



Annual Report  
**2019 2020**

**“Boosting Smart Industry”**

**Mi4**  
MetaIndustry4



**INDUSTRIA INDUSTRY  
TECNOLOGÍA TECHNOLOGY  
CONOCIMIENTO KNOWLEDGE**



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# 1 . Presentation by the President

Mi4

## 2

# Presentation by the President



Our goals have been clear:  
a fair energy transition,  
a consolidated digital  
transformation process  
and a sustained economic  
growth of the industry.

Dear Member,

Looking back in time we can see that the three founding principles that define us, Value Creation, Technology and Knowledge are still in force. The cluster model selected for MI4 was supposed to go beyond the horizontal networks in which companies from the same market sectors cooperate (R&D, marketing, or joint purchases) and compete.

Our aim was to create the basic conditions so that the companies belonging to the cluster could learn about externalities or “spillovers” of knowledge created with the cluster to reinforce their proficiency and enhance their competitive capacity.

In this activity report you will be able to verify the effectiveness of this initiative and you can check the figures that support it, but I think it is relevant to underline the European position of our “project”. MI4 is

A shared collaboration  
is the solution to  
face this crisis with  
innovative and dynamic  
responses.

currently working on 2 European projects along with 16 international partners and a joint budget of 5 million Euros. It is important to highlight that 75% of the budget is intended to finance SME innovation projects. In 2020 our aim is to add 3 new European projects and to collaborate with 25 international partners. For this purpose we count with a budget of around 10 million euros. These data relatively show a broad qualitative leap for the cluster in its progress towards its consolidation.

I am writing these lines when the alarm state created by an incredible global pandemic has just ended. Socio-economic data anticipate that the Spanish economy will be seriously affected. It is a crisis caused outside the economic system and it is very different from the crises that have occurred in recent years, so applying successful recipes from the past does not seem to be the best alternative today.

This emergency has come during the process of applying new technologies to manufacturing (4.0 Industry) and accelerating the decarbonization processes of economy, and we are aware that the pandemic has sunk demand abruptly. Additionally, we are experiencing a technological decoupling between the USA and China. This comes along with a great economic interdependence between countries during the crisis period and it may end up promoting a greater nationalization or at least a regionalization of production. This situation can affect our internationalization and integration strategy in global value chains.

However if the COVID-19 pandemic is holding back physical globalization, it is also motivating a digital globalization. Working remotely has got more followers and network services have been more used in this crisis.

The COVID-19 pandemic has meant a turn towards the State in terms of searching for a strong and collective leadership with an inductive governance model where institutions, companies and citizens are present.

In early April the European Commission through DG Grow launched a cooperation forum between companies, associations and clusters at European level. We set support lines through the clusters to reorient the production processes and respond to the needs caused by the pandemic. An organizational model based on needs- solutions - actions was the key element proposed by the European Cluster Alliance and it required a political commitment to business management in relation to the clusters. Europe considers that promoting clusters is part of the solution. In this sense Asturias needs to support this organizational model or we will not be able to create the essential “momentum” for recovery.

The metal sector is considered to be the engine of socio-economic progress in Asturias. It is a mature sector with little capacity for reinvention and in permanent reconversion. That is why heralds of the future with mental patterns from the past proliferate in mass media. They propose to grow in more attractive sectors and leave the current sector due to its expected irrelevance. It seems like a "deja vu" of the situation experienced in the 1980s. We consider that it is time to have confidence in an intelligent, competitive and innovative industry that is knowledge-oriented and committed to creating thousands of qualified jobs.

Quality, dynamism  
and innovation are the  
guidelines that set the  
Asturian industry.

It is time to bet  
on an intelligent,  
competitive,  
innovative industry,  
residence of  
knowledge and  
commitment of  
thousands of  
qualified jobs.

Europe believes that the guidelines included in the European Green Pact along with its investment plans in the manufacturing industry, and the development of new environmentally friendly products can produce complete recovery in the short time. That would boost the economy and job creation, as well as it would achieve the goals related to climate change and it would promote a circular economy.

Asturias has a great potential to be a benchmark in circular economy and in advanced manufacturing together with a smart specialization strategy promoted by Europe. The MI4 has recently presented its proposals for the implementation of additive manufacturing along with the initial projects developed collaboratively by companies in the cluster. They are in favor of developing Ecoparks, technology parks and excellence campuses oriented to market opportunities for Asturias. Now it is time to move forward and we should focus on research and innovation in circular economy, from top-down and bottom-up approaches supported by European interregional networks belonging to the MI4 European peers club.

This roadmap should identify strategic priorities in production, distribution, after-sales services, collection systems, repair for subsequent reuse, and recovery and recycling models for biochemical raw materials. Cross-cutting priorities related to legislation and regulation and learning systems throughout professional life that require a new social contract should be considered as well.

As a conclusion, I would like to highlight that some of these reflections should be integrated in the up-to-date MI4 Strategic Plan that the board of directors has proposed for 2020. Due to the current circumstances I think that this is more necessary than ever.

MetalIndustry4 has welcomed all the participating companies, partners' projects, seminars and initiatives raised during these years. The achievements are commendable. The MI4 executive committee, coordinators and technical team have done an excellent job. We have shown that aspiring goals can be achieved. I would like to express my deepest admiration and gratitude to all of you.

It has been an honor for me to make this dream come true.

**Guillermo Ulacia Arnáiz**  
President of MetalIndustry4



## 2. MetaIndustry4 Governance

## 2

# MetalIndustry4 Governance

The Advanced Manufacturing Cluster of Metal Industry in Asturias, **MetalIndustry4**, was created in 2016 as a non-profit and voluntary membership group which has its own legal and independent personality.

**MetalIndustry4** started with 32 founding members and has been evolving and growing to 57 partners today.

**MetalIndustry4** is defined as a multidisciplinary cluster, aligned with the **Asturias Smart Specialization Strategy (RIS3)**, in which industry, technology and knowledge converge. With a clear vision and mission, the Cluster has gone on with its strategy and has **positioned itself as a meeting point between offering and searching for solutions**. Looking further ahead, it is a facilitator of the transformation of the advanced industry in Asturias.

**MetalIndustry4 is a meeting point between offering and searching for solutions.**

## MISSION

Promote the **competitive improvement of the sectoral ecosystem**, facilitate its **integration** in the main **Global Value Chains**, improve **human and technological resources** and promote innovation and cooperation; with a clear orientation towards accelerating the growth rate, both in turnover and profitability.

## VISION

**Achieve a highly competitive Industry in Global Value Chains** thanks to its high degree of innovation and incorporation of advanced manufacturing technologies, professional qualification and high level of cooperation throughout the entire sectoral ecosystem.

Promote the  
competitive  
improvement of the  
sectoral ecosystem  
with innovation  
and advanced  
manufacturing in  
global value chains.

## 2.1. ORGANIC STRUCTURE

The Governing Bodies of **MetalIndustry4** are made up of the General Assembly, the Board of Directors, Presidency, Vice Presidency, Treasury and Management.

The maximum governing body of **MetalIndustry4** is the General Assembly, where all their associates are represented and therefore, their decisions will bind the entire group.

On the other hand, the body in charge of the management of **MetalIndustry4** is the Board of Directors.

The entity has a multi-functional team which is dependent on the governing bodies. They are in charge of managing the activity of the Cluster, facilities and services. The main part of the team is the Management, which is responsible for leading the entity, in accordance with the instructions issued by the Board of Directors.

## MEMBERS OF THE BOARD OF DIRECTORS

**FEMETAL**

D. Guillermo Ulacia Arnaiz  
**President**

**THYSSENKRUPP NORTE**

D. Iñigo Landa Mayor  
**Vice president**

**FEMETAL**

D<sup>a</sup>. María Jesús García Rodríguez  
**Treasurer**

**ATOX**

D<sup>a</sup>. Paula Granjo Meana

**CTIC TECHNOLOGY CENTER**

D. Pablo Coca Valdés

**IDESA**

D. Benjamín Baragaño Valdeolmillos

**IDONIAL TECHNOLOGY CENTER**

D. Íñigo Felgueroso Fernández-San Julián

**SERESCO**

D. Alejandro Blanco Urizar

**TSK GRUPO**

D. Arturo Betegón Biempica  
**Members**

**FEMETAL**

D<sup>a</sup>. María Pérez Medina  
**Manager and Secretary of the Board of Directors**



## 3. Multi-level Governance

### 3

## Multi-level Governance

Over the past 4 years, **MetalIndustry4** has positioned itself within the main business and institutional networks related to its area of influence at regional level as a reference agent, and it has been acquiring a remarkable presence and reputation in its fields of action at national and international levels.

Specifically, the Cluster is integrated into the **Asturias Cluster Network**, the **National Federation of Innovative Business Groups and Clusters**, and the **European Cluster Collaboration Platform**.



Likewise, **MetalIndustry4** is a member of the **4.0. Industry Advisory Council** of the Principality of Asturias and has been recognized as an **Innovative Business Group** by the **Ministry of Economy, Industry and Competitiveness**. It has been part of the partnership of **Asturias European Entrepreneurial Region 2019**.



### 3.1 | INSTITUTIONAL PRESENCE IN THE REGIONAL FIELD

#### The Asturias Cluster Network

The Network of Clusters of Asturias is the meeting point of the 10 existing Clusters in the Principality. **MetalIndustry4** is one of them.

These groups aim to create a sectoral policy that provides support instruments to meet the specific needs of certain sectors.

#### 4.0 Industry Advisory Council of the Principality of Asturias

The Government of the Principality of Asturias, through the Counseling of Employment, Industry and Tourism, has set up the **4.0 Industry Advisory Council**.



It is a forum for dialogue and work which intends to promote the incorporation of new technologies by Asturian companies to gain competitiveness.

This Council is made up of a group of experts from University of Oviedo, Technology Centers, main tractor companies of the region, the Government of the Principality of Asturias and IDEPA, as well as other business organizations. **MetalIndustry4** is one of them and it is represented by its president Guillermo Ulacia..

### **Asturias, European Entrepreneurial Region 2019**

The Committee of Regions, an organization belonging to the European Union that represents regional and local authorities, has recognized Asturias as an **European Entrepreneurial Region (REE) 2019**.

**MetalIndustry4** is part of a Regional Partners Network that has endorsed the **candidacy of Asturias for the European Entrepreneurial Region Award 2019**. This recognition encourages the promotion of entrepreneurship carried out in the Principality of Asturias by all the organizations included in the regional partnership.





### 3.2 | INSTITUTIONAL PRESENCE IN THE NATIONAL FIELD

#### National Federation of Innovative Business Groups and Clusters

The **National Federation of Innovative Business Groups and Clusters** was set up in Madrid in March 2009, and it currently has around 60 members. They are distributed throughout the national territory, including **MetalIndustry4**, which is also a **member of the Board of Directors of the Federation**.

**FENAEIC** is oriented towards the achievement of collaborative objectives between Federations, Clusters and their partners by promoting the excellence of Clusters and supporting the internationalization of their projects, initiatives and their financing, as well as the recognition of Clusters as innovation agents.

### Register of Innovative Business Groups

**MetalIndustry4** is part of the 83 entities registered in the **Ministry of Economy, Industry and Competitiveness**, as an **Innovative Business Group, AEI**.

The recognition of **MetalIndustry4** as **AEI** is an essential requirement to access to national financial support programs which are specific for **Innovative Business Groups**. They are aimed at promoting innovation strategies and business competitiveness.

Such recognition is very important to **MetalIndustry4** and its partners due to the following reasons:

- It is an **activation link** among industry players.
- It is a **meeting point** of companies, Clusters and other agents to exchange knowledge and obtain business opportunities.
- It is an **excellent tool** to access projects of common interest, both at national, European and international levels.
- It is an **observatory** to identify market trends and needs.
- It brings a broader **perspective** on the business, through contact with other companies with different visions and realities.
- It provides national and **international visibility** and it is a tool for a joint positioning of companies and the sector.





### 3.3 | INSTITUTIONAL PRESENCE IN THE INTERNATIONAL ARENA

#### European Cluster Collaboration Platform

**MetalIndustry4** is registered and participates actively in initiatives organized by the **European Cluster Collaboration Platform, ECCP**.

Promoted by the **European Commission**, **ECCP** is the instrument to encourage and support activities organized by **European Clusters** to improve their performance and increase their competitiveness by stimulating transnational and international cooperation.

#### Bronze Label

**MetalIndustry4** was awarded at European level with the **Cluster Management Excellence Bronze Label Seal**.

This seal is granted by the **European Secretariat for Cluster Analysis (ESCA)** which focuses on analysis and comparative evaluation within the European scope





## 4 . Member & Area Of Influence

## 4

## Member & Area Of Influence

Leading companies  
in industry related  
to manufacturing,  
industrial digitization,  
advanced services  
and technology.

Updated data on the sector indicate that Metal Industry in Asturias includes 775 companies whose turnover is 6,200 million euros in excess. This represents 11% of the regional GDP. In 2019 exports of Metal Sector reached 3,416.26 million euros. This represents 70.68% of the total value of Asturian exports in this period.

**MetalIndustry4** Cluster's partners carry out activities related to advanced manufacturing and its entire value chain. In this way we find companies related to manufacture installation and repair of metal products, such as main auxiliary and complementary activities in the operational field (58%), or industrial digitization (17%).

Companies whose activities are related to other advanced services (12%), technology and knowledge centers (5%) and organizations and public administration (7%) are included among the partners. The 57 companies that make up MetalIndustry4 have a turnover of 1,844 million euros in excess, 30%, within the Asturian industrial ecosystem.



## ● INDUSTRY

1. ASTURFEITO
2. ASTURIANA DE ALEACIONES, ALEASTUR
3. ATOX SISTEMAS DE ALMACENAJE
4. CONTENEDORES Y EMBALAJES NORMALIZADOS, CYNSA
5. DAORJE
6. DELFIN TUBES
7. DESIGN, BUSINESS & VERIFICATION SERVICES, DBV SERVICES
8. DINAMET INGENIERÍA
9. ESTAMPACIONES Y DECOLETAJES RODISA
10. FÁBRICA DE PERSIANAS METÁLICAS CIERRES DEL HOGAR
11. FEDECOR
12. FUNDICIONES Y SERVICIOS, FUNDYSER
13. GRUPO NAVEC SERVICIOS INDUSTRIALES
14. HIASA GRUPO GONVARRI
15. INGENIERÍA Y DISEÑO EUROPEO, IDESA.
16. INDUSTRIAL DE ACABADOS, INDASA
17. INDUSTRIAL MOREYPI
18. INGENIERÍA Y SUMINISTROS ASTURIAS, ISASTUR
19. INSTALACIONES ELECTROASTUR
20. ITURCEMI
21. JUNTAS INDUSTRIALES Y NAVALES

22. MECÁNICA DE CASTRILLÓN, MECSA
23. MECANIZACIONES Y FABRICACIONES, MEFASA
24. METÁLICAS SOMONTE
25. OXIPLANT, CENTRO DE TRANSFORMACIÓN DEL ACERO
26. SAMOA INDUSTRIAL
27. SISTEMAS ESPECIALES DE METALIZACIÓN, SEM GRUPO
28. TALLERES LUMAN
29. TÉCNICA DE CONEXIONES, TEKOX
30. THYSENKRUPP NORTE
31. TSK GRUPO
32. VAUSTE SPAIN
33. WINDAR RENOVABLES

## ● TECHNOLOGY

1. ASAC COMUNICACIONES
2. BEZZIER
3. INCOSYSTEMS
4. INTERMARK IT
5. IZERTIS
6. R CABLE Y TELECABLE TELECOMUNICACIONES
7. SERESCO
8. TÁCTICA TIC
9. TALENTO TRANSFORMACIÓN DIGITAL

## ● KNOWLEDGE AND INNOVATION

1. CTIC CENTRO TECNOLÓGICO
2. ESCUELA POLITÉCNICA DE INGENIERÍA DE GIJÓN. UNIVERSIDAD DE OVIEDO
3. IDONIAL CENTRO TECNOLÓGICO

## ● ADVANCED SERVICES

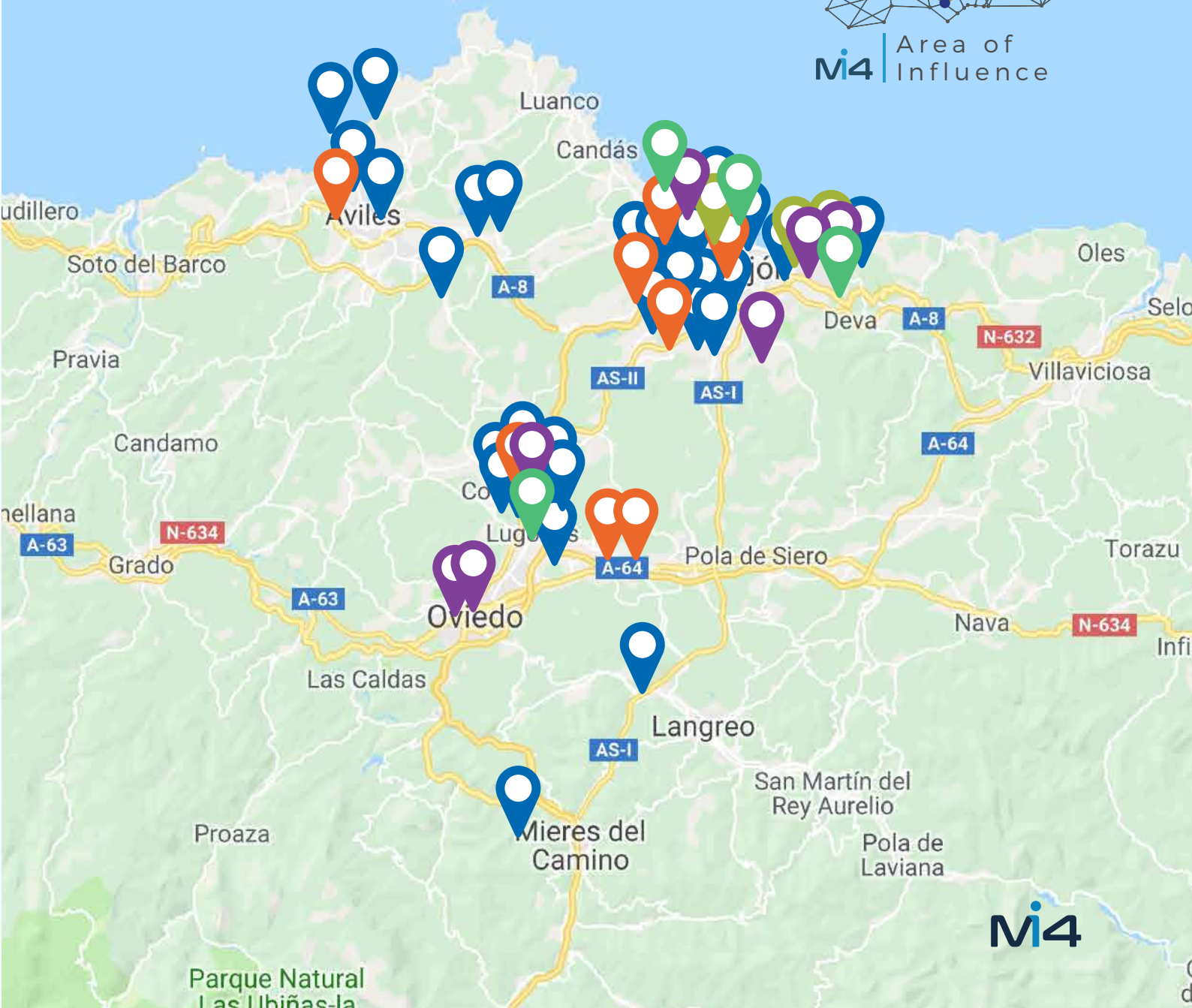
1. APPLUS NORCONTROL
2. CASINTRA
3. COGITRANS PLATAFORMA LOGÍSTICA
4. EDIMAR
5. ENCAJA EMBALAJES DE MADERA
6. GRÚAS ROXU
7. KNOW-HOW INNOVATIVE SOLUTIONS
8. PÉREZ Y CIA

## ● BUSINESS SUPPORT ORGANIZATIONS

1. ASOCIACIÓN CLÚSTER TIC DE ASTURIAS
2. ASTUREX
3. AUTORIDAD PORTUARIA DE GIJÓN
4. FEMETAL



Mi4 | Area of Influence



Mi4

The background is a complex, abstract network of glowing lines and nodes. The lines are primarily teal and orange, with some white and blue accents. They form a dense, interconnected web that fills the entire frame. The nodes are small, colorful circles (teal, orange, blue, white) that serve as connection points. The overall effect is one of dynamic energy and technological sophistication.

## 5. Management Report

## 5 Management Report

### 5.1 | MANAGEMENT AND ORGANIZATION

These last twelve months have meant a consolidation for **MetalIndustry4**, but it also has been a constant improvement and adaptation of its organizational structure. We have been able to face changes in the most efficient way and we have never lost touch with our associates and stakeholders.

In this sense, the development and implementation of the following actions should be taken into consideration:

- **CRM** has been consolidated as a key tool in the organizational and administrative management of the activity of the Cluster. Since its implementation a year ago, the system improved and could be adapted to the Cluster and its needs.
- The **mail-list** has increased in these months and it has more than 500 subscribers.
- We have experienced a change in the way people work: the current situation made us leave our offices and create a new workspace

There is an improvement and adaptation of the organizational structure to the current situation and we are using new tools for management efficiency in relation to our associates and stakeholders.

Our work to review and  
update the Strategic Plan  
2021-2025 has begun.

adapted to our homes. For this reason, **videoconferencing tools** such as **GoToMeeting** have been very important in these months to keep in touch with our partners.

- Not only has the way of relating to our partners changed; the Cluster has **internally implemented** the use of tools such as **Slack** for an agile communication between team members.
- We have started to design a **project management tool** adapted to the individual needs of the Cluster.
- We are reviewing and updating the **Strategic Plan 2021-2025** to be adapted to the current and future situation of the Cluster and we are **renewing the registration of AEIs**.

## 5.2 | SOCIALIZATION

**MetalIndustry4** considers that its presence in the main institutions and networks within its area of influence is very important. Following its Strategic Plan, the Cluster goes on with its tireless development in an ambitious socialization plan with a well-defined objective: to be a significant agent in the relevant initiatives and events to formalize stable frameworks for collaboration with other agents of interest.

During this year MetalIndustry4 has participated in the following public events:

- **Act of presentation of the Strategic Plan of Research and Development of Medium and Small Shipyards Companies. 2030 Vision.** Gijón. June 2019.
- **VI Metal Forum of Asturias.** Gijón. June 2019.
- **MindTech. Vigo.** September 2019.
- **National Cluster Conference.** Madrid. September 2019.
- **Cluster Visit. Capital Goods.** Castilla y León. Burgos. October 2019.
- **Artificial Intelligence & Digital Innovation Hubs Conference.** Madrid. November 2019.
- **Intercluster Meeting of Northern Spain.** Pamplona. December 2019.
- **Asturias Business Meetings.** Oviedo. December 2019.
- **Asturex International Meeting Point.** Oviedo January 2020.
- **20 Transfer Forum and National Cluster Conference.** Málaga. February 2020.

### General Assembly MetalIndustry4 2019

Held on June 14, 2019, it had place at the Hotel Reconquista in Oviedo. The annual report was shown and it was given an special recognition to the most active associates.



Family photo with #SociosMI4, holding their recognitions. Oviedo, June 14.



1. Closing of the 2019 Asturias Entrepreneurial Region of Europe Award. December 2019.
2. Intercluster Meeting of Northern Spain. Pamplona, December 2019.
3. MI4 President's Conference at the Asturias College of Architects. Gijón, February 2020.
4. Working group to define the Asturias Digital Innovation Hub. Oviedo, September 2019.
5. VI Metal Forum of Asturias. Gijón, June 2020.
6. Closing ceremony of the Hub4Metal project. July 2020.

Goal: to promote a forum  
for reflection/action  
among the main leaders  
of the MI4 companies.

- **MI4 CEO's Meetings. Shared Knowledge Spheres**

It is in times of crisis when the act of leading becomes an art. The current world situation and all the damage that this entails means that leaders with a strategic and analytical vision are the ones who inspire confidence and motivation in their teams. They have the aim of getting ahead in the face of the unknown.

**MetalIndustry4** is aware of this and we have organized the first virtual **CEO's meeting with a group of the main representatives** of the Cluster's partner companies which are characterized by motivation and drive in adverse moments.

The main purpose of this meeting was to promote a forum for reflection / action in the following areas:

- Safety and health
- Treasury management
- Clients / Markets
- Communication
- Costs
- Operations: Flexibility and supply chain
- Future plans

During the meeting **Julio Martín, Idesa CEO**, told us how the company dealt with the crisis derived from COVID-19 based on the points previously mentioned.

### 5.3 | WORKING COMMISSIONS

The Cluster activity is carried out according to three main axes or work lines that are defined in the Strategic Plan. These are the following: **Integration in Global Value Chains, Collaborative Innovation and Technological Improvement and, Human Capital Management**. These three lines are the relevant ones for the different Work Commissions. The Commissions are reflective and operational bodies whose function is to comply with the orientation of the main lines, as well as to generate dynamism and make the most appropriate decisions at any time.

The Commissions have the following tasks:

- Permanent updating of analysis on the different strategic areas in which the Cluster is aligned.
- Create a space for strategic reflection, for identification, prioritization and selection of action recommendations in each area.
- Exercise a leadership role on the projects within their area of interest. They should manage, coordinate and monitor proposals and actions, promoted by the Commissions.

In addition to these three main axes, it is necessary to highlight a fourth transversal axis which extends to all the actions of the Cluster. This axis is essential for **MetalIndustry4** and it consists of a line of **General Cooperation** which allows all the agents involved in the innovative ecosystem to develop a collaborative network in order to be more competitive and achieve their goals.

Over the last year, **MetalIndustry4** has carried out an intense activity through these Commissions in order to achieve the objectives defined by them: improving the competitive positioning of companies and integrating them into global value chains, their commitment to collaborative innovation, incorporation of 4.0 Industry and support for the development of talent.

### 5.3.1 | Integration Commission in Global Value Chains

The main objective of this Commission is to facilitate a greater and better integration of the Cluster's partner companies in the different **Global Value Chains** in which they are involved.

Thus, several actions are carried out to promote an **easy access to greater knowledge about market trends**, opportunities and activities that promote the joint participation of partners in the most advanced links. These activities improve the competitive position of the Asturian metal sector in those markets of interest.

This Commission keeps the initial organizational structure with a coordinator and a vice-coordinator who succeeds the coordinator after two years. These roles currently fall to **Santiago Rebollo** from **Dinamet** as coordinator and **Manuel Ocariz** from Iturcemi as vice-coordinator who recently was replaced by **Antonio Álvarez** from **Mefasa**.

Over the last year, MetalIndustry4 has been working to attract business opportunities to developed value chains: petrochemicals, renewables, steel and electricity production. The Cluster has received around **thirty business opportunities** coming mainly from the African continent and the Middle East, mainly related to projects managed by **petrochemical and renewable energy production sectors**, as well as several proposals for a project of a **scientific-technological** nature and facilities aimed at **civil works and construction**.

Two projects have been approved by the **Opportunity Validation Committee**, that was set up for this purpose and for the constitution of pre-consortia, and one of these projects is moving forward since its approval. Both business opportunities come from Sub-Saharan Africa, and other shared business opportunities have also emerged between partners who use the Cluster as an exchange platform.

### **VI Metal Forum of Asturias 2019**

The Cluster participated in the **VI edition of the Asturias Metal Sector Forum**, organized by **ASTUREX** in collaboration with **FEMETAL** that took place from 18 to 20 June 2019 at the Luis Adaro Trade Fair in Gijón.

**MetalIndustry4** was at a trade fair stand shared with **FEMETAL** with two main approaches: supporting partner companies throughout the event and contacting potential international clients to publicize the industrial and technological capabilities of the companies and organizations that are part of the Cluster.

For three days the Cluster held twenty business meetings with companies and organizations from Europe, Africa and South America. We visited **IDESA** and **Aceros Avilés** facilities to check their industrial capacity to develop a project in Sub-Saharan Africa.

### **Conference "Business opportunities in the field of mining and infrastructure in Peru"**

At the end of June 2019 the Cluster organized a workshop to present business opportunities detected in the mining and port environment, organized jointly with **FEMETAL** and **ASTUREX**.

This activity, framed within the activities of the **"Program for the early identification of business opportunities through access to tenders in Multilateral Development Banks in Washington"**, focused on two major business opportunities that Peru plans to tackle in a short period of time. The first of these opportunities involves the modernization and development of Salaverry Multipurpose Port Terminal, a project promoted by the Peruvian government, and a business opportunity linked to the mining sector, specifically associated with Mina Justa project, in which the emergence of several business opportunities are related to the mine which will be directly managed by the winning company of the exploitation.

A dozen industrial companies participated in this event and they showed their interest in the approaches presented.

The Cluster has actively worked on the search for new business opportunities in the face of changing current scenarios.

### New activities

For this strategic axis, 2019 and 2020 have signified a turning point and a reinvention point. They have sought new business opportunities based on changing scenarios and the impact of the COVID-19 crisis in markets in which the **MI4's Partners** have traditionally held a prominent position.

In this sense, new value chains have begun to be analysed, through contacts and studies, in which the industrial partner companies could easily gain positioning due to their level of specialization or geographic proximity to potential clients or collaborating partners. It is important to highlight the approach to **Gondán Shipyards** throughout the first quarter of 2020 whose aim was to deepen mutual knowledge and carry out a series of joint activities.

Likewise, in the last months of this inter-assembly period, new initiatives and proposals have begun to be defined by this Commission aimed at facilitating an adaptation to the new scenario of teleworking, remote attendance at events or commercial management by telematics, as well as the re-planning of projects which had been stopped, delayed or conditioned by legislative changes.

There was a meeting held on May 26 in which the Commission counted with the participation of **Guillermo Pérez-Holanda, FEMETAL's international legal adviser** who gave a talk with the title: **“Contractual situations of Force Majeure and onerousness (hardship / rebuc sic stantibus) in international trade”**.

This talk was in response to the reflections and proposals raised by the partners regarding the need to restart projects after the stoppage suffered by them due to COVID-19. Throughout this session, the expert reviewed a series of domestic and international cases and examples to be considered in the application of force majeure clauses in the contracts of companies in the sector.

Over the past year, this Commission has carried out a total of **6 activities**, including meetings of the members of the Commission, presentations of international opportunities and other activities. In addition, different regional and international companies have been contacted in order to establish possible business channels. A total of **61 people** have participated in these activities.

New initiatives have been defined to facilitate adaptation to the new scenarios.

6 activities  
61 participants

MetalIndustry4 is a key piece in the progressive adaptation of the Advanced Manufacturing concept in Asturias.

18 activities  
270 participants

### 5.3.2 | Collaborative Innovation and Technological Improvement Commission

The general areas of work of this Commission focus on actions aimed at facilitating greater and better integration of technological advances and innovation in the companies of the Cluster. In this way, the degree of knowledge about key technological trends in the sector is improved. Another Commission's key objective is to promote the development of collaborative innovation projects and to incorporate new 4.0 technologies. MetalIndustry4 is an essential piece in the progressive adaptation of the concept "Advanced Manufacturing" or "Industry" in Asturias.

**Luis Saturnino** from **Hiasa Gonvarri Group** is the coordinator of the Commission replacing **Daniel Rojo, Asturfeito** and **Diana Álvarez** from **Mefasa** is now the vice-coordinator.

Over the last twelve months, this commission has held a total of **18 activities** with about **270 participants**. In addition to the meetings of the Commission, these working groups were set up to address specific topics such as **Artificial Intelligence** or **Intelligent Management and Traceability of Raw Material in plant**. Meanwhile, project teams meetings were arranged for **AEIs** such as:

### MI4 projects developed or in full development

The activity of this strategic axis has been focused on the definition, design and development of new projects in the area of **digital transformation, 4.0. Industry, innovation, circular economy and talent development**:

### **Impulsa Gijón Project. Hub4 Metal Advanced Manufacturing**

Project developed with the objective of promoting industry-oriented and advanced technology projects. Its aim is to enhance the local technological innovation offer and to focus on the needs and challenges facing the Metal Industry to hybridize solutions that address the industry's defies and create a tractor effect on the local technological fabric.

The project has had the participation of 25 companies, 11 industrial companies and 14 technology companies that have worked together to define a total of 18 collaborative projects for the introduction of advanced technologies in the improvement of processes, services and the design of new products.

### **Impulsa Gijón Project. "4C's: Collaborative and Competitive Management towards the Change of the Supply Chain"**

This project is aimed at optimizing the management of spare parts in Metal Industry through the application of collaborative solutions and supported by additive manufacturing technology to promote the reduction of costs, time and space in companies, and consequently, to improve their competitiveness.

In order to achieve this purpose, we are working with 10 companies in the following aspects:

- Identification of discontinued or hard- to- find common parts, tools and spare parts on the market, which are critical elements for the industrial production.
- Definition of a common inventory of these elements that allows a shared management among the companies involved.
- Analysis of the technical and economic feasibility to produce these parts and spare parts through additive manufacturing, and definition of the exploitation model to follow.

### **Mine Project. The Gap Creation and Integration of Novel Industrial Value Chains for SMEs in the Raw Materials & Mining Sectors through ICT, Circular Economy, Resource Efficiency & Advanced Manufacturing Innovation Support**

This is the first **2020 Horizon project** in which the **MetalIndustry4** Cluster participates. The project has a budget of around 5 million euros in three years' time and it will dedicate 75% of its budget to offering financing for the development of **technological modernization** projects in companies which are directly or indirectly linked to the mining value chain.

**MetalIndustry4** is one of the 11 partners of this consortium in which organizations from countries such as Germany, France, Poland, Bulgaria, Finland and Portugal are represented, in addition to the Spanish representatives.

### **MI4 actions for digital transformation**

The Cluster offers its partners a support service for digital transformation that is based on the analysis of the digital transformation level in the industry and is led by technical experts from the **CTIC Technology Center**.

This service is supported by three types of initiatives: in-company training, in-depth technological analysis on key aspects of the organization and dynamization of technological projects based on needs detected through diagnose. These actions include:

The availability of a catalogue of specific training actions aimed at searching for information technological surveillance, promotion and digital marketing, integration of management tools, data analysis or cybersecurity. All these actions have been carried out via "In-Company" or in a group form, depending on the number of interested parties.

The specific and personalized analysis has affected aspects such as Internet presence, information security or technological surveillance. All the interested companies have had the support of specialized technicians in the metal sector to delve into each of these topics:

### **Working groups within the Commission**

This Commission has kept two active working groups: Artificial Intelligence Working Group and Traceability and Intelligent Management of Raw Material Working Group.

- **Artificial Intelligence Working Group**

The objective of this working group has been focused on the transfer of knowledge and the generation of new projects, through the constitution of a specific channel, provided by the project.

Within the framework of this group, two meetings have been held with 44 participants. Starting from the presentation and transfer of results of the project of application of artificial intelligence to production planning, new work lines in the field of Artificial Intelligence have been created.

- **Traceability and Intelligent Management of Raw Material Working Group**

The action carried out within the framework of this group was the visit to two member companies of the **MetalIndustry4 Cluster, Oxiplant and Moreypi** in order to create a networking environment between companies and thus, identify common elements to define a proposal for action, as well as the search for financing to address the improvement of the traceability processes and management of raw material storage. These two actions have had the participation of **36 companies**.

### Factory Tours

Throughout these twelve months, **MetalIndustry4** has managed to connect the Cluster partners with companies from outside the region, thanks to the **Factory Tour** concept. This consists of visiting companies outside the Cluster and / or the region, which are benchmarks in certain technologies, in order to **share knowledge and grasp ideas** from partners.

Burgos was visited in order to get to know the **Cluster of Manufacturers of Capital Goods and Industrial Automation of Castilla and León (CBECyL)**.

14 companies from **MetalIndustry4** were involved in this visit and other 17 companies from the Spanish-Leonese Cluster joined them. During the trip, three reference companies such as **Grupo Nicolás Correa, Hiperbaric and ASTI** were also visited.

The **MetalIndustry4** and **CBECyL** partners had the opportunity to arrange a knowledge meeting in which all the participants could speak to everyone, with the result of more than **210 meetings** held at the end of the day.

The objective of this type of activity is to create a framework for collaboration between members of both organizations to promote innovation and the incorporation of advanced manufacturing technologies and professional qualifications within the sector ecosystem of 4.0 Industry.

### Visits to companies

**MetalIndustry4** is committed to being the agent in which companies can **share and exchange experiences, knowledge and good practices**. This is undoubtedly made possible thanks to the tireless collaboration of companies, which promote an **enriching environment**, in which knowledge, collaboration and trust between them naturally increases.

A study visit to Tekox has been organized in 2020 in which 20 attendees from different partner companies were able to learn about the projects developed by the company, focused on the adoption of 4.0 technology for process improvement. The aim is to improve the degree of knowledge about all the sectoral trends in the field of training and human capital management.

### 5.3.3 | Human Capital Management Commission

**MetalIndustry4** focuses on creating actions that facilitate a better training and management of the present and future human capital of its partners. Once again, its purpose is to improve the level of knowledge about all those sectoral trends in professional qualifications and training needs in the sector. Another purpose is to promote the adaptation of these qualifications and training offers to changing sectoral trends. Furthermore, the Cluster fosters and facilitates access to new knowledge, benchmarking and the exchange of experiences within and outside the Cluster.

This Commission is led by the coordinator **Alejandro Blanco** from **Seresco** and **María Rivas** from **Isastur** as vice-coordinator. Over the last twelve months the Human Capital Management Commission has had an intense work in which the **Digital Competences Study for Metal Industry Professionals** and the **AttTrak project** stand out. Their main milestone was the organization of an international meeting on talent attraction and retention in the industry that was held in Gijón in March.

Improve the degree of knowledge about all the sectoral trends in the field of training and human capital management.

8 activities  
191 participants

1, 2 y 3. Factory Tours. Burgos 2019.  
4. Study visit to Tekox.  
5 y 6. Study visit to Oxiplant.  
7 y 8. Study visit to Moreypi.



1 y 2. Commission Meetings.  
3 a 7. Different workshops held by the Cluster.



### Exchange of good practices in HR

The Commission is the meeting point where specific workshops are being held to exchange experiences and good practices in human resources management. The members of the Commission have been able to learn about inspiring examples of personal development, as well as good practices of multinational companies aimed at attracting and managing talent in the industry.

In this sense, the Commission had the opportunity to count with **Miguel Morán**, Master Coach and President of **RHO Group**, who read the paper "**Digital Disconnection: Gold and Mud**". He talked about a relevant topic related to work-life balance that needs to be considered by companies

Last November the Commission had the presentation of the **Innovation Culture Program** launched by **Luis Saturnino**, R&D manager at **Gonvarri**. Throughout his presentation, the members of the Commission were able to learn first-hand about motivation, actions taken and results obtained by this internal program that strengthens the company's innovation policy.

### Analysis of professional skills linked to the 4.0 paradigm shift in metal industry in Asturias

We are aware of the great impact that emerging technologies are having on the labour market and according to the priorities of the Cluster's current Strategic Plan and Work Commissions; we have achieved the following objectives:

- Determine both the technical and personal skills that companies need in metal industry in Asturias to successfully tackle their digital transformation processes.
- Identify the existing gaps between the current and the desirable situation, both in terms of technical and personal skills for the digital transformation of the Asturian metal sector.
- Formulate possible lines of action to solve or minimize the gaps detected.

This initiative is made tangible in the study **"Technical and personal skills for the digital transformation of Asturian metal"**. This has allowed to **identify the "4.0 competencies" and to guide the development of the "4.0 professionals"** needed by the metal industry in Asturias in the medium term, in order to train them in coordination with the different agents involved.

A cabinet analysis to identify general trends and models of technical and personal skills associated with future employment was carried out and personal interviews with the human resources managers of partner companies and organizations were made. A working group was organized to define and validate new digital skills and occupations in Metal Industry. **11 companies participated along with the Public Employment Service Manager, the Vocational Training General Manager and the Polytechnic University in Gijón.**

In addition to the workshop and the fieldwork that were carried out, **17 studies on the issue at international level have been analysed and compared, 7 at national level, and 13 other initiatives at regional level.**

Thanks to the data collected, three possible new professional roles have been identified that could be relevant in the context of the Asturian metal industry derived from the transformation digital, which are:

- 4.0 Manager
- Product and Process Automation Specialist.
- Data Analytics Specialist.



# AttTrak



Co-funded by the  
Erasmus+ Programme  
of the European Union

## Erasmus + AttTrak project

**Employer empowerment to attract, transfer and keep young people in metal industries, AttTrak** is the first Erasmus+ European project for **MetalIndustry4** and aims to develop and strengthen the employers' skills in metal sector companies for recruitment and staff development. Its mission is to empower companies to recruit young people, make them fit for the job market in metal industries and prepare them for the challenges of the future. This also includes changing the vision of personal development from the company's point of view.

The project is made up of a consortium of five partners from Germany, Italy, Poland and Lithuania, in addition to the Spanish representation in charge of **MetalIndustry4**.



► Poster.

MI4 organized its first international meeting on talent attraction and management.

In October 2019, **MetalIndustry4** participated in the first transnational workshop organized within the framework of this project in Lithuania. Each of the partners contributed with a national expert to analyse youth attraction and training strategies in the metal sector from different perspectives.

On the Spanish side the Cluster counted with **María Goitia**, **La Laboral CFP** Manager, who read a paper on “**Training Methodologies in Vocational Training Centre**” to **Alytus College’s** representatives. She showed a novel methodology used in her center in Gijón based on real challenges.

The Cluster's turn to welcome the partnership and its expert guests was in March. It was the first international meeting organized by **MetalIndustry4** and the Cluster designed a series of workshops and conferences aimed at attracting and managing talent in metal industry.

We worked on the development and strengthening of managerial skills focused on executive staff and human resources managers in the metal sector for the recruitment and development of personnel.

We learned about the teaching systems of training centers and their needs, and about guidance services to attract and retain young people in the sector.



► Accreditations.

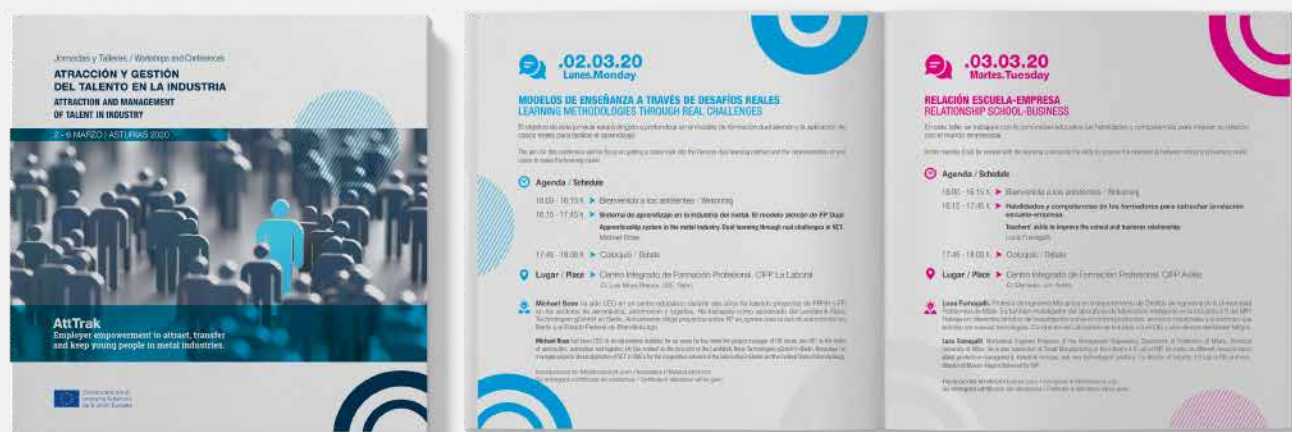
We counted with the participation of experts from the member countries of the partnership. They discussed the following topics:

- Apprenticeship system in the metal industry, taking as a reference the German dual training model aimed mainly at teachers, vocational training, employment policies, and counsellors.
- Skills and competences to improve the relationships between the training centers and the business world.
- Features and characteristics of the business culture capable of attracting talent and generating value.
- The role of marketing in human resources which facilitates the talent attraction and talent management process by creating a brand image.
- Youth retention and attraction strategy based on the role of the environment and guidance services.

The week ended successfully with more than a hundred attendants.

A video showing the activities carried out during this week has been released and can be seen in all the Cluster's digital profiles

This time **MetalIndustry4** counted with the expert **Javier Cueli, Professional Education General Manager of the Government of the Principality of Asturias**, who participated as a speaker in the meetings.



► Program "Conferences and Workshops. ATTRACTION AND MANAGEMENT OF TALENT IN THE INDUSTRY".





Co-funded by the  
Erasmus+ Programme  
of the European Union

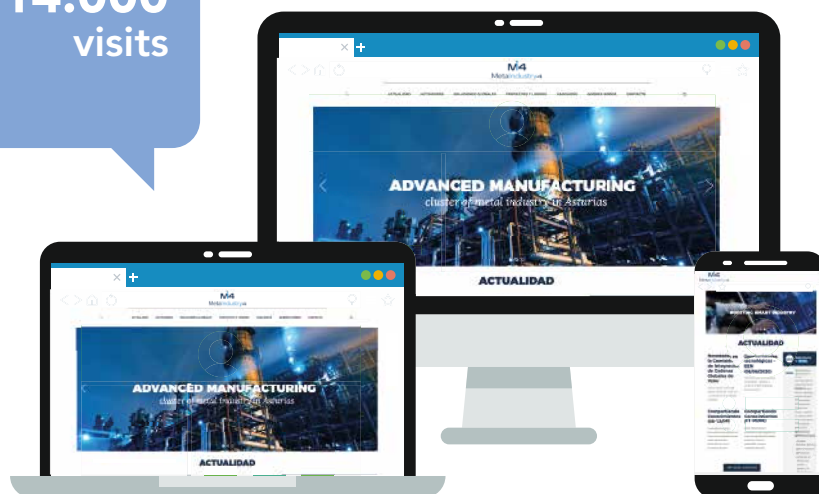
Images of the different activities carried out within the cycle of days and workshops of AttTrak held between March 2 and 6, 2020.

The background is a complex, abstract network of glowing lines and nodes. The lines are primarily in shades of teal, blue, and orange, creating a sense of depth and connectivity. The nodes are small, colorful dots scattered throughout the network. The overall effect is a dynamic, digital landscape.

## 6 . Social Impact

75  
post

+14.000  
visits



**[www.metaindustry4.com](http://www.metaindustry4.com)**

## 6 Social Impact

**MetalIndustry4** website is essential for the Cluster and its partners.

Since its creation in 2017, the website houses all kinds of relevant information for companies, such as activities, news and articles of interest to the sector.

Throughout this period, a total of 75 entries have been published, related to news, activities and projects linked to the Cluster. Most of them have been published in Spanish, but due to the increased international activity of the Cluster, many of the entries are also in English.





2.200  
followers

500 K  
impressions

#### Social networks. Twitter, LinkedIn and Instagram

The main communication and interaction channel in society is social media and **MetaIndustry4** is aware of that.

Currently the Cluster is on **Twitter, LinkedIn and Instagram** where it keeps a constant activity to publicize its activities.

The Cluster's most popular social network is Twitter, where 972 followers interact with the Cluster's publications. The Cluster got 1,028 followers on LinkedIn in the last twelve months and 231 followers on Instagram.



58  
newsletters

519  
subscribers

## Newsletter MI4 News

**MI4 News**, the Cluster corporate newsletter, has been establishing a close and direct relationship between partners and stakeholders.

The content of each newsletter, which is distributed biweekly, deals with news of interest to partner companies. Besides, it informs about activities carried out by the Cluster and publicizes all the initiatives coming from **#SociosMI4**.

**MI4 News** reaches more than **500 subscribers** and has already **58 editions**.

The latest initiative in terms of communication of the Cluster has been the Bulletin “**Sharing Knowledge and Solutions**”.

Every Monday since the start of the alarm period, **MetalIndustry4** has published a newsletter in which it shares all those initiatives carried out by the partners to share knowledge, experiences, needs and solutions. This newsletter reaches more than **500 subscribers**.



## • MI4 Bulletin

• **MI4 Newsletter**  
Personalized and “responsive” design for optimal viewing in mobile devices.



## Economía

Domingo, 8 de diciembre de 2019

La transformación de un sector clave para la economía regional

# Así será el soldador asturiano 4.0

La revolución tecnológica obligará a los trabajadores del metal a tener más conocimientos informáticos y mayor capacidad para resolver problemas complejos, según las empresas

Gijón, José Luis SALINAS

La industria que la poderosa industria del metal asturiano ha emprendido hacia modelos de producción más automatizados, con fábricas en las que las máquinas van a tener el protagonismo, obligará a los empleados del sector a cambiar su forma de trabajar. Necesitarán conocimientos diferentes a los que tienen ahora, y las empresas del sector comenzarán a valorar en sus procesos de selección ciertas actitudes y habilidades que ahora se pasan por alto. Por ejemplo, tener conocimientos en programación de robots-operarios y andróides van a tener que trabajar mano a mano en esas fábricas del mañana, y de idiomas o contar con competencias sociales como la capacidad para enfrentarse y resolver con éxito problemas complejos. Viendo que esos requisitos van siendo cada vez más frecuentes, la patronal Fentetal, a través del cluster Metalindustry4, ha comenzado a como será el trabajador del metal del futuro.

Días atrás, miembros de este clúster, que cuenta ya con 60 socios, reunieron en su sede durante varias horas a representantes del Servicio Público de Empleo, de la Dirección General de Formación Profesional y de la Universidad de Oviedo para ir diseñando esos perfiles de un mañana cada vez más cercano. Lo hicieron después de que casi una veintena de compañías del sector se sometieran a un exhaustivo examen para conocer por dónde van a ir sus demandas laborales no tardando mucho.

Todo comenzó debido a una inquietud, más bien, a un dolor de cabeza. "Estamos muy preocupados por la evolución de la transformación digital y por nuestra todavía débil preparación para afrontar", señala María Pérez, secretaria general de Fentetal, así, que hace unos meses el colectivo se puso manos a la obra y emprendió ese trabajo de campo con empresas de "cuerdo tamaño". "El objetivo final que nos planteamos es conseguir mejorar la dimensión competitiva de las compañías del sector en la región, para que puedan ser más rentables", resulta Pérez. No precisa, pero la meta es que puedan competir con las cada vez más tecnológicas compañías que vienen de fuera.

El estudio que la americana Metalindustry4 no solo se centra en las necesidades de los operarios de producción -sica, donde por otro lado, Fentetal ha detectado que el avance hacia la transformación digital camina algo más lento- sino que también abarca a todas las categorías, incluidas las competencias futuras de los comerciales o los trabajadores de mantenimiento, por

### Los requisitos del empleado del metal del futuro



### En poco tiempo surgirán puestos nuevos, como el de responsable de industria 4.0

ejemplo. Aunque todos van a tener que tener unas habilidades comunes. Al menos así lo predicen los principales analistas. José Ramón Natal, responsable del clúster, asegura: "Estamos viendo que la industria está girando hacia que los trabajadores tengan más trabajadas ciertas habilidades sociales que las competencias técnicas". Algunos

elementos claves serán que los empleados tengan capacidad para enfrentarse a problemas complejos, que tengan pensamiento analítico...

"Se trata de ir pasando del desamor a la destreza manual hacia otro tipo de competencias en las que se requiere tener criterio, creatividad, innovación", apunta José Ramón Natal.

En aquellas encuestas que Metalindustry4 hizo entre empresas del sector había una pregunta clave: ¿Qué ocupaciones que ahora no existen considera que podrán surgir en el futuro? Muchas respuestas apuntaban hacia la misma dirección: las compañías del metal asturiano necesitarán jefes de industria 4.0. "Será como un especie de intermediario entre la industria y la tecnología, el coordinador de las estrategias", resulta Natal. También se precisarán responsables de departamentos que aún no existen en la inmensa mayoría de estas industrias, como los de inteligencia artificial o de ciberseguridad.

Más abajo en el escalafón, los operarios deberán tener buenos conocimientos informáticos con los que manejar las máquinas que reemplazarán las fábricas, incluso deberán saber de programación. Fuera de lo tecnológico, estos empleados tendrán aprender a usar nuevos esquemas lógicos para saber cómo enfrentarse a problemas complejos. Es decir, van a tener que profesionalizarse mucho más de lo que lo están ahora. Los operarios del futuro, dice Natal, ocuparán una especie de rol híbrido entre los trabajadores de ahora y los actuales responsables de producción. En otros puestos más específicos, como los comerciales de estas compañías habrán de adaptarse a la realidad virtual para mostrar a los posibles clientes sus productos. Es el futuro.

Con todo este trabajo ya sobre la mesa, Fentetal quiere darle un empujón a la formación en el sector y que las empresas del sector demandarán mano de obra. "No queremos quedarnos en una foto fija, ya estamos trabajando en impulsar estos estudios", concluye Pérez. Está arrancando la preparación del soldador 4.0.

## La atracción y retención del talento en la industria del metal, una prioridad para Metalindustry4

El Cluster de Fabricación Avanzada de la Industria del Metal de Asturias, que participa en el proyecto europeo Erasmus+ Attract, acoge del 2 al 6 de marzo en Gijón un ciclo de talleres y jornadas con socios de Polonia, Lituania, Alemania y Italia



Reunión de los miembros del Proyecto Attract en Gijón. Foto cedida a LNE

Oviedo, Diana CASERO

El cluster Metalindustry4 está en marcha y en su primer año de vida ya ha comenzado a preparar el futuro del sector. En su primer año de vida ya ha comenzado a preparar el futuro del sector. En su primer año de vida ya ha comenzado a preparar el futuro del sector.

de trabajo en la industria del metal y preparando para el futuro del sector. En su primer año de vida ya ha comenzado a preparar el futuro del sector. En su primer año de vida ya ha comenzado a preparar el futuro del sector.

Conociendo de la importancia de la industria 4.0, se analizarán formas de atraer y retener el talento para enfrentar la cultura de la transformación digital en la industria, de forma, precisamente, las empresas y sus clientes, las empresas y sus clientes, las empresas y sus clientes.

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## Los empresarios, "muy preocupados" por el alto nivel de abandono en las especialidades industriales de la FP media

Gijón, J. L. S.

Al sector del metal asturiano no le salen las cuentas. El número de titulados que cada curso sale de las escuelas de Formación Profesional (FP) en las tres ramas ligadas con su negocio no da para cubrir las necesidades de nuevo personal, según las compañías.

María Pérez, secretaria general de la industria asturiana del sector (Fentetal), pone de relieve otra situación importante: en la FP de grado medio el porcentaje de abandono de los estudiantes "es alarmante" y llega al 75% durante el primer curso. Esto tiene su explicación,

asegura. Según Pérez, se debe en buena parte a la falta de vocación de los estudiantes, que "suelen llegar rebotados" de otros estudios. Esta formación relacionada con la industria es con frecuencia la segunda o la tercera opción de los alumnos, por lo que su motivación ya no es la misma. A eso hay que sumar que las asignaturas suelen ser más duras, más complicadas que en otros estudios de FP.

"Estamos muy preocupados con el número de nuevos estudiantes que entran en estos cursos, que es muy bajo, y, también, con las altas tasas de abandono que se están dando",

resumió Pérez. Según las cuentas que maneja Fentetal, en los cursos de FP ligados con la industria se quedan sin cubrir sobre un 25% de sus plazas.

Más en concreto, y tirando de datos del curso pasado, María Pérez apunta que en la rama de FP de electricidad se ofertaban 2.070 plazas de FP de ellas quedaron vacías. En fabricación mecánica, los números tampoco son muchos mejores. De las 1.325 que se pretendían cubrir, 332 quedaron en blanco. Y, por último, en instalación y mantenimiento se ofertaron 1.165 y 361 no se cubrieron.



María Pérez (Femetal), José Ramón Natal (MetalIndustry4) y Pablo Cabal (Idonial), e. c.

## Diez pymes del metal renovarán inventario con piezas en 3D

MetalIndustry4 desarrolla un proyecto piloto de innovación colaborativa, que mejorará procesos de fabricación en pymes industriales

CRISTINA TUERO

cuo». Convertir una bomba centrífuga elaborada en dos piezas de acero por la que fluye agua a alta presión, en una única pieza de 3D, de nuevo diseño, y con un metal de mayor resistencia. Con este ejemplo se pueden analizar pros y contras de la incorporación de la fabricación aditiva en el mantenimiento industrial. Y la comprobación revela muchas más ventajas, dos de ellas esenciales: se aumenta la vida útil de esa pieza de 3D y su coste de amortización es menor que el de una realizada en fabricación convencional.

Este caso real forma parte de la presentación que el Cluster MetalIndustry4 incorpora de su proyecto 4C's (colaboración, competitividad, cambio y cadena de suministro). Se trata de una propuesta piloto orientada a pymes industriales, inicialmente de Gijón –para esta puesta en marcha cuentan con el respaldo del Ayuntamiento a través de Gijón Impulsa–, pero con la intención de extenderlo «como fórmula de trabajo al resto de pymes de la región. ¿Qué se busca? Emular los procesos ya en marcha en grandes multinacionales, con independencia del sector en el que operan, en los que la fabricación aditiva ya está incorporada en el mantenimiento industrial «como fórmula para dar una respuesta

### PROYECTO 4C'S

» **A quién.** Orientado a pymes industriales, interesadas en optimizar la gestión de mantenimiento y repuestos, aplicando tecnologías de fabricación aditiva. Participarán 10 pymes industriales de Gijón.

» **Plazos.** La selección de empresas será en marzo. El proyecto culminará a final de año.

» **Condiciones.** Se trabajará con las pymes, sin coste para ellas, en identificar piezas susceptibles de 3D.

» **Organización.** MetalIndustry4 e Idonial, con el respaldo del Ayuntamiento de Gijón.

más rápida y eficiente a la cadena de producción», apunta José Ramón Natal, responsable de Innovación de Femetal y del Cluster MetalIndustry4.

El proceso de selección de las diez primeras empresas del sector del metal que se incorporarán a este proyecto piloto tendrá lugar a lo largo de este mes de marzo. Serán, como se indicaba, diez las pymes elegidas de las aproximadamente 500 del sector de Gijón. El siguiente paso, que durará hasta el verano, se

» **A muchas pymes industriales, el tema de la innovación con 3D les da miedo porque lo consideran algo irreal»**

destinará al trabajo de campo. Será el momento en que la gente de Idonial visitará las pymes. «Veremos sus necesidades e identificaremos sobre el terreno qué piezas son susceptibles o no de reproducirse por fabricación aditiva», explica Pablo Cabal, jefe de proyecto en Idonial. Y añade: «A muchas pymes industriales, el tema de la innovación en 3D les da miedo porque lo consideran algo irreal. Pero ha venido para quedarse».

### Empresas asturianas

Tras la auditoría técnica y económica sobre la viabilidad del uso de la fabricación aditiva, habrá actividades o talleres entre las pymes para «fomentar la colaboración». Es la fórmula elegida para definir un inventario común de las piezas susceptibles de realizarse en 3D. Así, explican, «se definirá un modelo de negocio basado en la gestión común y en la adhesión de un mayor número de empresas para reducir los costes de fabricación por el incremento de la demanda». «Esa colaboración permite abordar el proceso de innovación colaborativa porque no se está hablando de producto final, sino que tiene ver con procesos de fabricación», añade la secretaria general de Femetal, María Pérez.

Una vez definido ese inventario, se creará un «fichero virtual» de stocks y se pondrá a las empresas en contacto con proveedores asturianos dedicados a dar soluciones en materia de fabricación aditiva, en un intento también de fomentar las relaciones entre empresas de la región. Los resultados del proyecto piloto se conocerán a final de año.

## El clúster del metal asturiano se posiciona en Europa

L. CASTRO

GIJÓN. Cuando nació tenía 32 empresas y centros tecnológicos asociados y ahora, tres años después, ha duplicado esa cifra. El Cluster de Fabricación Avanzada de la Industria del Metal de Asturias, 'MetalIndustry4', impulsado por Femetal, sigue dando pasos en su estrategia de especialización inteligente de Asturias y lo hace

posicionándose en Europa como uno de los «más avanzados y dinámicos».

Este equipo de trabajo, concentrado en la innovación abierta y colaborativa y en la inversión en nuevas tecnologías, participa en varios programas europeos y también ha mantenido relaciones bilaterales en el ámbito internacional con otros clúster del sector metalúrgico.



Algunos socios del clúster asturiano 'MetalIndustry4'. e. c.



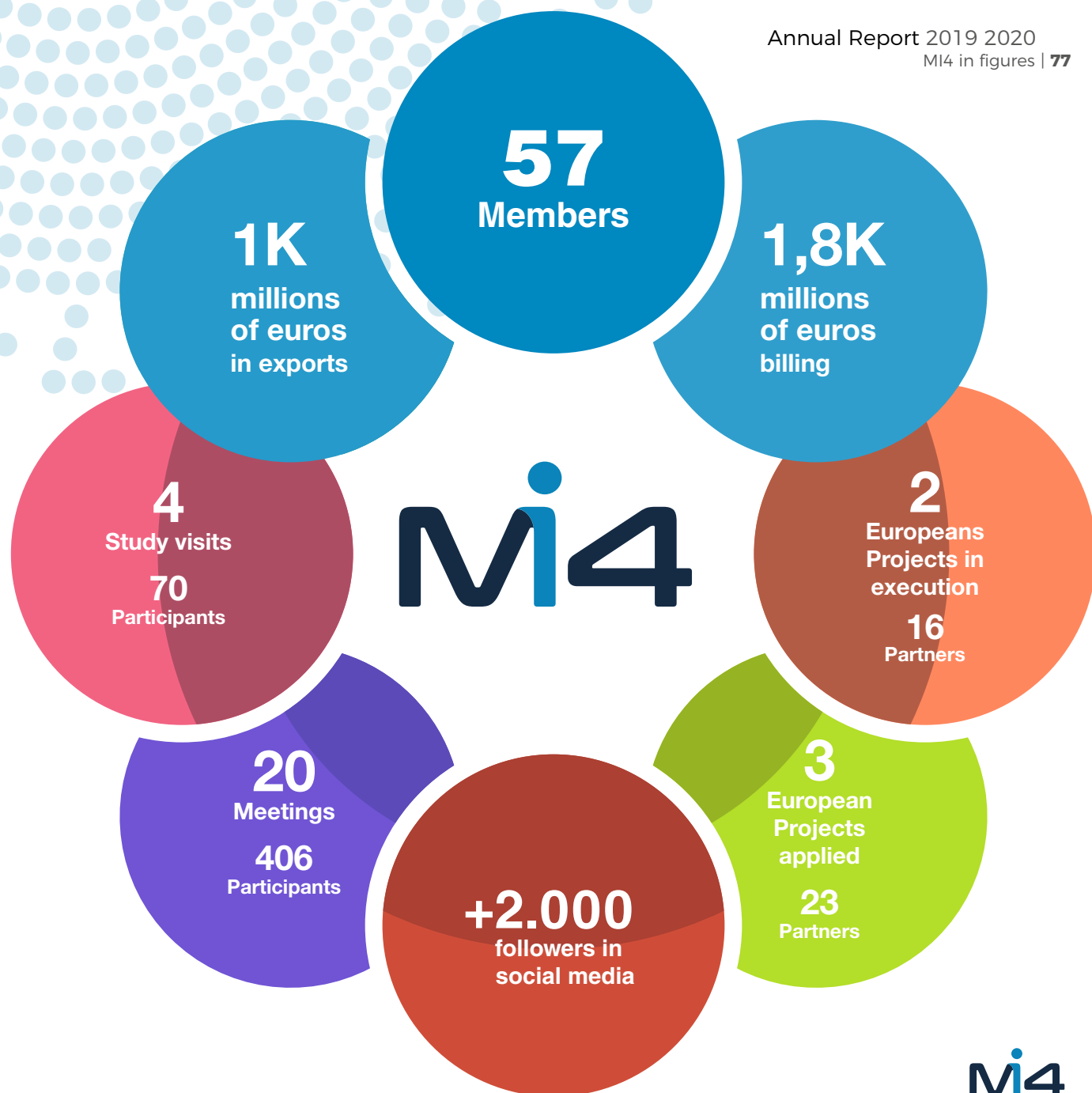
El presidente y directivos de Femetal con los socios de MetalIndustry4.

## Femetal reconoce la labor de los socios del clúster MetalIndustry4

El Cluster de Fabricación Avanzada MetalIndustry4, promovido por Femetal (la patronal metalúrgica asturiana) reconoció la labor y el compromiso demostrado por buena parte de sus asociados (que aparecen en la imagen) en la consolidación de este colectivo como estrategia de internacionalización e innovación colaborativa. Según Femetal, la implicación de los más de 60 socios llevó a MetalIndustry4 a posicionarse en Europa como uno de los clúster más avanzados y dinámicos participando en programas europeos y reuniones bilaterales a nivel internacional.



## 7. MI4 in figures



Annual Report  
**2019 2020**

**“Boosting Smart Industry”**

**Mi4**  
MetaIndustry4

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