SmarT Eco-friendly anticontami
AMANECO	Assessment of additive manufacturing limits for
H2FREE	Investigation and modelling of Hydrogen effusio used for landing gear structures



	CALL
es for antennas and passives for small satellites	European-NAEN Euroregion
technologies integrated into aerostructures	National - CDTI PTA 2022
afe collaborative aircraft operations	National - CDTI PTA 2022
	Regional - Navarra Calls
nd 6G	Regional - Navarra Calls
to a network of unmanned aircraft (UAS) to capture and	Regional - Navarra Calls - Strategic
gh modular variability obtained by ablation casting	National - CDTI
w space technologies and future planetary missions	Regional - Basque Calls - ELKARTEK
for the manufacture of new products for more sustainable alysis tools	Regional - Basque Calls - ELKARTEK
sting for the aeronautic industry	Regional - Basque Calls - HAZITEK
al modelling for metal industries	Regional - Basque Calls - HAZITEK
tion	Others - Internal/Client Development
OTors in aeronautics	European - H2020
plex aerostructures ASSEMBLY, ASSisted by Neural	European - H2020
rosion damage of coated aeronautic Al alloys through the ensors	European - CLEAN SKY 2
ation technologies for LAMINA wings	European - CLEAN SKY 2
eco-design optimization in heat exchangers	European - CLEAN SKY 2
n in electrochemically plated ultra-high-strength-steels	European - CLEAN SKY 2

PROJECT	SUMMARY
<b>CIDETEC</b>	
LUBGEAR	Tribological behavior under loss of LUBrication of gearboxes
REINTEGRA	Innovative End of Life procedures for REcycling IM
exFan	Novel recuperation system to maximize exergy fr propulsion system.
GENEX	New end-to-end digital framework for optimized aircraft composite structures
HIPERION II	Generation of knowledge and capabilities for nev
<b>CTA</b>	
FASTER H2	Fuselage, Rear Fuselage and Empennage with Ca Technologies for H2 integration
TheMa4HERA	Thermal Management for the Hybrid Electric Reg
HEAVEN	Hydrogen Engine Architecture Virtually Engineer
ARIAS	Advanced Research Into Aeromechanical Solution
TRANSCEND	MATERIALS AND PROCESSES ADVANCED OF LOW
ZEROe	TECHNOLOGIES FOR OPERATE AIRCRAFT WITH ZE
PHIADI	INNOVATIVE ADVANCED E INTELLIGENT HYDROG
TASTE	Aerodynamic Technologies for Geared Turbofan
HEGAZKIN 2023	Validation of New Technologies for Zero Emission
CONAVANTER 2023	Development of advanced thermal control techn aeronautical manufacturing processes.
ECOSEL	Development of experimental technologies for n
HIPERION II	Generation of knowledge and capabilities for nev
EKOHEGAZ II	DIGITALIZATION IN THE INTELLIGENT AND SUSTA EMISSIONS AIRCRAFT
PROH2BIO	Hydrogen AND electric hybrid propulsion and BIC



	CALL
of new optimized GEARS for friction reduction in power	European - CLEAN SKY 2
INTEGRAL welded Al-Li Aerostructures	European - CLEAN SKY 2
from energy for fuel cell powered geared electric aircraft	European- Horizon Europe
manufacturing and maintenance of next generation	European- Horizon Europe
low space technologies and future planetary missions	Regional - Basque Calls - ELKARTEK
bin and Cargo Architecture Solution validation and	European-CLEAN AVIATION
regional Aircraft.	European-CLEAN AVIATION
ed Novelty	European-CLEAN AVIATION
ns. Aeroelasticity test	European-H2020
COST FOR HIGH AIRCRAFT CADENCE	National - PTA
ERO EMISSIONS	National - PTA
EN PROPULSION	National - PTA
	National - RETOS Collaboration
n Aircraft	Regional - Basque calls - DFA
iques and sensor communication for optimization of	Regional - Basque calls - DFA
ew concepts of turbine seals in zero emission engines.	Regional - Basque calls - DFB
low space technologies and future planetary missions	Regional - Basque calls - ELKARTEK
SUSTAINABLE AERONAUTICAL INDUSTRY for the ZERO	Regional - Basque calls - ELKARTEK
D-inspired designs for sustainable air transport	Regional - Basque calls - ELKARTEK

PROJECT	SUMMARY
<b>CTA</b>	
EKOPROP	Enabling technologies for intelligent and sustainable
INDARRA	Infrastructure Designed for Modular Self-Assembly
PRELUDIO	Distributed Electric Propulsion
ALL-E	New high-performance 100% electric lubrication for the aeronautical sector
MMASINT	Advanced magnetoactive materials for new intelligent
<b>DANOBATGROUP</b>	
FIBREMACH	Minimizing exposure of humans to potential carcinogens in composite parts machining
INFINITE	Aerospace Composites digitally sensorised from the inside
MIRAGED	Strategic positioning in virtual models and digital twins
OPTICED	Process optimization for zero defect manufacturing
<b>EGILE</b>	
ExFAN	Heat recovery system from a fuel cell for using its waste heat
ECOGEROTOR	Oil gerotor hybrid pump
APERTURAS	Electric propulsion system
AFA 3e	Metal AM components for eVTOLS (Steel and titanium)
SUSCROM	New Ni and Cr(III) coatings to replace Cr(VI)
MinTT	New tool to study the influence of heat treatment on mechanical properties
ALL-e	Oil gerotor 100% electric pump
CONFLES	New technologies for NGVs manufacturing
IMPROVe	Electric propulsion system (low power)
PRELUDIO	Electric propulsion system (high power)



	CALL
able propulsion of zero-emission aircraft	Regional - Basque calls - ELKARTEK
ply in Orbit	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
pump that improves efficiency and safety in the	Regional - Basque calls - HAZITEK
ligent systems	Regional - Basque calls - ELKARTEK
cinogenic dust and increasing competitiveness with robots	European - H2020
manufacturing to end-of-life	European - Horizon Europe
l twins for an industry 4.0	National - CDTI - CERVERA
ing of large parts	Regional - Basque calls - ELKARTEK
as additional propulsion energy	European-HORIZON EUROPE
	National - CDTI - PID
	National - CDTI - PTA
anium)	National - CDTI - PTA
	National - CDTI - PTA
nt operations	Regional - Basque calls - ELKARTEK
	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK

PROJECT	SUMMARY
<b>EIBAR PRECISION CASTING</b>	
HIDROSOL	New aluminium products fpr aeronautics with h
MODELAN	Technologies for advanced and connected integr
MANDALA	Development of aeronautic components with ad
SENDOA	Process development for the manufacturing of h
CORTEX	Precision in ultra near net shape critical compon
ADISAM	Aluminium components produced by ablation ca
<b>IDEKO</b>	
INFINTE	Monitoring of manufacturing and structural heal of ferromagnetic microwires to be mointored wi
FIBREMACH	Robotic machining of carbon aerostructures
<b>INGETEAM</b>	
ZERO	Technologies for a ZERO Emission Aircraft Opera
APERTURAS	Advances in Electric Propulsion with Turbomach
PRELUDIO	State of the art and promotion of electric propul
<b>ITP AERO</b>	
CAVENDISH	Consortium for the AdVent of aero-Engine Demo
HEAVEN	Research and innovation in hydrogen-powered a
HE-ART	Hybrid Electric propulsion system for regional Ai
TheMa4HERA	Thermal Management for the Hybrid Electric Reg
VHBR	Very High Bypass Ratio Large Turbofan-Engine In
ARIAS	Advanced Research Into Aeromechanical Solutio
TURBONOISE	Validation of improved turbomachinery noise pr for fan stages with reduced broadband noise
ENCOMPASS	ENgineering COMPASS



	CALL
high modular variability obtained by ablation casting	National - CDTI
al modelling for metal industries	Regional - Basque calls - HAZITEK
vanced design and high performance by SLM	Regional - Basque calls - HAZITEK
high strength aluminium components	Regional - Basque calls - HAZITEK
ents obtained by 2030 processes	Regional - Basque calls - HAZITEK
osting for the aeronautic industry	Regional - Basque calls - HAZITEK
th of composite primary structures based in the inclusion relessly.at the earliest stages	European-HORIZON EUROPE
	European-H2020
tion	National - PTA
nes	National - PTA
sion and zero-emission aviation	Regional - Basque calls - HAZITEK
onstrator and aircraft Integration Strategy with Hydrogen	European-CLEAN AVIATION
aviation	European-CLEAN AVIATION
Rcraft	European-CLEAN AVIATION
gional Aircraft	European-CLEAN AVIATION
intermediate Pressure Turbine Technology	European-CLEAN SKY 2
ns	European-H2020
ediction models and development of novel design methods	European-H2020
	European-H2020



PROJECT	SUMMARY
<b>ITP AERO</b>	
EMUSIC	Efficient Manufacturing for Aerospace Components 'Investment Casting'
BOOSTER2	Acquisition of basic compressor technologies
COLD SPRAY	High Speed Cold Filling Repairs for Nickel Base Alloys
SALUD	Sistema de Análisis Unificado para el Diagnóstico de Enfermedades
JANO	Join ActionN towards digital TranfOrmation
FUTURALVE	Material and advanced manufacturing technologies for the development of advanced materials and manufacturing technologies for high speed turbines and be able to manufacture them
ENVIDIA	Virtual Environment for the Design and Manufacturing
ESCALITURB	Competitive technologies for aeronautical turbines 100% reliably and in high production (from 10 to 1000 units) interturbine of the aeronautical engine of the military aircraft
TALDEA	Turbinas de ALta velocidad: DEsarrollo de tecnologías de fabricación manufacturing technologies to produce future high speed turbine segments of medium and high thrust
<b>KORTA</b>	
HI-PREST	Technologies for highly reliable mechanisms and environments. A consortium of six Basque companies develop a high-performance scanner, with applications in instruments
<b>LAZPIUR</b>	
Product development	Vanes and Blades prototypes
Processes development	sensorized tooling
<b>LORTEK</b>	
MICROFORM	The use of microperforations with variable size in the design of the wings with High Performance
ROLIAC	Robust and Light AM Components for Military Systems
DISCMAN	Digital supply-chain for on-site maintenance in defense
NEMARCO	New manufacturing routes (for NiCrSiFeB alloys)
AMANECO	Assessment of additive manufacturing limits for aerospace



	CALL
nts Using Additive Manufacturing, Net Shape HIP and	European-H2020
	National - CDTI
loys	National - CDTI
	National - CDTI
	National - CDTI
ies for new generation high-speed turbines. Development ologies necessary to design optimized components of high a with better use of the raw material	National - CIEN
ture of Aeronautical Turbines	National - MICIN
e hot structures. Develop the technology to perform more than 1000 components year) hot structures ddle segment	Regional - Basque calls - HAZITEK
ogías de fabricación Avanzada. Development of advanced gh-speed turbines of future aeronautical engines in	Regional - Basque calls - HAZITEK
sub-micrometric precision in critical applications and anies, led by SENER working together on a project to ations in telescopes, cameras and other optical	Regional - Basque calls - HAZITEK
	Others - Internal/Client Development
	Others - Internal/Client Development
n the external skin of the aircraft wings allows to reduce ybrid Laminar Flow Control (HLFC).	European-CLEANSKY 2
systems	European-EDF
efense by additive manufacturing	European-EDF
to replace cobalt in aircraft component	European-H2020
eco-design optimization in heat exchangers	European-H2020

PROJECT	SUMMARY
<b>LORTEK</b>	
HYPERCOG	Hyperconnected architecture for high cognitive p
MULTIFUN	Enabling MULTI-FUNctional performance through
COROB	Cooperative robotics powered by AI and data for
FLASH-COMP	Flawless and sustainable production of composi
CEFAM	Strategic program for the Training of Excellence i
NINFA	Research for the development of aerospace solu in Additive Manufacturing adapted to the entire
INNPROBAT	RESEARCH OF NEW PRODUCTION PROCESSES FO ENVIRONMENTAL IMPACT
TECMADIVA	Digitized MATERIAL addition technologies for the parts
EDISON	More sustainable, digital and intelligent Additive
ANDREA	Digital transformation and efficient use of resour
MINERVA	Advanced design and development of materials energy and mobility using modeling and data an
ETCHPRIN	Extension of New Technologies and Digitalization Hostile Environments
MINAKU	Multilayer INTEGRATED Advanced CUTaneous sens
HIPERION II	Generation of knowledge and capabilities for ne
ICME23	Technologies to accelerate the implementation o
REIMAGIN	Hybrid manufacturing technologies for the smar
HIPERSIMA	Processing of hyperspectral images for the inspe advanced algorithms
DEMobility	Smart Mobility Industry
DEFECT	On-line monitoring and off-line inspection techn manufacturing processes
EGOKIA	Digital knowledge sharing space
SEMFEM	SUSTAINABLE & EFFICIENT MAGNET FREE ELECT
INDATIA	PROJECT TO ACCELERATE THE USE OF DATA AND
GSMART5	Research into a new model of virtual, intelligent future



	CALL
production plants.	European-H2020
h multi-material additive manufacturing	European-H2020
r flexible production cells	European-Horizon CL4
the parts through a human centred digital approach.	European-Horizon Europe
n Additive Manufacturing of Metallic materials	National - CDTI - CERVERA
tions with new evaluation, design and inspection methods supply chain	National - CDTI - CIEN
FOR THE REDUCTION OF THE COST OF BATTERIES AND THEIR	National - CDTI - MISIONES
automated manufacturing and repair of high Added Value	National - CDTI - MISIONES
Manufacturing technologies for an efficient industry	Regional - Basque Calls
ces through non-destructive inspections	Regional - Basque Calls
for the manufacture of new products for more sustainable analysis tools	Regional - Basque Calls
n Tools for the Intelligent Production of Components for	Regional - Basque Calls
ing	Regional - Basque Calls
w space technologies and future planetary missions	Regional - Basque Calls
of the ICME methodology	Regional - Basque calls
t industry	Regional - Basque calls
ction and monitoring of composite processes using	Regional - Basque calls
	Regional - Basque Calls - DFG
iques for the detection of defects in metal additive	Regional - Basque Calls - DFG
	Regional - Basque calls - HAZITEK
RIC MOTORS FOR EV	Regional - Basque calls - HAZITEK
AI IN THE BASQUE INDUSTRY	Regional - Basque calls - HAZITEK
and hyperconnected factory for the smart factory of the	Regional - Basque calls - HAZITEK



PROJECT	SUMMARY
<b>MESIMA</b>	
DESPRO	Development of new products and strategies for turbines
<b>METROLOGÍA SARIKI</b>	
NINFA	Advanced additive manufacturing for aeronautic protocols for AM parts
ABIO	Inspection, monitoring and new developments o
FAKTORIA	Advanced manufacturing and materials technolo inline inspection system
KAIA	Inspection, monitoring and new developments o
<b>MIZAR ADDITIVE</b>	
CETACEO	Development of more efficient transport aircraft medium to long term.
<b>NAITEC</b>	
EMERAL	Development of autonomous flight system
MOSIC	DRONES FOR EMERGENCIES
NaVEAC Drive-Lab	Last mile logistics Drones
<b>SATLANTIS</b>	
SPIDER	Developing an affordable high revisit constellation (e.g. optical, optical video, low light, infrared, hyp applications, providing responsive tasking and co and tactical use, and with high level of interoper
NEMOS	Detail design an EO mission for maritime surveill
CIBERSEGURIDAD	Implementing a CASB tool, thanks to which SATL the visibility and control of the main in cloud app
LUR-BAT	Functional Prototype and Service Center for Eart
INFOCUS	Intelligent and sustainable design and manufactu optoelectronic applications



	CALL
ECO21 manufacturing of blades for 100% SAF aircraft	Regional - Basque calls - HAZITEK
al components. 3D tomography inspection systems and	National - CDTI - CIEN
n metrology tools	Regional - Basque calls - HAZITEK
gies for the new generation of high-speed turbines. 3D	Regional - Basque calls - HAZITEK
n metrology tools	Regional - Basque calls - HAZITEK
aimed at reducing emissions to zero net emissions in the	National - PTA
	National - CDTI
	Regional - Navarra Calls
	Regional - Navarra Calls
n of small satellites with various types of sensor payloads (hyperspectral, SAR), including its ground segment, for ISR collection, including on board processing, for operational capability.	European-EDF
ance for defense applications based on small satellites.	European-EDIDP
ANTIS will be able to mitigate the risk of data loss thanks to applications.	Regional - Basque Calls - Ciberseguridad Industrial
h Observation Mission over Euskadi	Regional - Basque calls - HAZITEK
uring of new products with surface processes for	Regional - Basque calls - HAZITEK

PROJECT	SUMMARY
SENER	
EXCEED COMINT	Trusted and system-on-Chip for European Defense European supply chain of reconfigurable, flexible ruggedized and secure defense applications such as arrays, flexible radio, flexible cryptography, secure controllers.
OPTIMISE	Innovative positioning system for defense in GNS offering a set of emerging technologies -or a small advantages and limits (that will be assessed and integrate them.
ADVANCED TVC FOR MICROLAUNCHERS	Design, developing and test of an Advanced Thru
EO-DDL PDT EM	Development of a full dual (X and K) band EO Data than 2 Gbps per channel. The DDL includes two c assembly and the Ultracompact Dual Band steera
SAFEST	SAFEST project will develop an AFTU for micro/sr to a launch site, the proposed AFTU segregates t mission abort rules, which are launcher and spac launcher and site. This strategy is a game change space.
EICACS	The project "European Initiative for Collaborative interoperability as air collaborative combat will in manned or unmanned platforms, legacy platform EICACS aims at ensuring the interoperability of su potentially other coalitions situations) and a sear
COMMANDS	The COMMANDS project aims to develop Throug cooperative Manned and Unmanned Land System of-the-art UGV Technologies solutions that will p modular open architectures. The answer to the U supported by a Technology Demonstrator and a l potential early exploitation of technologies direc sustainable development.



	CALL
se applications. The EXCEED project is aimed at creating a and trustable processor family targeting a number of as secure communications controllers, signal processing e positioning, navigation and timing and mission critical	European-EDA
S-denied areas. This project will propose a PNT “toolbox”, art combination of disruptive technologies- having all evaluated), as well as a backbone software architecture to	European-EDA
st Vectoring Control (TVC) for micro-launchers.	European-EDA
ta Downlink System (EO-DDL), targeting data rates higher on-board sub-systems: the Payload Data Transmitter (PDT) able (mechanically) Antenna (UDBA) assembly.	European-EDA
small launchers. Different from other developments linked he general-purpose sensors and functions from the eport dependent. This enables customization for a given r for the reduction of launch service cost and access to	European-EDA
e Air Combat Standardization” (EICACS) will focus on nvolve future combat air systems, ns and their evolution, including sensors and effectors. The uch assets (with NATO and mless integration of future combat air systems.	European-EDA
h Life Capabilities (TLC) for agile, intelligent and ms. These Capabilities will be based on a variety of state- rovide seamless functional services across integrated UGVT call is based on a solid Systems Engineering process Business Case, that will ensure early de-risking as well as tly addressing a roadmap of self-reliant EU Defense TLC	European-EDA

PROJECT	SUMMARY
SENER	
ADEQUADE	The project “Advanced, Disruptive and Emerging” providing a breakthrough in different quantum-s significant technological, operational and strateg technologies in different warfare areas.
EUROHAPS	The project “High altitude platform systems dem Air (LTA) technology demonstrators (Strategic Air balloon system) addressing 4 major ISR missions Intelligence and telecommunications) some of w
HYDEF	The project “European Hypersonic Defense Inter targeting the 2035+ threats, weapon and sensor mitigation and demonstration of a cost-effective air levels encompassing new aerodynamic and a guidance concepts, and advanced sensor/seeker
Q-SING	The project “Quantum-based Simultaneous inert demonstrate of a free-inertial high-accuracy navi type of military vehicles, from submarines to airc
USSP	Unmanned Semifixed Sea Platforms: design, man underwater vehicles and the platform itself, inclu power and data transfer system
CARAMUEL	led by HISPASAT, is working on the feasibility pha mission, one of the main technologies that will d
AURORA	The AURORA project provides a suite of Europea in-flight software that optimizes interoperability Simplifying the process yields a more reliable sol and lower production costs. The auto-coding in-f commercial missions, including the telecommuni
MULTIMAG	The EU-funded MultiMag project aims to develop multi-material additive manufacturing (MM-AM) lightweight components. This will result in machi have shorter lead times. The components can be recycled successfully. In addition, MultiMag will c design challenges.



	CALL
QUAntum technologies for DEfense" (ADEQUADE) aims at sensing domains which will develop capabilities with specific advantages over existing defense products or	European-EDA
onstration" (EuroHAPS) will develop 3 major Lighter-than-airship, Hybrid Airship and Autonomous Stratospheric (3D LiDAR, Communication Intelligence/Infrared, Signal processing) which have been never developed in Europe.	European-EDA
ceptor" (EU HYDEF) will develop a European interceptor systems. The project will result in the concept, risk reduction and endo-atmospheric interceptor able to operate in different actuator system for high maneuverability, highly agile systems.	European-EDA
ial Navigator and vector Gravimeter" (Q-SiNG) will develop a navigation system, able to operate in GNSS denied areas on all aircraft.	European-EDA
manufacturing and validation of the interface between the capture and mooring system, as well as the	European-EDIDP
se of the first geostationary quantum key distribution system to define secure communications of the future.	European-ESA
n tools for the development and validation of auto-coding and the exchange of information on the platform. The solution, significantly shorter software programming times and lightweight software is applicable in both scientific missions and applications market and the so-called NewSpace.	European-H2020
o innovative design tools, high-performance materials and procedures for the manufacture of electric machines' that operate better, are more energy-efficient and can be disassembled when no longer in use and the materials deliver a framework and toolbox to tackle several complex	European-HE

PROJECT	SUMMARY
SENER	
EROSS IOD	The EU-funded EROSS IOD project aims to change orbit Servicing (OOS). Tasks such as autonomous will help maintain and extend the satellites' lifespan to make this a reality. This project builds on advanced technologies that paves the way towards assembly, repair and waste management.
ORU BOAS	The EU-funded ORU-BOAS project plans to further develop replacement units that are based on building blocks. Space Horizon 2020 Strategic Research Cluster. The project aims to develop standard interfaces and payloads.
ET-PACK F	A Ready-to-Fly Deorbit Device Based on Electrodynamic Tethers. The project aims to design, manufacturing and testing a prototype that reach TRL 4, E.T.PACK-F faces the next natural step in the development of tether technology to perform, immediately after the deorbit phase.
QU-TEST	The project Qu-Test aims to develop and provide quantum technologies in Europe.
POD COMINT	Development of a prototype of COMINT equipment for tactical usage in aircrafts and UAVs.
COMINT E2	Development of a basic prototype of COMINT equipment for communications and mobile communications.
ARCO	Development of a convoy of vehicles with mixed navigation. Aerospatiale is responsible for the navigation unit of a military product (following the requirements of the demonstrator).
AEROSKIN	AEROSKIN (Smart Skin for Airflow Sensing) is a project that aims to develop the multi-point and non-intrusive local monitoring of aircraft structures such as the optimization of aircraft efficiency, the health-monitoring of structures exposed to turbulent flows, the sensing structure which allows to measure locally the pressure field, providing information at macroscopic level as to the aerodynamic performance of a morphing aircraft, which is one the potential pillars of the next generation on reducing fuel consumption, noise and total energy.



	CALL
<p>to achieve this by researching the use of autonomous robots for on-orbit rendezvous, refueling and replacement of components in space. EROSS IOD will design the missions and technologies based on experiences made by the past projects EROSS and EROSS+ and on the management in the Future Space Ecosystem.</p>	European-HE
<p>to further advance the technology readiness level of orbital components developed in previous projects and calls from the previous projects. The enhanced units will be compatible with different</p>	European-HE
<p>on Dynamic Tether Technology. Electrodynamic tethers are long cables that can be used to de-orbit and/or re-boost without using propellant. After the completion of a Deorbit Device (DD) in the FET E.T.PACK project and the development of a ready-to-fly DD based on electrodynamic technology, the project, an in-orbit-demonstration (IOD).</p>	European-HE
<p>to develop infrastructure for testing and experimentation for</p>	European-HE
<p>to develop a system (Intelligence de Comunicaciones) located in a POD for</p>	National - DGAM
<p>to develop equipment (Intelligence de Comunicaciones) for satellite</p>	National - DGAM
<p>to develop a system with tele-operated and autonomous). SENER is leading the project. The project aims to obtain the requirements definition and to reach a TRL5/6</p>	National – DGAM
<p>to develop a project devoted to increase the technological maturity of the technology of the airflow, a key technology in multiple applications such as the improvement of energy generation at wind turbines or the control of the airflow. The Smart Skin is a flexible and non-intrusive sensor that can measure at multiple points the airflow characteristics, instead of a single point. This technology is a critical enabler for adaptive and smart structures to be developed to meet the ambitious goals of the EU missions of aerospace industry.</p>	National - Spanish Ministry of Science

PROJECT	SUMMARY
<b>SENER</b>	
TMBE	The main objective of the TMBE (Towards Model technologies for companies managed by intelligence processes and business models.
UMOR	Universal components for MODular Robotics for UMOR aims to research and development of new their application in the precision collaborative robotics healthcare applications
CLIM Pre-Dev	Development of know-how and procedures for t
<b>TECNALIA</b>	
HECATE	Hybrid ElectriC regional Aircraft distribution TECh
FLEXGAN	K-band GaN-based SSPA for flexible payloads and
CURE	Copernicus for Urban Resilience in Europe
ISBA	Insulation system based on aerogel
TINDAIR	Tactical Instrumental Deconfliction and Automat
Uspace4UAM	Large scale demonstrations project
AMU-LED	Air Mobility Urban Large Experimental Demonstr
AEROTAPE	Fuselage high performance thermoplastic compo
COMPLAST	Advanced techniques for the development of ne application sectors
NEOCABIN	Printed Electronics for cabin interior
AEROBOTICS	Research in new technologies associated with ro production
APERTURAS	Advances in Electric Propulsion with Turbomachi
CRIPICOMP	CRlogenics, batteries and hydrogen combustion i
AERCOST	Components and systems of the future
TRASCEND	Advanced low cost materials and processes for h
AIRE	Aeroestructuras Innovadoras orientadas a la Red
CODISAVA-2	Advanced distributed control for air transport sat



	CALL
Based Enterprise) project is research into advanced ent digital models applied to the design of products,	Regional - Basque calls - HAZITEK
Space, Industrial and Medical Applications. The project w modular components and technological solutions for botic systems of the future for space, industrial and	Regional - Basque calls – HAZITEK
lescopes alignment TMA (Three Mirror Anastigmatic).	Others - AIRBUS DS
technologies	European-CLEAN AVIATION
l multicarrier operation for 5G satellite concept	European-H2020-IL-LEIT- SPACE
	European-H2020-IL-LEIT- SPACE
	European-Horizon Europe
ic Resolution	European-SESAR
	European-SESAR
ations	European-SESAR
sites based on customized stack thermoforming process	European-Smart-EUREKA
w thermoplastic composites in high added value	National - CDTI - CIEN
	National - CDTI - PiD
botic AEROnautical developments for sustainable	National - PTA
nes	National - PTA
n air transport	National - PTA
	National - PTA
igh cadence aircraft	National - PTA
ucción de Emisiones	National - PTA
fety and energy efficiency	Regional - Basque calls - ELKARTEK

PROJECT	SUMMARY
<b>TECNALIA</b>	
EKOHEGAZ	Digitalization in the intelligent and sustainable ae
EKOPROP	enabling technologies for a intelligent and sustain
HI-PREST	Technologies for a new generation of ultra-precis
E-Flight	Aerostructures for electric aircraft
PRELUDIO	Development of electric propulsion system for ai
SENDOA	Process development for the manufacture of hig
CUBE4SAT	Development of a high-emissivity coating for flex
<b>TEKNIKER</b>	
WEIBAL	Development of an innovative system for measu
RECYCOMP	Development of equipment for composite recycl
i-TRIBOMAT	Intelligent Open Test Bed for Materials Tribologic
MadebyEurope	Added Value Manufacturing KIC
DIH2-TEK	Pan-European Network of Robotics DIHs for Agile
IRISS	The InteRnational ecosystem for accelerating the
Masterly	Development of innovative smart automated har
VIDIT	Trustworthy virtual experiments and digital twins
LUBRINTEL	New intelligent lubrication systems for metal pro
5R	Robotic technologies in smart manufacturing
SENECA	Strategic raw materials of secondary origin for in
COMIC	NEW ENABLING TECHNOLOGIES FOR FLEXIBLE AD COMPONENTS
ZERO	Development of miniaturization concepts and pe high power density
ISISTEHMA	Strategy development and implementation of he system



	CALL
eronautical industry for the zero emissions airplane	Regional - Basque calls - ELKARTEK
nable propulsion of the zero emissions aircraft	Regional - Basque calls - ELKARTEK
ion and high-stability automated systems	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
ircraft	Regional - Basque calls - HAZITEK
h-strength aluminum components	Regional - Basque calls - HAZITEK
ible space structures	Regional - Basque calls - HAZITEK
ring the weight and unbalance of an aircraft	European-CLEAN SKY 2
ing process of uncured material	European-CLEAN SKY 2
al Characterization Services	European-H2020
	European-H2020
e Production	European-H2020
e transition to Safe-and-Sustainable-by-design materials,	European-Horizon Europe
ndling systems	European-Horizon Europe
s	European-Horizon Europe
rocessing	National - CDTI - CIEN
	National - CDTI - CIEN
dependence and energy transition	National - CDTI - MISIONES
ND AUTOMATED MANUFACTURING OF MULTIMATERIAL	National - CDTI - MISIONES
performance optimization in electric machines with very	National - CDTI - PTA
alth monitoring in an electromechanical performance	National - CDTI - PTA

PROJECT	SUMMARY
<b>TECNALIA</b>	
AEROBOTICS	Precision improvement in industrial robots
DIMENSIONAL	Conceptual design of a module for heating and f components
REFORCE	Intelligent tooling for assembly of aeronautical m
HIPERION	Generation of knowledge and capabilities for ne
EDISON	Digital and Intelligent Additive Manufacturing Te
PROFLOW	Fluid Production for the Smart Industry
MINTT	Optimization of the manufacturing process chain industry
MINERVA	Advanced design and development of materials mobility
Front 22	Development of safe and sustainable coatings th
MINAKU	Development of Multipoint, Wireless, Self-powe metallic components
LANVERSO	Development of digital tools at the service of the
HIPERION II	Generation of knowledge and capabilities for ne
MMASINT2023	new magnetoactive materials
ONTZHI	Key technologies for hydrogen storage and trans
HELDU	Artificial Intelligence Technologies for visual and manipulation tasks
ReIMAGIN	Hybrid manufacturing technologies for the smar
ABIO	Smart Manufacturing



	CALL
	National - CDTI - PTA
using carbon fiber strips for the laminar manufacturing of	National - CDTI - PTA
moving surfaces	National - AGE
low space technologies and future planetary missions	Regional - Basque calls - ELKARTEK
technologies for a more sustainable industry.	Regional - Basque calls - ELKARTEK
	Regional - Basque calls - ELKARTEK
in applications for the aeronautical sector and science	Regional - Basque calls - ELKARTEK
for the manufacture of new products for energy and	Regional - Basque calls - ELKARTEK
that comply with the European green deal	Regional - Basque calls - ELKARTEK
red and CUTaneous sensors for the surface monitoring of	Regional - Basque calls - ELKARTEK
e company	Regional - Basque calls - ELKARTEK
low space technologies and future planetary missions	Regional - Basque calls - ELKARTEK
	Regional - Basque calls - ELKARTEK
portation	Regional - Basque calls - ELKARTEK
haptic perception and the planning and control of	Regional - Basque calls - ELKARTEK
t industry	Regional - Basque calls - ELKARTEK
	Regional - Basque calls - HAZITEK

PROJECT	SUMMARY
<b>TECNALIA</b>	
ULCAVEEN	ULtrasonic CAVitation pEENing in components su
InFOCUS	Intelligent and sustainable design and manufactu optoelectronic applications
E-Flight	Studies and technological developments for elec
FIDATU	your intelligent digital aeronautical factory
SORIA	New sustainable processes and advanced industr components in the construction and automotive
NAGUSI	Satellite for Service in Orbit
TITAN	Latest generation HIPIMS coatings for titanium c
MIPU	MICRO-PUMP FOR BALL BEARING LIQUID RE-LUBE
HISRU	Photoelectrochemical system for CO2 reduction
Winglet motor	Development of electric motor for EMA winglet
SIPRES	PRINTED STRUCTURAL ELECTRONICS
SCORPENES	Solutions for Corrosion Optimized and Prediction
DREAM	Development of Coatings for Extreme Environme
DDV Motor 2	Engine manufacturing
<b>TTT GROUP</b>	
NINFA	FA Suply Chain
ECrODUR	Advanced coatings
RECOAT	Grinding for hard coatings
<b>(University) MONDRAGON</b>	
MULTIMAG	Multi-functional, multi-material magnetic compo
EKOHEGAZ	Digitalization in the intelligent and sustainable ae
EKOPROP	Enabling technologies for intelligent and sustaina



	CALL
subjected to mechanical fatigue	Regional - Basque calls - HAZITEK
uring of new products with surface processes for	Regional - Basque calls - HAZITEK
etric airplanes	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
erial coatings developed by plasma electro-oxidation, for sector	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
utting burs	Regional - Basque calls - HAZITEK
BRICATION	Others
to produce fuels and sewage treatment	Others
	Others
	Others
with Efficient Network of Environment Sensors	Others
ents	Others
	Others
	National - CDTI - CIEN
	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
onents and structures for electrification	European-Horizon Europe
eronautical industry for the zero-emission aircraft	Regional - Basque calls - ELKARTEK
ble propulsion of zero-emission aircraft	Regional - Basque calls - ELKARTEK

PROJECT	SUMMARY
<b>(University) TECNUN</b>	
TESLA	Development of the advanced technologies for future Microwave/millimetre (1 to 300 GHz) and sub-mm domains, including electromagnetic design and manufacturing technologies, and experimental characterizations (qualifications)
MIRACLE	Prove the feasibility of developing a radiative cooling system. Main results: prove the feasibility of this idea, find other applications
INTERSPACE	Filters and passive components for future ground-to-space systems. Main results: design, manufacture and measurement
FUTUREFILTER	High-frequency passive filters and components for future systems in a hyper-connected world. Main results: design and measurement
GAS	New antenna configurations based on Gap waveguide
FRONT-milliRAD	Radiofrequency antennas and headers for advanced new generation of earth observation instruments. Main results: design of components
PROH2BIO	PROpulsión Híbrida Hidrógeno-eléctrica y diseño de sistemas de propulsión
BANDAQ	Analysis of satellite payloads and optimization of Q-Band. Main results: compact Q-band antenna feed
LANs-6G	New lens antenna technologies for new space & ground systems
GGWFILTROS	High-frequency devices for communications satellite systems. Main results: design, technology and metal 3D printing (SLM)
<b>(University) UPNA</b>	
TESLA	Development of the advanced technologies for future Microwave/millimeter (1 to 300 GHz) and sub-mm domains, including electromagnetic design and manufacturing technologies, and experimental characterizations (qualifications)
MIRACLE	Prove the feasibility of developing a radiative cooling system. Main results: prove the feasibility of this idea, find other applications



	CALL
uture European satellite applications. Main results: millimetre (above 300 GHz) wave frequencies, in multiple theoretical analysis/modelling, advanced materials and characterization (e.g. high-power effects and space	European-H2020 - MSCA
oling device based on a Photonic Meta-Concretes (PMC). oricate a prototype, and start the roadmap to be used in	European-H2020 - FETOPEN
d and space millimeter wave integrated radio systems. nent of passive components in millimeter frequencies	National - MICINN (AEI)
or future high-capacity ground and space communications s: high performance filters	National - MICINN (AEI)
guide technology	National - MICINN (AEI)
ced radiometers in millimeter frequencies that enable the s. Main results: design, manufacture and characterization	National - MICINN (AEI)
s BIOinspirados para un transporte aéreo sostenible	Regional - Gipuzkoa Calls
machining geometries for high capacity satellites in Q ed chain configuration	Regional - Navarra Calls
6G. Main results: high performance antennas	Regional - Navarra Calls
llites with advanced manufacturing. Main results: GGW	Regional - Navarra Calls
uture European satellite applications. Main results: millimetre (above 300 GHz) wave frequencies, in multiple theoretical analysis/modelling, advanced materials and characterization (e.g. high-power effects and space	European-H2020 - MSCA
oling device based on a Photonic Meta-Concretes (PMC). oricate a prototype, and start the roadmap to be used in	European-H2020 - FETOPEN

PROJECT	SUMMARY
<b>(University) UPNA</b>	
INTERSPACE	Filters and passive components for future ground Main results: design, manufacture and measurement
FRONT-milliRAD	Radiofrequency antennas and headers for advanced new generation of earth observation instruments of components
GAS	Novel antenna configurations based on Gap wave
TERAPLAUTO	Quality control system for components using tera
LANs-6G	New lens antenna technologies for new space &
TERAMAT	Research on terahertz technology as a supportive energy storage technologies
<b>(University) UPV/EHU</b>	
INTER-Q	Interlinked process, product, & data quality fram intelligent systems, hybrid digital twins and AI-dr factories. Main results: use of blockchain and rad
ADDITOOL	Development and diffusion of Metal Additive Ma smart and sustainable growth of space. Develop processes focused on the die & mould industries
ADAM^2	Analysis, Design, And Manufacturing using Micro that will focus on all stages involving Analysis, De by multi-material 3D printers. Main results: The r development that impacts CAD and tool manufac exploitation of heavy materials between an orde
MHAYA	Towards the new industrial ecosystems of 2030, capable of Learning and Acting autonomously an
TASTE	Aerodynamic technologies for next generation o components for next testing programs of high-sp components to be used at CTA and LIFT.
ITENEO	A global approach to improve the manufacturing manufacturing technologies used in the next way turning and turn-milling modelling, Cryogenic co final check control by optical means.
NEOPHYM	A new method for obtaining functional compone

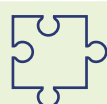


	CALL
and space millimeter wave integrated radio systems. Development of passive components in millimeter frequencies	National - MICINN (AEI)
anced radiometers in millimeter frequencies that enable the s. Main results: design, manufacture and characterization	National - MICINN (AEI)
eguide technology	National - MICINN (AEI)
ahertz technology	Regional - Navarra Calls
6G. Main results: high performance antennas	Regional - Navarra Calls
e tool in the development and manufacturing of new	Regional - Navarra Calls
etwork for zero defect manufacturing. Digital solutions, given optimization tools to assure the quality in smart lical quality testing techniques	European-H2020 FoF
manufacturing technologies in tooling industrial sector for ment and training for Metal Additive Manufacturing .	European-SUDOE Interreg
structures. It is proposed a unified manufacturing pipeline sign, And Manufacturing using Microstructures produced results of this project will lead to scientific-technological cturing European markets and are expected to reduce the r of magnitude to two orders, in volume.	Eusopean-H2020 FETOPEN
driven by the new generation of cognitive Machine Tools, d empathetically	National - CDTI - MISIONES
f geared turbofans. Rigs, compressor and turbine eed engines. Main results: designs and processes for	National - CDTI - RETOS
f casings for the new aero engines. Improving ve of engines for aircrafts (NEO). Main results: High-feed oling on Ni-Co alloys. Polishing by robotic polishing and	National - CDTI - RETOS
nts by hybrid and machining processes.	National - Ministry of Science and Innovation

PROJECT	SUMMARY
<b>(University) UPV/EHU</b>	
DISTINCTIVE	Digital environment for heterogeneous structure and digital evaluation of metal additive manufacturing
VERDE	Virtual environment for the redesign and re-manufacturing Fusion process digitalization towards a digital center
AIAM++	New generation of cognitive machine tools with laws updating.
HCR Taylor	NEW PRODUCTION OF TOOLS ORIENTED TO MANUFACTURING TURBOMACHINES (HAUTE COUTURE TAYLOR MACHINES)
COAX	Proposal of two new laser head families for applications in coatings. Design of Laser DED powder coaxial nozzle
CORTEX	Precision in critical Ultra Near Net Shape components
FAKTORIA	New technologies and processes of Basque Manufacturing for high speed turbines. Manufacturing technologies for high speed turbines Main results: machine and optimized processes for high speed turbines
FIDATU	your intelligent digital aeronautical factory
UPSCALE	Research and development of technologies, processes and integration of subcomponents
KAIA	Quality digital platform for zero defect manufacturing
CONFLES	New manufacturing and automation technologies for the process applied to the machining of high performance components
BERMEK	Development of a sustainable machining process for high performance components
DESPRO	Development of new products and strategies for high speed turbines
<b>WOLCO</b>	
TALDEA	Development of advanced Cutting-Tools
FACKTORIA	Development of advanced Cutting-Tools



	CALL
s manufacturing by Additive Manufacturing. Digital Twin turing processes.	National - Ministry of Science and Innovation
ufacturing of metal parts by 3D printing. Laser Powder Bed rtification of parts.	National - Ministry of Science and Innovation
accelerated learning capabilities and continuous control	National - PERTE
NUFACTURE HIGH ADDED VALUE COMPONENTS OF MADE)	National - Proof of concept
ication with high reactivity materials and multimaterial zzles using CFD algorithms.	National - Proof of concept
ponents obtained by 2030 processes	Regional - Basque calls - HAZITEK
ufacturing supply chain companies for next future high- future turbines related with Ultrafan new aircraft engine. For 2030 engine programs.	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
cesses and simulation models required for optimized	Regional - Basque calls - HAZITEK
uring	Regional - Basque calls - HAZITEK
s for a controlled, flexible, efficient and sustainable nance materials	Regional - Basque calls - HAZITEK
s for the manufacturing industry of the future	Regional - Basque calls - HAZITEK
ECO2 manufacturing of blades for 100% SAF aircraft	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK
	Regional - Basque calls - HAZITEK



## 3.4 Facts & Figures 2023

Members  
aggregate...

...TURNOVER

**2,882**  
million €

...EMPLOYMENT

**15,396**  
people

(directly generated in all of  
their worldwide facilities)

2023 Geographical breakdown:	Turnover (M€)	Increase vs. 2022	Employment	Increase vs. 2022
Basque Country	1,183	41.2%	5,495	12.5%
Rest of Spain	956	5.5%	5,665	6.5%
Rest of the World	743	27.7%	4,236	3.8%
<b>TOTAL</b>	<b>2,882</b>	<b>24%</b>	<b>15,396</b>	<b>7.8%</b>

R&D I Exports	M€	% over Sales	Average annual % (last 10 years)
Members R&D investment	195	6.8%	6.8%
Members Exports	2,223	77.1%	69%

### Cluster Dimension (facilities in Basque Country)

**1.3%** of the  
Basque  
GDP\*

**6.1%** of the Basque  
Industrial  
GDP\*

**2.7%** of the Basque  
industrial  
employment\*

### HEGAN Members Dimension (facilities in Spain)

**17.7%** of the  
Spanish  
\*\*

**1%** of the  
European  
\*\*\*

aerospace **TURNOVER**

**23.8%** of the  
Spanish  
\*\*

**2%** of the  
European  
\*\*\*

aerospace **EMPLOYMENT**

**14%** of the  
Spanish  
\*\*

**0.9%** of the  
European  
\*\*\*

aerospace **R&D INVESTMENT**

\* EUSTAT 2023

\*\* TEDAE 2022

\*\*\* ASD 2022



75

## AEROSPACE MEMBERS

4

**TIER 1:**  
Aerostructures - Engines - Space

7

**MID-CAPS:**  
Components - Advanced Manufacturing  
- Engineering

42

**SMES:**  
Subassys, Sub-Systems, Components, Parts, Special  
Processes, Tooling, Advanced Services, Advanced  
Manufacturing... for Aerostructures, Engines, Systems  
and Space

1

**AEROSPACE R&D CENTRE:**  
Certification Testing and RTD (3 Labs)

9

**R&D ENTITIES:**  
with aerospace activities (15 labs)

5

**UNIVERSITIES:**  
ETSIB: Master in Aeronautics, Master in Space, CFAA

7

**CLUSTER ALLIES:**  
Risks & Insurance - Intellectual Property - Legal & Tax  
- Financing - Intralogistics - Strategic Advisory

168

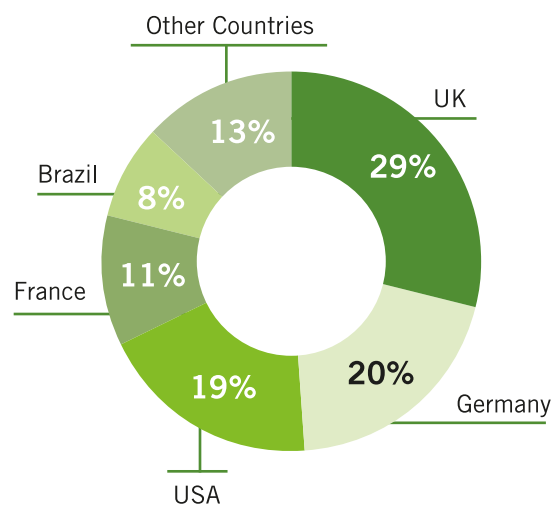
**FACILITIES AROUND THE WORLD**  
99 in the Basque Country - 41 in the rest of Spain  
- 28 abroad (Brazil, China, Germany, India, Malta,  
Mexico, Poland, Portugal, UK, USA)

## 3.4 Facts & Figures 2023

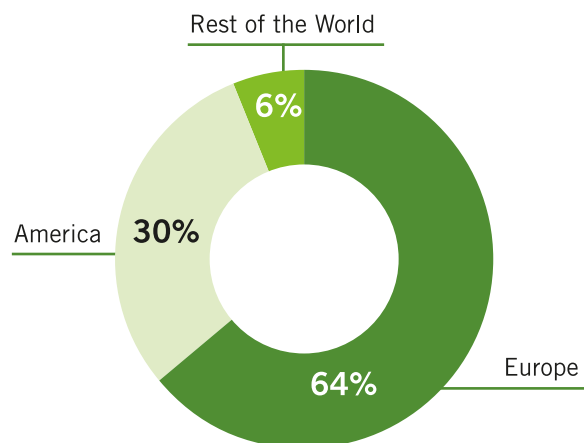
### EXPORTS



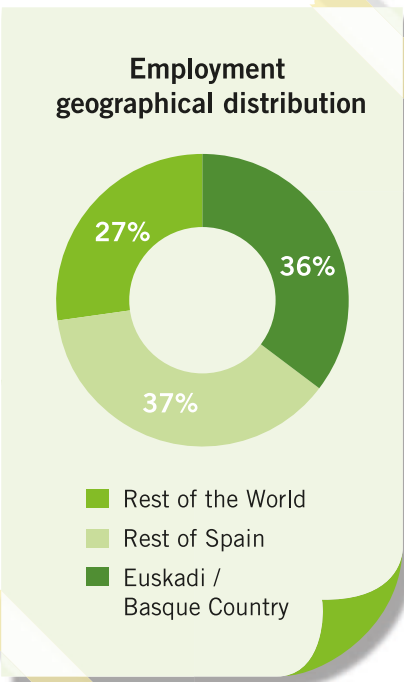
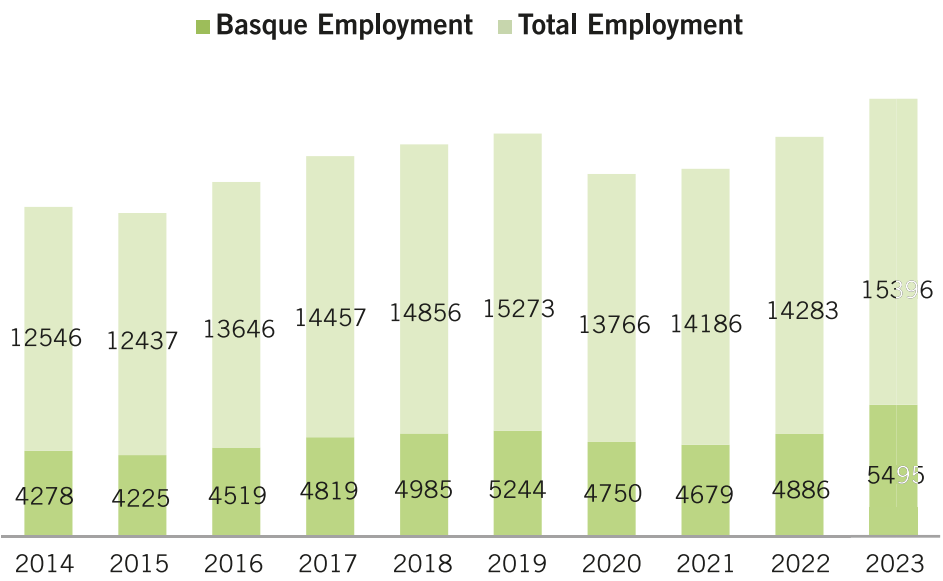
#### Exports according to Countries



#### ... According to Continents



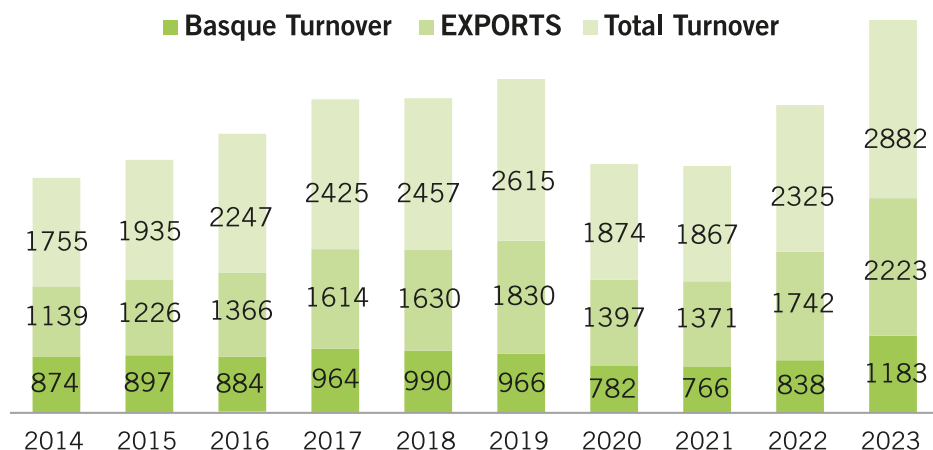
## PEOPLE: EMPLOYMENT EVOLUTION



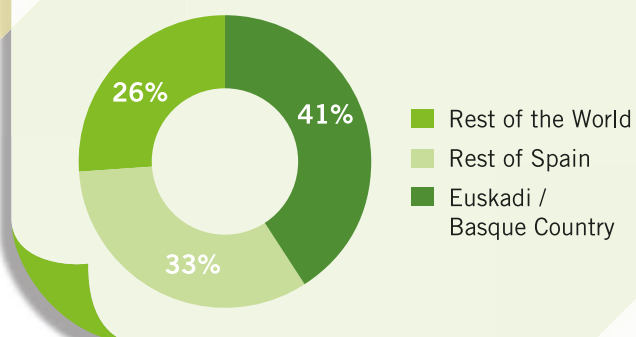
Employment According to Qualification	TOTAL	FEMALE	# Female
Managers, Engineers & Graduates	33%	51%	1,764
Technicians, Administration & Others	31%	37%	1,279
Manual Workers	36%	12%	415
Total FEMALE Employment		22.5%	3,458

## 3.4 Facts & Figures 2023

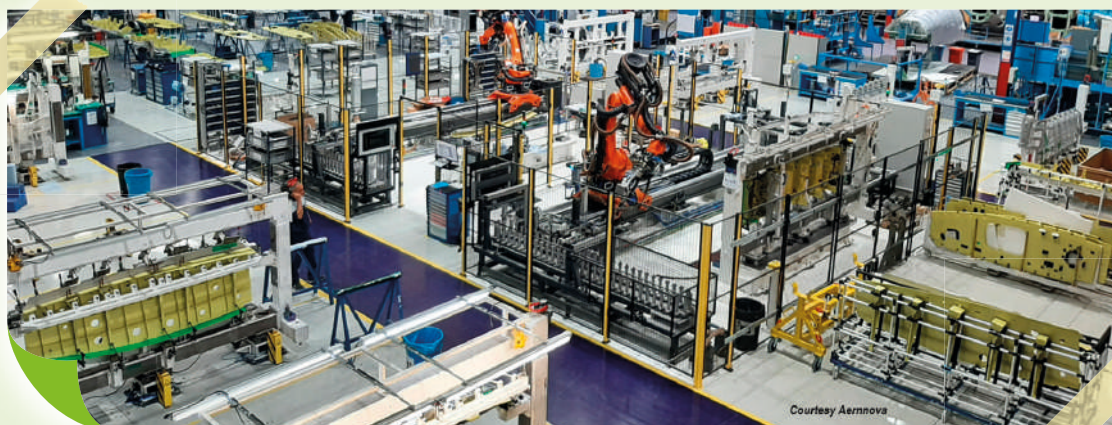
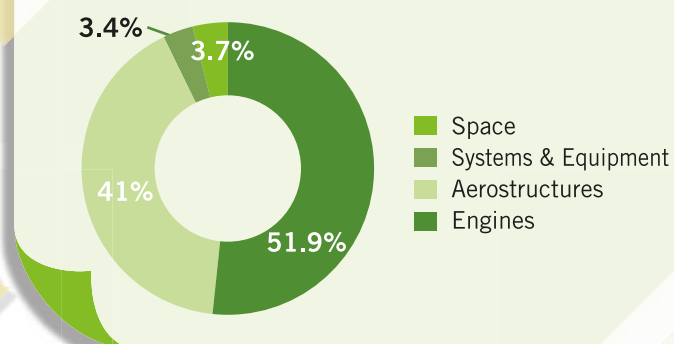
### TURNOVER: EVOLUTION IN € MILLION



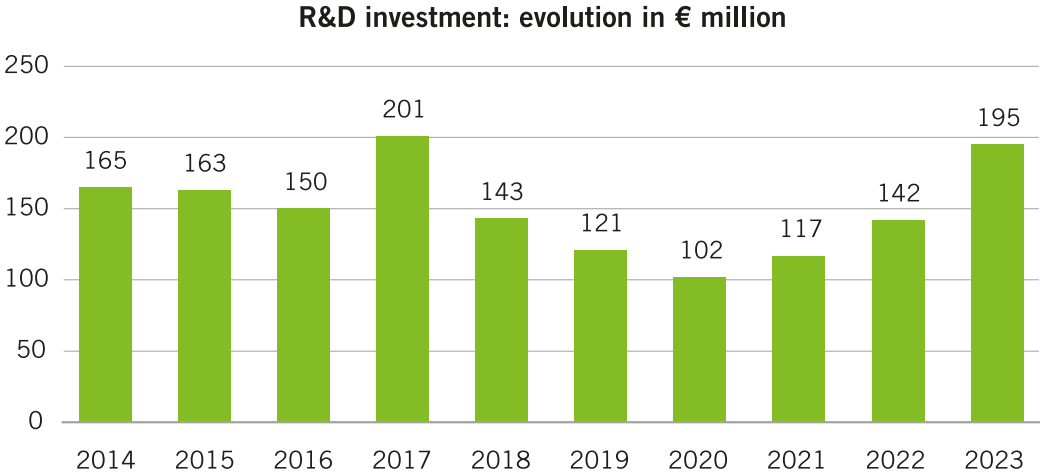
Turnover geographical distribution



Turnover according to Subsectors



## R&D INVESTMENT: EVOLUTION IN € MILLION



## R&D EFFORT

Auto-financing (Public Support)

86% (14%)

Employees with R&D activity

2,551

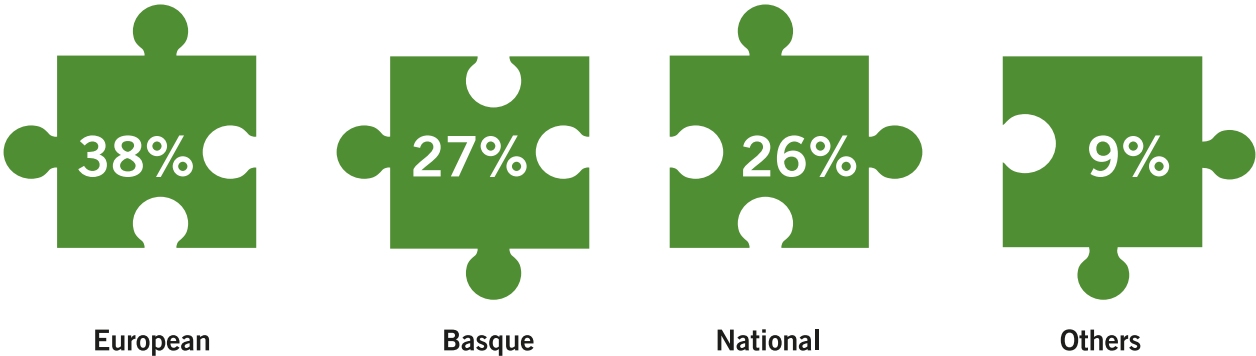
Cumulates investment since 1997 (€million):

3,443

Active R&D projects in 2023:

252

Projects according to Call:



## ACKNOWLEDGEMENTS

4



At a time of rapid growth in the Sector and the long-awaited recovery following the awful pandemic, I would like to express my deepest gratitude to the Members of HEGAN and all individuals and organisations who enable us to move forward. Thank you for allowing us to accompany and support you to overcome the great challenges we will face in the coming years. While these are certain to be excellent years in terms of sales and creation of skilled jobs, we also need to achieve total sustainability of our products and industrial processes, help improve our society and respond to the needs of our people, who are at the heart of our business. And alongside all of this, we must remain competitive.

As always, we will strive to constantly improve and we will give it our all to develop our Cluster.

Thank you very much!

Ana VILLATE  
Managing Director

### AGRADECIMIENTOS

En un momento de veloz crecimiento del Sector y finalmente conseguida la tan ansiada recuperación tras la terrible pandemia, me gustaría expresar mi máximo agradecimiento a las asociadas de HEGAN y a todas las personas y entidades que hacen posible nuestro avance. Agradezco que nos permitáis acompañaros y ayudaros en lo posible para superar los grandes retos a los que nos enfrentaremos en los años venideros. Aunque estamos seguros de que serán excelentes en términos de ventas y generación de empleo de calidad, no podemos obviar que también nos enfrentamos al desafío de lograr la absoluta sostenibilidad de nuestros productos y procesos industriales, asumir un rol que contribuya a mejorar nuestra sociedad y responder a las necesidades de nuestras personas, siempre núcleo y eje de nuestro negocio, sin perder la competitividad que siempre nos ha caracterizado.

Como todos los años, seguiremos esforzándonos por mejorar continuamente, dando lo mejor de todo el equipo en aras del desarrollo de nuestro clúster.

¡Muchas gracias!

Ana VILLATE  
Directora

### ESKER ONEZ

Sektorea azkar hazten ari den une honetan eta pandemia lazgarriaren ondoren susperraldia lortu ondoren, nire eskerrik beroenak eman nahi dizkiet HEGANeko bazkideei eta gure aurrerapena ahalbidetzen duten pertsona eta erakunde guztiei. Eskerrak eman nahi dizkizuet datozen urteetan izango ditugun erronka handiak gainditzeko bidean zuen ondoan egoten uzteagatik eta bide horretan laguntzen uzteagatik. Ziur dakigun arren salmentei eta kalitatezko enplegua sortzeari dagokienez bikainak izango direla, ezin dugu alde batera utzi gure produktu eta prozesu industrialek erabateko iraunkortasuna lortzeko erronkari ere aurre egin behar diogula eta gure gizartea hobetzen eta gure pertsonen beharrei erantzuten lagunduko duen rol bat geureganatu behar dugula, horixe baita beti gure negozioaren muina eta ardatza, betiere, ezaugarri dugun lehiakortasuna galdu gabe.

Urtero bezala, aurten ere etengabe hobetzen jarraitzeko ahalegina egingo dugu, talde osoaren onena emanez gure klusterra garatzeko helburuarekin.

Eskerrik asko!

Ana VILLATE  
Zuzendaria



HEGAN participated in the Regional Project co-financed by **Basque Government:**  
**ZEROCO2** - Carbon Footprint Calculation.



HEGAN participated in the international Project co-financed by **Euroregion NAEN:**  
**ADRIENNE** – Fabrication Additive pour des systèmes d’antennes Durables dans petits Satellites



HEGAN participated in the regional Project co-financed by **Basque Government:**  
**H2-4COOP** – Dynamization of COOPeration activities for the use of H2 in the future sustainable air transport



HEGAN participated in the Project co-financed by **Ministry of Industry, Trade and Tourism**  
**AeMAQ** - Feasibility study for collaborative projects between companies in the aerospace and machine tool sectors



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