

ANNUAL REPORT URTEKO TXOSTENA INFORME ANUAL

2018

hegan 
basque aerospace cluster

Registered at



Associated member of



Advisor of



Member of



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It is an honour for me to present for the first time the Annual Report of the Basque Aeronautics and Space Cluster. Since I was appointed as President at the 2018 General Meeting, I have made every effort to work towards achieving the objectives of this Association and the Sector we represent.

2018 has been a stable year in which the expected high and sustained ramp-up in production has been confirmed. In fact, this aspect is one of the causes of an increase, for another year running, in our turnover and employment figures, which stand at 2,457 million euros and 14,856 jobs, with these figures representing all the locations of HEGAN members around the world. It is satisfying to see that employment has grown by almost 3% compared to the previous year, and even more so considering that this sector has people who are highly qualified and of high value—one of the keys to maintaining our positioning and competitiveness. Another of these keys is the effort poured into RTD, with 143 million euros of investment made during the year. It was also the year in which we said goodbye to an iconic programme for us: the Airbus A380, which was the driver of our current robust position in the market.

This is our present situation, and the future promises to follow the same trend. The sector continues to present a favourable scenario as forecasts are still very positive (air traffic continues to rise and it is expected that around 40,000 new aircraft will be needed until 2037); in fact, there had never been as many flights as in 2018. According to the figures published on 31 December 2018 by the ICAO, airlines carried more than 4.3 billion passengers. A figure 6.1% higher than 2017 and higher than the forecasts of 5% per year. This means that the production ramp-ups continue with a constant positive slope. On the other hand, the price demands of customers, the lack of new programmes and the shift in production towards those countries where the market is going to develop (Asia, the Middle East, the USA, etc.) or where the market is experiencing aggressive competitive pressure (low production costs, support for investment, and such) mean that we have to maintain, and even step-up, our constant efforts in terms of strategic positioning, or sharpen our competitive edge and try to overcome the barriers to entry.

In any case, the need to increase our level of competitiveness is an ever-present must. There are many variables that are helping to improve the competitiveness of our companies, since maintaining a position in an intrinsically international market means that HEGAN Members need to compete with competitors from anywhere in the world. And of course, we must continue working on the variables of highly trained personnel, high RTD activity, cutting-edge equipment, Advanced Manufacturing and Industry 4.0, having a solid base of aeronautical culture and quality, etc.

If all of us who make up the Cluster work on and develop these competitive vectors, I am sure we will continue to advance with a clear and solid horizon.



A handwritten signature in blue ink, which appears to be 'Carlos Alzola Elizondo'. The signature is fluid and stylized, written over a white background.

Carlos ALZOLA ELIZONDO

President

Ohorea da niretzat Euskadiko Aeronautika eta Espazioko Klusterraren Urteko Txostena aurkeztea. 2018ko Batzar Nagusian lehendakari aukeratu nindutenetik, elkartearen eta ordezkatzan dugun sektorearen helburuak lortzeko lanean aritu naiz buru-belarri.

2018. urtea urte egonkorra izan da, eta aurreikusita zegoen gorakako ekoizpen-malda egonkorra egiaztatu da. Horixe da, hain zuzen, beste urte batez, fakturazioan eta enpleguan lortu ditugun zifrek gora egitearen arrazoietakoa bat: 2.457 milioi euroko fakturazioa iritsi gara, eta 14.856 enplegu izatera (HEGANeko bazkide guztiak munduan zehar dituzten instalazioei dagozkie zifra horiek); pozgarria da enplegua, aurreko urtekoarekin alderatuta, % 3 hazi dela egiaztatzea, eta are gehiago, sektoreak balio eta kualifikazio handiko pertsonak dituela ikustea, posizioari eta lehiakortasunari eusteko oinarritzko osagaiak baitira. Beste osagai horietako bat I + G arloan egiten den ahalegina da; urte honetan, 143 milioi euroko inbertsioa egin da. Horrez gain, urte honetan, agur esan diogu guretzat ikono izan den programa bati: merkatuan gaur egun dugun posizio sendoaren sustatzaile izan zen Airbus A380 programari, hain zuzen.

Orainari dagokio hori guztia, eta etorkizunak joera bera erakusten du. Sektoreak aldeko testuingurua izaten jarraitzen du, aurreikuspenak oso positiboak baitira (aire-garraioa goraka doa, eta 2037. urtera arte 40.000 hegazkin berri beharko direla aurreikusten da); izan ere, inoiz ez da 2018. urtean adina hegan egin. HEZINEK 2018ko abenduaren 31n argitaratutako zifren arabera, airelineek 4.300 milioi bidaiaririk gora garraiatu zituzten. 2017koarekin alderatuta, % 6,1 gehiago, eta aurreikusita zegoen urteko % 5a baino gehiago. Ekoizpenaren maldek positiboak eta egonkorrak izaten jarraitzen dutela esan nahi du horrek. Bestalde, kontuan hartuta bezeroek prezioarekiko dituzten eskakizunak, programa berrien falta, ekoizpena merkatua garatuko den herrialdeetara (Asia, Ekialde Hurbila, AEB...) bideratzea edota haien lehiakortasun-presio oldarkorra (ekoizpen-kostu baxuak, inbertsioei emandako babesak...), ezinbestekoa da posizio estrategikoari eusteko ahaleginak egiten jarraitzea edota areagotzea, edo gure lehiakortasun-diferentziala handitzea eta horiei dagozkien sarrera-hesiak gainditzeko saiatzea.

Dena den, gure lehiakortasun maila handiagotu beharra etengabeko eginbeharra da. Asko eta asko dira gure enpresen lehiakortasun-egoera hobetzen laguntzen ari diren aldagaiak, merkatuan posizioari eusteak (merkatu horrek nazioarteko izaera du berez) munduko edozein lekutako edozein lehiakiderekin lehiatzera behartzen baititu HEGANeko bazkideak; eta, beraz, aldagai horiek lantzen jarraitu beharra dago: maila altuko gaitasuna duten langileak, I + G + b arloaren indarra, ekipamendu aitzindariak, Fabrikazio Aurreratua eta 4.0 Industria, aeronautikako kultura sendoa eta kalitatezkoa izatea oinarrian...

Klusterre osatzen dugun guztiok lehiakortasun-bektore horiek elkarrekin lantzen eta garatzen baditugu, etorkizun argi eta sendo batekin egingo dugu aurrera, ziur nago.

Carlos ALZOLA ELIZONDO

Lehendakaria



Es para mí un honor presentar por vez primera el Informe Anual del Cluster de Aeronáutica y Espacio del País Vasco. Desde que en la Asamblea General 2018 fuera elegido Presidente, he puesto todo mi empeño en trabajar en la consecución de los objetivos de esta Asociación y del Sector al que representamos.

2018 ha sido un año estable en el que se ha confirmado la rampa de producción elevada y sostenida prevista. De hecho, este aspecto es una de las causas de un aumento, un año más, en nuestras cifras de facturación y empleo, alcanzando los 2.457 millones de euros y los 14.856 empleos (cifras estas generadas en todas las localizaciones que los Socios de HEGAN tienen en todo el mundo); es una satisfacción comprobar que el empleo ha crecido en casi un 3% con respecto al año anterior, y más cuando este sector cuenta con personas de alto valor y cualificación, uno de los componentes básicos para mantener el posicionamiento y la competitividad. Otro de estos componentes es el esfuerzo que se realiza en I+D, y que este año ha llegado a los 143 millones de euros de inversión. También ha sido el año en el que hemos dicho adiós a un programa icónico para nosotros: el Airbus A380, que fue impulsor de nuestra actual y robusta posición en el mercado.

Este ha sido el presente, y el futuro sigue la misma tendencia. El sector continúa presentando un escenario favorable ya que las previsiones siguen siendo muy positivas (el tráfico aéreo continúa al alza y se prevé una necesidad de cerca de 40.000 aviones nuevos hasta 2037); de hecho, nunca se ha volado tanto como en 2018. Según las cifras publicadas el 31 de diciembre de 2018 por la OACI, las aerolíneas transportaron a más de 4.300 millones de pasajeros. Una cifra superior en un 6,1% en comparación con 2017 y superior a las previsiones del 5% anual. Esto quiere decir que las rampas de producción siguen con una pendiente positiva y constante. Por contra, las exigencias en precio de los clientes, la falta de nuevos programas o la deriva de producción hacia aquellos países en los que se va a desarrollar el mercado (Asia, Oriente Medio, EEUU...) o que su presión competitiva es agresiva (bajos costes de producción, apoyo a las inversiones...) hace que tengamos que mantener, e incluso intensificar nuestros esfuerzos constantes de posicionamiento estratégico, o aumentar nuestro diferencial competitivo e intentar superar las barreras de entrada correspondientes.

En cualquier caso, la necesidad de incrementar nuestro nivel de competitividad es un 'must' constante. Son muchas las variables que están contribuyendo a mejorar esta situación competitiva de nuestras empresas ya que mantener la posición en el mercado, que es de natural de carácter internacional, obliga a los Socios de HEGAN a rivalizar con cualquier competidor de cualquier parte del mundo; luego hay que seguir trabajando estas variables: personal altamente capacitado, intensidad en I+D+i, equipamiento de vanguardia, Fabricación Avanzada e Industria 4.0, contar con una base una sólida de cultura aeronáutica y de calidad...

Trabajando y desarrollando entre todos los que formamos el Cluster estos vectores competitivos, estoy seguro, veremos cómo seguimos avanzando con un horizonte despejado y sólido.

Carlos ALZOLA ELIZONDO

Presidente

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



Working Groups and Committees

We work in temporary and flexible work-groups dedicated to a number of specific activities. These WGs are created and dissolved according to the strategic areas defined in our Strategic Plan (PE1720) and in accordance to the specific needs of the Members. Besides, we maintain four permanent committees for the development of the current Strategy: *Innovation, Internationalization, Talent and Supply Chain.*

HEGAN's Team

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

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

General Assembly

This is the highest-ranking body of the Association. It is made up of all Members.

Board of Directors

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

Carlos ALZOLA -Chairman-, ITP AERO
Xabier BERASATEGI -Vice-Chairman-, GRUPO TTT
José Julián ECHEVARRIA -Secretary-, SENER
Álvaro FDEZ. BARAGAÑO, ACITURRI
Hipólito SUÁREZ, AERNNOVA
Karlos BALSATEGUI, ARATZ
Jon PARDO, BURDINBERRI
Ignacio EIRIZ GERVÁS, CTA
Aitor KINTANA, DT KINTANA
Ana SANTIAGO, SISTEPLANT
Iñaki TELLECHEA, SPRI / BASQUE GOVERNMENT
Ana VILLATE, HEGAN

Executive Committee

This committee, by delegation of the Board of Directors, is the body responsible for the monitoring of the activities performed by the Association.

It meets regularly and its current members are:

Plácido MÁRQUEZ -Chairman-, ITP AERO
Álvaro FDEZ. BARAGAÑO, ACITURRI
Javier FDEZ. DE RETANA, AERNNOVA
Karlos BALSATEGUI, ARATZ
Jon PARDO, BURDINBERRI
Ignacio EIRIZ GERVÁS, CTA
Aitor KINTANA, DT KINTANA
Xabier BERASATEGI, GRUPO TTT
Javier VIÑALS, SENER
Ana SANTIAGO, SISTEPLANT
Susana LARREA, SPRI / BASQUE GOVERNMENT
Ana VILLATE, HEGAN
Martín FDEZ. LOIZAGA, HEGAN

.2.1 the cluster association

The 2017–2020 Strategic Plan (PE1720), which sets out our common path for the period, is divided into **four Strategic Challenges**, which are the areas where HEGAN can give value to its Members. These form the basis of our **Management Map**:



#1 Reinforce the Value Chain



LOCAL CHALLENGE

#2 People Development

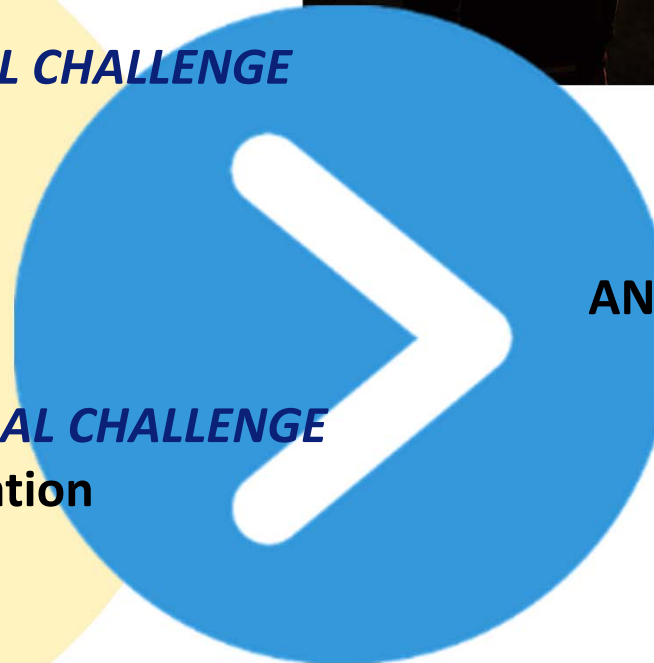
#3 Internationalization



GLOBAL CHALLENGE

#4 Communication/Representation

Strategy & Management



ANNUAL PLANS

#1 Reinforce the Value Chain

Supply Chain, Innovation, RTD...



#2 People Development

Training, Talent, Strategic Information...



#3 Internationalization

Missions, Market Positioning, B2Bs, AirShows...



#4 Communication

Representation, Dissemination, Promotion...



Strategy & Management

Strategic Plans, Management, Sustainability...



3.1 Members

3.2 Value Chain and Capabilities

3.3 Activities 2018

3.3.1 Aerostructures

3.3.2 Engines

3.3.3 Systems & Equipment

3.3.4 Space

3.3.5 MRO

3.3.6 RTD Projects

3.4 Programmes and Clients

3.5 2017 Figures



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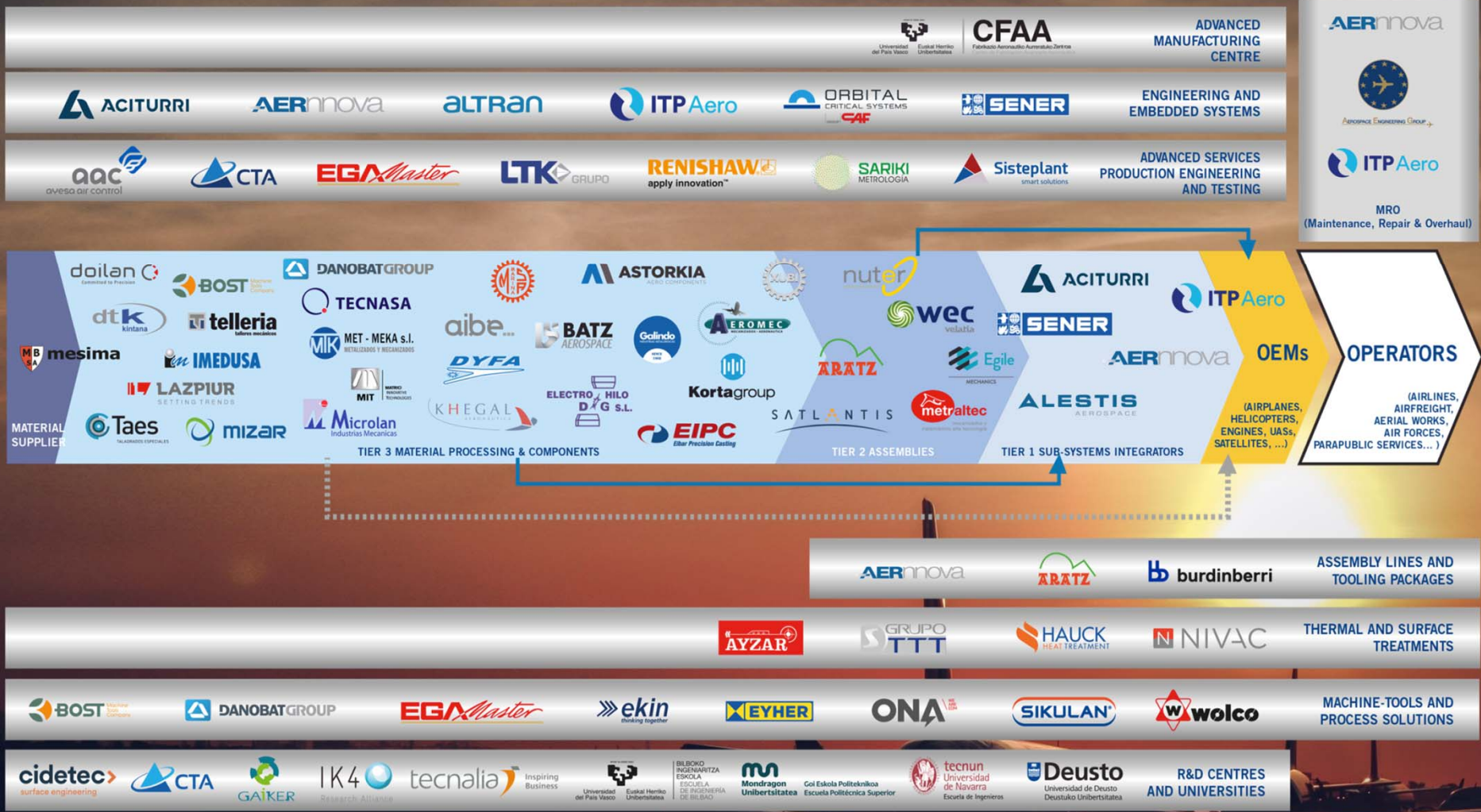
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> Industry

> R&D. Org

> Universities

.3.2 value chain



3.3.1 Aerostructures

3.3.2 Engines

3.3.3 Systems & Equipment

3.3.4 Space

3.3.5 MRO

3.3.6 RTD Projects



General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
ACITURRI			
VTP Dorsal Fin	AIRBUS OPERATIONS	AIRBUS	A320
HTP Torsion box	AIRBUS OPERATIONS	AIRBUS	A320
Leading edge panels and LEX of HTP	AIRBUS OPERATIONS	AIRBUS	A320
Leading edge of HTP assembly	AIRBUS DS	AIRBUS	A330
Passenger door structural assembly	ALESTIS	AIRBUS	A330
CFRP Spar Outboard Aileron	AIRBUS OPERATIONS	AIRBUS	A330
VTP	AIRBUS OPERATIONS	AIRBUS	A350 XWB
Internal structure of S19	AIRBUS OPERATIONS	AIRBUS	A350 XWB
Outboard FLAP CFRP parts (V1000)	FOKKER-GKN	AIRBUS	A350 XWB
Belly Fairing (Zones 0,1, 2 , 3.1, 3.2, 3.3 y 4)	AIRBUS DS	AIRBUS	A380
HTP Ribs	AIRBUS OPERATIONS	AIRBUS	A380
Rudder & Elevators	AIRBUS OPERATIONS	AIRBUS	A380
S19.1 CFRP Omegas	AIRBUS OPERATIONS	AIRBUS	A380
S19.1 Ducts & Housing	AIRBUS OPERATIONS	AIRBUS	A380
CFRP Rudder Spar	AIRBUS OPERATIONS	AIRBUS	BELUGA XL
Flap CFRP parts and Vane	AIRBUS OPERATIONS	AIRBUS	BELUGA XL
Auxiliary Fin & HTP Box Extension	DAHER-SOCATA	AIRBUS DS	A400M
Ventral Fin	AIRBUS FRANCE	AIRBUS DS	A400M
Sponsons	AIRBUS GERMANY	AIRBUS DS	A400M
Central Box: structural assembly and equipment & Tip wings integration	AIRBUS DS	AIRBUS DS	CN235, C295
Sponsons and Vertical Tail	FOKKER-GKN	AIRBUS HELICOPTERS	NH90
Rudder Components & Subassembly	AIRBUS DS	BOEING	737
CFRP Flaperon Skins	AIRBUS DS	BOEING	777
S46 Passenger door surround	AIRBUS DS	BOEING	777
Keel Beams CFRP Parts cargo floor	BOEING	BOEING	787
FLAPERONS CFRP PANELS	BOEING	BOEING	787
Elevators	AIRBUS DS	DASSAULT	FALCON 7X
HTP Parts	AIRBUS DS	DASSAULT	FALCON 7X
Ailerons	FOKKER-GKN	DASSAULT	FALCON 7X
Wing to Fuselage Fairing	EMBRAER	EMBRAER	KC-390
CFRP Fairings	AIRBUS DS	EUROFIGHTER	TYPHOON

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
AERNNOVA			
Elevators Assy /Main Landing Gear Doors Assy / Horizontal Stab. Spars / Fus. Section 18 Covers / Interior "dado" panels	AIRBUS	AIRBUS	A320
Elevator Components / Karman Fairings. Design Maintenance and Manufacturing of Main Landing Gear Doors Assy	AIRBUS	AIRBUS	A330/A340
Conceptual and detailed design and manufacture of HTP horizontal stabiliser fixed parts and Elevators - Risk Partner	AIRBUS	AIRBUS	A350 XWB
Build to print Rudder	AIRBUS	AIRBUS	A350 XWB
Build to Print Passenger Doors	AIRBUS	AIRBUS	A350 XWB
Build to Print Air Inlet	AIRBUS	AIRBUS	A350 XWB
Conceptual and detailed design and manufacture of MLG Pressure bulkhead	STELIA AEROSPACE	AIRBUS	A350 XWB
Horizontal Stabilizer: Design and Manufacturing of Leading Edges, Trailing Edges and Box Joint.	AIRBUS	AIRBUS	A380
Rear Fuselage - Section 19: Design & manufacturing of Internal Metallic Structure, including attachment fittings to Vertical Stabilizer	AIRBUS	AIRBUS	A380
Stiffeners and angle bars S19.1 / trailing edge covers HTTP (composite)	AIRBUS	AIRBUS	A380
Skin Panels Assembly S-19 (Built to Print)	AIRBUS	AIRBUS	A380
Rear Fuselage	AIRBUS	AIRBUS	BELUGA XL
Stringers / tip HTTP / wing stringers (composite)	AIRBUS DS	AIRBUS DS	A400M
Forward landing gear traps/ engine housings (composite)	AIRBUS DS	AIRBUS DS	CN235, C295
Build to print Fuselage	LEONARDO	AIRBUS HELICOPTERS	NH90
Upper structure manufacture.	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	EC 225 /725 Super Puma
Lower structure manufacture. Tail cone (composite)	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	EC 225 /725 Super Puma
Rear fuselage(composite)	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	TIGRE
Tail Cone manufacture	HELIBRAS	AIRBUS HELICOPTERS	EC 225 /725 Super Puma
Spoilers	STELIA AEROSPACE	ATR	ATR 72
Manufacture of Complete structure (foward fuselage, cabin and tailboom)	BELL	BELL	Bell 505
Conceptual engineering Wing Insparr Ribs and structures for sections 11, 12 and 42	BOEING	BOEING	747-81/F
Rear Pressure Bulkhead (composite)	BOEING	BOEING	787-9/-10
Manufacturing of complete Tail section (vertical and horizontal stabilisers) and elevators	BOMBARDIER	BOMBARDIER	CRJ700/900/1000
Conceptual Design & Manufacture of Central Wing Box (composite)	BOMBARDIER	BOMBARDIER	CSeries

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
Design & manufacture of Tail Cone (composite)	BOMBARDIER	BOMBARDIER	CSeries
Design and manufacture of complete Tail section (vertical and horizontal stabilizers), rudder and elevators - Risk Partner	EMBRAER	EMBRAER	EMB 170/175/190/195/LINEAGE 1000
Design and manufacture of rear fuselage - Risk Partner	EMBRAER	EMBRAER	EMB 170/175/190/195/LINEAGE 1000
Design and manufacture of complete wings-Risk Partner	EMBRAER	EMBRAER	ERJ135/140/145
Design and manufacture of nacelles - Risk Partner	EMBRAER	EMBRAER	ERJ135/140/145
Design and manufacture of wing to fuselage fairings -Risk Sharing Partner- Partially Transferred to Embraer	EMBRAER	EMBRAER	ERJ135/140/145
Design and manufacture of complete wings - Risk Partner	EMBRAER	EMBRAER	LEGACY Family
Design and manufacture of nacelles -Risk Partner	EMBRAER	EMBRAER	LEGACY Family
Design and manufacture of wing to fuselage fairings -Risk Partner- Partially Transferred to Embraer	EMBRAER	EMBRAER	LEGACY Family
Design and manufacture of rear fuselage - Risk Partner	EMBRAER	EMBRAER	LINEAGE 1000
Design and Manufacturing of Flaps, Ailerons and Rudder	EMBRAER	EMBRAER	KC-390
Design of Rear Fuselage, Pylon, Cargo Ramp and Upper Door	EMBRAER	EMBRAER	KC-390
Design of Wing Box	EMBRAER	EMBRAER	KC-390
Design and Manufacturing of Horizontal & Vertical stabilizer	EMBRAER	EMBRAER	E-jets E2
Design of Cockpit	EMBRAER	EMBRAER	E-jets E2
Wing covers, housings and conduits (composite)	AIRBUS DS	EUROFIGHTER	TYPHOON
Design and manufacture of the equipped transition section and tail cone - Risk Partner	SIKORSKY	SIKORSKY	S-92 / H-92
Design and manufacture of the HS - Risk Partner	SIKORSKY	SIKORSKY	S-92 / H-92
Design and manufacture of the main rotor pylon, fairings and engine cowlings - Risk Partner	SIKORSKY	SIKORSKY	S-92 / H-92
AEROMECA			
Pilon Rib	Several	AIRBUS	A320
Wing ribs structure	Several	AIRBUS	A330/350XWB
Structural door components.	Several	BOEING	787
Door structural components	Several	EMBRAER	170/175/190/195 / E2
AIBE			
Precision machining of components	MTORRES	Several	Miscellaneous

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
AIBE			
Precision machining of components	MTORRES	Several	Miscellaneous
ALESTIS			
BBAH HTP & VTP	ACITURRI	AIRBUS	A320 & A320neo
TIP's HTP	AIRBUS	AIRBUS	A320 & A320neo
TTP's	AERNNOVA	AIRBUS	A320 & A320neo
TIP's HTP	AIRBUS DS	AIRBUS	A330
PAX Door	AIRBUS	AIRBUS	A330
Ribs HTP	AIRBUS	AIRBUS	A330
PAX Door	AIRBUS	AIRBUS	A330neo
Ribs HTP	AIRBUS	AIRBUS	A330neo
Belly Fairing - Risk Partner	AIRBUS	AIRBUS	A350 XWB
S19.1 - Risk Partner	AIRBUS	AIRBUS	A350 XWB
MLGD / S19.1 / Rear Fairing	AIRBUS	AIRBUS	A380
Belly Fairing (Structure)	AIRBUS DS	AIRBUS	A380
Assembly tasks	AIRBUS DS	AIRBUS DS	A330MRTT
Elevator	AIRBUS DS	AIRBUS DS	A400M
Cowlings	AIRBUS DS	AIRBUS DS	A400M
Rear fuselage	AIRBUS DS	AIRBUS DS	CN235, C295
HTP / VTP	AIRBUS DS	AIRBUS DS	CN235, C295
Tips & Strakelet	BOEING	BOEING	737
Aileron	AIRBUS DS	BOEING	777
Flaperon	AIRBUS DS	BOEING	777
Winglet & Wingstub	EMBRAER	EMBRAER	190/195
Central Fuselage	EMBRAER	EMBRAER	LEGACY450/500
Empennage & Wings	EMBRAER	EMBRAER	LEGACY450/500
Composite parts	EMBRAER	EMBRAER	LEGACY450/500
ALTRAN			
Design, stress, tests and materials/process, industrial operations, quality assurance	AIRBUS	AIRBUS	A350XWB/320/330MRTT/380

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
Design, stress, tests and materials/process, industrial operations, quality assurance	ALESTIS	AIRBUS	A350XWB/380
Design, stress, tests and materials/process, industrial operations, quality assurance	AIRBUS DS	AIRBUS DS	A400M/C295
ARATZ			
Composite Tooling	AIRBUS	AIRBUS	A350 XWB
Lay Up Tooling	AIRBUS	AIRBUS	A350 XWB
Assembly tooling	AIRBUS	AIRBUS	AIRBUS families
Assembly tooling	DASSAULT	DASSAULT	Falcon family
Composite Tooling	DASSAULT	DASSAULT	Falcon family
Composite Tooling	BOMBARDIER	BOMBARDIER	Cseries CS100
ASTORKIA			
Structural components	AERNNOVA	AIRBUS	AIRBUS families
Structural components	Several	BOEING	747 / 787
Structural components	AERNNOVA	BOMBARDIER	CRJ700/900
Structural components	AERNNOVA	EMBRAER	EMBRAER families
AYESA AIR CONTROL			
Process optimization techniques, Industry 4.0 solutions and Digital Factory technologies	AIRBUS DS	AIRBUS DS	A330MRTT, A400M, C295, CN235
AYZAR			
Heat treatments	ACITURRI	AIRBUS	AIRBUS families
BOST			
Machine Tools for aero-components manufacturing	Several	Several	Miscellaneous
BURDINBERRI			
HTP integration assembly jig	ACITURRI	AIRBUS	A320neo
HTP leading edge assembly jigs	ACITURRI	AIRBUS	A320neo
HTP skins curing tools	AERNNOVA	AIRBUS	A320neo
Pax Door assembly jig	AERNNOVA	AIRBUS	A350 XWB
S19 curing tool	AIRBUS	AIRBUS	A350 XWB
VTP ribs curing tools	CTRM MALASIA	AIRBUS	A400M

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
CIDETEC			
Surface preparation	AERNNOVA	AIRBUS	AIRBUS families
Reprocessability, Repairability and Recyclability of composites	AERNNOVA	AIRBUS	AIRBUS families
CTA			
Drop test on fuel tank	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	AS350
Bird strike on rotor blade	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	H160
Rotor blade test	DAHER	AIRBUS HELICOPTERS	Miscellaneous
Fire certification tests of interior materials	BOEING R&T EUROPE	BOEING	Airlines
E2 Horizontal Stabilizer Fatigue Test	AERNNOVA	EMBRAER	E-Jets E2
E2 Flap Supports Structural Test	ASCO INDUSTRIES	EMBRAER	E-Jets E2
Flap inboard test	AERNNOVA	EMBRAER	KC-390
Aileron & Rudder tests	AERNNOVA	EMBRAER	KC-390
Fire certification tests of interior materials	AIR NOSTRUM LAM	Several	Airliners
Fire certification tests of interior materials	DIEHL AEROSPACE	Several	Airliners
Fire certification tests of interior materials	IACOBUCCI HF AEROSPACE	Several	Airliners
Fire certification tests of interior materials	HUTCHINSON-CR	Several	Airliners
Fire certification tests of interior materials	COMPOSITE INDUSTRIES	Several	Airliners
Fire certification tests of interior materials	PMV INDUSTRIES	Several	Airliners
Fire certification tests of interior materials	JCB AERO	Several	Airliners
Fire certification tests of interior materials	INDUSTRIAL NEO-TEX	Several	Airliners
Fire certification tests of interior materials	PINTA INSULATION	Several	Airliners
Fire certification tests of interior materials	VELCRO EUROPE	Several	Airliners
Fire certification tests of interior materials	ROMTEX ANJOU AERONAUTIQUE	Several	Airliners
Fire certification tests of interior materials	SN CENTRAIR	Several	Airliners
Fire certification tests of interior materials	DESSO	Several	Airliners
DT KINTANA			
Landing gear trap components	AERNNOVA	AIRBUS	A320
Stabilizer components	AERNNOVA	AIRBUS	A350 XWB

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
DYFA			
Machining of components	ACITURRI	AIRBUS	A350XWB
Tooling for Aeronautical manufacturing	AIRBUS	AIRBUS	A320/330/400M
Tooling for aeronautical Assembly	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	NH90
Tooling for aeronautical Assembly	AIRBUS	DASSAULT	Falcon 7X
Machining of Composite (Carbon fiber / Fiberglass) & Metallic components	AERNNNOVA	EMBRAER	ERJ170/190, KC-390
Machining of Composite (Carbon fiber / Fiberglass) & Metallic components	Several	Several	Miscellaneous
EGAMASTER			
Special Hand-Tools for Aerostructures assemblies	AERNNNOVA	Several	Miscellaneous
Remote Asset localization system	AERNNNOVA	Several	Miscellaneous
Smart access tooling stations	AERNNNOVA	Several	Miscellaneous
Electronic Kanban systems	AERNNNOVA	Several	Miscellaneous
EIBAR PRECISION CASTING			
Secondary structure components	TAI	AIRBUS	A320neo
Fuel system components	AIRBUS	AIRBUS	A320neo/ A330neo
Secondary structure components	AIRBUS DS	AIRBUS DS	C235,C295, EUROFIGHTER TYPHOON
EYHER			
Platform retrofit	AIRBUS	AIRBUS	BELUGA XL
Work in-heights platforms for the Embraer E2 HTP	AERNNNOVA	EMBRAER	E2
GAIKER			
Scrap Recycling	Several	Several	Miscellaneous
Composite moulds development	Several	Several	Miscellaneous
RTM/INFUSION	Several	Several	Miscellaneous
GRUPO TTT			
Heat and surface treatments	SONACA	AIRBUS	AIRBUS families
Heat and surface treatments	AERNNNOVA	AIRBUS	AIRBUS families
Heat and surface treatments	ALESTIS	AIRBUS	A400M/380
Heat and surface Treatments	AIRBUS DS	AIRBUS DS	AIRBUS DS families
Heat and surface treatments	AERNNNOVA	AIRBUS HELICOPTERS	AIRBUS HELICOPTERS families
Heat and surface treatments	AERNNNOVA	BELL	Bell 505

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
Heat and surface treatments	BHR Helicopter	BHR Helicopter	F360/290
Heat and surface treatments	Several	BOEING	737 / 777 / 787
Heat and surface treatments	Several	BOMBARDIER	BOMBARDIER families
Heat and Surface treatments	SONACA	DASSAULT	FALCON family
Heat and surface treatments	AERNNNOVA	EMBRAER	EMBRAER families
Heat and surface treatments	Several	EMBRAER	KC-390
Heat and surface treatments	AERNNNOVA	MRAS-GE	Miscellaneous
Heat and surface treatments	SKF	Several	Miscellaneous
Heat and surface treatments	PARKER	Several	Miscellaneous
Heat and surface treatments	AERNNNOVA	SIKORSKY	S-92
HAUCK HEAT TREATMENT			
Heat treatments	HÉROUX-DEVTEK SPAIN	AIRBUS	AIRBUS families
Heat treatments	ACITURRI	AIRBUS	AIRBUS families
Heat treatments	AIRBUS DS	AIRBUS DS	AIRBUS DS families
Heat treatments	EMBRAER	EMBRAER	KC-390
Heat treatments	AERNNNOVA	FOKKER	Miscellaneous
Heat treatments	AERNNNOVA	SIKORSKY	S-92
Heat treatments	HÉROUX-DEVTEK SPAIN	SIKORSKY	S-92
INDUSTRIAS METALÚRGICAS GALINDO			
Tooling manufacturing	INESPASA	AIRBUS	A350 XWB
Tooling manufacturing	ALESTIS	AIRBUS	A350 XWB
Tooling manufacturing	AERNNNOVA	AIRBUS	A380
Tooling manufacturing	ACITURRI	AIRBUS	Miscellaneous
Tooling manufacturing	ALESTIS	BOEING	787
Tooling manufacturing	AERNNNOVA	EMBRAER	E-JET family
Tooling manufacturing	CTA	Several	Miscellaneous
KHEGAL AERONÁUTICA			
Elementary components Machining	Several	AIRBUS	AIRBUS Families
Fuselage Holders for assembly line and Tooling for test bench	Several	AIRBUS	AIRBUS Families
Fuselage Holders for assembly line	Several	AIRBUS DS	A400M

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
Elementary components Machining	Several	ATR	42/72
Elementary components Machining	AERNNOVA	BOMBARDIER	CSeries Family
Elementary components Machining	Several	DASSAULT	Falcon Family
LTK GRUPO			
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	AIRBUS	AIRBUS	AIRBUS families
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	AIRBUS DS	AIRBUS DS	A330MRTT
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	AIRBUS DS	AIRBUS DS	A400M
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	AIRBUS DS	AIRBUS DS	CN235, C295
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	ALESTIS	BOEING	787
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	ALESTIS	AIRBUS	AIRBUS families
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	ALESTIS	EMBRAER	E-JET family
MATRICI INNOVATIVE TECHNOLOGIES			
Metallic Forming Components	GROUPE LAUAK	EMBRAER	Miscellaneous
MESIMA			
Materials management and supply	AIRBUS DS	AIRBUS DS	Miscellaneous
METRALTEC			
Manufacture and assembly of elements (Sheet metal working, machining, heat and surface treatments, painting)	AERNNOVA	AIRBUS	A320 / A380
Manufacture and assembly of elements (Sheet metal working, machining, heat and surface treatments, painting)	ACATEC	AIRBUS	A320
Manufacture of elementary parts (machining)	KHEGAL AERONÁUTICA	AIRBUS	A380
Manufacture of elementary parts (sheet metal)	ALESTIS	AIRBUS	A350XWB
Manufacture of elementary parts and assembly (sheet metal, machining, heat and surface treatments, painting)	AERNNOVA	BOMBARDIER	CRJ family, CSERIES
Manufacture of elementary parts and assemblies (sheet metal, machining, heat treatments and surface treatments, painting)	AERNNOVA	EMBRAER	EMBRAER families
Manufacture of elementary parts and assemblies (sheet metal, machining, heat treatments and surface treatments, painting)	OGMA	EMBRAER	KC-390
Manufacture of elementary parts (sheet metal, machining, heat treatment, surface treatment, painting)	AERNNOVA	EUROFIGHTER	TYPHOON
Manufacture of elementary parts and assemblies (sheet metal, machining, heat treatments and surface treatments, painting)	AERNNOVA	SIKORSKY	S-92
Manufacture of elementary parts and assemblies (sheet metal, machining, heat treatments and surface treatments, painting)	MTORRES	Several	Miscellaneous

General Description of the Product/service	DIRECT CLIENT	OEM	PLATFORMS
MICROLAN			
Precision Machining of components, Turning and Milling	Several	Several	Miscellaneous
NUTER			
Structural components	AERNNOVA	AIRBUS	A380
Components	AERNNOVA	BOMBARDIER	CRJ family
Structural components	AERNNOVA	EMBRAER	ERJ family / E-JET family
Structural components	AERNNOVA	SIRKOSKY	S-92
Components	AERNNOVA	EMBRAER	E-2
RENISHAW			
Positioning of carbon fibre parts in the machine tool before machining, avoiding the need of expensive tooling, in an automated cycle.	Several	AIRBUS	Miscellaneous
SENER			
Surface protection stations	AIRBUS	AIRBUS	A320/330/350XWB
HTP assembly line	AIRBUS	AIRBUS	A330
Engineering, Procurement and Construction (EPC) of a new pulse motion line for the manufacture of the HTPs	AIRBUS	AIRBUS	A330 neo
Floor grid assembly stations	PAG	AIRBUS	A350 XWB
SISTEPLANT			
Manufacturing Execution System implementation - New features	ALESTIS	AIRBUS	A350XWB
Brainstorming Factory of the Future	SPACE	AIRBUS	Miscellaneous
TAES			
Components Deep precision Drilling	MEUPE	Several	Miscellaneous
Components Deep precision Drilling	AEROTECNIC	Several	Miscellaneous
Components Deep precision Drilling	ACATEC	Several	Miscellaneous
Components Deep precision Drilling	EPCO	Several	Miscellaneous
Components Deep precision Drilling	KANTER	Several	Miscellaneous

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
ACITURRI				
Fun Hub Frames	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP 1A/B/C	Airbus A320neo / Boeing 737 MAX/Comac C919
Hub Compressor	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP 1A/B	Airbus A320neo / Boeing 737 MAX
Brackets	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP 1A/B	AIRBUS A320neo / BOEING 737 MAX
Lugs and Shrouds	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP 1B	BOEING 737 MAX
Belts	SAFRAN OIL SYSTEMS	CFM INTERNATIONAL	LEAP 1A/1B, GTF	AIRBUS A320neo / BOEING 737 MAX
Lugs and vanes	ITP AERO	EPI	TP400	AIRBUS A400M
Mounting Rings, Thermals and fittings	ITP AERO	EUROJET	EJ200	EUROFIGHTER TYPHOON
Components	WEC	EUROJET	EJ200	EUROFIGHTER TYPHOON
Housings	ITP AERO	GENERAL ELECTRIC	F414	BOEING F/A-18E/F
Struts	ITP AERO	GENERAL ELECTRIC	GE90-115	BOEING 777
Hubs	ITP AERO	PRATT&WHITNEY	Several	Miscellaneous
Irods	ITP AERO	PRATT&WHITNEY	Several	Miscellaneous
Hubs	ITP AERO	ROLLS-ROYCE	TRENT 7000	AIRBUS 330neo
Hubs	ITP AERO	ROLLS-ROYCE	TRENT 1000	BOEING 787
Housings	ITP AERO	ROLLS-ROYCE	TRENT 700	AIRBUS A330
Housings	ITP AERO	ROLLS-ROYCE	TRENT 500	AIRBUS A340
Lugs and vanes	ITP AERO	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
Lugs and vanes	ITP AERO	ROLLS-ROYCE	TRENT 900	AIRBUS A380
Lugs and vanes & T.Match	ITP AERO	ROLLS-ROYCE	TRENT 1000	BOEING 787
End Fittings	SL ENGINEERING	ROLLS-ROYCE	Several	Miscellaneous
Rings	ROLLS-ROYCE	ROLLS-ROYCE	Several	Miscellaneous
AEROMECH				
Support ring	Several	CFM INTERNATIONAL	CFM56	AIRBUS A320 / BOEING 737
Engine TBH	Several	EPI	TP400	A400M
LPT rings	Several	EUROJET	EJ200	EUROFIGHTER TYPHOON
Engine exhaust Zone.	Several	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
Engine TBH	Several	ROLLS-ROYCE	TRENT 900	AIRBUS A380

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
Engine exhaust zone	Several	SAFRAN AIRCRAFT ENGINES	SILVERCREST	CESSNA Citation / DASSAUL FALCON 5X
Turbine casing & Thermal	Several	Several	Miscellaneous	Miscellaneous
AIBE				
Design and manufacture of clamping systems and fixtures for machining processes and special machines	ITP AERO	GENERAL ELECTRIC	GE90	BOEING 777
Design and manufacture of clamping systems and fixtures for machining processes and special machines	ITP AERO	ROLLS-ROYCE	TRENT family	Miscellaneous
ARATZ				
Machined Components	ITP AERO	ROLLS-ROYCE	TRENT 700	AIRBUS A330
Machined Components	ITP AERO	ROLLS-ROYCE	TRENT 900	AIRBUS A380
ASTORKIA				
Engine components	ITP AERO	EPI	TP400	AIRBUS A400M
Engine components	ITP AERO	ROLLS-ROYCE	TRENT family	All range
Engine components	ITP AERO	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
BATZ				
Hot formed panels for special alloys	ITP AERO	EPI	TP400	A400M
Hot formed panels for special alloys	WEC	ROLLS-ROYCE	TRENT 900	AIRBUS A380
Hot formed panels for special alloys	WEC	ROLLS-ROYCE	TRENT 1000	BOEING 787
Hot formed panels for special alloys	SALLEN	ROLLS-ROYCE	TRENT 7000	AIRBUS A330neo
Hot formed panels for special alloys	WEC	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
BOST				
Machine Tools for aero-components manufacturing	Several	Several	Miscellaneous	Miscellaneous
BURDINBERRI				
Duct RTM curing tools	ACITURRI	SAFRAN	Miscellaneous	Miscellaneous
CTA				
Aerodynamic Technology Acquisition Rig Programme	ITP AERO	Several	Miscellaneous	Miscellaneous
DANOBAT GROUP				
Vertical grinding Machine-Tools for aeroengine manufacturing	GENERAL ELECTRIC	Several	Several	Miscellaneous

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
EGAMASTER				
Special Hand-Tools for Engines manufacturing	ITP AERO	Several	Several	Miscellaneous
Torque control traceability and permit system	ITP AERO	Several	Several	Miscellaneous
EGILE				
Carter parts	ITP AERO	CFM INTERNATIONAL	CFM56	AIRBUS A320 / BOEING 737
Carter parts	ITP AERO	CFM INTERNATIONAL	LEAP 1A/B	AIRBUS A320neo / BOEING 737MAX
Engine actuation systems	HÉROUX-DEVTEK SPAIN	EUROJET	EJ200	EUROFIGHTER TYPHOON
Main shaft Ge90	AUBERT&DUVAL	GENERAL ELECTRIC	GE90	BOEING 777
NGVs	ITP AERO	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
NGVs	ITP AERO	ROLLS-ROYCE	TRENT 1000	BOEING 787
Boitiers Roulements	SAFRAN TRANSMISSION SYSTEMS	SAFRAN AIRCRAFT ENGINES	LEAP 1A/1B	AIRBUS A320neo / BOEING 737MAX
Gears and shafts	SAFRAN HELICOPTER ENGINES	SAFRAN AIRCRAFT ENGINES	M88	RAFALE
Main transmission gears	SAFRAN HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	ALL RANGE	Miscellaneous
Accessory transmission gears	SAFRAN HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	ALL RANGE	Miscellaneous
Shaft	ITP AERO	SAFRAN HELICOPTER ENGINES	MTR390	AIRBUS HELICOPTERS TIGRE
ELECTROHILO				
Inner vanes stubs machining (spark erosion) and Vanes edge cutting (wire)	ITP AERO	EPI	TP400	AIRBUS A400M
TEC segmentation	ITP AERO	EUROJET	EJ200	EUROFIGHTER TYPHOON
Strut manufacture	ITP AERO	MTRI	MTR390-E	AIRBUS HELICOPTERS TIGRE
Edging of VANES and BCVs	ITP AERO	ROLLS-ROYCE	TRENT 1000	BOEING 787
Separation Top Core Vane, Vanes erosion, Top Core Vane manufacture	ITP AERO	ROLLS-ROYCE	TRENT 900	AIRBUS A380
EIBAR PRECISION CASTING				
Castings Components	ITP AERO	ROLLS-ROYCE	TRENT 1000	BOEING 787
Castings Components	ITP AERO	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
EKIN				
Broaching Tools for the manufacture of Fir Tree turbine discs	ITP AERO	Several	All Range	Miscellaneous
GRUPO TTT				
Heat and Surface treatments	ITP AERO	EUROJET	EJ200	EUROFIGHTER TYPHOON
Heat and surface treatments	ITP AERO	ROLLS-ROYCE	Miscellaneous	Miscellaneous
Heat and surface treatments	SAFRAN AIRCRAFT ENGINES	SAFRAN AIRCRAFT ENGINES	Miscellaneous	Miscellaneous
Heat and surface treatments	Miscellaneous	SAFRAN HELICOPTER ENGINES	Miscellaneous	Miscellaneous
Heat and surface treatments	SAFRAN TRANSMISSION SYSTEMS	Several	Miscellaneous	Miscellaneous
HAUCK HEAT TREATMENT				
Heat treatments	ACITURRI	ROLLS-ROYCE	TRENT 1000	BOEING 787
Heat treatments	ITP AERO	ROLLS-ROYCE	TRENT family	Miscellaneous
Heat treatments	WEC	Several	Miscellaneous	Miscellaneous
Heat treatments	EGILE	SAFRAN HELICOPTER ENGINES	Miscellaneous	Miscellaneous
Heat treatments	SAFRAN HELICOPTER ENGINES	SAFRAN HELICOPTER ENGINES	Miscellaneous	Miscellaneous
Heat treatments	SAFRAN AERO BOOSTERS	Several	Miscellaneous	Miscellaneous
IMEDUSA				
BRACKETS	WEC	EPI	TP400	AIRBUS A400M
BRACKETS	WEC	EUROJET	EJ200	EUROFIGHTER TYPHOON
BRACKETS	WEC	CFM INTERNATIONAL	LEAP 1A/B	AIRBUS A320neo / BOEING 737MAX
INDUSTRIAS METALÚRGICAS GALINDO				
Design of Cutting Tools	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP 1A/B	AIRBUS A320neo / BOEING 737MAX
Manufacturing of Tooling for LPT Components (inter stage seals)	ITP AERO	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
Manufacturing of Tooling for turbine shafts and static components	ITP AERO	Several	Miscellaneous	Miscellaneous
Design of Cutting Tools	ITP AERO	Several	Miscellaneous	Miscellaneous
Design of Cutting Tools	MECACHROME	Several	Miscellaneous	Miscellaneous

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
ITP AERO				
Lost wax casting super alloys for Turbine	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	CFM56	AIRBUS A320 / BOEING 737
Lost wax casting super alloys for Turbine	MTU	EA	GP7000	AIRBUS A380
Design and manufacture of low pressure turbine (LPT) - Member of EPI Consortium	AIRBUS DS	EPI	TP400	AIRBUS A400M
Design and manufacture of the Front Frame and Exhaust System - Member of the EPI Consortium	AIRBUS DS	EPI	TP400	AIRBUS A400M
Manufacture of Externals - Member of EPI Consortium	AIRBUS DS	EPI	TP400	AIRBUS A400M
Final assembly of engine - Member of EPI Consortium	AIRBUS DS	EPI	TP400	AIRBUS A400M
Lost wax casting super alloys for intermediate pressure turbine	ROLLS-ROYCE	EPI	TP400	AIRBUS A400M
Lost wax casting super alloys for the LPT	ROLLS-ROYCE	EPI	TP400	AIRBUS A400M
Design and manufacture of the Diffuser cones and By-Pass Module - Member of the EUROJET Consortium	NETMA	EUROJET	EJ200	EUROFIGHTER TYPHOON
Design and manufacture of the post burner duct and variable nozzle - Member of the EUROJET Consortium	NETMA	EUROJET	EJ200	EUROFIGHTER TYPHOON
Manufacture of Externals - Member of the EUROJET Consortium	NETMA	EUROJET	EJ200	EUROFIGHTER TYPHOON
Final assembly of the engine - Member of the EUROJET Consortium	NETMA	EUROJET	EJ200	EUROFIGHTER TYPHOON
Lost wax casting super alloys - nozzle	NETMA	EUROJET	EJ200	EUROFIGHTER TYPHOON
Lost wax casting super alloys - low pressure turbine	NETMA	EUROJET	EJ200	EUROFIGHTER TYPHOON
Components	GENERAL ELECTRIC	GENERAL ELECTRIC	CF34-10	EMBRAER 190/LINEAGE 1000
Manufacture of rear turbine structure	GENERAL ELECTRIC	GENERAL ELECTRIC	GE90-115	BOEING 777
Structural components	HONEYWELL	HONEYWELL	HTF7000	BOMBARDIER CHALLENGER 300
Design and manufacture of three LPT - Member of the MTRI Consortium	AIRBUS HELICOPTERS	MTRI	MTR390-E	AIRBUS HELICOPTERS TIGRE
Final assembly of the engine - Member of the MTRI Consortium	AIRBUS HELICOPTERS	MTRI	MTR390-E	AIRBUS HELICOPTERS TIGRE
Lost wax casting super alloys - low pressure turbine	AIRBUS HELICOPTERS	MTRI	MTR390-E	AIRBUS HELICOPTERS TIGRE
Lost wax casting super alloys for Turbine	SNECMA	POWERJET	SaM146	SUKHOI SUPERJET 100

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
Modules manufacturing	PRATT & WHITNEY	PRATT & WHITNEY	PW1000G	Cseries/MRJ90/MS-21/A320neo
Components manufacturing	PRATT & WHITNEY CANADA	PRATT & WHITNEY	PW535E	EMBRAER PHENOM 300
Parts of external equipment of engine	ROLLS-ROYCE	ROLLS-ROYCE	BR725	GULFSTREAM G650
Design and validation of the ROLL POST	ROLLS-ROYCE	ROLLS-ROYCE	F136	LOCKHEED MARTIN F-35
Design and manufacture of low pressure turbine (LPT) - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 1000	BOEING 787
Design and manufacture of Rear Frame - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 1000	BOEING 787
Lost wax casting super alloys for the LPT	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 1000	BOEING 787
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 1000	BOEING 787
Design and manufacture of low pressure turbine (LPT) - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 500	AIRBUS A340
Design and manufacture of the Rear Frame - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 500	AIRBUS A340
Lost wax casting super alloys for the LPT	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 500	AIRBUS A340
Assembly of the LPT and component manufacture	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 700	AIRBUS A330
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 700	AIRBUS A330
Design and manufacture of the low pressure turbine (LPT) - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 900	AIRBUS A380
Design and manufacture of the Rear Frame - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 900	AIRBUS A380
Lost wax casting super alloys for the LPT	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 900	AIRBUS A380
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-ROYCE	ROLLS-ROYCE	TRENT 900	AIRBUS A380
Design and manufacture of the low pressure turbine (LPT) - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
Design and manufacture of the Rear Frame - Risk Partner	ROLLS-ROYCE	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
Lost wax casting super alloys for the LPT	ROLLS-ROYCE	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB
Lost wax casting super alloys for the intermediate pressure turbine	ROLLS-ROYCE	ROLLS-ROYCE	TRENT XWB	AIRBUS A350XWB

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
KHEGAL AERONÁUTICA				
Injection elementary components Machining	AD GROUP	CFM INTERNATIONAL	CFM56	AIRBUS A320 / BOEING 737
MATRICI INNOVATIVE TECHNOLOGIES				
Metallic Forming Components	ITP AERO	ROLLS-ROYCE	TRENT 900 /1000	A380 / 787
Metallic Forming Components	ITP AERO	ROLLS-ROYCE	XWB	A350XWB
Metallic Forming Components	ITP AERO	ROLLS-ROYCE	TP400	A400M
MESIMA				
Materials management and supply	ITP AERO	ROLLS-ROYCE	Miscellaneous	Miscellaneous
Materials management and supply	WEC	Several	Miscellaneous	Miscellaneous
METALÚRGICA MARINA				
Machining Tooling manufacturing	ITP AERO	Several	Miscellaneous	Miscellaneous
Load Tester Tooling manufacturing	ITP AERO	Several	Miscellaneous	Miscellaneous
NIVAC				
Thermal and surface treatments	Miscellaneous	Several	Miscellaneous	Miscellaneous
NUTER				
Fittings	ITP AERO	EPI	TP400	AIRBUS A400M
Fittings	ITP AERO	EUROJET	EJ200	EUROFIGHTER TYPHOON
Airfoils	ITP AERO	PRATT & WHITNEY	PW-800	Miscellaneous
Small Parts	ITP AERO	PRATT & WHITNEY	PW-800	Miscellaneous
Small Parts	ITP AERO	PRATT & WHITNEY	C-SERIES	Miscellaneous
Fittings	ITP AERO	ROLLS-ROYCE	TRENT family	Miscellaneous
ONA ELECTROEROSIÓN				
Die-Sinking EDM machine	TURBINE JET	PRATT & WHITNEY	PW1000G	Airbus 320 neo
Die-Sinking EDM machine	ITP AERO	ROLLS-ROYCE	TRENT 1000	Boeing 787
Die-Sinking EDM machine	MAINI	SAFRAN AIRCRAFT ENGINES	LEAP 1A	Airbus 320 neo

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
RENISHAW				
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	Several	Miscellaneous	Miscellaneous
Precision sensors for fast, accurate acquisition of component dimensions and surface data. They include blade-specific software applications.	Several	Several	Miscellaneous	Miscellaneous
Component set up, tool setting and in-cycle gauging and first off component inspection for accurate machining processes.	Several	Several	Miscellaneous	Miscellaneous
SARIKI METROLOGÍA				
Measurement Equipment and Consultancy-supply, maintenance, training and software programming	ITP AERO	Several	Miscellaneous	Miscellaneous
Measurement Equipment maintenance, training and software programming	ITP AERO	Several	Miscellaneous	Miscellaneous
SISTEPLANT				
Review of Assembly standards	ITP AERO	Several	Miscellaneous	Miscellaneous
TAES				
Components Deep precision Drilling	EGILE	Several	Miscellaneous	Miscellaneous
Components Deep precision Drilling	ACITURRI	Several	Miscellaneous	Miscellaneous
Components Deep precision Drilling	GALVATEC	Several	Miscellaneous	Miscellaneous
TECNASA				
Silicone Grommets	ITP AERO	Several	Miscellaneous	Miscellaneous
WEC				
Parts of external equipment of engine	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	CFM56	AIRBUS A320 / BOEING 737
Parts of external equipment of engine	SAFRAN AIRCRAFT ENGINES	CFM INTERNATIONAL	LEAP 1A/B	AIRBUS A320neo / BOEING 737MAX
Parts of external equipment of engine	ITP AERO	EPI	TP400	AIRBUS A400M

.3.3.2 engines

General Description of the Product/service	DIRECT CLIENT	OEM	ENGINE MODEL	PLATFORMS
Structural parts	ITP AERO	EPI	TP400	AIRBUS A400M
Exhaust nozzle parts	ITP AERO	EUROJET	EJ200	EUROFIGHTER TYPHOON
TEC parts	ITP AERO	EUROJET	EJ200	EUROFIGHTER TYPHOON
Parts of external equipment of engine	ITP AERO	EUROJET	EJ200	EUROFIGHTER TYPHOON
Parts of external equipment of engine	SAFRAN AIRCRAFT ENGINES	GENERAL ELECTRIC	GE90-115k	BOEING 777
Rings, annular components, combustion chamber components	HONEYWELL	HONEYWELL	Several	Miscellaneous
Parts of external equipment of engine	ITP AERO	PRATT & WHITNEY	PW 814	GULFSTREAM G500
TEC Front Cases	GKN Aerospace Engine Systems	ROLLS-ROYCE	Several	Miscellaneous
Structural parts	ITP AERO	ROLLS-ROYCE	TRENT family	Miscellaneous
Parts of external equipment of engine	ITP AERO	ROLLS-ROYCE	TRENT family	Miscellaneous
Dynamic seals components	ITP AERO	ROLLS-ROYCE	TRENT family	Miscellaneous
Parts for engine cooling devices	SAFRAN AIRCRAFT ENGINES	SAFRAN AIRCRAFT ENGINES	SILVERCREST	CESSNA Citation / DASSAUL FALCON 5X
WOLCO				
Special Cutting Tools for Aerospace manufacturing	ITP AERO	Several	Miscellaneous	Miscellaneous

3.3.3 systems & equipment

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
ACITURRI			
Auxiliary Fuel Tanks	AIRBUS DS	Fuel system components	EUROFIGHTER TYPHOON
Hydraulic Tanks	HÉROUX-DEVTEK SPAIN	Hydraulic system	AIRBUS A380
Equipped elements	RATIER FIGEAC	Turboprop systems	Miscellaneous
AEROMECH			
Nose and main landing gear components	Several	Landing Gear	AIRBUS DS C295
Main landing gear components	Several	Landing Gear	AIRBUS DS CN235
ALTRAN			
Architecture, critical software and hardware development	AIRBUS	ATA30, ATA32, ATA36, ATA39, ATA27, ATA24, ATA21	Miscellaneous
Architecture, critical software and hardware development	AIRBUS DS	ATA30, ATA32, ATA36, ATA39, ATA27, ATA24, ATA22	Miscellaneous
Architecture, critical software and hardware development	BOMBARDIER	ATA32	Miscellaneous
BOST MACHINE TOOLS			
Machine Tools for aero-components manufacturing	Several	Several	Miscellaneous
CIDETEC			
Non Destructive Inspection	EGILE	Landing gear	Miscellaneous
Surface preparation	EIBAR PRECISION CASTING	Air Control System	Miscellaneous
Non Destructive Inspection	GRUPO TTT	Landing gear	Miscellaneous
CTA			
MLG retraction actuator test	HÉROUX-DEVTEK SPAIN	Landing gear	AIRBUS A350 XWB
Electrovalve	CIRCOR	Electrovalve	AIRBUS A350 XWB
Main and Tail Rotor Endurance Tests	INDRA	Rotor	INDRA PELÍCANO
Manifold	OMA	Manifold	AIRBUS A350 XWB
Flow Servovalve tests	ZODIAC AEROSPACE	Servovalve	BOMBARDIER GLOBAL
Flow Servovalve tests	ZODIAC AEROSPACE	Servovalve	MITSUBISHI MRJ
DANOBAT GROUP			
Grinding Machine-Tools for Landing Gears	SAFRAN LANDING SYSTEMS	Landing gear	Miscellaneous
Machine tools for aerocomponents manufacturing	Several	Several	Miscellaneous

3.3.3 systems & equipment

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
DOILAN			
Component machining	Several	Landing Gear	Miscellaneous
EGAMASTER			
Tool control inventory management system	AIRBUS HELICOPTERS	EGAWARE	Miscellaneous
Tooling traceability system	ACITURRI	Several	Miscellaneous
EGILE			
Gears and shafts	AIRBUS HELICOPTERS	MLG and AGB	H160, H175, ...
Lubricant Pumps	AIRBUS HELICOPTERS	MLG and AGB	H160, H175, ...
Carters and main rotor shaft	HELICOPTERES GUIMBAL	Main rotor	Cabri G2, VSR700
Landing gear components	HÉROUX-DEVTEK SPAIN	Balancier	AIRBUS HELICOPTERS TIGRE
Actuation systems	HÉROUX-DEVTEK SPAIN	Several	AIRBUS CN235/C295
Flight control & actuation systems	HÉROUX-DEVTEK SPAIN	Several	EUROFIGHTER TYPHOON
Actuation systems	HÉROUX-DEVTEK SPAIN	Several	SIKORSKY S92
Shock Absorber	SAFRAN LANDING SYSTEMS	MLG	AIRBUS A330/A340
Shock Absorber	SAFRAN LANDING SYSTEMS	MLG	AIRBUS A350
Shock Absorber	SAFRAN LANDING SYSTEMS	MLG	BOEING 787
Shock Absorber	SAFRAN LANDING SYSTEMS	NLG	BOEING 787
Slider	SAFRAN LANDING SYSTEMS	NLG	AIRBUS A320
Slider	SAFRAN LANDING SYSTEMS	NLG	ATR 42/72
Rack	SAFRAN LANDING SYSTEMS	NLG	AIRBUS A320
Cylinder & Piston	SAFRAN LANDING SYSTEMS	RETRACTION ACTUATOR MLG	AIRBUS A330
Balancier équipé	SAFRAN LANDING SYSTEMS	Landing Gear	AIRBUS HELICOPTERS SUPER PUMA
Gears and shafts	SAFRAN POWER UNITS	APUs	Miscellaneous
Gears and shafts	SAFRAN POWER UNITS	Pump	DASSAULT RAFALE
EIBAR PRECISION CASTING			
Conduits- Air Fittings (Lost wax casting superalloys)	IAI	Air conditioning	GULFSTREAM 280
Radar housings (Lost wax casting aluminium)	INDRA	Radars	Miscellaneous
Conduits- Air Fittings (Lost wax casting superalloys)	LIEBHERR AEROSPACE	Air conditioning	AIRBUS A320neo/ceo /BOEING 787 / CSERIES / COMAC / KC395 / E2 / G7000...
Optronic equipment housings (Lost wax casting aluminium)	SAFRAN AEROSYSTEMS	Engines-Actuators- Electronical equipments	AIRBUS A320/330/380
Optronic equipment housings (Lost wax casting aluminium)	SAFRAN ELECTRONICS & DEFENCE	Optronic systems TV- Thermography	Miscellaneous
Optronic equipment housings (Lost wax casting aluminium)	SAFRAN ELECTRONICS & DEFENCE	Optronic systems TV- Thermography	Miscellaneous
Optronic equipment housings (Lost wax casting aluminium)	THALES GROUP	Engines-Actuators- Electronical equipments	AIRBUS A320/330/380

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
GRUPO TTT			
Heat and surface treatments	BHR Helicopter	Miscellaneous	F360, F290
Heat and surface treatments	GOODRICH	Miscellaneous	Miscellaneous
Heat and surface treatments	IAI	Miscellaneous	Miscellaneous
Heat and surface treatments	SAFRAN LANDING SYSTEMS	Landing Gear	AIRBUS families
Heat and surface treatments	SAFRAN LANDING SYSTEMS	Brakes	AIRBUS families
Heat and surface treatments	SAFRAN TRANSMISSION SYSTEMS	Several	Miscellaneous
Heat and surface treatments	Several	Landing Gear	SIKORSKY
HAUCK HEAT TREATMENT			
Heat treatments	AIRBUS DS	Several	Miscellaneous
Heat treatments	EGILE	Several	Miscellaneous
Heat treatments	HÉROUX-DEVTEK SPAIN	Several	Miscellaneous
Heat treatments	INDRA	Several	Miscellaneous
Heat treatments	SAFRAN LANDING SYSTEMS	Landing Gears	Miscellaneous
Heat treatments	SENER	Several	Miscellaneous
IMEDUSA			
External housings	INDRA	Several	Miscellaneous
INDUSTRIAS METALÚRGICAS GALINDO			
Tooling manufacturing	WEC	Several	Miscellaneous
KHEGAL AERONÁUTICA			
Oil tanks Elementary components Machining	AD Group	Lubrication systems	AIRBUS A350XWB
KORTA			
Ball Screws	HÉROUX-DEVTEK SPAIN	Actuators	Miscellaneous
Ball/Trapezoidal Screws	SENER	Actuators	Miscellaneous
Ball Screws	SAFRAN AEROSYSTEMS	Actuators	Miscellaneous
MET-MEKA			
Machined components	Several	Interiors	Miscellaneous
METRALTEC			
Manufacture of elementary parts and assemblies (sheet metal, machining, heat treatments and surface treatments, painting)	SENER	Several	Miscellaneous
MICROLAN			
Precision Machining of components, Turning and Milling	Several	Several	Miscellaneous

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
MIZAR ADDITIVE			
3D Pouring moulds	AIRBUS DS	Several	Miscellaneous
Screw-housing	CARBURES	Several	Miscellaneous
Components of the Futuralve project	ITP AERO	Several	Miscellaneous
NUTER			
Components	HÉROUX-DEVTEK SPAIN	AIRBUS	AIRBUS A330/A350XWB
Components	HÉROUX-DEVTEK SPAIN	AIRBUS DS	AIRBUS A400M
Components	HÉROUX-DEVTEK SPAIN	EUROFIGHTER	EUROFIGHTER
ORBITAL CRITICAL SYSTEMS			
MTF, Model and Test System Support	AIRBUS DS	Military Test Facilities	AIRBUS A400M
M-MMS DASS Display Capabilities V&V	AIRBUS DS	Mission Management System (M-MMS)	AIRBUS A400M
M-MMS Tactical Situation System. Design, Development and V&V	AIRBUS DS	Tactical Situation Management (M-MMS)	AIRBUS A400M
Tactical Situation Management System (TSMS), Test System Development	AIRBUS DS	Test System for TSMS	HELIBRAS EC725
Maintenance Simulator Training (MST)	AIRBUS DS	MST	EUROFIGHTER TYPHOON
Flight Control System (FCS), SW, SW/HW Integration and V&V	AIRBUS DS	FCS	EUROFIGHTER TYPHOON
Smart Nozzle. Sensor in Boom for Automatic Air to Air Refuelling.	AIRBUS DS	Boom System	AIRBUS A330-MRTT
System integration test bench and supportability for Ground and Flight test	E2S AIRBUS DS	Air to Air Refuelling System	AIRBUS A330-MRTT
SW Multifunction Control Display (MFCD) and BOOM Control and Computing System (BCU)	E2S AIRBUS DS	MFCD and BCU	AIRBUS A330-MRTT
M-MMS Communication Management System. Design, Development and V&V	E2S AIRBUS DS	Mission Management System (M-MMS)	AIRBUS A400M
M-MMS Cargo and Aerial Delivery System. Design, Development and V&V	E2S AIRBUS DS	Mission Management System (M-MMS)	AIRBUS A400M
AMU. SW and Firmware design and testing	E2S AIRBUS DS	Audio Management System (AMS)	AIRBUS A400M
Flight Test and Analysis Defence Aided System	E2S AIRBUS DS	DASS	AIRBUS A400M
M-MMS Low Level testing for DO178B certification.	E2S AIRBUS DS	Mission Management System (M-MMS)	AIRBUS A400M
M-MMS, MIDS Display Capabilities. Design, Development and V&V	E2S AIRBUS DS	Mission Management System	AIRBUS A400M
Avionics Flight Test Telemetry	E2S AIRBUS DS	Flight Tests Telemetry	Miscellaneous
Fly-by-Wire FT4B actuators control system	E2S AIRBUS DS	FT4B	AIRBUS DS C295
Automatic Air to Air Refuelling A3R. Platform Software	E2S AIRBUS DS	A3R	AIRBUS A330-MRTT
FITS. Radar System.	E2S AIRBUS DS	FITS	AIRBUS DS C295
MIDS System Integration and V&V	E2S AIRBUS DS	MIDS	AIRBUS A330-MRTT
Tactical Situation Management System (TSMS), Test System Production	EMBRAER	Test System for TSMS	HELIBRAS EC725
STTE MIMETS Bench	INDRA	DASS Test System	AIRBUS DS C295

3.3.3 systems & equipment

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
RENISHAW			
Raman spectroscopy technology for the material make-up of specialist components and the quality of component surface coatings	Several	Several	Miscellaneous
SENER			
Production of the Control Section of aerodynamic fins and fixed wings (Air - Air version)	DBD	Control Systems	Defence Systems
Development and qualification of the Control Section of aerodynamic fins (Surface Launch version)	DBD	Control Systems	Ground equipment
Technological teammate of GA-ASI for the integration of the Remotely Piloted Aircraft (RPA) system Predator® B in the Spanish Armed Forces	GENERAL ATOMICS	Predator® B	GENERAL ATOMICS RQ-1
Program to extend the life of the Spanish Navy's AB212 helicopters	Head of Logistics Support (JAL) - Spanish Navy	Several	AGUSTA-BELL AB 212
Development, qualification, industrialisation and production of the Control Section of aerodynamic fins	MBDA-UK	Control Systems	Defence Systems
Image management unit for two Tactical Recognition systems (Reccelite or Litening Pods)	RAFAEL	IPU 2 / IPU 3	Defence Systems
Stabilized Mirror Unit (SMU) of the sight	SAAB Dynamics	RBS 70 NG	Ground equipment
FASS subsystem of drive and control of aerodynamic fins	TAURUS Systems	Control Systems	Defence Systems
SISTEPLANT			
Manufacturing Execution System implementation	HÉROUX-DEVTEK SPAIN	AIRBUS	Miscellaneous
Manufacturing Execution System implementation - New features	EGILE	Several	Miscellaneous
TAES			
Components Deep precision Drilling	HÉROUX-DEVTEK SPAIN	Several	Miscellaneous
Components Deep precision Drilling	METALMEC	Several	Miscellaneous
TECNASA			
Firing Handles	MARTIN-BAKER	Ejection Seats	Defence aircrafts
O-RINGS	MARTIN-BAKER	Ejection Seats	Defence aircrafts
JIGS	MARTIN-BAKER	Ejection Seats	Defence aircrafts
WEC			
Air Bleed equipment parts	HONEYWELL	Air Treatment Management	AIRBUS A320/330, DASSAULT F7X
Air Bleed equipment parts	LIEBHERR	Air Treatment Management	AIRBUS A320/A330/A400M, CSeries
Air Bleed equipment parts	LIEBHERR	Air Treatment Management	AIRBUS A320neo

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
Air Bleed equipment parts	LIEBHERR	Air Treatment Management	AIRBUS A330neo
Air Bleed equipment parts	LIEBHERR	Air Treatment Management	AIRBUS A400M
Air Bleed equipment parts	LIEBHERR	Air Treatment Management	BOEING 747-8
Air Bleed equipment parts	LIEBHERR	Air Treatment Management	DASSAULT F7X
XUBI			
Rotating transmission	GENERAL DYNAMICS	Azimut	Miscellaneous
Actuation systems/linear actuator	IAI	Control systems	Miscellaneous
Gear transmission	IAI	Control systems	Miscellaneous
Rotating transmission	IAI	Radar	Miscellaneous
Rotating transmission	SAFRAN AEROSYSTEMS	Radar	Miscellaneous

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
AIBE			
Precision machining of components	SATLANTIS	Several	Miscellaneous
Precision machining of components	SENER	Several	Miscellaneous
ALTRAN			
Structure development/system development/integration/industrial operations	AIRBUS DS	Several	Miscellaneous
Structure development/system development/integration/industrial operations	LEONARDO	Several	Miscellaneous
Structure development/system development/integration/industrial operations	OHL	Several	Miscellaneous
Structure development/system development/integration/industrial operations	RUAG	Several	Miscellaneous
Structure development/system development/integration/industrial operations	THALES	Several	Miscellaneous
ARATZ			
Machined Components	Several	Satellite	Miscellaneous
Components for satellite antennas	Several	Satellite Antennas	Miscellaneous
AYESA AIR CONTROL			
Implementation of process optimization techniques, Industry 4.0 solutions and Digital Factory technologies	AIRBUS DS	Satellite solar panel arrays	SKYNET 5
BOST			
Machine Tools for Space-components manufacturing	Several	Several	Miscellaneous
BURDINBERRI			
IFS section assembly jig	REDUCTIA AEROSPACE	Launcher	ARIANE 6
IFS section headstock and tailstock turning supports	REDUCTIA AEROSPACE	Launcher	ARIANE 6
CIDETEC			
Surface treatments	FINITEC ELECTROLISIS	Satellite	Miscellaneous
Surface preparation	SENER	Satellite	Miscellaneous
CTA			
Multi-Payload Component Static Tests	AIRBUS DS	Structure	FALCON 9
Antenna	AIRBUS DS	Telecom	Miscellaneous
Lander impact tests	CRISA	Flight Control	Miscellaneous
Heat pipes system	IBERESPACIO	Thermal Protection System	Miscellaneous
Optical components	LIDAX	Mission	MTO
Mechanisms	SENER	Telecom	Miscellaneous

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
DYFA			
CAD, CAM, Machining and dimensional control panels satellite	Several	Satellites	Miscellaneous
EGILE			
Various dynamic systems	SENER	Actuation	SENTINEL, EXOMARS, ...
Reflectors	AIRBUS DS	Optics	METOP
Cryomechanisms	CEA	Optics positioning	EUCLID
GRUPO TTT			
Heat and surface treatments	AIRBUS DS	Propulsion systems	ARIANE
Heat and surface treatments	SENER	Systems	Miscellaneous
HAUCK HEAT TREATMENT			
Heat treatments	AIRBUS DS	Several	Miscellaneous
Heat treatments	INDRA	Several	Miscellaneous
Heat treatments	SENER	Several	Miscellaneous
IMEDUSA			
External housings	INDRA	Several	Miscellaneous
INDUSTRIAS METALÚRGICAS GALINDO			
Tooling manufacturing	THALES ALENIA SPACE	Collars	CSO SATELLITE
ITP AERO			
Super alloy components for space shuttle engine	SAFRAN AIRCRAFT ENGINES	Launcher	ARIANE 5
METALÚRGICA MARINA			
Precision machining of laboratory components	SENER	Several	Miscellaneous
Precision machining of dummies	SENER	Several	Miscellaneous
METRALTEC			
Manufacture of elementary parts and assemblies (sheet metal, machining, heat treatments and surface treatments, painting)	SENER	Several	Miscellaneous
MICROLAN			
Precision Machining of components, Turning and Milling	Several	Satellites	Miscellaneous
NUTER			
Components	SENER	Several	GAIA
Components	SENER	Several	METEOSAT THIRD GENERATION
Components	SENER	Several	MTG

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
ORBITAL CRITICAL SYSTEMS			
EXOMARS 2018 DM OBC UT	CRISA	EGSE	EXOMARS 2018 DM
VEGA MFU UT	CRISA	EGSE	VEGA Launcher
UVAS FEE	CSIC	UV/UVN FEE System	UVAS CSP SEOSAT
Avionics System SW Demonstrator based on RTEMS	ESA	Avionics System	RTEMS
Requirement Data Base Maintenance	EUMETSAT	Meteorological satellite	METEOSAT THIRD GENERATION
IRCAM System Definition and proto development.	UAH	IR Camera System	JEM-EUSO
Full design and development of Scientific Instrument and launch to Space	UAM	IR Camera System	EUSO-Balloon
RENISHAW			
Metal 3D printing systems	Several	Several	Miscellaneous
SATLANTIS			
High resolution multispectral Cameras for Earth observation microsattelites	Several	Space Imagers	Miscellaneous
SENER			
For the lunar landing vehicle that will later be coupled to the station in order to collect lunar soil samples, SENER will undertake the structural design, mechanisms and thermal control	AIRBUS	Future space station in lunar orbit	LOP-Gateway lunar mission
Design of the four Hatches and the internal secondary structure	AIRBUS	Future space station in lunar orbit	LOP-Gateway lunar mission
Design of the docking and berthing mechanisms between the I-HAB and the various modules, which will be assembled in orbit	AIRBUS + THALES ALENIA SPACE	Future space station in lunar orbit	LOP-Gateway lunar mission
S-band deployable antenna integrated into the lunar ascent module	ESA	Future space station in lunar orbit	LOP-Gateway lunar mission
Design, manufacture and test devices for assembly of the Biomass satellite	ESA	Scientific Mission	JPL mission
Design, manufacture and test devices for assembly of the Biomass satellite	ESA	Scientific Mission	BIOMASS
Clamping mechanism for the B1 phase	ESA	Mission to combat the space debris problem	E-Deorbit
Design, manufacture and test a prototype of the HDRA (Hold Down and Release Actuator) mechanism	ESA	Scientific Mission	ATHENA
Design, manufacture and test the Instrument Selection Mechanism (ISM)	ESA	Scientific Mission	ATHENA
Analysis of different alternatives for planetary vehicle landing gear	ESA	Planetary exploration ship -Scientific Mission	AURORA - Mars Sample Return Mission

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
FixBox for the ISS	ESA	Fixation Box for a vegetal biology experiment to be performed at the ISS	ISS - International Space Station
Complete Guidance, Navigation and Flight control subsystem (GNC)	ESA	Intermediate experimental vehicle for re-entry into atmosphere	IXV
Technical and engineering assistance in the project	ESA	MELISSA project for developing a life-support system for long duration space travel and planetary bases.	MELISSA
Main contractor of the entire program	ESA	Phases C/D and E1	PROBA 3
Radar deployment system	ESA / AIRBUS DS	Observation satellite - Scientific Mission	SENTINEL 1
Optical instrument: engineering work of systems and optical and thermal-structural design	ESA / AIRBUS DS	Optical instrument - Observation satellite	SEOSAT / INGENIO
Communication antennas sub-system	ESA / AIRBUS DS	Scientific Mission	SOLAR ORBITER
Feedthroughs, doors and mechanism subsystem	ESA / AIRBUS DS	Scientific Mission	SOLAR ORBITER
Instrument Boom	ESA / AIRBUS DS	Scientific Mission	SOLAR ORBITER
In-flight demonstration study of all the functions of the mechanism and Guidance, Navigation and Control system (GNC)	ESA / ESTEC	Docking and joining mechanism -Navigation	IBDM (International Berthing and Docking Mechanism)
Main contractor of the formation flying system	ESA / GMV	Formation flying system	PROBA 3
So-Phi Instrument	ESA / IAA	Scientific Mission	SOLAR ORBITER
Design and verification of a swinging mechanism or FMD (Flip Mirror Device)	ESA / JENA OPTRONIK	Observation satellite -Sentinel 3-	SENTINEL 3
Scan assembly (FCI and IRS SCA) and the Calibration and Obturation Mechanism (FCI and IRS COM)	ESA / Kayser-Threde	Observation satellite	METEOSAT THIRD GENERATION
Optical Bech (OBA)	ESA / LEONARDO	FLORIS Instrument	FLEX
Attitude and orbit control system, Special Check Out Equipment (AOCS SCOE)	ESA / OHB System	Observation satellite	METEOSAT THIRD GENERATION
Prime contractor for Euclid's AOCS/GNC	ESA / THALES ALENIA SPACE	Scientific Mission	EUCLID
High Gain Antenna Gimbal	ESA / THALES ALENIA SPACE	Scientific Mission	EUCLID
EPD (Energetic and Surathermal PArticle Detector Analyzer) instrument	ESA / UNIVERSIDAD DE ALCALÁ DE HENARES	Scientific Mission	SOLAR ORBITER
ALMA Amplitude Calibration Device (ACD)	ESO - European Southern Observatory	Robotic Arm for the ALMA antennas	Atacama Large Millimeter/submillimeter Array (ALMA)
Design and construction of the cells of the secondary (M2) and tertiary (M3) mirrors	ESO - European Southern Observatory	Infrared optical telescope	E-Extreme Large Telescope

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
Actuator system for the JST telescope's panoramic camera	Institute of Astronomy, Geophysics and Atmospheric Science of Sao Paulo University	JPCam camera actuator system	T250 or JST (Javalambre Survey Telescope)
High gain antenna pointing mechanisms (HGAG) of the Rover	NASA / AIRBUS DS	Planetary exploration ship -Scientific Mission	MARS SCIENCE LABORATORY
High gain antenna pointing mechanisms (HGAG) of the Rover	NASA M2020 / AIRBUS España	New rover	JPL mission
Electronich system	ROSCOSMOS	Detector	World Space Observatory
Assessment on the motorised Hatch, the communication antenna pointing mechanism and the robotic arm interfaces	THALES ALENIA SPACE	Future space station in lunar orbit	LOP-Gateway lunar mission
Interfaces for the robotic arms (external and internal)	THALES ALENIA SPACE	Future space station in lunar orbit	LOP-Gateway lunar mission
TECNALIA			
Harmonic drive gears for space applications	ESA	Mechanism	METEOSAT THIRD GENERATION
Citric Acid as a Green Replacement for Steels Passivation	ESA	Spacecraft Structures	REACH
TM TELLERIA			
Tooling for big assemblies	Several	Engine	ARIANE 6
WEC			
Mechanical parts for Vulcain engine	AVIO	Vulcain engine	ARIANE 5

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
AERENNOVA			
Technical assistance & Sales of spares 24H/365d	AIRBUS	MLGD, HTP, Fuselage, etc	AIRBUS families
Composite & metal structure repairs	AIRBUS	MLGD, Elevators	AIRBUS families
Sales of spares 24H/365d	BEECHCRAFT	wings, flaps, ailerons, etc	BEECHCRAFT families
Composite & metal structure repairs	BOMBARDIER	Tips, fairings, panels, etc	BOMBARDIER Families
Technical assistance & Sales of spares 24H/365d	BOMBARDIER	Empenage, fairings, elevators	BOMBARDIER Families
Composite & Metal structure repairs	EMBRAER	Elevators, Rudders	EMBRAER 170/190
Composite & Metal structure repairs	EMBRAER	Flaps, Ailerons, Wing tips, MLGD, etc	EMBRAER ERJ145/135/Legacy
Technical assistance & Sales of spares 24H/365d	EMBRAER	Structures and mobile surfaces	EMBRAER families
Composite & Metal structure repairs	SIKORSKY	Doors, cowlings, stabilisers	SIKORSKY S-92/ H92
Technical assistance & Sales of spares 24H/365d	SIKORSKY	Doors, cowlings, stabilisers	SIKORSKY S-92/ H92
Maintainability, Reliability Analysis	OEMs	Several	Miscellaneous
Technical Publications, SRM, AMM, ITEM, SB, etc	OEMs	Several	Miscellaneous
Modifications at Final Assembly of OEMs	OEMs	Several	Miscellaneous
Design of repairs	OEMs & Operators	Several	Miscellaneous
Design of GSEs	OEMs & Operators	Several	Miscellaneous
sales of GSEs	OEMs & Operators	Several	Miscellaneous
Inspections, special processes and re-qualifications	Operators	Several	Miscellaneous
Technical assistance & Sales of spares 24H/365d	Operators	Several	Miscellaneous
Composite & metal structure repairs and modifications	Operators	Several	Miscellaneous
AEROSPACE ENGINEERING GROUP			
Overhaul and repair of electrical components	MRO, Operators, Air Forces, Trading Companies	Electrical Systems	AIRBUS / ATR / BOEING / BOMBARDIER / EMBRAER / FOKKER...
Overhaul and repair of hydraulic components	MRO, Operators, Air Forces, Trading Companies	Hydraulic Systems	AIRBUS / ATR / BOEING / BOMBARDIER / EMBRAER / FOKKER...
Overhaul and repair of electrical components	MRO, Operators, Air Forces, Trading Companies	Fuel Systems	AIRBUS / ATR / BOEING / BOMBARDIER / EMBRAER / FOKKER...
Overhaul and repair of avionics components	MRO, Operators, Air Forces, Trading Companies	Avionics Systems	Miscellaneous

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
ELECTRONBEAM WELDING	Several	Several	Miscellaneous
SPIN TEST 40.000 RPM	Several	Several	Miscellaneous
NDTs	Several	Several	Miscellaneous
DANOBAT GROUP			
Grinding Machine Retrofitting	MRO Operators	Engines	Miscellaneous
Machine tools for landing gear MRO	Several	Landing gear	Several
EGAMASTER			
Special Hand-Tools for aircraft MRO	TARMAC	Several	Miscellaneous
GRUPO TTT			
Heat and surface treatments	SAFRAN LANDING SYSTEMS	Several	Miscellaneous
I TP AERO			
Resolving incidents	ROLLS-ROYCE	Trent 700	AIRBUS A330
Resolving incidents	ROLLS-ROYCE	Trent 500	AIRBUS A340
Resolving incidents	ROLLS-ROYCE	BR717	BOEING 717
Full Maintenance, Inspection and Repair of the TPE331 -engine, modules and components- & engine and accessories test	ROYAL AIR FORCE	HONEYWELL TPE331	SHORT TUCANO
Full Maintenance, Inspection and Repair of the PW206 -engine, modules and components- & engine and accessories test	Several	P&W PW206	EUROCOPTER EC135
Full Maintenance, Inspection and Repair of the F404 -engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	GE F404	BOEING F/A-18
Full Maintenance, Inspection and Repair of the TFE731 -engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	HONEYWELL TFE731	CASA C101
Full Maintenance, Inspection and Repair of the TPE331 -engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	HONEYWELL TPE331	CASA C212
Full Maintenance, Inspection and Repair of the ATAR -engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	SNECMA ATAR	DASSAULT MIRAGE Families

General Description of the Product/service	DIRECT CLIENT	SYSTEM / EQUIPMENT	PLATFORMS
Full Maintenance, Inspection and Repair of the EJ200 - engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	EUROJET EJ200	EUROFIGHTER TYPHOON
Full Maintenance, Inspection and Repair of the T56 - engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	R-R T56	LOOCKHEED MARTIN C130
Full Maintenance, Inspection and Repair of the T56 - engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	R-R T56	LOOCKHEED MARTIN P-3
Full Maintenance, Inspection and Repair of the J85 - engine, modules and components- & engine and accessories test	Spanish Ministry of Defence	GE J85	NORTHROP F-5
LTK GRUPO			
Special Aerospace Logistics: Transport, Stock, Handling, Quality control...	AIRBUS DS	Several	A400M
ORBITAL CRITICAL SYSTEMS			
Mission Planning and Maintenance Portable platform in Android	E2S AIRBUS DS	Maintenance System	AIRBUS A300/310
Cargo Load DB Manager (Mozart)	E2S AIRBUS DS	Mission Management System	AIRBUS A400M
Fuel Management System platform in Tablets	E2S AIRBUS DS	Maintenance System	AIRBUS A300/310
RENISHAW			
Retrofited CMMs to be used in engines MRO with REVO2 (5 axis measurement)	Several	Several	Miscellaneous

PROJECT	SUMMARY	CALL
ACITURRI		
EWIRA	Manufacturing, assembly and integration of extended wing for a regional aircraft	European - CLEAN SKY 2
SYMBIO-TIC	Symbiotic Human-Robot Collaborative Assembly: Technologies, Innovations and Competitiveness	European - H2020-FoF
COMMUNION	Net-shape joining technology to manufacture 3D multi-materials components based on metal alloys and thermoplastic composites	European - H2020-FoF
COROMA	The main output of COROMA project will be a modular robotic system that will perform multitude of different manufacturing tasks in an autonomous way to adapt to the production requirements. The robot will be capable of performing drilling, trimming, deburring, polishing, sanding, non-destructive inspection and adaptive fixturing operations. Robotized surface finishing.	European - H2020-IND
ESTENEA	Study of low cost and high rates technologies for composite parts	National - CIEN - CDTI
RTM LE	Manufacturing of integrated leading edge in one shot	National - RETOS - MINECO
OPTIFLY 3D	Research on the integration of adaptive design and topological optimization with AM technologies for aeronautical components	Regional - Asturias Call
DECO-MET	Development of more integrated engine components. Advanced machining, integration and joining and surface technologies.	Regional - Castilla y León Calls
DECO-MAC	Composite parts for engines. RTM and complex textiles	Regional - Castilla y León Calls
DECO-FAD	Engine components produced by additive manufacturing. Additive manufacturing technologies for metals	Regional - Castilla y León Calls
ADDITIVE	Development and research of new alloys and industrial components through additive manufacturing for strategic sectors.	Regional - ETORGAI - Basque calls
LIVE-X	Hybrid laminar flow control application in leading edges	Others - AIRBUS
AERNNOVA		
CLEAN SKY 2	Airframe ITD	European - CLEAN SKY 2
CLEANSKY 2	LPA, HLFC HTP and WING	European - CLEAN SKY 2
CLEANSKY 2	LPA, REAREND	European - CLEAN SKY 2
CLEANSKY 2	LPA, THERMOPLASTIC PANELS	European - CLEAN SKY 2
FIBEREUSE	Large scale demonstration of new circular economy value-chains based on the reuse of end-of-life fiber reinforced composites.	European - H2020
SUCOHS	Sustainable & Cost efficient High-performance composite Structures	European - H2020
THOMAS	Collaborative light robotics for assembly operations	European - H2020
S2R PIVOT	Development of new structural components in composite for landing gears	European - H2020
TRANSFON3D	3D printing	European - POCTEFA

PROJECT	SUMMARY	CALL
AFLONEXT	Maturation of an integrated set of active flow, load and noise control technologies for the next generation of active wing	European - FP7
ADDIFLY	Additive Manufacturing Technologies	National - CDTI - PID
IRENE	Development for multi-material Robotic drilling with template	National - CDTI - PID
FILLER	Development of automatic extrusions of the robin of composites	National - CDTI - PID
MATERIA	Development of fittings with thermoplastic material	National - CDTI - PID
TEMPROCEN	Technologies of new automated processes for metallic empennages	National - CDTI - CIEN
MEGAZALAK	Large aerostructures efficient design and manufacturing	Regional - HAZITEK- Basque calls
PAINT-INK	Boric surface treatments for choppers and anti- fire composite coatings	Regional - HAZITEK- Basque calls
HASI	Industry 4.0	Regional - HAZITEK- Basque calls
GRECO	Manufacturing technology and tooling development for continous manufacturing preform cutting and compaction with dry fiber composite material	Regional - Innova - Adelante Castilla La Mancha
Mazizado	New processes for sandwich potting	Regional - Innova- Galicia
DESTACAR	Development of high performance technologies for the manufacture of multimaterial components	Regional - Interconnecta - Galicia
ALESTIS		
INTERNAL DEVELOPMENT	Composites Aerostructures resistant to high temperatures A350XWB	Others
INTERNAL DEVELOPMENT	Integrated fuselage barrel structures	Others
INTERNAL DEVELOPMENT	Optimization of composite beams	Others
INTERNAL DEVELOPMENT	Co-Curing one shot structures	Others
INTERNAL DEVELOPMENT	New Materials & Processes	Others
ALTRAN		
ECOTECH	New development and demonstration of airframe technologies aiming at improving aircraft life cycle environmental footprint.	European - CLEAN SKY 2
GRETEL	New design and manufacturing of a Green Turboprop Experimental Laminar Flow wind tunnel test demonstrator.	European - CLEAN SKY 2
EUROBENCH	EUropean ROBotic framework for bipedal locomotion bENCHmarking	European - H2020-ICT
VIMS	Virtual IoT Maintenance System	European - H2020-FTI
ATENEA	New industrial systems aimed at improving the interoperability of the aeronautical factories	National - Innterconecta - CDTI
MIRFLEX	New systems to support workshop operators, support for manufacturing engineering and training in industrial processes with real-time exploitation of the information of PLM systems	National - Innterconecta - CDTI
SMART ROBOTICS	Low cost heads with monitoring system	National - Innterconecta - CDTI

PROJECT	SUMMARY	CALL
SINGULAR	Intelligent System of Management, Logistics and Verification	National - Innterconecta - CDTI
ESCAPHIB	Tail structures and systems for a hybrid propulsion plane	National - CDTI- CIEN
ALED	Aerodynamic efficiency improvement of regional airliners	National - CDTI
SMART FACTORY	Smart Factory	Regional - UIC - Andalusian Calls
ECOSAT-1	Stratospheric solar airship for communications and terrestrial observation: development of critical systems	Regional - HAZITEK - Basque Calls
AYESA AIR CONTROL		
JIGLESS	Advanced tooling for aerospace assemblies	European - CLEAN SKY 2
NEBULA+	Advanced tooling for aerospace assemblies	National - INNTERCONECTA
DRONECAPTOR	Protection of airspace from malicious drones	National - INNTERCONECTA
SPARTAN	Functional Test digitalization	National - MINETUR
CIDETEC		
SEALANT	Optimization and scale-up of final sealing of Sulfuric Acid Anodizing employing Design of Experiments. Anodized Surface-treatment	European - CLEAN SKY 2
ECOLAND	Development of ECO-friendly protection procedures for LANDING gear aluminium alloys	European - CLEAN SKY 2
CHOPIN	Coatings with Hydrophobic and/or Omniphobic Properties against INsect contamination	European - CLEAN SKY 2
Future Litium-ion Technology	Development of advance materials and electrolytes for advance Li-ion cells.	European - ESA
AIRPOXY	ThermoformAble, repalrable and bondable smaRt ePOXY based composites for aero structures	European-H2020
HARVEST	Hierarchical multifunctional composites with thermoelectrically powered autonomous structural health monitoring for the aviation industry	European-H2020
CTA		
ORBIT	AerOdynamic Rigs for VHBR IP Turbine. Experimental aerodynamics	European - CLEAN SKY 2
OUTCOME	OUT of autoclave COMpositE manufacturing, wing and tail unit components and multifunctional design. Test technologies, STRUCTURAL TEST,	European - CLEAN SKY 2
FLOWCAASH	FLOW Control Actuators at Aircraft scale manufacturing by SLM with high aerodynamic performance for using in Harsh environment	European - CLEAN SKY 2
ENOVAL	Engine Module Validators. Experimental aerodynamics	European - FP7
TEMPROCEN	Automation technologies for metal empennage. IT Technology, NDT Test technologies	National - CIEN
AVANWINGLET	RESEARCH IN TECHNOLOGIES OF ADVANCED MANUFACTURING FOR COMPETITIVE, FLEXIBLE AND EFFICIENT PRODUCTION OF WINGLETS OF COMPOSITE MATERIAL	National - CIEN
DIEMETEN	Empennage metal design with new testing technologies. IT technologies, Estructural test, HALT test, accelerated fatigue technology	National - RETOS
SPACECAP AÑO 2018	Development of the spatial technologies. space test technologies,	Regional - DFA - Basque calls
CONAVALTIN	Development of Advanced Control Technologies for Smart rigs. advanced control development	Regional - DFA - Basque calls

PROJECT	SUMMARY	CALL
INGRAVE	Innovative aerodynamic test configurations for the new generation of high-speed turbines. Experimental aerodynamics	Regional - DFB - Basque calls
GENTALVE	Disruptive Technologies for the New Generation of High Speed Turbines. Experimental aerodynamics	Regional - ELKARTEK- Basque calls
ACTIMAT	Research and Development of new smart materials. Test technologies,	Regional - ELKARTEK- Basque calls
AEROTRESNAK	Smart Rig for for Large Aerostructural Components in Industry 4.0. NEW test technology, developmen of Smart Rigs for	Regional - ELKARTEK- Basque calls
CODISAVA	Advanced distributed control for safety and energy efficiency of air transport	Regional - ELKARTEK- Basque calls
KONMUSAT	New Controlled Switches for Waveguide in Satellites. design of test rig for space component	Regional - HAZITEK - Basque calls
LIT-SENS	Development of smart products using new sensorization and lighting technologies. IT Technology, NDT Test technologies	Regional - HAZITEK - Basque calls
EKIPANEL	Development of a high performance composite panel through advanced manufacturing processes. IT Technology, NDT Test technologies, Structural test, fire test	Regional - HAZITEK - Basque calls
EGILE		
NEWGENPAGB	Development of a power gearbox for a turbopropengine to be installed in future jets	European - CLEAN SKY 2
SELENA	Development of transmission system fort more electrical configuration in aviation	National - CDTI - CIEN
GEAR-UP	Investigation in several treatments for critical components surfaces	Regional - HAZITEK - Basque calls
TALDEA	Development of engine components in additive manufacturing	Regional - HAZITEK - Basque calls
EIBAR PRECISION CASTING		
HIPERTURB	Development of investment casting process of nickel superalloys with enhanced weldability	European - CLEAN SKY 2
CASTWELD	Aeronautical structures based on INCO 718 manufactured by microfusion	Regional - HAZITEK - Basque calls
NANOTRAN	Development of processes and services for the implementation of nano-reinforced materials	Regional - HAZITEK - Basque calls
FAEROMOD	Development of aeronautical models by additive manufacturing	Regional - HAZITEK - Basque calls
SCALITURB	Competitive technologies for aeronautical turbine hot structures.	Regional - HAZITEK - Basque calls
EKIN		
TALDEA	Make the sensorized approach more robust and reliable, lower costs and eliminate sensors with repeatability or sensitivity to coolants Eliminate cables and systems that contradict the need to close production machine. This fact happens to use Wireless, and inductive sensors or cameras. Comprehensive capturing in the field of "fog monitoring and computing". In the machine itself, elements can be integrated to capture and filter higher level information to higher hierarchies. Big data on physical models, that is, that improvements are proposed on process models, providing monitoring and data management, which in the case of discrete event processes, will never be massive.	Regional - HAZITEK - Basque calls
GAIKER		
SPECTRA	Smart PErsonal Co2-free TRAnsport. Development of sandwich-type hybrid structures	National - CIEN

PROJECT	SUMMARY	CALL
RCARB	Industrial valorisation of carbon prepreg from the aeronautical sector to obtain intermediate products with high added value. The integral reuse of carbon fiber prepreg scraps has been studied. This work has been oriented to manufacturing new intermediate prepreg and final parts for automotive and transport sectors. It has started from waste formed by scraps of bidirectional carbon	Regional - HAZITEK - Basque calls
C-RECYCLING II	Development of processes for the industrialization and implementation in the market of new intermediate and final products based on recycled carbon composite, and consequently boosting the industry around recycled carbon fiber in the Basque Count	Regional - IHOBE - Basque calls
RCARBEFIL	Use of carbon fiber waste in the form of powder for the production of conductive monofilament for 3D printing applications. The project proposes the utilization of powder residues obtained in the transformation of CFRC. Thermoplastic matrices will be modified in order to provide electrical conductivity and to improve mechanical performance, obtaining new functional monofilaments for FDM	Regional - IHOBE - Basque calls
Filament winding	Manufacturing of 8 carbon fiber prototype tanks by Filament winding technology	Others
GRUPO TTT		
PRO-SURFACE	Surface Treatments	National-RETOS
HAUCK HEAT TREATMENT		
ITP AERO projects	Heat Treatments	Several
SENER projects	Heat Treatments	Several
IK4		
INDUCTICE	Efficient, Modular and LighWeight Electromagnetic Induction Based Ice Protection System	European - CLEAN SKY 2
I3PS	INTEGRATION OF INNOVATIVE ICE PROTECTION SYSTEMS	European - CLEAN SKY 2
BBT	Herramientas inteligentes de alto rendimiento para el mecanizado de ejes de motor de aviones	European - CLEAN SKY 2
HYPER-DRILL	Desarrollo de un sistema de micro-taladrado láser de paneles de Ti de grandes dimensiones para el sector aeronáutico	European - CLEAN SKY 2
STIMULANT	Integridad superficial en el Mecanizado híbrido de alto rendimiento, para piezas de motores para aeronáutica de aleaciones súper críticas	European - CLEAN SKY 2
ETSIN	Modular, Scalable, multi-functional and high power density power controller for electrical taxi in new aircraft	European - CLEAN SKY 2
TR4EMACS	Flexible Test Rig of Aircraft Control Surfaces powered by EMAs	European - CLEAN SKY 2
SIMFAL	Assembly Planning and SIMulation of an Aircraft Final Assembly Line	European - CLEAN SKY 2
HUC	Development and validation of a powder HIP route for high temperature Astroloy to manufacture Ultrafan® IP Turbine Casings	European - CLEAN SKY 2
IDEN	Innovative Distributed Electrical Network	European - CLEAN SKY 2
ALFORAMA	Innovative Al alloy For aircraft structural parts using Additive MAnufacturing technology	European - CLEAN SKY
CRO-INSPECT	New inspection system based on advance Ultrasonic Test of large aircreaf components	European - CLEAN SKY
DELASTI	Development of advanced Laser based technologies for the manufacturing of Titanium HLFC structures	European - CLEAN SKY

PROJECT	SUMMARY	CALL
DISTRACTION	Design against Distortion of metallic aerospace parts based on combination of numerical modelling activities and topology optimisation	European - CLEAN SKY
ECO-TECH	Development of innovative and ECO-friendly airframe TECHNOLOGIES from desing to manufacturing to improve aircafe life cycle environmental footprint	European - CLEAN SKY
HIPERTURB	Development of investment casting process of nickel superalloys with enhanced weldability.	European - CLEAN SKY
HYPROCELL	Development and validation of integrated multiprocess Hybrid PROduction CELLS for rapid individualized laser-based production	European - CLEAN SKY
Rib-on	Innovative Stamping Die for Aluminium Ribs hot stamping	European - CLEAN SKY
FLOWCAASH	Development of Aero Engine Component Manufacturing using Laser Additive Manufacturing	European - CLEAN SKY
PRODUCTIVE 4.0	Electronics and ICT as enabler for digital industry and optimized supply chain management covering the entire product lifecycle	European - ECSEL
ALISE	Advanced Lithium Sulfur Battery for EV	European - H2020
SusPIRE	Sustainable production of industrial recovered energy using energy dissipative and storage technologies	European - H2020
EUCoM	Development of new standards for the evaluation of the uncertainty of geometric measurements in the industry	European - H2020
LAVA	Metrology for large volume applications	European - H2020
DITAS	Data-intensive applications Improvement by moving daTA and computation in mixed cloud/fog environmentS	European - H2020
MM-TECH	New aerospace advanced cost effective materials and rapid manufacturing technologies	European - H2020
SCORE	Score board of competitiveness of European transport manufacturing industries	European - H2020
AMABLE	Development of Aero Engine Component Manufacturing using Laser Additive Manufacturing	European - H2020-FoF
COROMA	Cognitively enhanced robot for flexible manufacturing of metal and composite parts	European - H2020-FoF
ForZDM	Integrated Zero Defect Manufacturing Solution for High Value Adding Multi-stage. Manufacturing systems	European - H2020-FoF
MC-SUITE	ICT Powered Machining Software Suite	European - H2020-FoF
OPTIMISED	Operational Planning Tool Interfacing Manufacturing Integrated Simulations with Empirical Data	European - H2020-FoF
PRECOM	Predictive Cognitive Maintenance Decision Support System	European - H2020-FoF
PROGRAMS	PROGnostics based Reliability Analysis for Maintenance Scheduling	European - H2020-FoF
SYMBIO-TIC	Symbiotic Human-Robot Collaborative Assembly: Technologies, Innovations and Competitiveness	European - H2020-FoF
ZAERO	Zero-defect manufacturing of composite parts in the aerospace industry	European - H2020-FoF
MOBNET	Mobile network for people's location in natural and man made disasters	European - H2020-Galileo
AIOSAT	Autonomous indoor-outdoor safety tracking	European - H2020-Galileo
PROPART	Precise and robust positioning for automated road transport	European - H2020-Galileo
ADDISPACE	Platform for the dissemination and transfer of Additive Manufacturing Technologies in the Aerospace Sector of SUDOE	European - Interreg SUDOE
ULTRAERO	Ultraprecision machines based on low cost and high impact solutions for the aeronautical sector	National - RETOS

PROJECT	SUMMARY	CALL
EPAMP	EPAMP - Proyecto de Amplificador de Potencia en Banda E (71 – 86GHz)	National - RETOS
MADEIRA	Machine And Deep learning en Entorno Industrial con uso de Realidad Aumentada	National - RETOS
DIMAER	Development of design and manufacturing technologies to produce special DIaMond tool for the AERonautical sector	National-CDTI-CIEN
LasTitan	Additive manufacturing of Ti6Al4V components by Laser Metal Deposition	National-CDTI-CIEN
FACTORIA	Automated assembly processes and advanced manufacturing by deposition for low structures reducing environmental impact	National-CDTI-CIEN
FUSELAGE	Development of automated manufacturing processes and high integration of aeronautical fuselage structures in an Industry 4.0 environment	National-CDTI-CIEN
SELENA	More electrical systems, safe and reconfigurable oriented to a more efficient plane and reducing the workload of the pilot	National-CDTI-CIEN
MOTLIG	Electromagnetic, mechanical and thermal study of light engines	Regional - ELKARTEK - Basque calls
CODISAVA	Advanced distributed control for safety and energy efficiency of air transport	Regional - ELKARTEK - Basque calls
AERHASI	Monitoring for the characterization and analysis of machine tools	Regional - HAZITEK - Basque calls
AEROSILI	New silicone and fluorosilicone technical components with advanced surface properties oriented to the aeronautical sector	Regional - HAZITEK - Basque calls
AEROTOOL	Innovative cutting-tools for latest generation materials machining in the Aeronautics industry	Regional - HAZITEK - Basque calls
CASTWELD	Aeronautical structures manufactured by microfusion based on INCO718 with improved weldability	Regional - HAZITEK - Basque calls
ESCALITURB	Competitive technologies for aeronautical turbine hot structures.	Regional - HAZITEK - Basque calls
FRONTIERS 3	Multifunctional surfaces at the frontier of knowledge III	Regional - HAZITEK - Basque calls
GEAR-UP	Research of the escalability of certain key post-processes to improve the reliability, life and efficiency of the future gears of aeroengines	Regional - HAZITEK - Basque calls
MALGUROB	Development of flexible and collaborative robotics technologies for the automation of manufacturing processes	Regional - HAZITEK - Basque calls
PROMULENS	Structural product lightening by multimaterial approach and assembly hybrid enabling technologies	Regional - HAZITEK - Basque calls
R-COMPOSITES 4.0	R-COMPOSITES 4.0	Regional - HAZITEK - Basque calls
UCURVIC	New grinding machine for the automated manufacture of couplings for the aeronautical sector	Regional - HAZITEK - Basque calls
ADDIECO	Development of a methodology of ecological manufacturing of aerocomponents through additive and subtractive technology	Others
Puerta compuesto	Development of new composite door manufacturing systems	Others
RECOMPFI	Reuse and recycling of prepreg of long fiber structural composite waste for the manufacture of structural parts	Others
SmartlubV4	Robotic lubrication and storage of cutting-tools for milling-grinding machines	Others

PROJECT	SUMMARY	CALL
ITP AERO		
Clean Sky 2	VHBR Engine Intermediate Pressure Turbine Technology	European - CLEAN SKY 2
JTI - Clean Sky	Advanced propulsion plants: Development of new concepts for the future generation of aircraft propulsion plants in accordance with the environmental requirements established by ACARE.	European - CLEAN SKY
LEMCOTEC	Low emissions Core-Engine Technologies. Improvement of core-engine thermal efficiency	European - FP7
E-BREAK	Engine Breakthrough Components and Subsystems. Advanced sealing technologies and oil systems, Engine variability and thermomechanical behaviour, Health monitoring, High temperature materials and abradables, Light weight material	European - FP7
FACTOR	Full Aerothermal Combustor – Turbine Interaction Research. Combustor-turbine interactions design, High-pressure turbine, specific fuel consumption reduction, European test facility, aerodynamic and aerothermal measurement, design simulation	European - FP7
ARIAS	Advanced Research Into Aeromechanical Solutions	European - H2020
TURBONOISE	Validation of improved turbomachinery noise prediction models and development of novel design methods for fan stages with reduced broadband noise	European - H2020
OPENAER	New engine and aircraft configurations for the future air transport system. Aerodynamics, Methods, Materials, Mechanical design, Manufacture and Control.: Development of technologies for the design and manufacture of components in the hot area of an aeronautical gas turbine in "open-rotor" configuration	National - CENIT
PROSAVE	Eco-efficient aircraft	National - CENIT
FUTURALVE	Material and advanced manufacturing technologies for new generation high-speed turbines. Development of advanced materials and manufacturing technologies necessary to design optimized components of high speed turbines and be able to manufacture them with better use of the raw material	National - CIEN
ALEXANDRIA	Development of Damage Inspection Techniques and Methodologies and New Generation Dimensional Metrology for the Aeronautics, Railways, Naval and Wind Power sectors.	National - MICIN
DESAFIO	Development of High Reliability Manufacturing Systems for rotating parts with High Surface Integrity Requirements.	National - MICIN
TAG	Feasibility studies for the development of general aviation turbines. Feasibility studies for the development of low pressure turbines, structures and external components in turbines for general aviation	National - SAE
MASIR	Advanced Noiseless Machining. Noise reduction: Techniques to reduce noise in industrial environments engaged in the precision machining and well-being of parts.	National Calls
ENVIDIA	Virtual Environment of Design and Manufacturing of Aeronautical Turbines	National - MICIN
VANCAST	Next Generation Nozzle Guide Vane Design and Casting Technology. Technologies for the Design and Casting of the New Generation of Low-pressure Turbine Blades.	Regional - Basque Country Calls
SAGER	Large-scale Energy Storage Systems for the Electricity Grid. Development of energy storage technologies.	Regional - Basque Country Calls
EUSKESTUR	Manufacturing technologies: Development of Basque excellence pole for the manufacture of radial structures for aeronautical turbines	Regional - Basque Country Calls
PAINT	Aeronautical pole for the Innovation in Turbines. High Performance Manufacturing	Regional - Basque Country Calls

PROJECT	SUMMARY	CALL
ESCALITURB	Competitive technologies for aeronautical turbine hot structures. Develop the technology to perform 100% reliably and in high production (from 10 to more than 1000 components year) hot structures interturbine of the aeronautical engine of the middle segment	Regional - Basque Country Calls
TALDEA	Development of advanced manufacturing technologies to produce future high-speed turbines of future aeronautical engines in segments of medium and high thrust	Regional - Basque Country Calls
NOISE MEASUREMENT	Optimisation and validation of techniques for the advanced measurement of noise in a jet engine.. Advanced instrumentation: Optimisation and validation of techniques for the advanced measurement of noise in a jet engine.	Regional - Madrid Region calls
SACMI	Advanced Control and Monitoring System of ITP AERO. Control systems: Development of a control system applied to the fuel control unit of an aeronautical engine.	Regional - Madrid Region calls
DIALPE	Fatigue life design and verification of the vibration behaviour of gas turbine monocrystal blades. Mechanical technology: Study of fatigue and service life behaviour of small size monocrystal blades for a gas turbine.	Regional - Madrid Region calls
MESIMA		
TALDEA	Development of advanced manufacturing technologies to produce future high-speed turbines: waterjet cutting and trimming	Regional - HAZITEK - Basque calls
METALÚRGICA MARINA		
FUTURALVE	Material and advanced manufacturing technologies for new generation high speed turbines. Development of advanced materials and manufacturing technologies necessary to design optimized components of high speed turbines and be able to manufacture them with better use of the raw material.	National-CDTI-CIEN
MIZAR ADDITIVE		
TRANSFOR	3D manufacturing across France and Spanish border. Additive manufacturing	European - Interreg SUDOE
FUTURALVE	Advanced manufacturing and materials technologies for the new generation of high-speed turbines. 3D manufacturing	National - CIEN
MONDRAGON UNIBERTSITATEA		
MECAERO	Development of Test-benches of high speed linear machining for the analysis of the condition of surface integrity of aeronautical alloys and validation of predictive cutting processes models	Regional - Basque Calls
GERTURA	Disruptive technologies for the new generation of high-speed turbines	Regional - ELKARTEK - Basque calls
ORBITAL CRITICAL SYSTEMS		
MOBNET	Lead of consortium with development of a system that localize mobiles during emergency situations.	European - H2020
CRYSTAL	CRITICAL SYSTEM engineering AccELeration	European - ARTEMIS
UAV-RTEMS	Design and development of a UAV (Unmanned Air Vehicle) D0-178B certifiable Health Monitoring System based on RTEMS real-time operating system.	European - ESA TTP
SELENA	Forecast system for electromechanical actuators.	National - CDTI

PROJECT	SUMMARY	CALL
ETH-RTOS	Real time operative system wiht DIMA capability	National - AVANZA
PLATHW	Design and development of a D0-254 certifiable, cost-effective and multipurpose Hardware platform for Avionics subsystem applications.	National - AVANZA
OPENSYS	Design and development of an application programming interface for the communication between IMA partitions and Cockpit Display System	National - CDTI
Test benches complete Simulation	Test benches complete Simulation, Acquisition and monitoring SW/HW Environment. System that provides a common environment for running design models, simulations and real equipment to support testing and / or simulation of avionic equipment subsystem or system.	National - CDTI
RENISHAW		
FUTURALVE	Futuralve project is to create advanced material and manufacturing technologies for the new generation of high-speed turbines for the aerospace sector. Throughout the project Renishaw is directly involved with the development of new lightweight additively manufactured materials. Renishaw will also contribute to the metrology and part verification of the aerospace parts throughout the Futuralve project by its award winning 5 axis measurement system REVO® and on-machine contact scanning system SPRINT™.	National - CIEN - CDTI
3D Manufacturing Technologies	CATEC is a technical centre of excellence and aims to become, over the next few years, a national and international R&D centre for developing aerospace technologies. In this Centre Renishaw has installed its Ren AM500M and AM 250 additive manufacturing machines.	Others: CATEC
Advanced Manufacturing Technologies	The objective is to develop advanced manufacturing technologies; these developmental level technologies can be quickly transferred to industry. The centre also acts as an intersection of ideas and advancement for agencies and companies with capabilities, interests, and businesses in the aeronautical engines and structural components sector. The centre has several different manufacturing technologies, including Sprint, REVO and the metal 3D printing machine AM 400.	Others: CFAA
SARIKI METROLOGÍA		
FUTURALVE	Advanced manufacturing and materials technologies for the new generation of high-speed turbines (Futuralve). 3D inline inspection system	National - CIEN - CDTI
ESCALITURB	Advanced forming, welding processes for hot structures on Turbines. 3D inline inspection system	Regional - HAZITEK - Basque calls
SATLANTIS		
ISIM	iSIM integrated Standard Imager for Microsatellites. The objective of this project is to introduce the iSIM payload into the market. It includes both technical and business development activities. In particular, this project covers the design, manufacture, assembly, integration and validation of the technology iSIM, including the optomechanical and electronic systems.	European - SME Instrument
SEER	Sistema Electrónico Estándar para super-Resolución. This programme is destined to support new technological companies. This project focuses on the development of a new electronics and control subsystem for iSIM payloads, including image processing algorithms	National - NEOTEC CDTI
KUBEKAM	Earth observation camera for Cubesat Standards This program focuses on small companies to help them drive innovation and internationalisation of their activities. This project focuses on the development of payloads for CubeSat satellite platforms	Regional - Plan 3i BEAZ

PROJECT	SUMMARY	CALL
SENER		
HELICON PLASMA THRUSTER	Innovative technology for electric in-Space propulsion that could be a competitive alternative to the current thruster technologies and therefore awakes the interest of several companies and institutions, including ESA. Developed by SENER as a joint R&D project with the Universidad Carlos III de Madrid (UC3M). To date, SENER and the UC3M have manufactured and start up a prototype of the helicon plasma thruster, now being evolved to a new engineering model to certify the system prior to its in-flight demonstration, which could take place in 2022.	European - ESA - GSTP
PEGASUS	Flight Qualification of Deployable Radiator using Two Phase Technology. The main objective of this project is to develop a Deployable Thermal Radiator (DPR) based on Loop Heat Pipes Qualification Model. This includes the design, manufacturing and flight qualification testing to achieve a Technological Readiness Level (TRL) 8. Development of the Deployment Mechanism of the DPR.	European - H2020
SIROM	Standard Interface for Robotic Manipulation of Payloads in Future Space Missions. The main objective is to develop a standard interface that considers a set of connections that allow coupling of payload to manipulators and payload to other payload. The realization of a modular reconfigurable system depends, among other things, on interfaces, that includes mechanical interfaces connecting the blocks to one other, electrical interface for power transmission, thermal interfaces for heat regulation and interfaces to transmit data throughout the satellite. Design and develop the standard and modular IF that groups the mechanical, electrical, data and power interface as a building block for future robotic applications in Space.	European - H2020
CG-SPACE	Compact systems for space antenna pointing mechanisms. Design and develop space antenna pointing mechanisms optimizing the electrical motors, sensors and gear systems in order to produce a compact and robust design.	Regional - HAZITEK
SISTEPLANT		
PLATFORM	Open access pilot plants for sustainable industrial scale nanocomposites manufacturing based on buckypapers, doped veils and prepregs. Industrialisation in nanocomposites - Led by TECNALIA and research in relation to aerostructures with FIDAMC (AIRBUS). Scaling up of a pilot plan of buckypapers and prepregs (nano-enabled products). Set up and optimization of large scale buckypapers manufacturing	European-H2020
OASIS	Open Access Single entry point for scale-up of Innovative Smart lightweight composite materials and components. Scaling up of 4 pilot plans (2 in the Basque Country, 1 in Patras - Greece and another in Warsaw - Poland)	European-H2020
TQMNANO	Traceability, quality, processes control and production follow-up in pilot plants for nanocomposites manufacturing based on buckypapers and prepregs. Knowledge-based engineering, information and communication technologies for manufacturing (industrial robotics, computer-aided engineering and design, automated manufacturing, product lifetime management, etc.)	Regional - HAZITEK - Basque Calls
TECNALIA		
OUTCOME PROJECT/CONSORTIUM	Out of autoclave composite manufacturing, wing and tail unit components and multifunctional design. CORE PARTNER OF ITD AIRFRAME - Out of autoclave composite manufacturing, wing and tail unit components: Advanced preforming and RTM - Hot stamping of innovative aluminium alloys	European - CLEAN SKY 2

PROJECT	SUMMARY	CALL
FASELAG	FAil-Safe Electro-mechanical actuation for LAnding Gear: development of an electromechanical actuation system (EMAS) for extension-retraction of main and nose landing gears for future SMALL A/C. Development of ECU HW&SW	European - CLEAN SKY 2 - SYS
VALEMA	Validation tests of electromechanical actuators and its dedicated control units at TRL 6 level. Development of ECU HW&SW	European - CLEAN SKY 2 - SYS
EMA4FLIGHT	Development of Electromechanical Actuators and Electronic control Units for Flight Control Systems. Development of ECU HW&SW	European - CLEAN SKY 2 - SYS
BLINDFAST	Innovative Blind Fastener Monitoring Technology for Quality Control: Definition, development and prototype realization of a real-time inspection monitoring process for blind rivets installation. Evaluation of relevant signals and data acquired during fastening process. The monitoring technique allows classifying blind fasteners and detect the imperfect installed ones.	European - CLEAN SKY 2 - LPA
HFLE	Hybrid Fixed Leading Edge. - Development of RTM tool for leading edge with HLFC system - RTM process automation	European - CLEAN SKY 2 - LPA
BIONIC AIRCRAFT	Increasing resource efficiency of aviation through implementation of ALM technology and bionic design in all stages of an aircraft life cycle. - Development of heat treatment for aluminium-lithium AM parts- Development of NDT methods and life time prediction - Development of repair methods - Mechanical / microstructural characterization	European - H2020 - MG
C3HARME	Next generation Ceramic Composites for Combustion HARsh environMEnts and space. Development of UIHT ceramic matrix composites by SPS technology for aerospace applications	European - H2020 - NMP
PEGASUS	Flight Qualification of Deployable Radiator using Two Phase Technology. New materials development, in particular the replacement of the chromium-based coatings currently used in the DPR by alternative chromium-free surface treatments and coatings	European - H2020 - SPACE
SMILE	SMall Innovative Launcher for Europe. Materials for fairing and thermal protection systems	European - H2020 - SPACE
TRANSFRON 3D	3D manufacturing across France and Spanish border. Development of high-value added parts by additive manufacturing. LMD and WAAM process parameters and limits, equipment development, components development and posttreatment and characterization of materials.	European - INTERREG - POCTEFA
SELENA	Safer, more electrical and more reconfigurable systems oriented towards a more efficient aircraft by reducing the pilot's workload. Development of ECU SW & HW	National - CIEN
TEMPROCEN	New generation of materials and 3D printer for advanced manufacturing. Sealant application automation, Artificial vision for assembly operations, one-shot drilling, flexible tooling for machining, mechanical milling, flexible robotics, etc	National - CIEN
AEROEMA	Electromechanical Actuation for Flight Controls. Development of ECU SW & HW, Model Based Design, Integration , tuning and validation of complete EMA	National - CIEN
SENSOR-GRAPH	Multifunctional materials reinforced with carbon nanostructures (grafene and nanotubes): application as composite materials, adhesives and structural sensors. CNT buckypapers and graphene reinforced multifunctional materials	National - MINECO- RETOS

PROJECT	SUMMARY	CALL
PROSURFACE	Development of a new generation of environmentally friendly surface treatments & coatings for aeronautical components. Plasma nitriding, Zinc Nickel coating, Thermal Spray technologies-HVOF, evaluation and testing	National - MINECO- RETOS
AVANWINGLET	Advanced manufacturing technologies and the optimization of media and processes to produce configurations of composite material winglets.	National- CIEN
HASI4.0	Flexible, digital, connected and sustainable aeronautical manufacturing factory	Regional- Hazitek
BEGIA 4.0	4.0 technologies in machining of aeronautic components	Regional- BI4.0
UPV/EHU		
HUC	Development and validation of a powder HIP route for high temperature Astroloy to manufacture Ultrafan® IP Turbine Casings. Un nuevo proceso de sinterizado para fabricar carcasas de turbinas	European - CLEAN SKY 2
PARADISSE	A Productive, Affordable and Reliable solution for large scale manufacturing of metallic components by combining laser-based ADDitive and Subtractive processes with high Efficiency . The overall objective of PARADDISE project is to rationalize, to structure and to make available to the stakeholders of manufacturing value chain t he knowledge and the tools for combining two antithetical processes: Laser Metal Deposition (LMD) and Machining (milling and turning). Additive and subtractive manufacturing processes	European - H2020 - FoF
FUTURALVE	Material technologies and advanced manufacturing for the new generation of high-speed turbines. Development of the advanced materials and manufacturing technologies needed to design optimized components of high speed turbines and to be able to manufacture them with better use of the raw material. Difficult-to-cut materials machining, fixture configurations and optimization, canning development for HIP process, EDM and meassuring technologies.	National - CENIT
ENVIDIA	Virtual Environment of Design and Manufacturing of Aeronautical Turbines. Modeling and simulation of key processes for high speed turbines. Leading to the concept of Virtual Engine, and allowing to migrate to a completely new engine configuration in a safe, robust, efficient and economically viable way.	National- Retos Colaboración
IBR-eliable	Advanced strategies for the definition of integral rotary parts milling, ensuring reliability and productivity requirements	National- Retos excelencia
ESCALITURB	Competitive technologies for inter turbine hot structures. At ESCALITURB the consortium will develop the technology to perform reliably 100% and in high production (going from 10 to 1000 components per year) hot turbine structures of the aeronautical engine of the middle segment. Advanced machining, lubricoolant techniques, monitoring and control, finishing processes, EDM, metrology and inspection.	Regional - HAZITEK - Basque calls
TALDEA	High-speed turbines: development of advanced manufacturing technologies. In TALDEA, the consortium will develop the advanced manufacturing technologies that allow the production of high-speed turbins of the future aeronautical engines of the medium and high-thrust segments, and always ensuring the integrity of the product and the efficiency in the process. Welding, superfinishing processes, edge control, tool design and testing, fixture optimization, measurement.	Regional - HAZITEK - Basque calls

CURRENT AND FORMER PROGRAMMES & CLIENTS

AEROSTRUCTURES

AIRBUS A300/310/318/319/320/320neo, ceo/321/330/330neo/
350XWB/380, BELUGA XL. **AIRBUS DS** A330MRTT/400M, CN235, C295. **AIRBUS HELICOPTERS** AS332/350, EC135,
NH90, TIGRE. **ATR** 42,72. **BELL** 505 JRX. **BEECHCRAFT** BARON/ BONANZA/ KING AIR. **BOEING** 737, 747-LCF, 747-
81/F, 777, 787, E-3 AWACS. **BOMBARDIER** Q-Series, CRJ Family, CSeries. **CASA** C101/212. **DAHER-SOCATA** TBM700.
DASSAULT FALCON 5/7X. **DORNIER** DO728. **EMBRAER** ERJ135/ 140/ 145/ 145LR/ 145XR, LEGACY, 170/ 175/
190/ 195, E175/190/195-E2, LINEAGE, KC-390, PHENOM. **EUROFIGHTER** TYPHOON. **SIKORSKY** H-92, S-92. **SINO**
SWERINGEN SJ30.

ENGINES

CFM INTERNACIONAL CFM56, LEAP. **EPI** TP400. **EUROJET** EJ200. **GENERAL ELECTRIC** CF700, CT7, F404/ 414,
GE90-14/ 115, J79, LM2500, T700. **HONEYWELL** AS907, HTF7000, Lycoming T53/55, Garret TPE331/TFE731, TF50.
MTRI MTR390E. **PRATT & WHITNEY** F135, JT8-STD/ 200, PT6/ T3, PW535/ 150/ 810/ 1000G. **POWERJET** SaM146.
ROLLS-ROYCE BR710/ 715, RB211, TRENT MT30/ 50, TRENT 500/ 700/ 7000/ 800/ 900/ 1000/ XWB. **ROLLS-ROYCE**
NORTH AMERICA A250, A601K, M250, T63. **SAFRAN AIRCRAFT ENGINES** ATAR, 9KPLUS/ 09C/ 09K50, CFM 56,
SaM146, Silvercrest.
SAFRAN HELICOPTER ENGINES ARRIEL, MAKILA, ARRIUS.

SYSTEMS & EQUIPMENT

AIRBUS, **AIRBUS DS**, **ALENIA**, **BAE Systems**, **BOMBARDIER**, **CESA**, **DIEHL-BGT**, **EUROFIGHTER**, **GOODRICH**,
HONEYWELL, **IAI**, **INDRA**, **LATECOERE**, **LIEBHERR**, **MARTIN-BAKER**, **MBDA**, **RATIER FIGEAC**, **ROLLS-ROYCE**, **SAFRAN**
AEROSYSTEMS, **SAFRAN LANDING SYSTEMS**, **SAFRAN NACELLES**, **SAFRAN TRANSMISSION SYSTEMS**, **SAGEM**,
SIKORSKY, **THALES**.

SPACE

ESA/ NASA ARTEMIS, ATHENA, AURORA, CLUSTER, CX-OLEV, EGNOS, ENVISAT, EUCLID, EUREKA, EXOMARS,
GAIA, GTAB, HERMES, HERCHEL-PLANCK, HUBBLE SPACE TELESCOPE, HIPPARCOS, INTEGRAL, ISEE-B/aurori/CRV,
MELISSA, METEOSAT, METOP, MSG, MTG, NSL, PROBA-3, ROSETTA, SENTINEL, SOHO, SOLAR ORBITER, SPACELAB,
ULISSES, XMM-NEWTON.

OTHERS

AMC21, AMOS3, ARABSAT 4A/B, ARIANESPACE, ASTRAM, ASTRIUM, CIEL-2, CHINASAT9, EXPRESS AM33/44, GE
1i/2i, GALAXY 17, GALILEO, HELIOS I/II, HISPASAT 1C/ D, KOREASAT5, MINISAT, NETLAndER, OLYMPUS, PLEIADES,
SPOT-4, SYRACUSE 3B, SUPERBIRD7, SPAINSAT, TURKSAT 3A, WSL, YAMAL 200.



A330neo



Trent XWB



SENTINEL 3

65 AEROSPACE MEMBERS

5 TIER 1:
Aerostructures - Engines - Space - Systems

12 GLOBAL COMPANIES
Advanced Services - Engineering - Processes
Solutions - Treatments - Equipment

42 SMES
Products, Components, Processes and
Advanced Services for Aerostructures,
Engines, Systems, Space and Equipment

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

4 RTD ENTITIES
with 12 RTD LABS with aerospace activities

4 UNIVERSITIES
ETSIB: Master in Aeronautics, Master in Space

176 FACILITIES AROUND THE WORLD
88 in the Basque Country
57 in the rest of Spain
31 abroad (Brazil, China, Germany, India,
Malta, Mexico, Poland, Romania, Turkey,
UK, USA)

HEGAN MEMBERS' 2018 FIGURES

Members aggregate TURNOVER and EMPLOYMENT:
2,457 million € and 14,856 people

2018 Geographical breakdown	Turnover (M€)	Δ 2017	Employment	Δ 2017
Basque Country	990	3.8%	4,985	3.4%
Rest of Spain	1,198	-0.2%	7,677	0.8%
Rest of the World	269	-0.8%	2,194	8.6%
TOTAL	2,457	1.3%	14,856	2.8%

2018	M€	% over Sales	Average % over Sales since 1993
MEMBERS R&D INVESTMENT	143	5.8%	14.5%
MEMBERS EXPORTS	1,630	66.3%	69.1%

CLUSTER DIMENSION (Facilities in Basque Country)

1.3%	of the Basque GDP (*)	5.9%	of the Basque Industrial GDP (*)	2.3%	of the Basque Industrial EMPLOYMENT (*)
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HEGAN MEMBERS DIMENSION (Facilities in Spain)

16.8%	of the SPANISH (**)	1.3%	of the EUROPEAN (***)	26.7%	of the SPANISH (**)	2.1%	of the EUROPEAN (***)	16.4%	of the SPANISH (**)	1.0%	of the EUROPEAN (***)
aerospace TURNOVER		aerospace EMPLOYMENT		aerospace R&D INVESTMENT							

(*) EUSTAT 2017 (est.), (**) TEDAE 2017, (***) ASD 2017



PW1006



H135



787

TURNOVER ACCORDING TO SUBSECTORS

AEROSTRUCTURES	54%
ENGINES	39%
SYSTEMS & EQUIPMENTS	4%
SPACE	2,5%

EXPORTS ACCORDING TO COUNTRIES

UK	25%
GERMANY	18%
FRANCE	17%
USA	15%
BRAZIL	5%
OTHERS COUNTRIES	20%

RTD EFFORT

Auto-Financing	75,6%
Public Support	24,4%

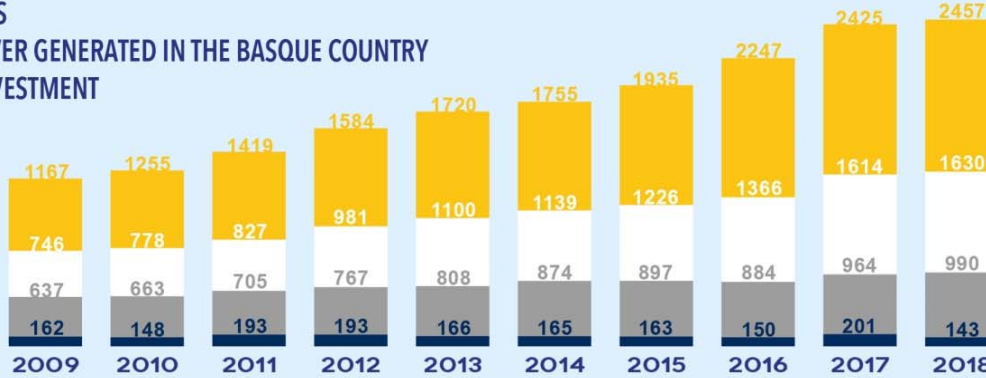
207 RTD Projects active in 2018
14 Members participating in Clean Sky 2

PEOPLE

Employment According To Qualification	TOTAL	FEMALE
Managers Engineers & Graduates	37%	49% (1,597)
Technicians, Administration and Others	23%	41% (1,328)
Manual Workers	40%	10% (325)
Total FEMALE Employment		21,9% (3,250)

EVOLUTION IN M€

- TOTAL AGGREGATE TURNOVER
- EXPORTS
- TURNOVER GENERATED IN THE BASQUE COUNTRY
- R&D INVESTMENT



EVOLUTION: PEOPLE

- TOTAL EMPLOYMENT
- EMPLOYMENT in the BASQUE COUNTRY
- PERSONNEL WITH R&D ACTIVITIES



.4 acknowledgements

Once again, I am proud to conclude this 2018 Annual Report, which reflects excellent results, showing year after year that Basque companies in the aeronautics and space sector continue to generate development, growth, and, above all, quality employment.

As always, all this is thanks to the commitment, involvement, and hard work of all our Members and, naturally, to the support and collaboration of the rest of all the participants in this Cluster.

Therefore, I must take the opportunity to extend my thanks, on behalf of the entire team, for the commitment that the Associates put into all the actions we try to deploy for the progress of the cluster... and also the criticism and advice, which are essential for our improvement.

We are proud to have such Members, with an administration that always supports us, with clusters, associations, agencies... friends, and a society that responds ... Thank you!



Ana VILLATE
Managing Director

Harrotasunez eman nahi diot itxiera emaitza bikainak islatzen dituen 2018ko Urteko Txosten honi, aeronautika eta espazioko sektoreko euskal enpresek urtez urte garapena, hazkundea eta, batez ere, kalitatezko enplegua sortzen jarraitzen dutela egiaztatu baitut berriro ere.

Beti bezala, gure bazkide guztien konpromisoari, inplikazioari eta lan gogorrari esker lortu da guztia, eta, jakina, baita klusterrean parte hartu duten gainerako guztien laguntzari esker ere.

Beraz, lerro hauen bidez, nire eta talde osoaren esker ona adierazi nahi dut, kolektiboak aurrera egiteko abian jartzen saiatzen garen ekintza guztietan bazkideek egindako ahaleginagatik... eta baita egindako kritika eta emandako aholkuengatik ere, oinarri-oinarrizkoak baitira hobetzen joateko.

Harro gaude horrelako bazkideak ditugulako, beti babesa eskaintzen digun administrazio bat dugulako, hainbat eta hainbat kluster, elkarte eta agentzia lagun ditugulako, eta erantzuten duen gizarte bat dugulako... Mila esker!

Ana VILLATE
Zuzendaria



Una vez más me enorgullece concluir este Informe Anual 2018 que refleja unos excelentes resultados, mostrando año tras año que las empresas vascas del sector aeronáutico y de espacio sigue generando desarrollo, crecimiento y, ante todo, empleo de calidad.

Como siempre, todo es gracias al compromiso, implicación y duro trabajo de todos nuestros Socios y, naturalmente al apoyo y colaboración del resto de todos los partícipes de este Cluster.

Por tanto, no puedo dejar de agradecer desde estas líneas, y en nombre de todo el equipo, el empeño que los Asociados ponen en todas las acciones que tratamos de desplegar en aras del progreso del colectivo... y también las críticas y consejos, fundamentales para nuestra propia mejora.

Estamos orgullosos de contar con unos Socios así, con una administración que siempre nos apoya, con los clusters, asociaciones, agencias... amigas y con una sociedad que responde... ¡Muchas gracias!

Ana VILLATE
Directora

HEGAN participated in the international project co-financed by INTERREG SUDOE:

ADDISPACE – Dissemination and transfer of Additive manufacturing technologies in the SUDOE Aerospace Industry



HEGAN participated in the project “FAB Connect” Industry 4.0 for Manufacturing, co-financed by:



HEGAN participated in the projects: “Cooperation Competitive Intelligence” and “Dinamization of RTD Projects for Advance Manufacturing”, co-financed by:



This publication is co-financed by the Basque Government



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