

Defence and Security Sector

2021

Isdefe (Ingeniería de Sistemas para la Defensa de España, SA, SME, MP), is a State Public Sector company, created in 1985 and attached to the Ministry of Defence, being the National Institute of Aerospace Technology (INTA), which owns all the shares of its capital stock.

Isdefe is the Spanish Administration's in-house technical service provider in the field of Defence and Security and, as such, provides services to the Ministries of Defence, Interior and the rest of the General State Administration. Likewise, it places its knowledge and experience at the disposal of the administrations of other allied countries and of international public organisations, with a presence in initiatives of interest to Defence and Security, working, among others, for the European Commission, the European Defence Agency (EDA), the European Border and Coast Guard Agency (Frontex), the EU Agency for the Space Programme (GSA) and Satellite Navigation (ESA), and the North Atlantic Treaty Organisation (NATO).





Defence Planning

The strategic consulting services and the capacity planning methodology developed by Isdefe support the strategic military planning process of both the Spanish Ministry of Defence and the European Defence Agency (EDA).

Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / General Subdirector of Planning, Technology and Research (SGPLATIN)

Consulting and engineering services in Resource Planning corresponding to the implementation of the **National Defence Planning** cycle:

- Identification / management of the needs derived from the Military Capabilities Objective (OCM) in support of the Joint Chiefs of Staff, including support for the definition of the prioritisation criteria for proposals.
- Planning of the resources of Armament and Material and Research and Development necessary to obtain the capabilities.
- Programming of the material resources (systems and infrastructures) necessary for the Armed Forces for the coming years.
- Identification of those military needs that can be promoted or financed through European initiatives (including PESCO or EDF).

Support in the monitoring and control of R&D programs of strategic value for national defence, among others the Technological Programmes associated with the F-110 frigate and the NGWS/ FCAS Programme (Next Generation Weapon System / Future Combat Air System).



2. OUR SECTORS

Ministry of Defence / Defence Staff (EMAD) / Joint Defence Staff (EMACON)

Technical support in Military Planning corresponding to the implementation of the National Defence Planning cycle, supporting the identification of the necessary capacities for the armed forces that are detailed in the Military Capabilities Objective (OCM).

The support provided to the MINISDEF to the digital transformation process includes activities for the analysis and definition of the processes of the Defence Staff (EMAD) and support for the EMACON Force Development Division (DIVDEF), in the definition and development of the concepts of Cooperative Network Confrontation and Joint Electromagnetic Operations.

Participation in the review and update of NATO doctrine documentation associated with Counterinsurgency.



Ministry of Defence / EA / General Headquarters / General Staff of the Air Force (EMA)

Support in the BACSI Project (Connected-Sustainable and Interconnected Air Base), as the nucleus and origin of the EA transformation programme in connectivity and sustainability, with the start-up of the project and participation in the preparation of the Master Plan, as well as the design of the management model for its planning.

Support in the planning, control and monitoring of the EA's resource needs at an economic, personnel and infrastructure level, as well as the planning of their availability and subsequent control of the actual execution. This support is provided in the General Staff, as well as in MAPER and the DAE.

Participation in the planning of available means to respond to NATO and EU needs and commitments.

European Union / European Defence Agency (EDA)

Technical support services of the European Defence Agency in various activities related to defence planning:

- Analysis and integration of documentation, WEB tool design associated with the Capability Development Plan (CDP).
- Development of Strategic Context Cases (SCC) in which the status of capabilities and future lines of action derived from CDP priorities are determined.
- Analysis of the security strategies and defence policies of the Member Countries for the Defence Policy Database (DPOL) of the EDA.
- Analysis of the European evaluation and evaluation capabilities (Test & Evaluation Gap Analysis) and determination of needs derived from the CDP.



Command and control networks and systems

We provide engineering and consulting services, at the strategic, operational and tactical levels to the Ministry of Defence and the NATO Communications and Information Agency (NCIA), for the development of large Information and Telecommunications (CIS) and Command and Control systems, both in the military sphere, and that of Spain's Law Enforcement.

Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG of Planning, Technology and Research (SDGPLATIN)

Technical assistance to the European Strategic Command and Control programme office, to provide the EU Military Staff with its own means for the strategic conduct of European Union operations and missions. The project, led by Spain within the European Union's PESCO (Permanent Structured Cooperation) framework, has been awarded to an industrial consortium led by a Spanish company (INDRA).

It continues to lead the working group for the preparation of the Viability Document (DDV) of the joint Intelligence, Surveillance and Reconnaissance (JISR) capacity of the Armed Forces, especially with the completion of the harmonisation of the General Staff Requirements, consolidation of the feasibility studies, update of the planning for the implementation and start of the cost estimates.



2. OUR SECTORS

Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SGPROGRAMAS

DGAM has participated in the process phases of obtaining material resources, supporting the following programmes/projects:

- MC3 Plan (Modernisation of deployable CIS Systems of the ET and Marine Corps).
- Joint Tactical Radio System (SCRT).
- TETRAPOL Communications Systems.
- Communications Teams for Special Operations.

Cooperation in the process of hiring the combatant's radio for the area of operations and follow-up of the record.

Ministry of Defence / Secretary of State for Defence (SEDEF) / Systems and ICT Centre (CESTIC)

Support for technical and economic planning, development of technological architectures, and demand management through Specific JEMAD-SEDEF Agreements.

Participation in the design and evaluation of technical architectures of ICT systems, and in the management of NATO and EU services. Our work contributes to the development of Defence digital infrastructures (I3D), and to the modernisation of the developments of corporate information systems by CESTIC. We also support the management and control of the ICT services provided to the Armed Forces and the structure of the Ministry of Defence by CESTIC, and to the information security operations of the I3D.

Ministry of Defence / Defence Staff (EMAD) / Operations Command (MOPS)

Technical support in the management of knowledge and information, and collaborative work for the functions of the General Staff in the Operations Command.

The J4A (Operational Logistics) section has been supported for participation in national and NATO exercises, in interoperability with other systems. In the Intelligence Section (J2), we have collaborated in the implementation of the JISR Interoperability capacity related to the SAPIIEM systems in the MOPS, as well as in the support and training necessary to allow the use of the systems in national and NATO exercises.

Ministry of Defence / Defence Staff (EMAD) / Armed Forces Intelligence Centre (CIFAS)

Technical support for knowledge and information management, and collaborative work, through the management of intelligence information systems projects.

In the cartography unit, we work on the operation, maintenance and evolution of the National Geospatial Data Warehouse, and we participate in multinational programmes for the joint preparation of digital cartography.



It continues to support the maintenance of the JISR Interoperability capacity related to SAPIEM systems in the CIFAS operating environments (SICONDEF and BICES), as well as providing first-level support and in the resolution of incidents for the participation of CIFAS in national exercises and NATO in which it participates.

Ministry of Defence / Defence Staff (EMAD) / Joint Command of Cyberspace (MCCE)

At the MCCE, work has been done on the definition and technical management of the needs in information and telecommunications systems, and participation in the NATO and EU forums on issues of Command, Control and Consultations (C3).

Provision of engineering services for frequency management and orbit-spectrum integration. At the Tactical Data Links Management Centre, we participate in technology issues and the evolution of NATO standards, Data Links teams, combined interoperability exercises, and in the management of link networks.

Collaboration with the Support Headquarters for the implementation and improvement of digital infrastructures in the EMAD Retamares Base.

Ministry of Defence / ET / Headquarters / JCISAT

Study of new technologies for Deployable CIS and participation in tests associated with the adaptation of the Army to the future operational environment (Experimental Brigade, BRIEX2035).

Development of architectures for deployable CIS, analyzing CESTIC guidelines, participating in system tests, developing possible military applications of 5G and studying new technological capabilities in these CIS systems.



Image: Ministry of Defence / BRIEX 2035

Definition of national data interoperability standards by participating in the international forum of the MIP Programme and in the CWIX demonstration exercise, promoting the use of data exchange mechanisms through the Tactical Data Interface (IDT), applicable to vehicle platforms and weapons systems.

Participation in NATO and national working groups for the implementation of FMN in spiral 2, with practical use the V2CN20 exercise.

Ministry of Defence / ET / Force Support / Army Logistics Support Command (MALE) / JIMALE

Collaboration with MALE in the modernisation processes of tactical land systems, including communication networks and command and control systems. The MALE Engineering Department is supported in the specification, development monitoring, verification and validation of new versions of C2 systems, particularly the BMS – ET.



2. OUR SECTORS

Ministry of Defence / EA / Force Support / Air Force Logistics Support Command (MALOG)

Strategic support in the program and in the management of funds from **the NATO Security Investment Programme (NSIP)** for the implementation of the “Air Command and Control System” (ACCS), in the entity Torrejon Combined Air Operations Centre (CAOC TJ), located in the Torrejón Air Base and part of the fixed component of the NCS.

Following the designation of MALOG/SEVIMCA as DGAM's delegated Programme Office for the modernisation of the GRUNOMAC and GRUALERCON Air Command and Control Centres, the Programme Management Directive and Product Specifications have been drawn up.

In coordination with the EMA, it has carried out the planning of the migration programmes to EoIP technology of the Air Command and Control System, as well as the deployable component participating in the start-up of a pilot project to integrate the SIMCA network of the EA with the future I3D in deployment by CESTIC. Participation in the management of the Implementation Plan of the Command and Control System (SC2N) in the EA segment for its integration in the future SC2N-EMAD.

Ministry of the Interior / SDG of Information and Communications Systems for Security (SGSICS)

In the civil sphere, during 2020 it has collaborated with the Subdirectorate General of Information Systems and Communications for Security of the Ministry of the Interior in its management and supervision of the current telecommunications services of the National Police and Civil Guard through of the Programme Office of the Unified Communications Service (OPSUC).

Said service includes all the communications (landline, mobile, IP, etc.) required by Spain's Law Enforcement in fulfillment of their mission of safeguarding the rights and freedoms of citizens.

NSPA (NATO / NATO Support and Procurement Agency)

Within NATO's Alliance Future Surveillance and Control (AFSC) programme, Isdefe has reviewed the SOW (Statement of Work) for the NSPA to launch the bidding for feasibility studies, to find technical solutions for AFSC systems.

NATO / Communications and Information Agency (NCIA)

Portfolio management services, programmes and NATO projects for the NCIA agency, for the implementation of information and communications systems of the Alliance at its facilities in The Hague. Contribution to the definition of a framework agreement with non-profit governmental organisations (Not-For-Profit Framework), which will allow Isdefe to receive commissions for the management of programmes that require independence from any commercial or industrial interests.

Technical assistance in its Security Operations Centre in the configuration, optimisation and enhancement of the security monitoring and incident management tool for NATO networks (CLASS/UNCLASS).



Platform Acquisition and Sustainment Programmes

We provide technical consulting services in the field of planning, economic-financial, technological and sustainability throughout the life cycle of aerial, land and naval platform programmes, including remotely piloted ones, guaranteeing an effective and comprehensive solution.

Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG of Programs

Land Programmes Area:

Support continues for the Land Systems Headquarters Programme Offices: Pizarro, Ammunition and 8x8 VCR. Of particular note in the OP VCR 8x8 are the follow-up of the tests under the Technological Programmes at the main groups level, and the 'Demostradores', base product of the production. Monitoring of the Launch Phases and Conceptual Design of the Manufacturing Supply contract for the 1st Section of 348 Vehicles.

Rotary Wing Air Programmes Area:

Collaboration with the Rotary Wing Systems Headquarters Programme Offices: NH-90, TIGRE and Chinook, highlighting the monitoring of the helicopter acquisition contract in its various configurations and auxiliary equipment in the NH90

Programme, and the analysis of the future evolution of Helicopter to MKIII for the Tigre Programme.

Fixed Wing Programmes Area:

Support given to the Headquarters of Fixed Wing Systems Programme Offices: EF2000, A400M, UAS, and future Air Programmes.

For the EF2000 Programme Office, support has been provided in the Falcon program, which will acquire at least 20 additional units, in addition to defining the requirements for the first common electronic scanning radar.



For the A400M Programme, we collaborated in the acceptance process of the ninth aircraft in the Spanish fleet, completed in December 2020, and being the first production aircraft to include the CHT (Cargo Hold Fuel Tanks) element in its configuration.

Collaboration in the activities to sign the contract for the new Trainer Aircraft with Pilatus Aircraft LTD in January for the acquisition of an integrated pilot training system (24 aircrafts, simulators and a logistics package). Participation in the preparation of the necessary documentation for the launch of the MRTT (Multi Role Tanker Transport) Programme with the aim of obtaining in-flight refueling and strategic air transport capacity.

Naval Programmes Area:

Support given to the Programme Offices of the Naval Systems Headquarters: F-110, S-80, BAM, highlighting for the F-110 Programme, the monitoring and control of the ship design phase and monitoring of the execution of the Technological Programmes (PROTEC).

In the BAM Programme, there has been participation in the BAM Intervention and Rescue Contract Specification (BAM-IS).

For the S-80 Programmes, of note are the follow-up to the construction of the first element of the S-81P series and the alternatives of the air independent propulsion system (AIP).

Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG GESPRO

- Support given to the management of the Tigre Helicopter Programme in JSAER-AR and Air Armament Programmes.
- Technical consulting services for the development and continuous improvement of processes, methodologies and tools for the comprehensive management of weapons and material programmes and in the development of a quality management system for the SDG PROGRAMS according to the ISO 9001:2015 standard.
- Support given to the Land Systems Headquarters in the management of the SISCAP (Foot Combatant Information System) programme and in the management of the Framework Agreement for the acquisition of 1.5-ton all-terrain armored vehicles, as well as in the preparation of the Viability Documents (DDV) and the Reports Prior to the SEDEF's Order to Proceed for land systems.





Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG INREID

Quality Engineering Unit:

- Technical support and advice for the certification of new companies, as well as for the maintenance and renewal of the certification.
- Technical support and collaboration for the delivery of the RAC course.
- Technical assistance for participation in the Joint Committee on Defence and Defence Industries (CMDIN) and for the AEC Committee on Defence Industries and Services.

Weapons and Explosives Unit:

Technical support and collaboration in the authorisation of facilities for the manufacture of weapons of war:

- Hazard classification of war ammunition.
- Weapons certifications.
- Cataloguing of explosives.

Laboratories and REACH Exemption Unit:

Collaboration with the unit to minimise the impact of the application in defence of the REACH, CLP, WFD Regulations and other European chemical regulations in the acquisition of supplies from the Armed Forces (CLP- Regulation on classification, labelling and packaging of substances and mixes, WFD: Waste Directive).

Industrial Safety Area:

Support for the maintenance of the processes that guarantee compliance with the Information Security Regulations held by companies (SEGINFOEMP) of the Ministry of Defence, compliance with the Regulations of the National Authority for the Protection of Classified Information (ANPIC) relative to the HPS, HSEM, HSES processes, and in particular to that related to "Industrial Safety" (NS06).

Industrial Inspections Area. Official Quality Assurance:

European Space Agency Launcher Programme: Support for the fulfilment, signing and consequent execution of the contract between DGAM and ESA for carrying out the Official Quality Assurance Activities of the development and production of the Ariane 5 and Ariane 6, and Vega and Vega-C launchers in Spanish manufacturers.

Airbus Getafe: Support has continued to be given to the Official Quality Assurance activities in the MRTT aircraft, specifically to the programmes:

- FAFR (Forces Armées Françaises).
- MMF (Multinational MRTT Fleet).
- Retrofit Singapore (GOS).



Image: www.esa.int / J. Huart, 2012



Airworthiness Support Division:

Technical support to the international collaboration activities of the Defence Aviation Authority, among which the following of are particular note:

- Collaboration with the Dutch aviation authority for the MRTT and MFF (Multinational MRTT Fleet) programme.
- In the National Programmes regarding airworthiness, mainly CH 47F, SIRTAP, NH 90, TIGRE.
- In the working groups of the European Defence Agency (EDA) for the issuance of military airworthiness regulations.
- In establishing the military airworthiness authority in the United Arab Emirates.



Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG for Armament and Material Procurement

Support for the contracting of products and services in the area of **Special Modernisation Programmes (PEMs)**, both national and international, highlighting for the EF2000, the delivery of the last production aircraft corresponding to Tranche 3A and the negotiation of the claims of the industry for not hiring Tranche 3B.

Technical support for consensus on the Capacity Plan for the next 10 years (2021-2030), at the Secretaries of State for Defence level of the four member countries.

In the area of the A400M, it has participated in the contracting for maintenance complementary to the Global Support Step2, as well as in initializing the negotiations for the establishment of the Future Support Engine Contract.

In relation to national contracts, of note is the contractual signing of the supply of 8x8-wheel combat vehicles and the termination resolution for compliance with the Missile Spike programme.



Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG for Armament and Material Procurement

Support to the Budget Office (OPRE) in the financial management of the Special Modernisation Programmes, from the approval of the cost, by Agreement of the Council of Ministers, to its imputation to National Accounts based on the rate of reception of the weapons systems and its financial closing.

Management control analysing the economic and contractual information that gives rise to financing profiles.

Support for the management of Chapter 2 (current expenditure) of the budget in the analysis of the needs of the different budget services as well as the preparation, based on the prioritisation criteria framed within the strategic axes of Defence, of the prioritised list of needs (LIP) and Operation Programming.



Ministry of Defence / ET / Army Logistics Support Command (MALE)

Progress has been made in predictive maintenance solutions based on IoT technologies for armored vehicles, and predictive life cycle models have been developed applying BI and AI (Business Intelligence and Artificial Intelligence) solutions.

Predictive maintenance models and solutions have been defined for Oil Analysis.

The Additive Manufacturing implementation project continued in MALE/ET, as part of Operation Balmis, as well as in the European Defence Agency (EDA), participating in various multinational working groups.

Isdefe has provided technical support for the maintenance of the airworthiness of the HA-28 Tigre and HT-29 NH90GSPA Weapons systems, at the Engineering Headquarters of the Helicopter Maintenance Centre and Park (PCMHEL).



2. OUR SECTORS

Ministry of Defence / ET / Army Logistics Support Command (MALE) / JIMALE

Technical support to the MALE Engineering Headquarters in consulting activities for the different systems to be acquired or to evolve: anti-aircraft artillery, field artillery, manned and unmanned ground and aerial platforms, jammers, electronic warfare stations, etc. Strengthening of collaboration with R&D projects and technical support in the Fuerza 35 experimentation of autonomous systems in order to obtain prototypes of future weapons systems.

Ministry of Defence / ET / Army Logistics Support Command (MALE)

In the area of **Land Support**, we have participated in the design of the **Logistics Base** of the ET:

- Definition of logistics and support processes
- Specification of the needs and requirements of information systems
- Technologies based on Industry 4.0 and the personnel necessary for its operation.
- Definition and support for the implementation of technological R&D projects as part of the pilot test.

Transport optimisation project in the Army, through the implementation of a market application that will be integrated with the logistics management system of the ET.

Support in the MALE logistics information system rationalisation project.

Technical support for the development of a prototype for massive and unstructured information storage.

Use of data analytics tools and methodologies in various areas, such as analysis of workforce capacity, operational availability. Predictive analysis of ammunition tests close to expiration.





Ministry of Defence / Navy / Logistics Support Headquarters (JAL)

- **Platform Branch:** updating of the Navy doctrine regarding Logistics Support and its coordination with the Naval Programmes, providing engineering support in the life cycle.
- **Systems Branch:** support in the BRE1TA programme (BRASS Enhancement 1 Technical Architecture).
- **Support in monitoring the execution in Arsenals.**
- **Specialised support in service contracting models via NSPA.**
- **DIC Cost Evaluation Section:**
 - Isdefe's collaboration has been limited to two special Armament Programmes:
 - S-80- Economic monitoring supported by earned value methodologies.
 - F-110- With the support of the Programme Office as part of the Working Group for the implementation of the programme monitoring model by EVM.
 - Start of the revision/update work of the Agreement signed between MINISDEF and Navantia, as well as its Complementary Rules, for its extension in 2021.
- **Saudi Arabia Corvettes Programme:**
 - Support in the inspection tasks of the Construction Inspection Support Team (ICO) at the Arsenal de La Carraca of the order signed in 2019, highlighting the following activities:
 - Coordination of FAT and HAT test protocols.
 - Coordination and management of protocol points with Navantia personnel.
 - Attendance at FAT and HAT tests.
 - On-site inspections of blocks of the different corvettes in the San Fernando and Puerto Real shipyards.
 - Inspections of different systems on board related to: electricity, auxiliary equipment, propulsion, communications, sensors, combat system, networks, navigation, etc.
- Other engineering, monitoring and cost works are carried out in collaboration with the Naval Construction Department at JAL. The programme will conclude in early 2024.





2. OUR SECTORS

Submarine Technical Certification Office:

- Fulfilment of compliance verification work for the class design certification for the S80 series in 2021, according to the requirements defined in the Submarine Technical Certification Manual.
- Definition of the criteria and points to be reviewed for the work for the provisional certification necessary for the S80 class sea trials.
- Carrying out of a face-to-face safety audit of the S80 (under construction) and S70 programmes (in works that extend their operational life). The remote audit that began, that was simultaneously applied to the two aforementioned programmes, is established with a view to the certification for sea trials in the S80 series and for the end-of-work report of the S70 series.



Image: Spanish Navy / SubmarinoS80

Ministry of Defence / EA / Logistics Support Command (MALOG)

Within the framework of Air Support, support has been given in the supply and management of material for different weapons systems of the Air Force.

For the new fleets, support has been given to the management of contract C3 to sustain the Eurofighter, and the negotiation of phase 2 of this contract has been participated in. For the A400M, there has been collaboration in the management of engine material and ground support equipment. For the NH90, there has been collaboration in the initial supply area and in material management. For the rest of the fleets, support is given to their maintenance in the areas of supply, maintenance management and in-service engineering.

Ministry of Defence / EA / General Headquarters / General Staff of the Air Force (EMA)

Preparation of the General Staff Requirements (REM) documents following the Instruction of the SEDEF for the acquisition of capabilities, in the Lanza Radars Modernisation programmes and the implementation of the SSA Capacity (Space Situational Awareness) in the COVE (Space Surveillance Operations Centre), framed by the S3T programme (Spanish Space Surveillance and Tracking).

Management of the agreement for the Assignment, use and maintenance of the Space Surveillance Radar (S3TSR) from the CDTI to the MINISDEF-EA, and in the drafting of the Public Domain Use Change Act (Acta de Mutación Demanial).



Ministry of Defence / Defence Staff (EMAD) / Military Emergency Unit (UME)

Technical support to the Balmis operation as support to the Logistics section, J4 of the Headquarters of the UME, carrying out numerous studies and analyses to support decision-making in the field of sustainability.

We continue with the process of outsourcing maintenance and purchasing of spare parts.

Support for the implementation of predictive maintenance in light vehicles based on IoT solutions.

Definition of Integrated Logistics Support (ILS) for new acquisitions within the UME Life Plan.

Implementation of the S1000D regulation.



Image: Flickr UME

Navantia S-80

Isdefe's collaboration in the S-80 Submarine Programme, in various tasks related to the Verification of Operational Requirements, Support for the "Safety Programme" and the preparation of technical documentation at the Cartagena shipyard. Additionally, simulator training for the keel crew of the S81.

NATO / Support and Procurement Agency (NSPA)

Technical support to the AFSC Programme (*Alliance Future Surveillance and Control Capability*).



Technology Centres

We supply multidisciplinary work teams in defence research centres, development and experimentation centres, which have the knowledge and experience necessary for scientific-technical and management environments, which is required to carry out activities in the aeronautical and space fields and in technologies related to nuclear, radiological, biological and chemical defence.

Ministry of Defence / Secretary of State for Defence (SEDEF) / National Institute Aerospace Technology (INTA)

Technical support to INTA in the Subdirectorates responsible for research and development projects: General Subdirectorates of Aeronautical Systems and Land Systems, although work has also been done in the Centre for Meteorology and Calibration and in the Department of Information Technologies and Communications.

Subdirectorate General for Aeronautical Systems:

- Certification and qualification of: RPAS, helicopters and combat aircraft, transport and in-flight refueling, highlighting the certification of the medical configuration of the A330 MMF programme, revision 15 of the Technical Certificate of C-295 MW TS03 CA-01 phase 2 (Canada) and the Technical Certificates of the EF2000 IPA9, ISPA3 and P2EB.
- Development, operation and maintenance of Unmanned Aerial Platforms, RPAS SIVA, Milano or ALO (in collaboration with Boeing), and DIANA target aircraft.
- Maintenance and tests on a turbojet bench for the certification of civil aeronautical engines and studies of emissions into the environment: Rolls-Royce Trent -900, Trent-XWB and Trent -1000.
- Support in the activities of characterisation of the flight of missiles and other projectiles at the “El Arenosillo” Experimentation Centre (CEDEA).
- Support in various national and international projects for the investigation of protective aeronautical coatings, such as GENERA, HELADA, EMEP, RAISELIFE or PHOBIC2ICE, SENTINEL 6 or ATHENA.



- Carrying out degassing and spectrometric and systematic analysis tests of oils, lubricants and fuels to serve the Air Force and the aeronautical industry.
- Participation in a trial of the European HYCARUS project for powering aircraft fuel cells.

Subdirectorate General for Land Systems:

- Development of software for testing of Link16 and Link22 tactical links, to make the link between the PATRIOT weapons system and the BMD operations centre, or the LINPRO national data processor on board ships.
- Support for the operation of the Torregorda Centre for the verification and homologation of howitzers and mortars for the Defence sector industry.
- Participation in the “Atila” pilot project, which aimed to test the effectiveness of UV light in the fight against coronavirus. Part of Operation Balmis of the Ministry of Defence.

- Participation in the development of a new textile material for military clothing, both for underwear and for outerwear.
- Support in testing and certification activities of land vehicles (cars, trucks, motorcycles, quadricycles and agricultural vehicles) in the areas of active safety, passive safety and certification of powertrains.

Consulting and engineering services to the Cybersecurity Laboratory, dependent on the Cybersecurity and Communications Area of the La Marañosa Technological Institute (ITM), in tasks of source code security analysis and application vulnerabilities developed by the DGAM.

Technical support for the change of the communication protocol from cataloguing tools to SICAD software.

International consulting, participating in AC / 135 meetings and giving support to the different SICAD user countries.





Logistics and Supply Chain Systems

Ministry of Defence / NAVY / Logistics Support Headquarters (JAL)

The project for the new Navy Logistics Information System has continued, in which Isdefe is participating in the definition and monitoring office.

A new support activity has been started for **CESADAR (Centre for Supervision and Analysis of the Navy)** in the Cartagena arsenal related to the application of artificial intelligence and big data, in the early detection of breakdowns and predictive maintenance of ships.

Ministry of Defence / Defence Staff (EMAD) / Military Emergency Unit (UME)

The development of a new version of the Logistics System of the UME (SIGLUME) continues, having started the process of implementation in operation in December.

Ministry of the Interior / National Police

New collaboration with the clothing service of the National Police to provide logistics and textile consulting services.

In the logistics consulting part, a new logistics model has been established, new operating processes have been defined and they have been modelled using BPMN notation.

The functional requirements for the implementation of a warehouse management system have also been defined.

New work methods and support have been established in the preparation of technical specifications for current and future garments.



Intelligence systems and electronic warfare

We provide engineering, consulting and support services to improve the efficiency and control of the logistics systems of the Armed Forces, providing solutions in the supply chain and in the management of logistics centres, and knowledge and support in the processes of the NATO System of Cataloguing.

Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM)

Monitoring of the guarantee of the different subsystems of the SANTIAGO Programme and the definition of the new SANTIAGO Phase II Programme.

Ministry of the Interior / Secretary of State for Security / SDG of Information and Communication Systems (SGSICS)

During 2020 Isdefe has provided technical assistance services to the Ministry of the Interior in the field of the Legal Interception System of Telecommunications and Data Conservation, both to support the supervision of activities associated with the operation of the service and for the management of the transition of new functionalities and platforms.



2. OUR SECTORS

Ministry of the Interior / Secretary of State for Security / SDG for Planning and Management of Infrastructures and Means for Security (SDGPGIMS)

Support to the Sub-Directorate, as the National Authority responsible for the Internal Security Fund, in the monitoring and control of projects and new developments in the field of integrated border management, police cooperation and the common visa policy.

Interior Ministry / Security Technology Centre (CETSE)

Provision of technical support services for research activities within the CETSE area, these services range from supporting the promotion of national and European RD&I initiatives, to coordinating the Community of Security Users (CoU Spain), and support for ongoing innovative projects, such as the GLOBAL-CD system for the detection and neutralisation of drones or innovative Artificial Intelligence tools promoted by the CETSE.





Security in information systems and critical infrastructures

This section brings together the activities carried out in the field of information security and critical infrastructures, both for the Ministry of Defence and other Ministries.

Ministry of Defence / Defence Staff (EMAD) / Joint Cyberspace Command (MCCE)

- Engineering and technical assistance to the MCCE in the areas of cyber defence, supporting the MCCE's plans to obtain defence, operation and response capabilities for the development of military Operations in Cyberspace. Technical assistance that encompasses the Operations area, where ISDEFE engineers are part of the military contingent sent by the MCCE to carry out Cyber Defence activities (CIS Security audits and inspections).
- Support services in operations derived from COVID, Operation Balmis and Baluarte, supporting the protection of the networks of the military Hospitals of Gomez Ulla and Zaragoza.
- Isdefe's collaboration with the NATO Cooperative Cyber Defence Centre of Excellence (CCDCoE), participating in the organisation of high-impact international cyber exercises such as **LockedShields and CrossedSwords**, execution of international courses and development of reports and studies on Red Team.
- Support in the implementation in the Spanish Armed Forces of the NATO Federated Mission Network (FMN) Concept. Participation in different panels and working groups, national and international, and in the design and deployment of the interoperability Laboratory.
- Assistance to the planning and execution of different national and NATO exercises, among which the National Validation, Verification and Confirmation Exercise (V2CN), the Steadfast Cobalt series and the Coalition Warrior Interoperability eXploration are of particular note.



2. OUR SECTORS

Ministry of Defence / National Intelligence Centre (CNI) / National Cryptological Center (CCN)

Support to the CCN for activities carried out within the scope of the National Scheme for the Evaluation and Certification of ICT Security (ENECSTIC):

- Certification of ICT security products.
- Accreditation of evaluation laboratories of the Scheme.

Support to the Department of Projects and Technologies of the CCN for the elaboration of the Catalogue of STIC Products (CPSTIC) qualified for use in the scope of the ENS:

- Product qualification and development of new ICT families.
- Internal evaluation tests of ICT security products.

Ministry of Defence / ET / CIS Headquarters (JCISAT)

Advice to the **Sub-Directorate of Activities in Cyberspace and Electromagnetic (SUBCEMA)** in the review of security documentation, preparation of Inspection Reports of national classified systems and preparation of security documentation and technical configuration of Isolated Computers that handle NATIONAL and NATO/EU classified information. Tutoring of the virtual classroom of Cyber Defence Awareness of the Army.

Ministry of the Presidency and Relations with the Courts and Democratic Memory / National Heritage

Advisory and support service in security systems, applicable to security infrastructures, anti-intrusion security systems, perimeter security systems, CCTV systems, security management systems, access control systems, fire protection systems, inspection equipment (metal detectors and scanners), in the different locations and dependencies of the National Heritage.

Technical support in the Security Systems Audit Plan.

Preparation of the projects and specifications necessary for the improvement of the security systems in the Royal Palace of Madrid, El Pardo, El Escorial, Valle de los Caídos, Aranjuez, La Granja, Las Huelgas, Tordesillas and Yuste.

Ministry of Transport, Mobility and Urban Agenda / State Ports

Support in port security matters to move towards comprehensive security, optimising both public-public collaboration with Spain's Law Enforcement, with companies that carry out commercial activities in the service area of ports of general interest.

- Support in the definition of normative safety criteria, actions of: definition of systems, implementation, dissemination, and control of compliance with the maritime security standard.
- Support to Port Authorities for the provision and maintenance of tools that facilitate the task of control and supervision of port facilities and ports subject to maritime security regulations.



European Union / European Defence Agency (EDA)

Study of state of the art technologies and threats applicable to Cyber Defence, with the aim of identifying and proposing projects that contribute to the improvement of military capabilities in the domain of Cyber Defence within the framework of the European Union.





Strategic Infrastructures

We provide support services for the management of strategic infrastructures such as naval bases, police centres or airports, that are essential for the normal operation of a country. Technical support services in planning, design and facultative management of these types of special facilities, applying the duality of engineering to both the military and civil spheres.

Ministry of Defence / NAVY / Force Support / Logistics Support Headquarters (JAL) / DIGENIN

Continuation of the activity during 2020 in the conceptualisation, feasibility studies, design and support for the execution of infrastructure projects related to Defence and Security.
Technical support in the Infrastructure Programmes of the Submarine S-80, as well as in the infrastructures required for the Maritime Action Vessels in the Cartagena Arsenal.

Ministry of the Interior / Secretary of State for Security (SES)

Design and execution of projects to improve the border fences of Ceuta and Melilla, as well as the execution of a Police Station in the city of Seville.



Border Surveillance and Control Systems

Isdefe provides strategic and technical consulting services, with a high technological component in border surveillance and control, where it integrates detection systems, command and control communication means, and developments for the detention and identification of possible threats in maritime and terrestrial border areas.

Ministry of the Interior / Secretary of State for Security (SES) / SDG of Information Systems and Communications for Security (SGSICS)

Consulting and support services for the implementation of **technological systems for border control**. Said systems include both tools for automated border control (ABC systems, Automated Border Control), and the establishment of integrated systems for video surveillance, license plate recognition or facial biometrics.

Technical support for the **national deployment of the European PNR (Passenger Name Records) systems**, EES (Entry-Exit System) and ETIAS (European Travel Information and Authorisation System).

Support in the definition and implementation of the new management system for international protection applications (such as asylum or refugee status), in terms of digital transformation which, in addition to the implementation of new systems, aims to re-engineer and integrate the existing e-government applications.



Technological and industrial management

We collaborate in the development of national industrial capacity through our support for the formulation of technological-industrial plans and policies, the management of industrial cooperation, the analysis of industrial capacities, the implementation of technological surveillance systems and competitive intelligence and the promotion of platforms for innovation.

Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG of Inspection, Regulation and Defence Industrial Strategy (SGD INREID)

Isdefe continues to provide support in the analysis and monitoring of the **industrial plans and studies for various programmes**, some of which are nationally funded, others are candidates for funding under the European Defence Fund or in cooperation with NATO.

Participation in the preparation of the **Annual Report on the National Defence Industry** and the preparation of sector reports. Further analysis of the industrial capacities of the national Defence Industrial and Technological Base (BITD).

Technical consulting activities related to the **NGWS / FCAS** (Next Generation Weapon System / Future Combat Air System) programme, in collaboration with SDG PLATIN:

- Technological aspects in the different phases of the Concept Study (JCS) programme.
- In the programme's Industrial Monitoring Office (OSI): analysis of the industrial aspects of the offers prepared by the leaders of the "pillar" (each of the large systems into which the program is divided) and of national industrial capacities to ensure the objective of returning national industrial participation in the Programme.



Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG of International Relations (SDGREINT)

It continues to collaborate with the SDG REINT in its three main areas of activity:

- Internationalisation of the Spanish defence industry (institutional support, bilateral meetings, reissue of the Catalogue of the Spanish Defence Industry)
- International cooperation in arms through multilateral forums (NATO, LoI, EDA, OCCAR, EU), with special support to the Permanent Secretariat EDAP.
- Control of foreign trade in arms and foreign investments in defence.



Ministry of Defence / Secretary of State for Defence (SEDEF) / General Directorate of Armament and Material (DGAM) / SDG for Planning, Technology and Innovation (SDGPLATIN)

Preparation of the new version 2021-2027 of **the Defence Technology and Innovation Strategy (ETID)** (published in 2021). ETID will direct the department's RD&I policy over the next few years, aligning it with the new defence planning cycle, with the principles of the new Spanish Strategy for Science, Technology and Innovation for the period 2021- 2027 and with the latest technological advances.

In international R&D cooperation, in addition to activities related to the **NATO Science and Technology Organisation (STO)** and bilateral initiatives with other countries, those relating to **European defence R&D cooperation** have been particularly relevant.

Support in the management and evaluation of the MINISDEF Programme, **Coincidente 2020**.



2. OUR SECTORS

European Union / European Defence Agency (EDA)

Isdefe has established itself as a reference “partner” of the EDA, where it has continued to provide services in the technological field in:

- Technological prioritisation, **OSRA project**, to define, identify and prioritise the technological objectives of the Member States. With OSRA, the Agency consolidates itself as a key actor for the topics of the future European Defence Funds managed by the Commission.
- Technological future planning, **project Foresight**, four-year framework contract to forecast the state of the art in relevant technological areas of the defence sector through sessions with European experts.

In the industrial field, Isdefe was awarded a contract in 2019 that has been developed in 2020, to develop the Key Strategic Activities (KSAs), which will identify different defence industrial areas that are particularly relevant to safeguard and develop the strategic autonomy of the European Union.



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Crisis and Emergency Management Systems

We offer technical support to national and international organisations in the management of special situations, through consultancy to military and civil protection organisations, for the development of control and crisis management centres, with special relevance to command and control and communications systems, in addition to organisational and management aspects.

Ministry of the Interior / Secretary of State for Security / SDG of Information Systems and Communications for Security (SGSICS)

During 2020, the work carried out in the field of the **State Emergency Digital Radiocommunications System (SIRDEE)** has focused on the preparation of the new service contract that will come into force in January 2022, as well as on the supervision of the work included in the current contract, including the search for solutions for the evolution of the communications network towards LTE technology.

Ministry of Defence / Military Emergency Unit (UME)

Technical support in the CIS systems in operation in the Military Emergency Unit: Fixed and deployable CIS systems, SIMGE (Integrated Emergency Management System), RENEM (National Emergency Network), Collaborate Portal and collaborative tools on Sharepoint.

Isdefe is also participating in the defining the evolution of the UME's CIS systems.

