



IDEKO is a member of the **Basque Research & Technology Alliance, BRTA**; with 16 agents belonging to the Basque Network of Science, Technology and Innovation; in addition to SPRI and the Provincial Councils of Gipuzkoa, Bizkaia and Araba.

16	SCIENTIFIC-TECHNOLOGICAL MEMBERS Azterlan, Azti, Ceit, CICbioGune, CICbiomaGune, CICenergiGune, ClCnanoGune, Cidetec, Gaiker, Ideko, Ikerlan, Lortek, Neiker, Tecnalia, Tekniker, Vicomtech.
301 M€	ANNUAL INCOME 60% Public Income - 10% Income from Companies.
3.500	RESEARCHERS
280	PHD THESIS
1.300	PUBLICATIONS
100	PATENTS
668	INTERNATIONAL PROJECTS

FIELDS OF ACTIVITY

Communication and Marketing	Talent	Knowledge Transfer
Scientific and Technological Activity	Indicators Following-Up	Indicators Following-Up



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MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE



XABIER ALZAGA
President of IDEKO

2020 has been a totally atypical year for all of us during which, in an environment which has been completely uncertain at times. We have had to take decisions to safeguard firstly the health of our people, but also that of our organisations, and as president of IDEKO I am proud to say that the Research Centre has overcome this challenge successfully.

Digitalisation in the field of manufacturing has been one of IDEKO's commitments over recent years and, in a totally unforeseen way, COVID-19 has led to a scenario that has accelerated the implementation of available technologies by companies who are faced with the urgency of connecting with our customers in a situation with no mobility. R&D developments, which would probably have remained in the shadows for a while in other circumstances, have emerged into the limelight and have been used to maintain part of our activity which has been a relief for many industries. This is why, now more than ever, it makes sense that the belief that sustained commitment to R&D is essential in the maintenance of our competitiveness and to stress the role, sometimes not recognised, of Research Centres like IDEKO.

Furthermore in 2020, IDEKO together with DANOBATGROUP has taken a step forward in one of the objectives that is part of its mission: the transfer of technologies and the creation of high-added value employment with the start-up of the new company ENDITY. The company, located in Bergara, specialises in developing automated non-destructive inspection solutions, and is the result of the expertise in automation of DANOBATGROUP as an industrial company and IDEKO's knowledge and development of technologies in the NDT field. This exciting initiative, at this current time, demonstrates the commitment of both companies to continue nurturing businesses with a high-technology component and high levels of specialisation.

And as always, this has all been done accompanied by our business partners and governmental institutions, all of whom have supported us in this especially difficult year. But if there is anybody who we must give special thanks to, it is to the people who make up IDEKO. Their professionalism and involvement throughout each and every day of 2020 and so far of 2021 have been exemplary. Thanks to everybody and congratulations for the work done.



NEREA ARANGUREN
Managing Director of IDEKO

Once again, it is my pleasure to share with everybody the most important information relating to the activity carried out by IDEKO over the past year.

Despite a very difficult year, we exceeded €9.9m in revenues, a figure that consolidates our activity, both in the research field and in the projects with the private sector. The activity with companies grew most, with 178 technology transfer projects, highlighting our proximity to the reality of companies, which was key last year. The lockdown and reduced mobility has meant companies have had to tackle accelerated digital transformation processes in order to maintain a certain level of activity, and IDEKO has closely supported many of them in this process. But this did not mean abandoning research activity, the remaining 46% of the turnover originates from R&D&I activities associated with programs driven by various European, state and Basque institutions.

All this activity was carried out without neglecting scientific production which has reached the figure of 34 active patents, six of which were granted during the year. We are increasing our dissemination activity, with 32 indexed publications. Although due to COVID-19 many scheduled events were cancelled, we participated in a dozen congresses with technical presentations, both at national and international levels, all of them held virtually this year.

The IDEKO workforce has reached 122 people, of which 29% are doctors. Shortly, 7 professionals will be added to this figure, who are writing their doctoral theses in the centre at the moment. Without doubt, the best news of the year was the obtaining of the Taylor medal by our researcher Xavier Beudaert, awarded by the CIRP, a recognition that we are very proud of. Congratulations Xavier and the entire team.

Finally, 2020 was a year of exceptional circumstances, and we felt especially well supported by our partners in the Basque Research & Technology Alliance (BRTA). This year has left us in a leading position in our specialisation and has provided us with two great lessons learned: the importance of maintaining sustained commitment to R&D and the conviction that with motivated and involved people, any challenge is achievable.

'20 ANNUAL REPORT

01 ABOUT US

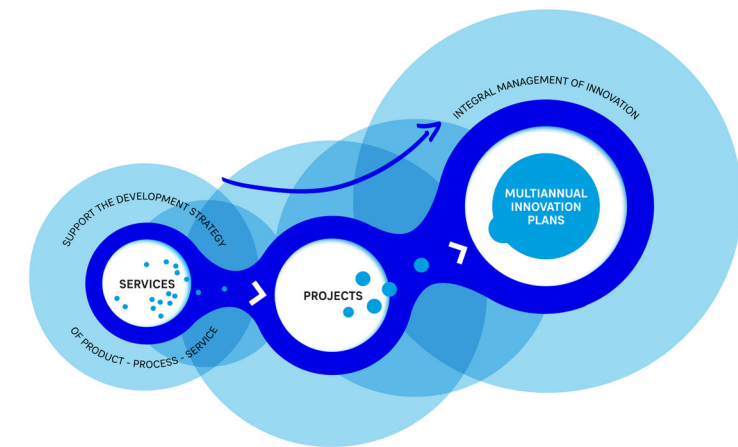
We are a research centre that specialises in industrial production and manufacturing technologies and we are integrated into the BRTA (Basque Research and Technology Alliance).

Our activity covers the identification and analysis of opportunities, the design and development of products, business lines and production processes and the resolution of problems through the provision of technological services such as technical consultancy and equipment based services.

02 ORGANISATION



03 COLLABORATION OF IDEKO WITH COMPANIES



1. SERVICE PROVISION

We have punctual, fast and efficient services to optimise the manufacturing and production processes of your industry, such as the solution to chatter problems, modal analysis, calculation and simulation of machine structures and mechanisms, characterisation and compensation of thermal expansion, advanced measurement, inspection and verification services. *We offer quick and flexible services that respond to the timely needs of our customers.*

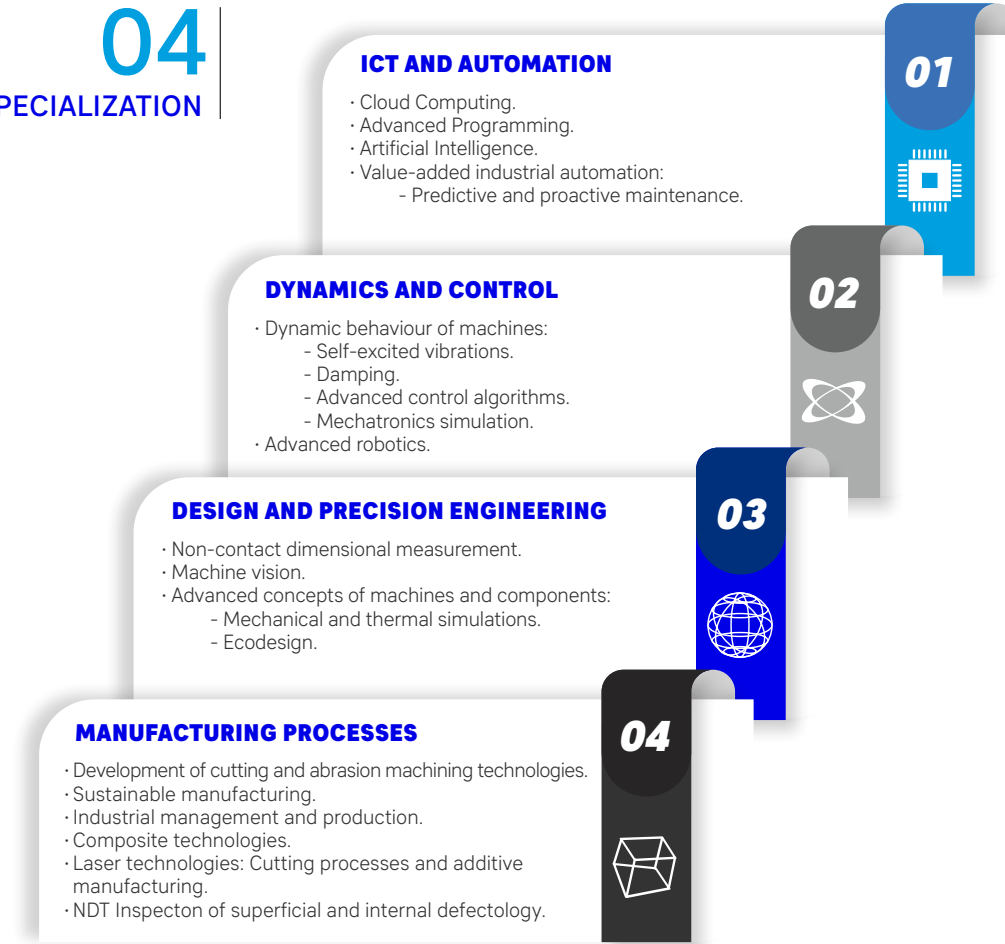
2. SUPPORT TO THE PRODUCT / PROCESS / SERVICE DEVELOPMENT STRATEGY

We analyse dynamic and thermal behaviour, model and manage production plants or improve manufacturing and production processes among other services. We know how to adapt ourselves and respond to our customer's requirements. *We provide companies with differentiating technology solutions to enhance their competitiveness.*

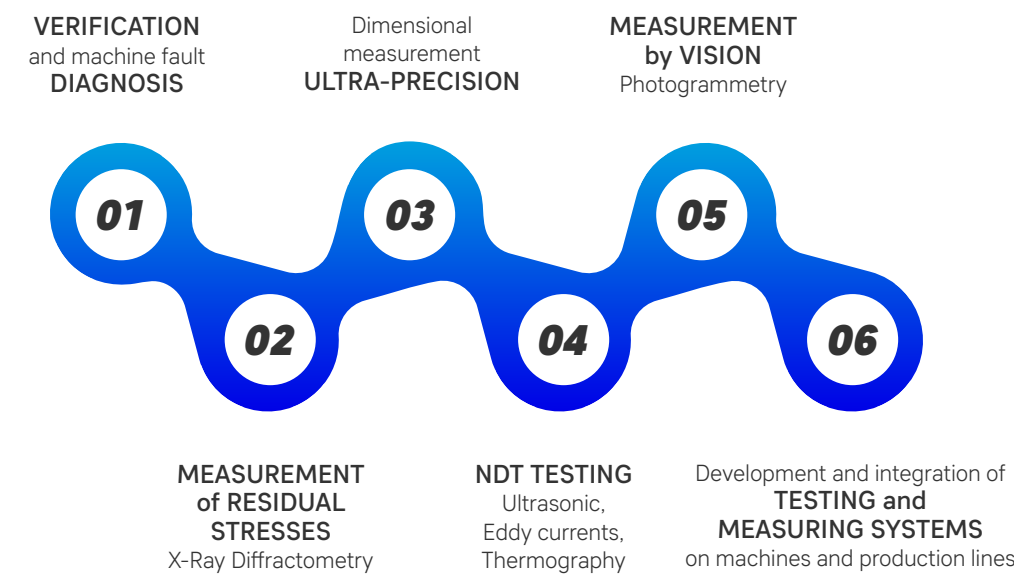
3. COLLABORATION FOR INNOVATION MANAGEMENT

This relationship model enables us to design R&D&I plans together through which we can align Research, Development and Innovation activities as far as is possible with the current and future needs of our customers. *This is the top collaboration level that goes beyond a single project and is based on establishing .collaboration plans together with a multi-annual horizon.*

04 SPECIALIZATION



05 TECHNOLOGICAL SOLUTIONS AND SERVICES



06 R&D PROJECTS

Development of a complete five-axis milling solution for applications with maximum accuracy requirements.

Smart approach for predictive maintenance based on cyber-physical systems.

System for in-process inspection of grinding burns.

"Digital twins" modelling and virtualisation of machine tools and manufacturing cells for virtual commissioning.

Development of virtual twins for the identification and removal of submicron marks in grinding.

High-performance broaches key for sectors related to new forms of transport.

Development of a robust, smart and portable cutting line for laser blanking.

Tackling the new critical workpiece surface requirements in the grinding process with the use of virtual twins.

Development of Smart Machines based on digital models for ultra-precision thread-cutting operations in turning.

New vertical ultra-precision grinding machine for large workpieces.

Ultrasound aided turning for hard materials.

Tool holders for internal precision turning with monitoring of cutting forces, chatter suppression and chip breaking.

New large composite manufacturing cell with high productivity and material efficiency.

Innovative analysis, design and development through additive manufacturing for machine tools.

New generation of sustainable composites for advanced manufacturing.

Integration of the digital identity and the blockchain for creating added value services based on industrial smart contracts.

EUROPEAN PROJECTS

COGNIPANT	LEVEL-UP	QU4LITY	FORZDM	PRECOM
Development of digital technologies for equipment diagnosis and process monitoring in the continuous production industry.	Reconditioning and digitization of production lines to extend their life and adapt to current trends in connected and digital equipment.	Digital reality in Zero Defect manufacturing.	Integrated Zero Defect Manufacturing (ZDM) solution for high value-added multi-stage manufacturing systems.	Predictive cognitive maintenance decision support system.

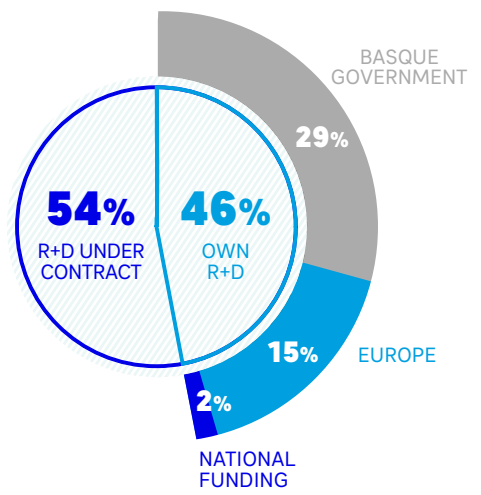
PRODUCTIVE 4.0	PROGRAMS	DAT4.ZERO	INTERQ	TWINGOALS
Electronics and ICTs as digital industry enablers and optimised supply chain management covering the entire product life cycle.	Innovative design and predictive maintenance technologies to extend the life span of production systems.	Digitally-enhanced Quality Management System, that gathers and organizes data from a Distributed Multi-sensor Network.	Digital technologies for the integrated quality management in zero defect manufacturing.	Digital Twin towards Zero Defects Manufacturing (ZDM) and circular economy.

07 2020 FIGURES

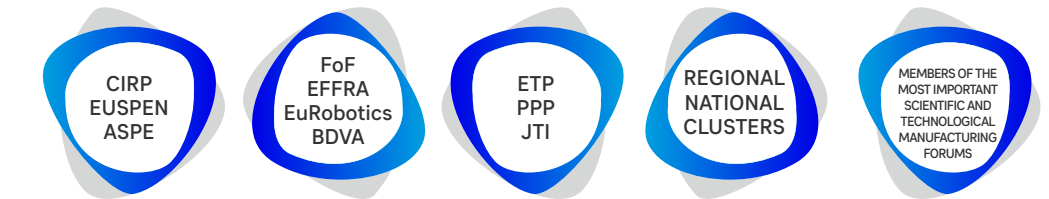
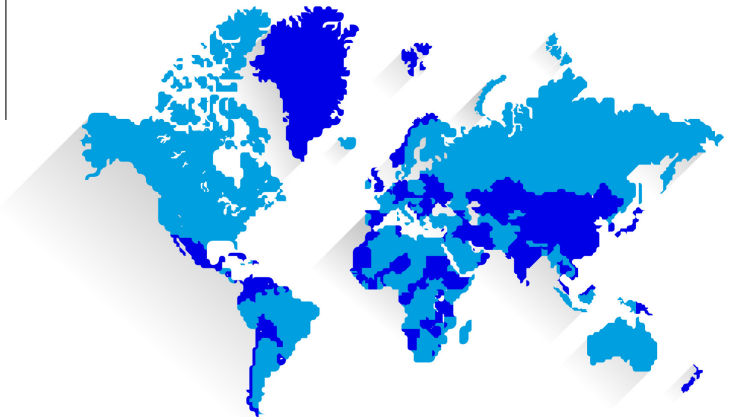
TOTAL INCOMES



INCOME DISTRIBUTION IN 2020



08 ALLIANCES AND COLLABORATIONS



BUCAREST UNIV., BWI, CEA, CEDRAT, CERTH, CESI, CETIM, CHALMERS, CNRS, CRF-FIAT, D'APPOLONIA, DELCAM, DELFT UNIV., DTI/DTU, EPFL LAUSANNE, ETH ZURICH, EUROCHILE, FIDIA, FLANDERSMAKE, GTS, HELLAS, IBS, IFW / LZH HANNOVER, INESPORTO, INRIA, IPA FHG STUTTGART, IPT / WZL / ILT / FHG / AACHEN, ITIA, IWU / TU CHEMNITZ, KALE AERO, KTH, STOCKHOLM, KU LEUVEN, LINZ, MONTERREY, NPL, NTNU / SINTEF, POLIMI, PONTIFICIA PERU, PRAGA UNIV., PRIMA, PROFACTOR, PTW DARMSTADT, SIRRI, SOCIESC, SWEREA, SZTAKI BUDAPEST, TEKNIFORETAGEN, TIMKEN, TNO, TU, ORTMUND, TU DRESDEN, TU EINDHOVEN, TUT TAMPERE, TWI, TYROLIT RTD, UNIV. ANKARA, UNIV. BRITISH COLUMBIA, UNIV. CALIFORNIA, UNIV. COSTA RICA, UNIV. ESTAMBUL, UNIV. GRAZ, UNIV. KEIO, UNIV. KOBE, UNIV. KOC, UNIV. LISBOA, UNIV. MASSACHUSETTS, UNIV. MICHIGAN, UNIV. NAGOYA, UNIV. PATRAS, UNIV. SABANCI, UNIV. SAO PAULO, UNIV. SETUBAL, UNIV. SOFIA, UNIV. TESALONICA, UNIV. WATERLOO, UNIV. CRANFIELD, UNIV. NOTTINGHAM, UNIV. OULU, UNIV. PADOVA, UNIV. SHEFFIELD + AMRC, UOB / BIBA / LFM BREMEN, VTT, WARSOV UNIV.