

State of the Art Analysis Spain

Benchmarking Key Actors: HEI's Academic Programmes,
Technological Centers & Industrial Clusters.

Road to WP4. Development Training Programme — November 2020

CENFIM
Furnishings Cluster

ELISAVA
Barcelona School of
Design and Engineering

LEITAT
managing technologies



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Introduction

This document acts as an analysis of Spain's **national High Education offer**, while also contemplating its most relevant **Technological Centres** and **Industrial Clusters**, according to INTRIDE's focus on certain knowledge areas, skills and competences.

The goal is to **summarise and visualise** the country's particular landscape where these three actors and stakeholders cross paths, in regards to the current situation so they can be better projected into the future when **designing the new training programme**.

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1. National Educational Offer in Design: Product, Industrial, Furniture & Habitat.

From all of Spain's national offer, we started by focusing on those Academic Programmes which dealt with the general subject of **Design**, selecting those that focused on **Product, Industrial, Furniture & Habitat**.

The next step was to study their Teaching Plans, in order to gain a deeper understanding in which **skills and competences** were most relevant and how they approached them, helping us to identify those programmes that could better inform our benchmarking process and thus, future stages of INTRIDE.

In this scenario, a total of **15 Master programmes** and **18 Bachelor Degrees** were selected, both from the public and private sector.

1.1 Master Programmes

Barcelona

Máster Universitario en Estudios Avanzados en Diseño
(MBDesign) (UPC + UB)

Máster Universitario en Investigación en Arte y Diseño
(UAB + EINA)

Máster Universitario en Investigación y Experimentación
en Diseño **(UVIC + BAU)**

Master's degree in Interdisciplinary and Innovative
Engineering **(UPC + EEBE)**

Máster en Diseño Estratégico, Innovación y
Emprendimiento **(IED)**

Master in Design for Emergent Futures - MDEF
(IAAC + ELISAVA + FabLab)

Master in Robotics and Advanced Construction MRAC
(IAAC + UPC)

Master in Advanced Computation for Architecture &
Design MACAD **(IAAD + UPC) (Online)**

Master's Degree in Furniture Design **(ELISAVA + UPF)**

Master's Degree in Product Design and Development
(ELISAVA + UPF)

Madrid

Máster Universitario en Diseño **(UCM)**

Master Universitario en Diseño de Producto **(ESNE)**

Manresa

Master Universitario en Ingeniería de los Recursos
Naturales (UPC + Escuela Politécnica Superior de
Ingeniería de Manresa)

Sevilla

Máster Universitario en Diseño e Ingeniería de Productos
e Instalaciones Industriales en Entornos PLM y BIM
(Universidad de Sevilla)

Mondragón

Máster Universitario en Diseño Estratégico de Productos y
Servicios (Mondragón Unibertsitatea)

Másters Universitarios / Official

Másters No Universitarios / Non Official

1.2 University Degrees & Equivalents

Barcelona	Grado en Diseño Transversal (ELISAVA + UPF / UVIC)	Madrid	Grado en Diseño de Producto (UCJC + ESNE)
	Grado en Ingeniería en Diseño Industrial (ELISAVA + UPF / UVIC)		Grado en Diseño (UCM)
	Grado en Ingeniería de Diseño Industrial y Desarrollo del Producto (UPC)		Título Superior en Diseño de Producto (IED)
	Grado en Diseño (EINA + UAB)	Segovia / Madrid	Grado en Diseño/Bachelor in Design (IE Universidad)
	Grado en Diseño (U.Barcelona)		
	Grado en Diseño (ESDI + URL)	Mondragón	Grado en Ingeniería Industrial y Desarrollo del Productos (Mondragón Unibertsitatea)
	Título Superior en Diseño de Producto (IED)		
Vic	Grado en Diseño (BAU + UVIC)	Pamplona	Grado en Diseño (UN)
Bilbao	Título Superior en Diseño de Producto (IED)	Valencia	Grado en Ingeniería Industrial y Desarrollo del Producto (Universidad Cardenal Herrera + CEU)
Castellón de la Plana	Grado en Ingeniería Industrial y Desarrollo del Productos (Universidad Jaume I de Castelló)		Grado en Ingeniería Industrial y Desarrollo del Producto (UPV)

Grados Universitarios

Equivalentes

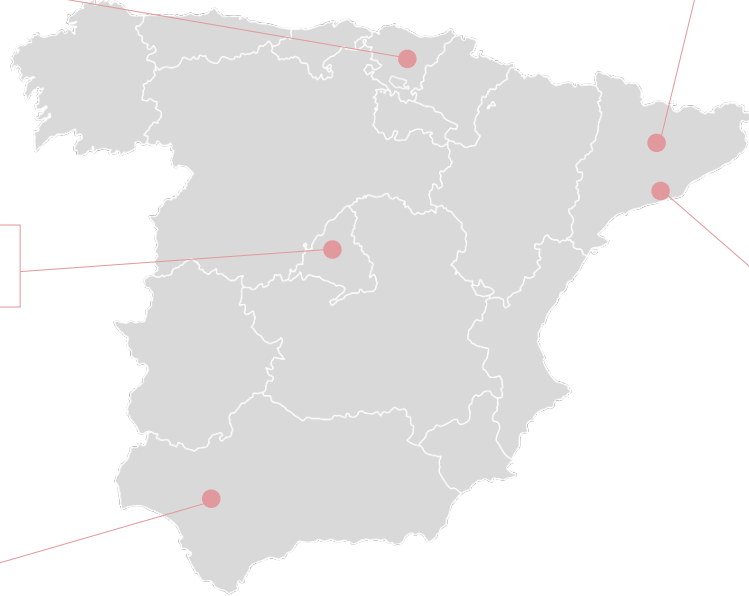
1.4 Master Programmes Placement

Máster Universitario en Diseño Estratégico de Productos y Servicios (**Mondragón Unibertsitatea**)

Máster Universitario en Diseño (**UCM**)

Master Universitario en Diseño de Producto (**ESNE**)

Máster Universitario en Diseño e Ingeniería de Productos e Instalaciones Industriales en Entornos PLM y BIM (**Universidad de Sevilla**)



Master Universitario en Ingeniería de los Recursos Naturales (**UPC + Escuela Politécnica Superior de Ingeniería de Manresa**)

Máster Universitario en Estudios Avanzados en Diseño (**MBDesign**) (**UPC + UB**)

Máster Universitario en Investigación en Arte y Diseño (**UAB + EINA**)

Máster Universitario en Investigación y Experimentación en Diseño (**UVIC + BAU**)

Master's degree in Interdisciplinary and Innovative Engineering (**UPC + EEBE**)

Máster en Diseño Estratégico, Innovación y Emprendimiento (**IED**)

Master in Design for Emergent Futures - MDEF (**IAAC + ELISAVA + FabLab**)

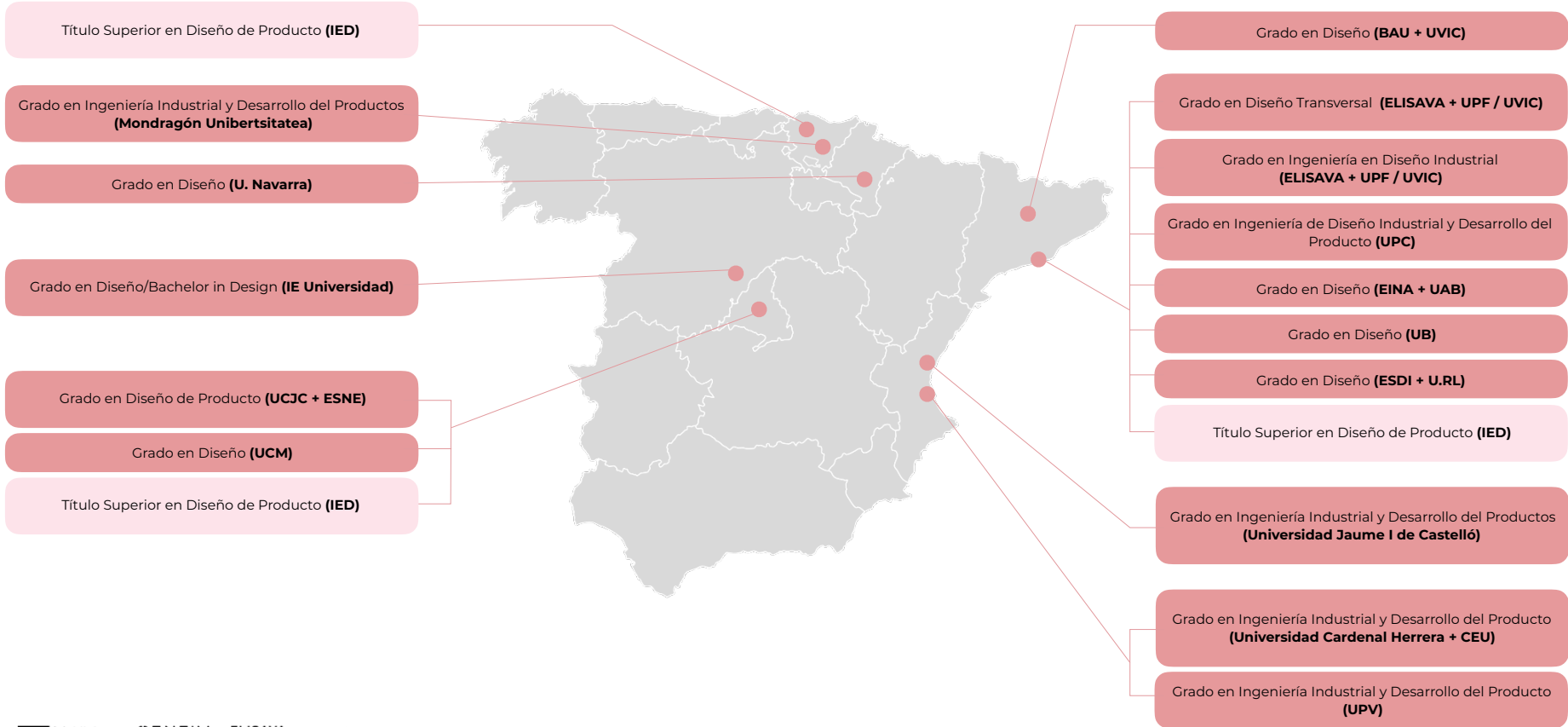
Master in Robotics and Advanced Construction MRAC (**IAAC + UPC**)

Master in Advanced Computation for Architecture & Design MACAD (**IAAD + UPC**) (**Online**)

Master's Degree in Furniture Design (**ELISAVA + UPF**)

Master's Degree in Product Design and Development (**ELISAVA + UPF**)

1.4 University Degrees & Equivalents Placement



2. National Educational Offer

Design Masters & Degrees According to INTRIDE SKILLS

Parallel to the Design-based Teaching Programmes , we also identified and studied **other Key national Masters** that were focused in the **skills and competencies** identified in both the National survey and the Workshops done in earlier stages.

The objective is to gain a deeper understanding on how those particular skills are effectively included in already existing academic programmes and were divided and organised into the categories of **Technical, Digital, Design, Green and Soft.**

The result is a short list of **14 Training programmes**, each one belonging to one of these main categories, while also registering if they include any other type of competences related with the INTRIDE project.

2.1 Design Skills

Másters Universitarios / Oficial

Máster Universitario en Diseño Estratégico de Productos y Servicios

Mondragón Unibertsitatea

<https://www.mondragon.edu/es/master-universitario-diseno-estrategico-productos-servicios>

- The objective of the master is to train **professionals who specialise in promoting and generating new products and services through strategic design, using the discipline of design as an innovation tool for the development of new products and services.** This master's degree will train students to:
 - Define the product and service strategy more in line with the business context, considering market opportunities and people's needs.
 - Identify the current and future needs of the various users in order to define the specifications of new services and products.
 - Propose solutions in the form of innovative products and services that respond to the business strategy.
 - Define the launch strategy for new products and services based on their positioning in the market.

#ProductDesign #ServiceDesign #StrategicDesign

SOFT

CREATIVE



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Design Engineering

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2.1 Design Skills

Màsters Universitaris / Official

Máster Universitario en Estudios Avanzados en Diseño (MBDesign)

Escuela Técnica Superior de Arquitectura de Barcelona (ETSAB)
Escuela Politécnica Superior de Ingeniería de Vilanova i la Geltrú (EPSEVG)
Escuela Superior de Ingenierías Industrial, Aeroespacial y Audiovisual de Terrassa (ESEIAAT)

<https://www.upc.edu/es/masteres/estudios-avanzados-en-diseno-barcelona-mbdesign>

- The inter-university master's degree in Design (UPC-UB) is a **multidisciplinary master's degree where creativity, innovation and research are applied as knowledge tools and proposals for the Design of the future**. It is proposed in an integral, broad and transversal sense, characteristic of the design made in Barcelona and which in recent decades has become an international benchmark. From an attitude of proposal, new visions are provided on theoretical reflection, participatory network strategies and the most innovative trends on new products. The tasks are developed through design workshops, projects on various topics, research laboratories in materials and technology, collaborative work and digital manufacturing laboratories, among others.
- Contemporary Design (taught in English)
- Design, Innovation and Technology (taught in English)
- Industrial Design Engineering
- Art Direction in Design
- Research in Design (transversal specialty, which deals with the other four).

#TransversalDesign #Innovation #Creativity #Technology

TECHNICAL

SOFT

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2.1 Design Skills

Másters Universitarios / Official

Máster Universitario en Investigación y Experimentación en Diseño

Universidad de Vic-Universidad Central de Catalunya + BAU

<https://www.baued.es/estudios/masters-y-posgrados/master-universitario-en-investigacion-y-experimentacion-en-diseno>

The objective of the Master's Degree in Research and Experimentation in Design is to **train researchers and design professionals committed to an increasingly changing society, capable of responding to its needs and therefore contributing to well-being and social transformation**. For this reason, this Master is presented as a space where to generate knowledge, with and from design, from research, creative practice and material and technological experimentation and ethical commitment.

The study plan for this master's degree offers **multidisciplinary training**, introducing research methodologies from disciplines so far outside the profession, such as political and social sciences. These, together with cultural studies and artistic research, make up the different subjects that make up the master, in which theory and practice are combined, using the digital manufacturing workshop as an environment for learning, experimentation and prototyping where generate research because this master's degree does not conceive research without experimentation, concern for the political without concern for the sensible, theory without technical creativity, or material experimentation without aesthetics.

#SocialDesign #Research

TECHNICAL

SOFT

CREATIVE



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en el diseño

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2.1 Design Skills

Màsters Universitaris / Official

Master's degree in Interdisciplinary and Innovative Engineering

UPC + Escuela de Ingeniería de Barcelona Este (EEBE)

<https://www.upc.edu/es/masteres/interdisciplinary-and-innovative-engineering>

Today's society needs people who are experts in **advanced technologies in emerging fields such as energy management, the digital industry, and healthcare**. To meet today's challenges, interdisciplinary teams of engineers are needed to work together to find creative, reliable, ethical and sustainable solutions. One of the key factors to carry out successful projects is that professionals from different fields have a great command of current engineering tools, such as massive data systems, 3D printing, intelligent sensors and computer simulation.

The master's degree in Interdisciplinary and Innovative Engineering enhances your academic profile with these skills to prepare you for the future. The different specialties will allow you to apply this knowledge to real problems in three emerging areas: efficient systems, smart factories and health technologies. The master's thesis is a research-oriented project, with which you will obtain 30 ECTS credits and that allows you to collaborate with the R&D departments of companies, research centers and hospitals.

#Engineering #DigitalIndustry

TECHNICAL

DIGITAL

GREEN



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2.1 Design Skills

Másters No Universitarios / Non Official

Master's Degree in Furniture Design

ELISAVA + UPF

<https://www.elisava.net/en/masters-postgraduates/masters-degree-furniture-design>

The Master in Furniture Design develops, specifically, **professional practices** that configure the profession of "furniture maker" or furniture designer. This discipline has some peculiarities that differentiate it from other design specialties. It requires knowledge of a language and its own references, which are present in each piece of furniture, a code refined over time. This allows us to communicate **uses and attitudes**, while effectively offering solutions for those objects that shape the relationships in our domestic or work environment.

- Mastery of the product design tools; tools oriented to the furniture industry; conceptual and methodological tools; knowledge tools of techniques of representation, processes and associated production materials; which can be used in:
 - Furniture projects for industrial and manufacturers of domestic furniture.
 - Tailored furniture projects for homes.
 - Industrial furniture projects for collectivities.
 - Urban furniture projects.
 - Upholstered furniture projects.
 - Projects of unique furniture elements which are representative for collectivities.
 - Lighting projects.
- Mastery of the formalisation and associated codes in projects applied to different disciplines.
- Mastery of work phases and professional project planning.
- Mastery of competences to develop projects in work groups.
- Use of the necessary resources and codes to communicate with the different agents involved in the process (clients and collaborators).

#Diseño de Producto #Mobiliario #Habitat

DIGITAL

SOFT

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Máster en Diseño de Mobiliario

ELISAVA Escola Universitària de Barcelona
Disseny i Enginyeria

UNIVERSITAT DE VIC
UNIVERSITAT CENTRAL DE CATALUNYA

2.1 Design Skills

Másters No Universitarios / Non Official

Master's Degree in Product Design and Development

ELISAVA + UPF

<https://www.elisava.net/es/masters-postgrados/master-en-diseno-de-producto>

The training offering of the Master's Degree in Product Design ranges from the **representation of the initial concepts to the technical development** of the final product, going through the different phases of the **design and engineering processes**. The Master's Degree in Product Design is aimed at specialising and updating professionals and postgraduates from different sectors, especially professionals in the field of design and product development engineering

Transversal competences:

- Ability to identify opportunities and define **design concepts**.
- Ability to argue and represent concepts and to express and defend the design proposals and the **technical decisions** made.
- Ability to work with **multidisciplinary teams** for the management of new products.

Specific competences:

- Ability to carry out new product projects, from the conceptual phase to the technical development.
- Ability to assess the **functional, aesthetic, cultural, technological, economic and communication** implications of the new product to be developed.
- Ability to apply the creative techniques of reference, as well as the most effective **management and expression** resources.
- Ability to apply the knowledge acquired from the selection of **materials, transformation processes and structural and kinematic simulation**, to the project of redesign or optimisation of a product.
- Ability to use the prototypes as a validation tool for the company projects carried out.
- Ability to apply **CAD / CAM / CAE tools**, to generate any 3D geometry, quality rendered images and videos of assembly and operation of the product.

#Diseño de Producto #Engineering

TECHNICAL

DIGITAL

SOFT

CREATIVE



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Diseño e Ingeniería

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Máster en Diseño de Producto

ELISAVA

Escuela Universitaria de Barcelona
Diseño e Ingeniería

UNIVERSITAT DE VIC
UNIVERSITAT CENTRAL DE CATALUNYA

2.2 Technical Skills

Másters Universitarios / Oficial

Máster en Organización Industrial

UPV EHU

<https://www.ehu.eus/es/web/master/master-ingenieria-organizacion-industrial>

In a complex, globalised and highly competitive scenario like the current one, the opinions that bet on a change in the production model guided by innovation and the rational use of productive and financial resources have gained strength.

In this special environment, the enhancement of **people's capacities, social and environmental responsibility and the intensive use of knowledge, organisational network work and greater public-private cooperation acquire special importance.**

It is formed for a search for solutions that has its starting point in understanding the relationships between the strategy and the design of an organisation, its operating conditions and the characteristics of the economic, political, regulatory, social, technological and environmental environment in which it is located. unwrap.

#Industrial #Management

SOFT

CREATIVE

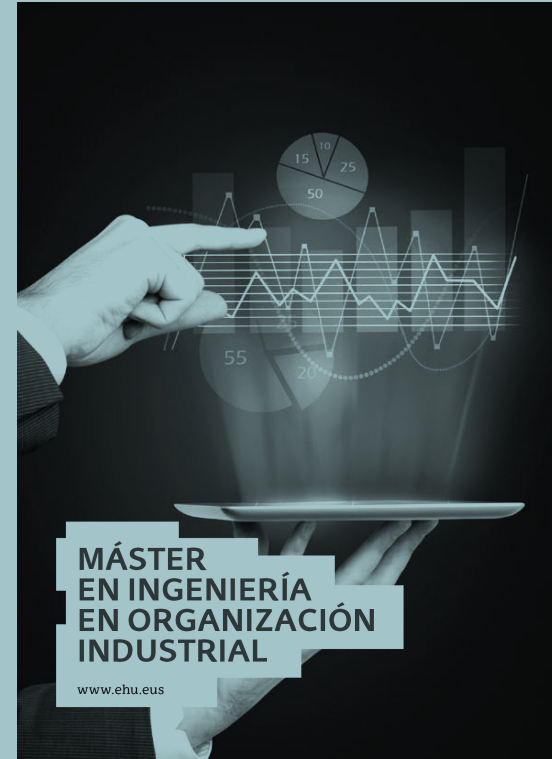


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Industrial Engineering

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2.2 Technical Skills

Másters Universitarios / Official

Máster en Ingeniería Industrial

UPV EHU

<https://www.ehu.eus/es/web/master/master-ingenieria-industrial>

The training received in this master's degree confers a level of specialisation that allows the future graduate to work in any of the functions present in a company (**engineering, design, manufacturing, quality, purchasing, R&D, etc.**) as well as in the **global management** of it. In addition to the classic output that industrial companies represent, it is also common for graduates to carry out their professional careers in other destinations such as technology centers and the public administration.

The training program deals with compulsory subjects of a technological nature, which constitute the framework of professional attributions in industrial engineering. In addition, the master offers 10 specialties to deepen in some of the technological areas of industrial engineering.

#Engineering #Design #Management

DESIGN

SOFT

CREATIVE



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Innovación en Ingeniería



2.3 Digital Skills

Másters Universitarios / Official

Ingeniería de Control, Automatización y Robótica

UPV EHU

<https://www.ehu.es/es/web/master/master-ingenieria-control-automatizacion-robotica>

In the field of robotics and automation is today in continuous evolution and progress. In addition to its consolidated track record in traditional industrial sectors, robotics is increasingly applicable in areas as diverse as clean energy, biomedicine or intelligent control systems. The irruption of "**Industry 4.0**" with all its associated technologies (**internet of things, intelligent data acquisition and processing systems, collaborative robotics ...**) is giving rise to "intelligent factories" and requires the presence of specialists with a broad and multidisciplinary training.

To address these new challenges, the Master's Degree in Control Engineering, Automation and Robotics allows training specialists capable of addressing the design, implementation, operation and maintenance of automatic systems for the supervision, **control and management of production processes** in which high performance benefits are required. dynamic behaviour, energy saving, pollution reduction or efficiency, flexibility, interoperability and security.

#Robotics #Automation #Industry 4.0

TECHNICAL

DIGITAL

GREEN



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International
Advanced Engineering



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Másters Universitarios



MÁSTER
EN INGENIERÍA
DE CONTROL,
AUTOMATIZACIÓN
Y ROBÓTICA

www.ehu.es

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EUSKAL HERRIKO UNIBERTSITATEA
BILBOKO INGENIARITZA
ESKOLA
ESCUELA DE INGENIERIA
DE BILBAO

2.3 Digital Skills

Másters Universitarios / Official

Innovación Digital, especialidad en Ciencia de Datos – Itinerario Data Science

Universidad Politécnica de Madrid

https://www.upm.es/Estudiantes/Estudios_Titulaciones/Estudios_Master/Programas?id=10.18&fmt=detail

The main objective of the master's degree in Digital Innovation is to train professionals capable of innovating and bringing the results of **research and innovation** in cutting-edge technologies to the market. For this, the Master not only prepares its students to be the best possible technologists in their specialty, but also seeks to acquire a business mentality that allows them to anticipate the changes that occur due to new technologies (in their specialty) and devise and develop new products that stay ahead of those changes, as well as translate those innovations into feasible business solutions.

From an innovation and entrepreneurship perspective, the title emphasizes two main elements:

On the one hand, offering a set of basic knowledge to students, while providing them with the skills and tools necessary to think about the digital innovation process in "commercial terms" (not only in the technological perspective that is dealt with in technical subjects. of the masters). Specifically, the intention is to provide students with the **skills and tools necessary to be able to develop business models** and, if necessary, launch their own business project or carry out similar activities in a pre-existing company (for example, to launch a new ICT product and service. or a new business unit in a company not necessarily in the ICT field).

And on the other hand, provide the student with the necessary skills so that they can develop a commercial and specific project.

The master's degree in Digital Innovation includes two specialties: Data Science, and Human Computer Interaction and Design.

#Interaction Design #Data Science

DESIGN



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Másters Universitarios



Digital
MASTER SCHOOL



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POLITÉCNICA

2.4 Green Skills

Másters Universitarios / Official

Ingeniería de Materiales Renovables

UPV EHU

<https://www.ehu.eus/es/web/master/master-ingenieria-materiales-renovables>

The inevitable and progressive consumption of fossil sources, also conditioned by geopolitical interests, continues to be the irrevocable argument that justifies the need to exploit renewable sources to **develop new materials from renewable sources**.

Added to this is the social demand for materials with the possibility of recycling or biodegrading, which gives way to using biotechnologies to prepare new biopolymers and other products under the principles of Green Chemistry in the processes associated with their transformation.

The Master in Renewable Materials Engineering offers a high qualification in the **sustainable development** of new applications based on the integral use of biomass to develop materials, fuels and other innovative products.

The training program allows to know the latest advances in the field of renewable materials engineering and the approach via biorefinery, as well as the activities in this field that are developed in the national and international environment.

#Engineering #RenewableMaterials

GREEN



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materiales y tecnologías

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2.4 Green Skills

Másters Universitarios / Oficial

Economía Circular - Esp. Consumo y Gestión Sostenible del Capital Natural

Universidad Politécnica de Madrid

The transition within companies from a linear to a **circular economy** brings a number of practical challenges for companies. The Master will provide a framework of strategies to train business designers and strategists in the transition from a linear economy to a circular economy. Therefore, its basic objectives are:

Present the methodologies to **decrease, reduce and close the loops of material and energy resources**.

Develop a list of product design strategies, business model strategies and examples for those who have to make key business decisions to facilitate the shift to a circular economy.

Prepare students as professionals who will also participate in a future Research.

Development and innovation agenda for the circular economy.

Facilitate education for sustainability and improve the employability of graduates.

#CircularEconomy #ProductDesign #BusinessStrategy

DESIGN

GREEN



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POLITÉCNICA

UNIVERSIDAD
POLITÉCNICA
DE MADRID

2.5 Soft Skills

Másters Universitarios / Official

Máster Universitario en Diseño de Interacción y Experiencia de Usuario

Universitat Oberta de Catalunya

<https://estudios.uoc.edu/es/masters-universitarios/disenio-interaccion-experiencia-usuario/presentacion>

Technology is increasingly multiple, ubiquitous and omnipresent. In this context, suitability for users and ease of use has become the key factor for the success of any digital product or service.

In this context, the profile of the UX designer in their different roles - UX strategist, UX consultant, usability consultant, information architect, interaction designer or interface designer (UI) - has been gaining prominence in recent years and has become a stable member of professional teams responsible for **creating interactive digital products and services**.

The disciplines of human-computer interaction (IPO) and user experience (UX) coordinate the essential aspects involved in the interaction between people and technology: the characteristics and human needs, the functionalities of interactive digital products, its context of use, the implementation of technological systems, information architecture, graphic, visual and interaction elements, and the development process of these products.

The UOC's online university master's degree in Interaction Design and User Experience (UX) provides insight into all the fundamental aspects of this field of knowledge and its professional practice. In addition, the electives offer an intensification in each of the main areas of **user-centred design**: research with users, interaction design, interface design and the evaluation of usability and user experience.

#UserCenteredDesign

DIGITAL

DESIGN



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La formación de posgrado de la UOC

Máster universitario

Diseño de Interacción y Experiencia de Usuario (UX)

¿Quieres más información?



UOC

Universitat
Oberta
de Catalunya

La formación de posgrado
en línea para los profesionales

2.5 Soft Skills

Másters Universitarios / Official

Universidad Politécnica de Madrid

<https://www.master-doctorado-innovacion.com/>

1. UNDERSTAND THE IMPORTANCE OF INNOVATION TO ENSURE COMPETITIVENESS AND THE FUTURE OF COMPANIES, REGIONS AND COUNTRIES
2. WILL KNOW THE FUNDAMENTALS AND EVOLUTION OF SCIENCE, TECHNOLOGY AND INNOVATION POLICIES
3. THEY WILL KNOW, KNOW HOW TO USE AND INTERPRET THE STATISTICAL SOURCES ON INNOVATION AND TECHNOLOGICAL CHANGE
4. UNDERSTAND THE INTER RELATIONSHIPS BETWEEN THE DIFFERENT ELEMENTS THAT INTERVENE IN THE DECISION-MAKING OF THE AGENTS LINKED TO INNOVATION.
5. THEY WILL HAVE ACQUIRED THE FUNDAMENTALS OF THE STRATEGIC MANAGEMENT OF THE COMPANIES, TO IDENTIFY AND DEVELOP THE ELEMENTS OF A MODEL OF CULTURE OF INNOVATION

#Innovation #Business strategy

SOFT



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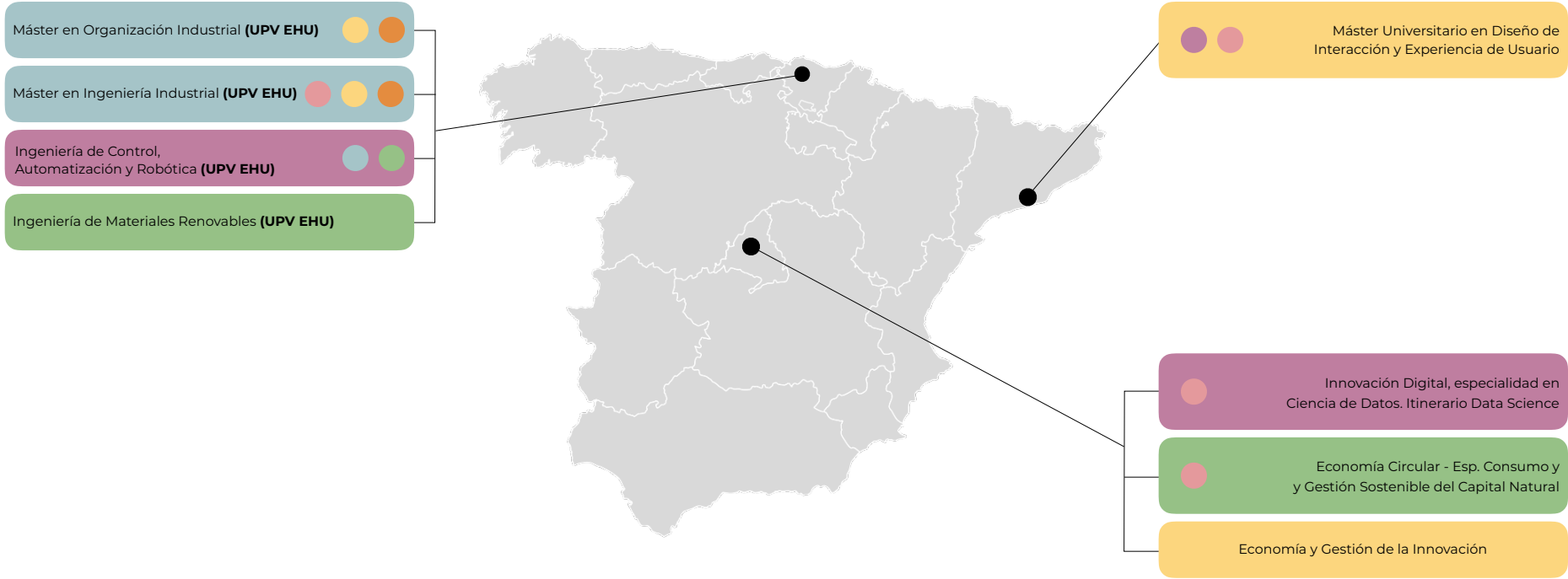
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en el sector
de la cerámica

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2.6 Key Master Programmes Diagram



- TECHNICAL
- DIGITAL
- DESIGN
- GREEN
- SOFT
- CREATIVE

3. Technological Centers & Industrial Clusters

3.1 Key Technological Centers

Applying the same Knowledge Areas & Skills-based criteria,
From a wide listing , 9 key Technological Centers were identified
by our partners at **LEITAT**.

3.1 Key Technological Centers

AITIIP - Fundación AITIIP

Zaragoza

www.aitiip.com

Aitiip is a technology centre based in Aragon, validated by the Spanish Ministry of Economy, Industry and Competitiveness. Aitiip is a private non-profit foundation, which offers enterprises and society as a whole, advanced technology services; research, technology development and innovation, as well as training.



TECHNICAL

DESIGN

GREEN

SOFT

CREATIVE



CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Design and Engineering

LEITAT
Leading Technology

3.1 Key Technological Centers

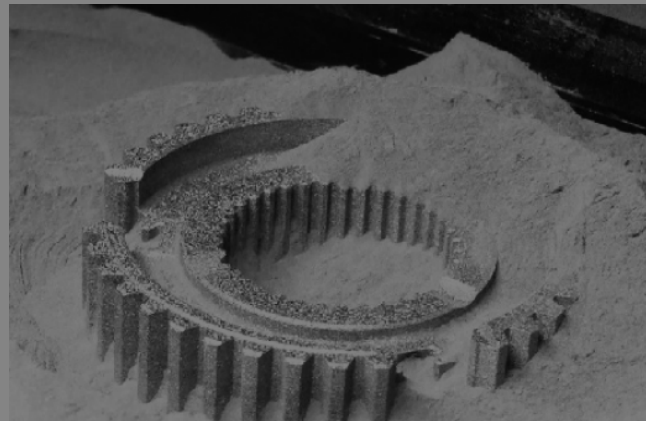
IDONIAL - Fundación Idonial

Gijón

www.idonial.com

IDONIAL was established in 2019 as a result of the merger of the [ITMA](#) and [PRODINTEC](#) centers with 28 and 14 years of experience respectively, which have opted to join efforts to address new challenges and provide our customers with tailor-made solutions related to the development of materials, advanced manufacturing and the digital industry through technological development and innovation.

For this purpose, the centre has a wide technological offer oriented to the needs of companies applicable to a wide range of industrial sectors and with an expert and multidisciplinary team with an interest in development and innovation.



TECHNICAL

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GREEN

SOFT

CREATIVE

3.1 Key Technological Centers

CIDAUT - Fundación CIDAUT

Valladolid

www.cidaut.es

CIDAUT are capable of applying innovation in each of the processes leading up to a new product thanks to the multidisciplinary structure of its work groups.

It works in a coordinated manner from its conception, characterisation, materials design, simulation and prototyping to its final validation.

Its mission is to be a model of progress that invigorates our socio-economic environment and makes it possible for people capable of providing value to society to develop.

Its vision is to be the Leading Centre in Technology Research, Development and Innovation in the Transport and Energy Sectors.



TECHNICAL

DESIGN

GREEN

SOFT

CREATIVE



CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Design

LEITAT
Leading Technologists

3.1 Key Technological Centers

ITECAM - Asoc. para la investigación y desarrollo tecnológico de la industria del metal Castilla La Mancha

Tomelloso

www.itecam.com

ITECAM is the Metal-Technological Centre of Castilla-La Mancha, created as a private non-profit business association since 2002 whose main goal has been to encourage innovation and promote competitiveness in metal-mechanic industries, as the ones dedicated to transformation, processing, equipment development, machinery and systems proved to metallic purposes.

Through a technical team and using advanced technological resources, the Centre develops an R+D+& applied, working in the generation of new products, services, processes improvements, technological implantations, and knowledge transfer. Those purposes achieved through quality technological services, implantations and supports of projects, R+D+& business consults as well as a specific training adapted to the improvement of talent.

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Manufacturing

LEITAT
Leading Technology



3.1 Key Technological Centers

LEITAT - Acondicionamiento Tarrasense

Terrassa

www.leitat.org

Leitat, founded in 1906, aims at Managing Technologies to create and transfer Social, Environmental, Economic and Industrial sustainable value for companies and entities through research and technology processes. From our state-of-the-art facilities, we are collaborating with more than 45 countries and developing more than 215 projects in the sectors of: Biotechnology, Health, Advanced Materials, Industrial Chemistry, Renewable Energies and New Production Processes. We focus our commitment on strengthening specialized teams in Technology Transfer, which allow generating collaborative and reliable business environments to achieve an economy based on knowledge and talent development.

We are a Technological Center, accredited by ACCIÀ[®] and recognized by the Ministry of Economy and Competitiveness, promoting collaboration and cooperation by providing knowledge and experience in a global environment.



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CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Design and Technology

LEITAT
Managing Technologies

3.1 Key Technological Centers

EURECAT - Fundació Eurecat

Cerdanyola del Vallès

www.eurecat.org

Eurecat, the big industrial technology provider of Catalonia offers business services applied R&D, technology services, technology consulting, training highly specialized development of innovative products and services, and promotion and dissemination of technological innovation.

Conceived with the mission of becoming a key agent in public-private cooperation within the area of research and innovation, Eurecat is one of the main players involved in the implementation of Catalonia's technological strategy, which was officially formalised as the RIS3CAT.



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3.1 Key Technological Centers

TECNALIA - Fundación Tecnalia research & innovation

Donostia

www.tecnalia.com

Tecnalia is the leading private Technology Centre in Spain and one of the main organisations devoted to applied research in Europe. Its operating model is based on sectoral Business Units that stand out because they are geared to the Market and their own Specialisation.



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Innovation in
Design & Engineering

LEITAT
Leading Technology

3.1 Key Technological Centers

CETEM - Centro tecnológico del mueble y la madera Murcia

Yecla

www.cetemes.es

The Technological Centre of Furniture and Wood of the Region of Murcia (CETEM) is a private and non-profit organization located in the town of Yecla, one of the most important furniture clusters of Spain.

Over the last 20 years CETEM has been promoting and implementing innovation and technological development in the Furniture Sector, making CETEM the main business reference in the industry and becoming an important economic engine in the Murcia Region.

Its main objective is to promote and undertake activities, projects and services, innovative technology, to improve, promote and encourage the development and continuous improvement of companies in the sector of wood, furniture and related services, making them more competitive.

Its creation in 1994 was promoted by the Institute Building of the Region of Murcia (INFO), the Regional Association of Employers of the Wood (AREMA), the Technological Institute of Furniture (AIDIMA), the City Hall of Yecla, the Office of Industry and Tourism, the Ministry of Industry and Energy and the European Community. CETEM is recognized as a Technology and Innovation Centre (CIT number 83) and as a Technology transfer office (TTO number 165).

It is important to note, that while CETEM is a minor Technological Center, it is one of the very few that specialises on furniture. That is the reason why we have decided to list it as a key center in our benchmarking.



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CENFIM
Furnishings Cluster

ELISAVA
Innovación y Tecnología



3.1 Key Technological Centers

INESCOP - Asoc. investigación industrial del calzado y conexas

Elda

www.inescop.es

INESCOP is a Centre for Technology and Innovation, founded in 1971 as a private and non-profit making association. With more than 45 years of experience, the Institute works to provide technology services, transfer knowledge and conduct research on general relevant topics for the footwear sector.



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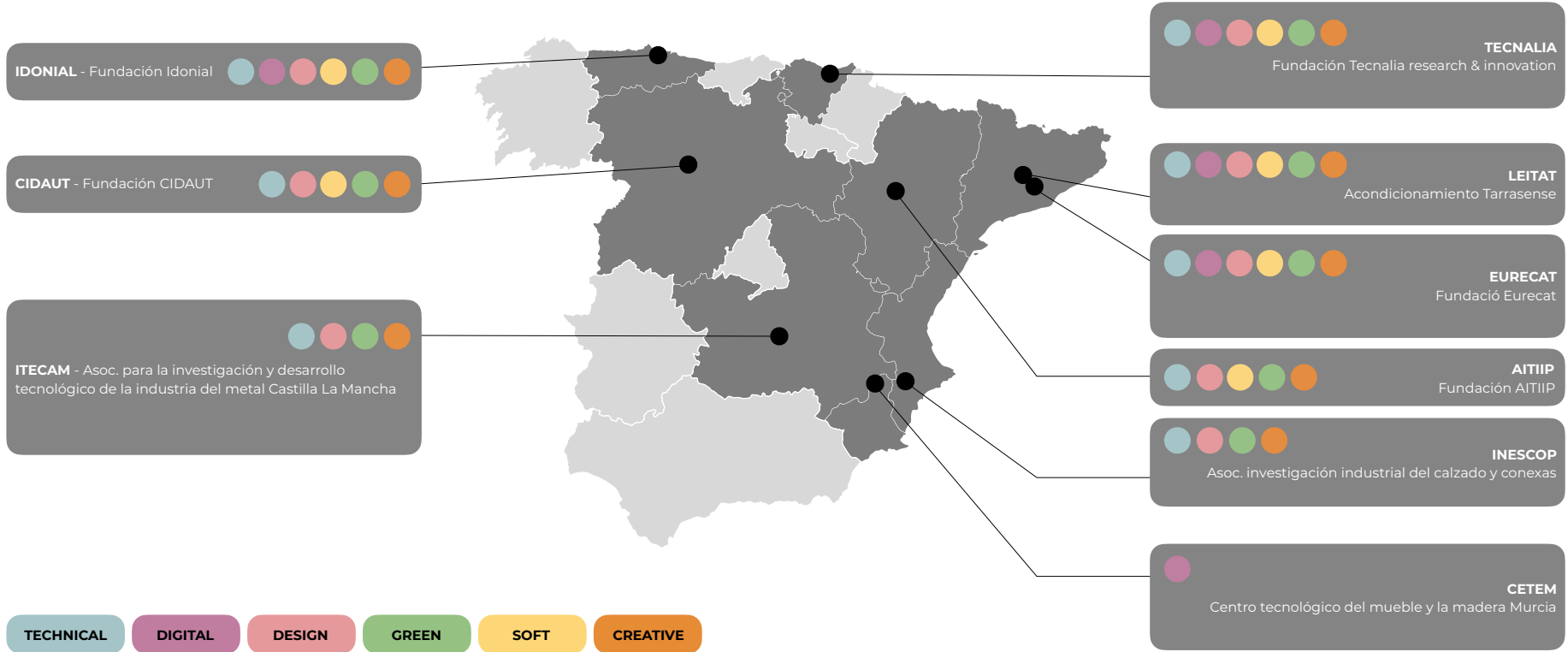


CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Textile Engineering

LEITAT
Leading Technology

3.1 Key Technological Centers Diagram



3.2 Key Industrial Clusters

Applying the same Knowledge Areas & Skills-based criteria, from a wide listing , 9 key Industrial Clusters were identified by our partners at **CENFIM**.

3.2 Key Industrial Clusters

AEI de la Infancia - Asociación de Empresas Innovadoras de la Infancia

Valencia

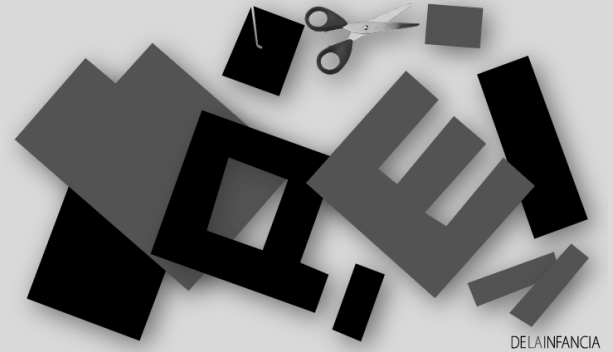
www.aeidelainfancia.es

AEI de la Infancia - Association of Innovative Companies for Children is a group of companies in children's fashion and footwear, childcare and toys that wants to make a qualitative leap in their competitive situation. Its products have always been excellent, but today's market requires going further, a constant and daily effort to qualify the product, with design, innovation, quality and brand.

AEI de la Infancia's mission is "to serve as a unifier between the agents of the business system to improve through innovation and collaboration the competitive situation of companies offering products and services suitable for children".

The association represents around 30% of a sector, that of products for children, which in 2017 estimated its turnover at around 3,500 million euros.

#footwear #furniture



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CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Design and Technology

LEITAT
Leading Technology

3.2 Key Industrial Clusters

AEICE - Clúster Hábitat Eficiente

Valladolid

<http://aeice.org>

AEICE is a private non-profit association whose mission is to promote the competitiveness of our associates based on innovation, collaboration, training, internationalization and communication as basic tools for their economic and social development, of our environment. and the territories.

For this, we have more than 100 partners in the value chain of the habitat and construction industry that interrelate with each other and with the different actors, public and private, with the aim of providing a collaborative response to the challenges we face. we face acting jointly as an agent of change through strategic actions.

#construction products and services #furniture



TECHNICAL

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3.2 Key Industrial Clusters

AIDIMME (AEI) - Instituto Tecnológico Metalmecánico, Mueble, Madera, Embalaje y Afines

Valencia

<https://www.aidimme.es/>

The Metalworking, Furniture, Wood, Packaging and Related Technological Institute, AIDIMME is the result of the merger of: AIDIMA (Technological Institute of Furniture, Wood, Packaging and Related Products) and AIMME (Metalworking Technological Institute.)

It is a private association, with its own legal personality, non-profit making, national in scope and international projection.

Its purpose is to contribute to increasing the competitiveness of the metal-mechanical, furniture, wood, packaging and related sectors, mainly in the field of design and development of innovative products and materials, advanced and sustainable procurement, manufacturing, logistics, distribution and services, as well as companies from other sectors in its environment, such as Habitat, Capital Goods, Automotive and Mobility, Consumer Goods, Health, Tourism, etc.

#construction products and services #furniture



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CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Manufacturing

LEITAT
Leading Technology

3.2 Key Industrial Clusters

AMUEBLA - Agrupación Empresarial Innovadora de Fabricantes de Muebles y Afines de la Región de Murcia

Murcia

<http://www.amueblacooperacion.es/>

The Association is constituted as a non-profit entity characterised by being a combination, in the FURNITURE MANUFACTURING sector AND RELATED SECTORS OF THE MURCIA REGION, of companies, research centers and training centers, public and private, involved in collaborative exchange processes, aimed at obtaining advantages and benefits derived from the execution of specific innovative projects.

The purpose of this Association is to facilitate, by achieving a sufficient critical mass of all associated companies and organisations, innovative practices that improve the competitiveness of associated companies, defend their general business interests, and promote their projection and international visibility:

Supporting innovation and business competitiveness strategies in the companies that make up this AEI.

Promoting and spreading innovation practices more quickly to groups of companies in conditions and with the will to undertake advanced collaborative projects.

Encouraging interaction and cooperation between the agents that make up the AEI to generate economic and competitive advantages for its members.

Implementing collective solutions that allow us to overcome the identification challenges and achieve increases in productivity and added value.

#construction products and services #furniture

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CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Manufacturing

LEITAT
Leading Technology



3.2 Key Industrial Clusters

CENFIM - Furnishings Cluster

La Sénia

<https://www.cenfim.org/>

CENFIM - Cluster and innovation hub for home and contract equipment has the mission of contributing to the improvement of the competitiveness of furniture manufacturers and companies along the entire value chain of home and contract equipment. It is a non-profit entity created by business associations in the wood and furniture sector and by the public administration. Currently, it has 140 associated companies for home and contract equipment: furniture, carpentry, flooring, bathrooms, lighting and home textiles.

CENFIM helps its associates improve their competitiveness and their capacities in innovation and commercialisation through their participation in collaborative projects and training activities. CENFIM's activities in innovation focus on 4 axes: 1) digitisation, 2) circular economy, 3) product ideation and 4) shared value. To boost the sales of the associated companies, CENFIM organises a marketplace in hotel interior design every year in Barcelona: InteriHotel. In addition, CENFIM manages a contract product showroom in Barcelona WEcontract and another in Madrid and the online platform HiContract.

#furnishings #furniture



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CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Design and Engineering

LEITAT
Leading Technology

3.2 Key Industrial Clusters

BCD - Barcelona Centre de Disseny

Barcelona

<https://www.bcd.es/cluster-diseno/>

The BCD understands design as a transformation factor for competitiveness, sustainability and positive impact on society, in line with the United Nations Sustainable Development Goals (Agenda 2030).

They promote innovation, creative talent and the projection of Barcelona's design to the world. They are defined as the strategic partner in design to create joint value with Companies, Entrepreneur, Professionals, Entities.

The Strategic Plan for Barcelona Centre de Disseny 2017-2020 focuses on the following areas:

Innovation and sustainability of organisations (companies and entities).

The impulse of creative entrepreneurship.

The promotion of the Barcelona brand in the creative field and the internationalisation of local creative talent (design inspired by Barcelona).

The challenges of society and the sustainable development goals of the United Nations, the 2030 Agenda.

#design



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DESIGN

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CENFIM
Furnishings Cluster

ELISAVA
International
Design School

LEITAT
Leading Technologies

3.2 Key Industrial Clusters

CMD - Cluster da Madeira e o Deseño de Galicia

Santiago de Compostela

<http://clustermadeira.com/>

The Cluster da Madeira e o Deseño de Galicia (CMD) was established in 2001 at the initiative of companies linked to the wood sector together with the Wood Technology Center (CIS Madeira) and the University of Vigo.

Since its inception, the CMD brings together companies and agents linked to the entire wood value chain, comprising companies related to forestry, sawmills, sheet metal and board, paper pulp companies, carpentry and furniture companies and services.

Currently, it is made up of about 50 companies from all over Galicia, with a pioneering wood industry in the development of products at a national and international level, as well as companies that are a benchmark in design and innovation.

The CMD is a business entity with a double Mission:

Strengthen the structure of the companies that make up the Cluster, providing them with competitive advantages through cooperation mechanisms, and the enhancement of their products as elements of natural origin, recyclable, and sustainable that contribute to improve comfort and quality of life.

The CMD is defined as an open and integrating entity of all the companies in the wood value chain, with the purpose of contributing to the improvement of their competitiveness, taking advantage of the derived synergies, the exchange of experiences and knowledge, of the mechanisms support and cooperative networking.

#forestry #furniture #wood

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Wood Technology

LEITAT
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3.2 Key Industrial Clusters

HABIC - Clúster del Equipamiento, Mobiliario y Diseño del País Vasco

Zarautz

<http://www.habic.eus>

Habic is the Basque Country's equipment, furniture and design cluster. It groups together the main companies in the sector whose scope of action is the equipping of communities, homes, hospitals, hotels, offices and work environments. Our mission is to support the competitiveness of companies in the design sector through actions representing the sector, generating new visible values for users and sustainable competitive advantages, promoting innovation and business transformation through collaboration and knowledge shared.

#construction products and services #furniture



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CENFIM
Furnishings Cluster

ELISAVA
Innovation in
Design and Technology

LEITAT
Leading Technology

3.2 Key Industrial Clusters

HCB - Habitat Cluster Barcelona

Barcelona

www.hcb.cat

The Habitat Clúster Barcelona is a non-profit business association with legal personality whose main objective is to promote and contribute to the competitiveness of the entire value chain of the habitat sector in Catalonia.

We work transversally with companies in the sector to innovate, we help in the evolution of businesses and we focus on shared strategic challenges.

Habitat Clúster Barcelona is aimed at companies, universities, research centers, agents from the entire value chain that is part of the equipment of buildings: bathroom, construction, decoration, rest, energy efficiency, training, lighting, innovation, furniture, flooring and coatings, textiles and sustainability.

The common point of all the companies and entities that we group is the final consumer. Collaboration enables economies of scale to be improved, but also offers new business opportunities and improved user experience.

#construction products and services #furniture



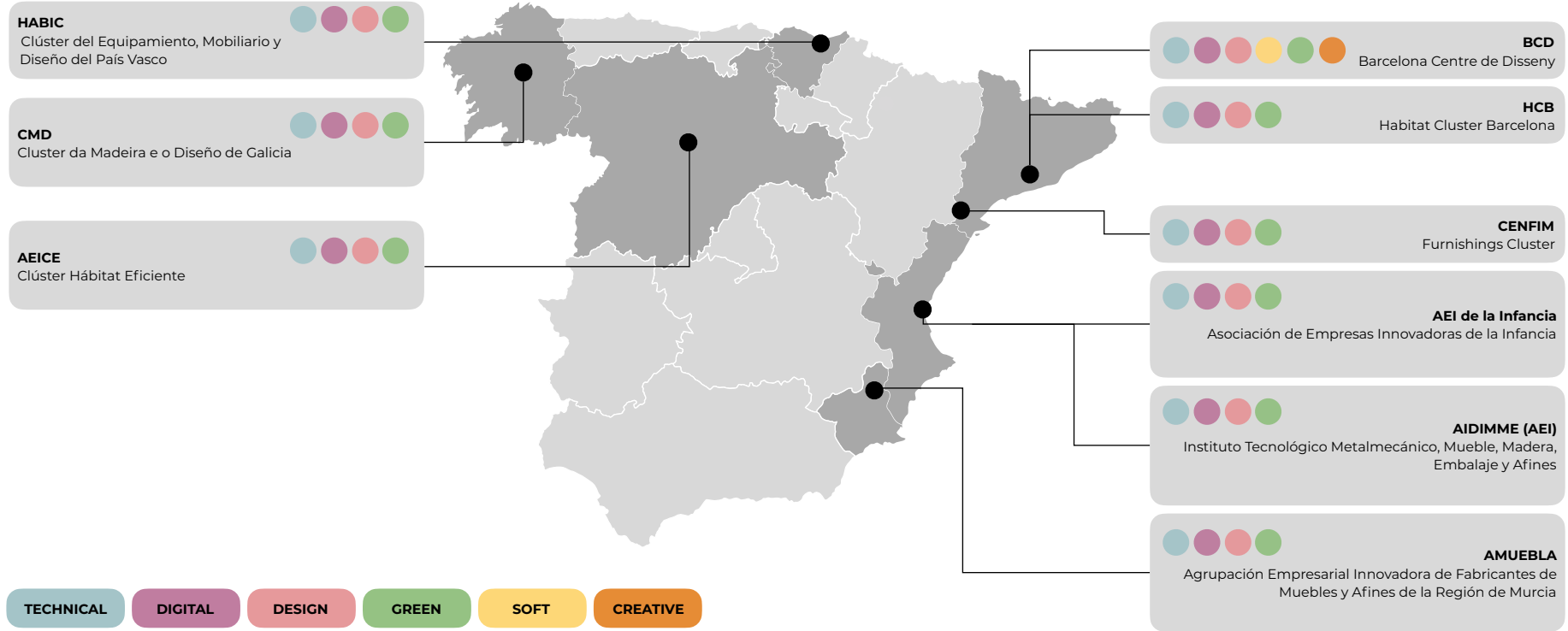
TECHNICAL

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3.2 Key Industrial Clusters Diagram



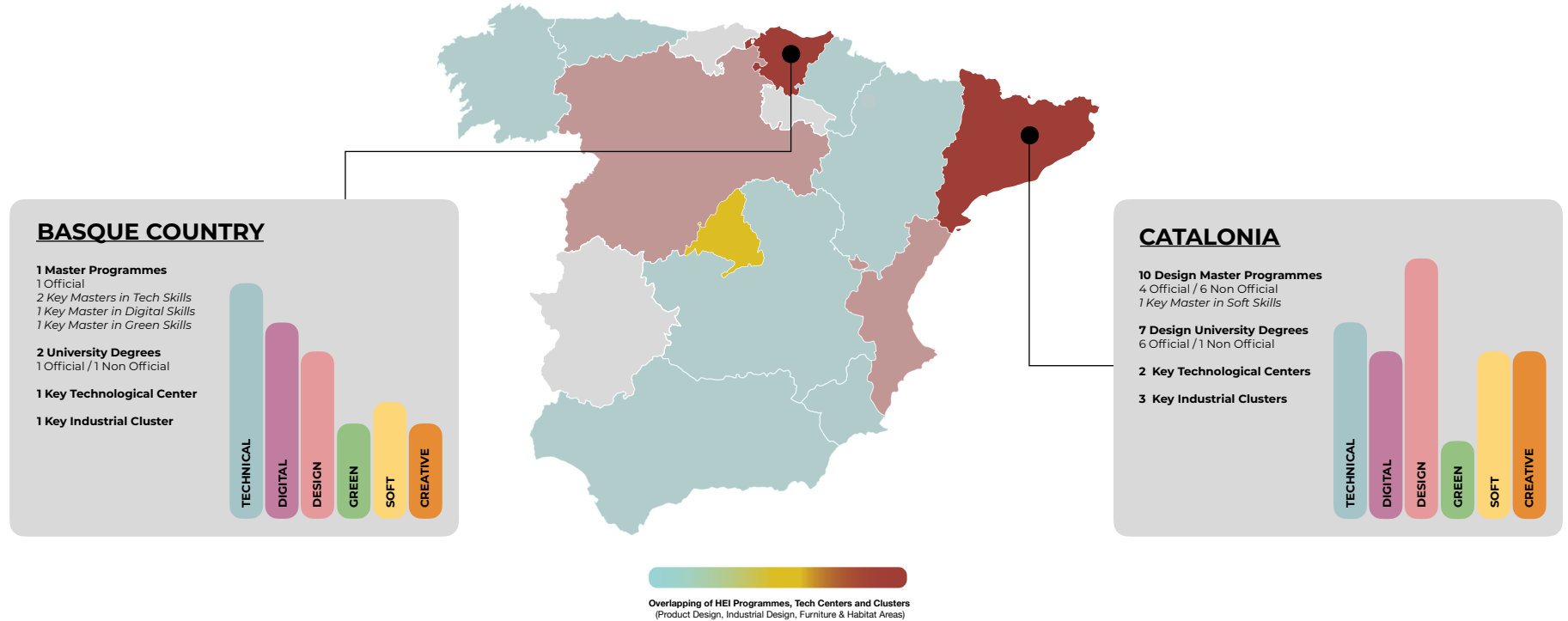
3.3 State of the Art Diagram

Key Actors in Spain

Visual Summary of key **HEI's, Training Programmes, Technological Centers and Industrial Clusters** that compose Spain's landscape, regarding Product Design, Industrial Design, Furniture & Habitat knowledge areas.

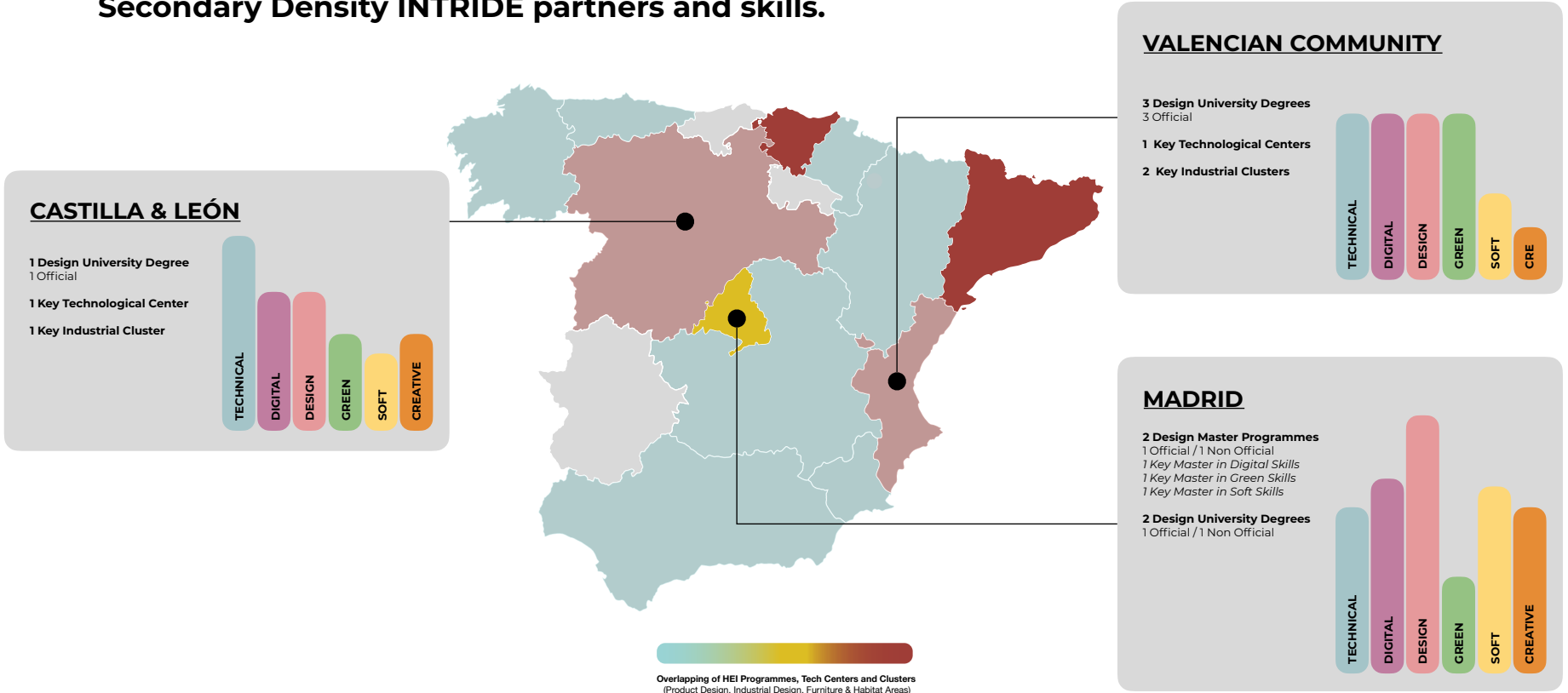
3.3 State of the Art Diagram - Key Actors in Spain

Primary Density of INTRIDE Partners and Skills.



3.3 State of the Art Diagram - Key Actors in Spain

Secondary Density INTRIDE partners and skills.



Conclusions

There are two areas in the north of Spain, **Catalonia and the Basque Country**, where all INTRIDE actors (HEI-Masters, Cluster and Tech Centers) are represented more densely. In these areas the major skills developed and represented are **Design Skills, closely followed by Technical.**

There are three other zones of interest, in a second level of density of INTRIDE actors: **Castilla y León, Valencian Community and Madrid.** In this case, the most prominent skills in a more transversal way are those that belong to the **Design, Technical and Digital categories.**

Total Amount of Design Academic Programmes in Spain

106 Masters + 63 University Degrees

(Source: RUCT Registro de Universidades, Centros y Títulos)

Total Amount of Key Master Programmes according to INTRIDE SKILLS

34 Academic Programmes of which:

Official Programmes: 25

Non Official Programmes: 9

Total Amount of Key Design Master Programmes according to INTRIDE SKILLS

15 Academic Programmes

Number of National regions represented:

7 out of 17

Key Technological Centers according to INTRIDE SKILLS

9 Centers

Number of National regions represented:

8 out of 17

Industrial Clusters according to INTRIDE SKILLS

9 Clusters

Número de Regiones Nacionales Representadas en Clusters Industriales

8 out of 17

Skills most represented in Key Design Master Programmes



Skills most represented in Key Technological Centers



Skills most represented in Key Industrial Clusters



Additional Resources

In the following links you will find, for your reference, some resources that allowed us to organise, quantify and analyse this benchmarking document.

Spain's Official Register for Universities, Centers and Titles:

[RUCT](#)

Access to the Summary Document with all the information displayed in this presentation:

[Master Document](#)

Thank you.

State of the Art Analysis Spain

Benchmarking Key Actors: HEI's Academic Programmes,
Technological Centers & Industrial Clusters.

Road to WP4. Development Training Programme — November 2020



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DIDA
DIPARTIMENTO DI
ARCHITETTURA



Sant'Anna
School of Advanced Studies - Pisa

ELISAVA

Barcelona School of
Design and Engineering

CENFIM

Furnishings Cluster

LEITAT

managing technologies



UNIVERSITY
OF ART
AND DESIGN
CLUJ-NAPOCA

WSB University



TRANSILVANIA
FURNITURE
CLUSTER



zamek cieszyn



did
distretto
INTERNI DESIGN



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