

1. Presentation by the President



During this year, MI4 has had to reinvent itself. refocus its activity and redouble its efforts to maintain contact with with its partners and to continue to be a a benchmark in its field.

One more year, I am writing to you to analyze what happened during the last year and look to the future from the present, setting the new goals of **MetaIndustry4** for the next twelve months.

The year 2020 has not been an ordinary year, the pandemic has left a mark on society that has impacted us and will affect the future in all areas of life. The personal loss is added to the economic cost, which during the last year has weighed down on all our companies. Hopefully, with the intensification of the vaccination process, the reopening of consumption and the stimulus plans that are announced, we will be able to recover and exceed pre-pandemic activity levels.

MI4 has not been oblivious to this situation and throughout this year it has had to reinvent itself, reorient its activity and redouble its efforts to keep in touch with the partners and with the entire network of stakeholders woven around the cluster. By adapting to the circumstances and relying on technology, we have maintained the rhythm of activities with partners at similar levels to other years, increasing the number of projects and, once again, leading innovative debates of regional and sectoral interest with the publication of studies such as the new competencies and necessary skills for workers in the industry, or the analysis and characterization of the green hydrogen value chain.

This effort has been rewarded with your loyalty because thanks to all of you, we have increased the number of members by 9%.





The year 2020 has been a particularly fruitful year in the consolidation of our international presence, thanks to the achievement of new European projects and the expansion of our network of international partners, establishing new alliances and partnerships. MI4's business model has been the object of study for global clusters, arousing the interest of various Latin American and European organizations, which have approached us to learn more about our model and with the intention of learning from our successes and mistakes at this time.

At national level, MI4 has strengthened its own profile and its regional traction capacity in the Strategic Projects for Economic Recovery and Transformation, launched by the Ministry of Industry, thanks to its leadership at the regional level of one of these national projects with a budget close to 2,000 million euros.

2020 has been a particularly fruitful year particularly fruitful year in consolidating of our international international presence, thanks to new alliances and partnerships and partnerships established.

But if something has focused our attention in this year that is closing, it is the definition of our new strategic plan. After five years of activity, the Cluster is analyzing its trajectory so far, as well as its situation and future prospects. We were asking ourselves what we wanted to be and where we wanted to go, without losing sight of the current context and the environment in which we coexist. This open and participatory reflection in which we have sought the involvement, not only of the members of the board of directors, but of all of us who make up MI4, has led us to define the five strategic dimensions that will guide the future of MI4 in the next 4 years.

As a result of this strategic reflection, we have launched a new initiative which I am especially proud of: the MI4 CEO Meetings. A space for meeting, analysis and reflection between the main representatives of our companies and partner organizations. This initiative was born to create a more enriched process of identification and evaluation of synergies for the creation of projects in cooperation and that, I am sure, will help to reinforce cohesion between our partners.



Since our inception, MI4 has always opted for a public-private collaboration, in which the sum of public and private initiative constitutes a fundamental binomial for the development of the regional business ecosystem. We have had the tireless support and trust of local and regional institutions, among which I would like to make a special mention of the Institute for Economic Development of the Principality of Asturias, IDEPA, which has offered us their financial support and their knowledge and access to their networks to get MI4 to where it is right now.

Organizations evolve and support models such as the Principality of Asturias Cluster Policy must evolve in the same way. Support is necessary in the consolidation of existing cluster organizations, encouraging the adhesion of companies by recognizing them in their innovative projects. Accompaniment in the internationalization process should be a priority: clusters create a "country brand" wherever we go and this can be the key to open the door to the internationalization of SMEs, as it is the engine of the generation of synergies and promoter of projects and alliances, with the support that this requires.

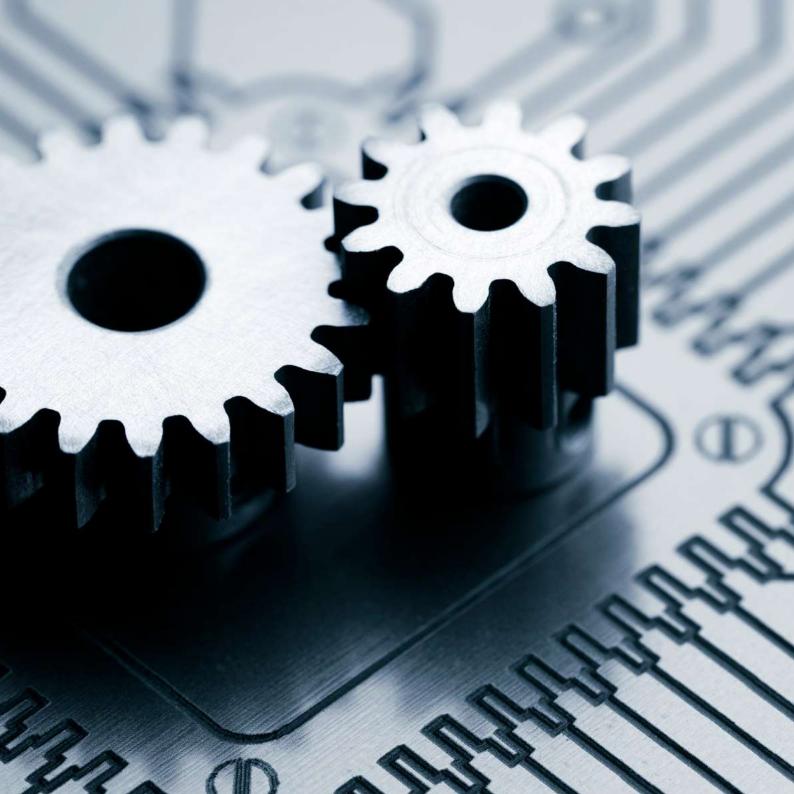
The future is in our hands and is being built day by day. Therefore, our commitment as MetaIndustry4 is to continue generating projects and proposals to address the challenges of our advanced manufacturing ecosystem and contribute to sustaining the competitiveness of companies integrated in the metal sector.

Finally, I would like to value the excellent work, involvement and commitment of all the people who are part and collaborate with **MetaIndustry4** and without whose support MI4 would not be a reality or an international benchmark as an industrial cluster.

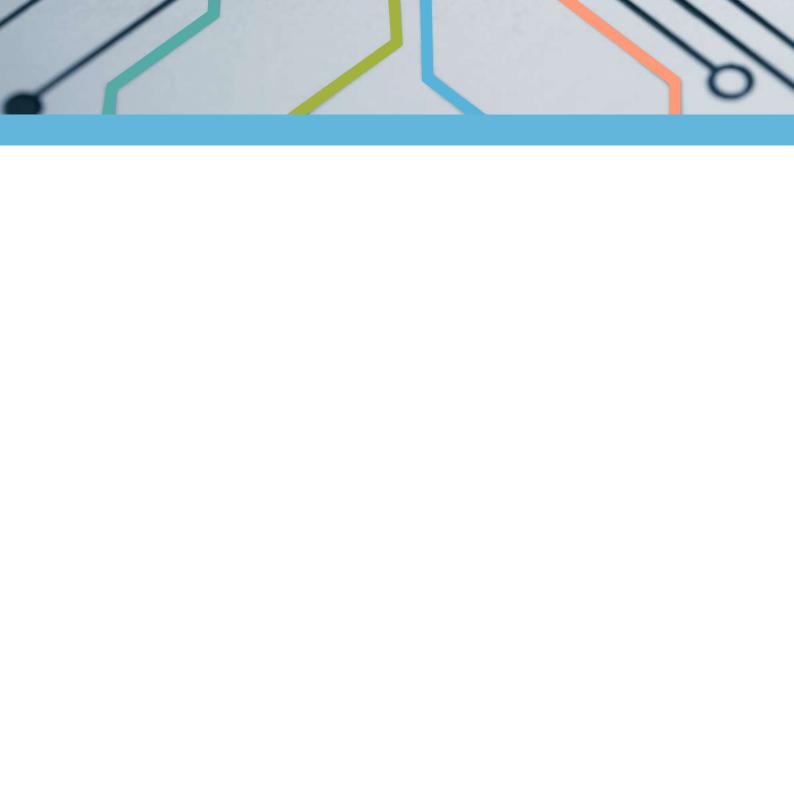
The new Strategic Plan will quide the Cluster over the next four next four years, reinforcing its current current strategic lines and incorporating new dimensions following European quidelines.

Guillermo Ulacia Arnaiz President of Metalndustry4









2. Metalndustry4 Governance

During the period covered by this report, the Cluster of Advanced Manufacturing of the Metal Industry, Metalndustry4, has completed five years. Since its foundation in 2016 as a non-profit organization and voluntary membership, the Cluster has evolved to become the recognized agent, both in Asturias and internationally, which it is today. Currently, the Cluster has doubled the number of partners it had in its beginnings, with a total of 62 companies that trust what MI4 represents and support its different actions.

MetaIndustry4 maintains its character as a multidisciplinary Cluster, aligned with the Asturias Smart Specialization Strategy (RIS3), in which industry, technology and knowledge converge. During these last five years, MI4 has consolidated its position as a key meeting point between demand and supply of solutions, becoming a facilitating agent for the transformation of advanced industry in Asturias. It has achieved this by adapting to the constant changes and needs of companies and the unpredictable environment that surrounds them, so marked in the last year.

During this period, the Cluster has carried out an update of its Strategic plan, in force since 2016. MI4 has been evolving and has expanded its space of influence, as well as the aspects on which to focus its activity. For this reason, the mission and vision of the Cluster have been adapted in order to reflect the new reality of the Cluster. In this way, both concepts project an image of work towards the future, being aware of aspects such as sustainability and digitization, as well as collaborative work based on a strong and consolidated sector ecosystem.

During these last five years MI4 has consolidated its position as a key meeting point between the demand and supply of solutions.





MISSION

Globalisation, digitalisation & decarbonisation

Provoke and promote the transformation of the Asturian metal industry with an eye toward the horizon of 2030, through the development of collaborative work and combined with the entire sectorial ecosystem aimed at facilitating the sector the best possible use of the opportunities derived from the three great challenges of the moment: globalization, digitization and decarbonization.

VISION

Competitiveness, cooperation & internationalisation

Represent a modern industry with a prominent presence in the new value chains, based on innovative products with high added value developed by competitive, professionalized, internationalized, digitized and sustainable companies, capable of cooperating and working together through leading projects with the support of a group of highly identified, motivated and qualified professionals.

Mission and vision have been adapted, projecting an image of working towards the future. sustainable, digital and collaborative.

ORGANIC STRUCTURE

The Governing Bodies of MetaIndustry4 are made up of the General Assembly, the Board of Directors, the Presidency, Vice Presidency, Treasury and Management. The highest governing body of Metalndustry4 is the General Assembly, where all its associates are represented and, therefore, its decisions will bind the entire group. On the other hand, the body in charge of the direct management and management responsibilities of MetaIndustry4 is the Board of Directors.

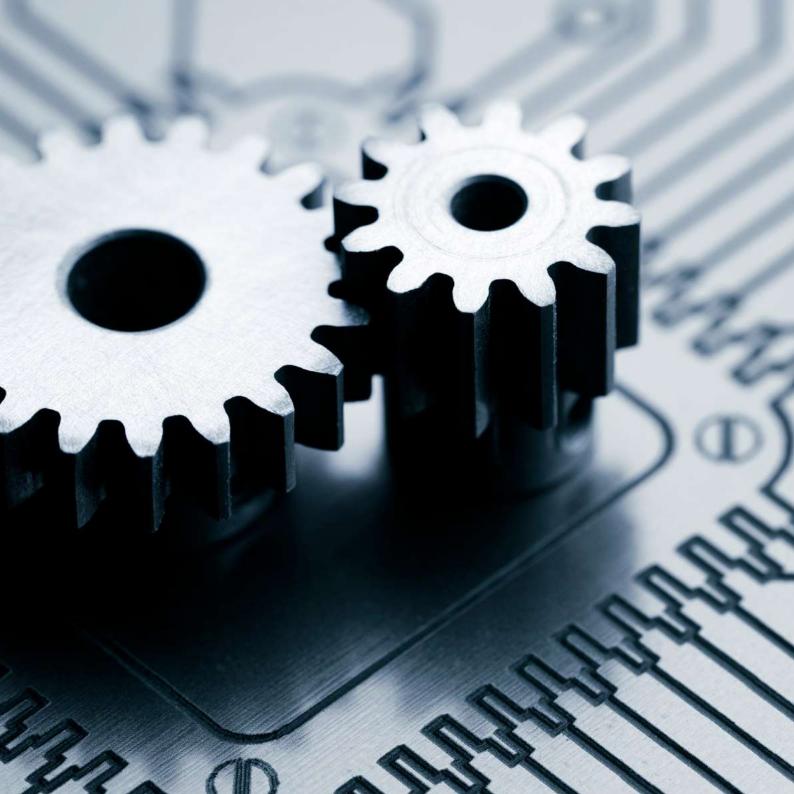
Dependent on the governing bodies, and in order to manage the Cluster activity, facilities and services, the entity has a multifunctional team, whose main figure is the Management, responsible for leading the entity, in accordance with the instructions issued of the Board of Directors.

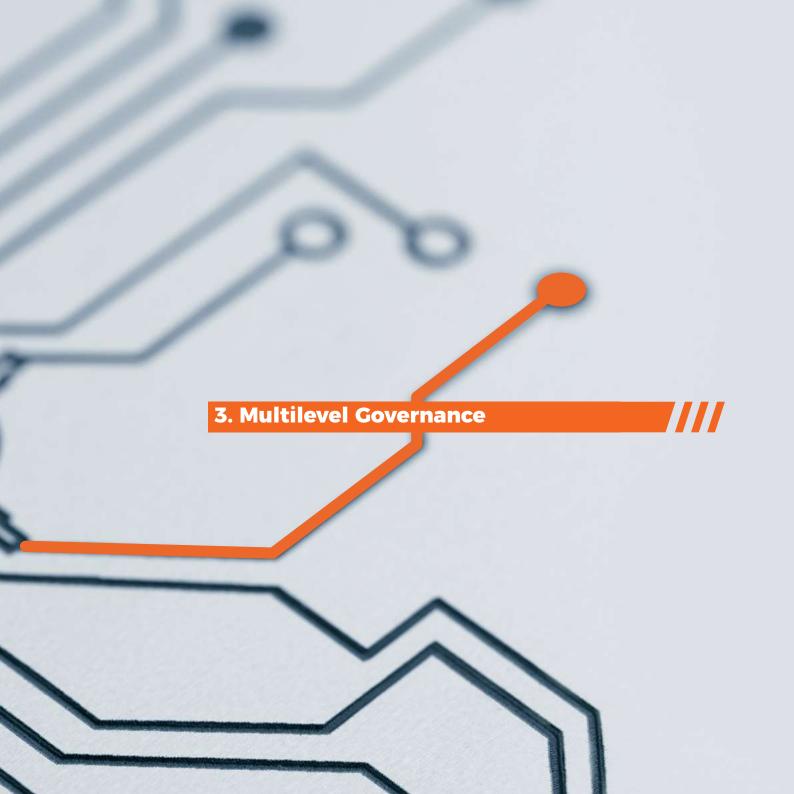


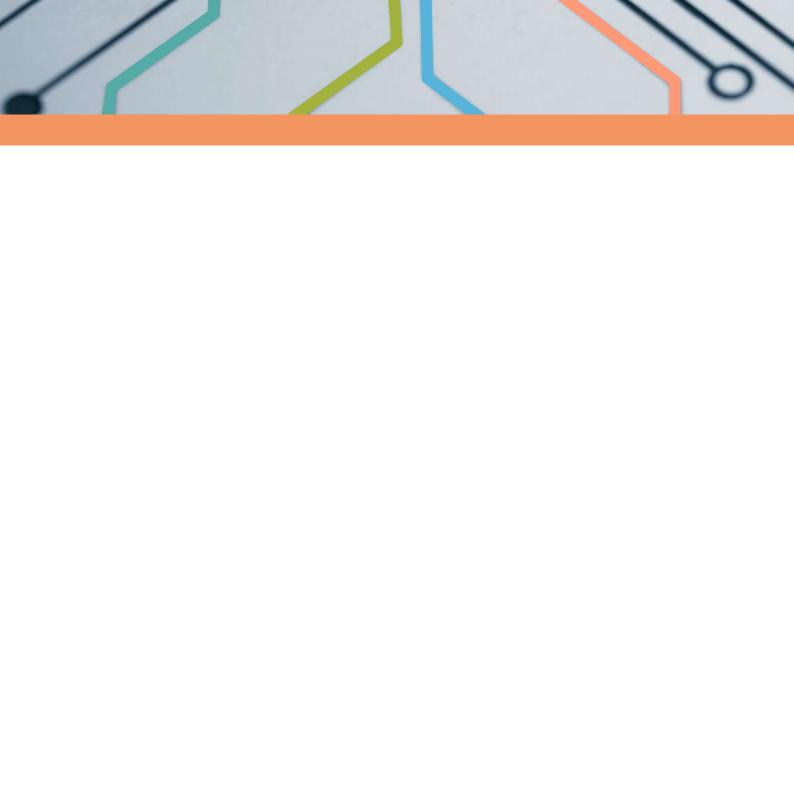
MEMBERS OF THE BOARD OF DIRECTORS

| FEMETAL | Mr. Guillermo Ulacia Arnaiz President |
|--------------------------|---|
| FEMETAL | Ms. María Jesús García Rodríguez Treasurer |
| ATOX | Ms. Paula Granjo Meana |
| CTIC TECHNOLOGY CENTER | Mr. Pablo Coca Valdés |
| IDESA | Mr. Benjamín Baragaño Valdeolmillos |
| IDONIALTECHNOLOGY CENTER | Mr. Íñigo Felgueroso Fernández-San Julián |
| SERESCO | Mr. Alejandro Blanco Urizar |
| TSK GRUPO | Mr. Arturo Betegón Biempica Members |
| FEMETAL | Ms. María Pérez Medina Manager and Secretary of the Board of Directors |









3. Multilevel Governance

MI4 has made steady progress in positioning since its early years. For this reason, today, the Cluster is present in the main business and institutional networks and has earned its position as a dynamic agent within its area of influence.

Specifically, the Cluster is integrated into the Network of Clusters of Asturias, the National Federation of Innovative Business Groups and Clusters, and is a member of the Advisory Council of Industry 4.0 of the Principality of Asturias

During this last year, the Cluster has grown at an unprecedented rate at an international level, being present in large-scale European organizations and projects. MI4 maintains its position within the European Cluster Collaboration Platform and has recently joined the European Lightweight Association.

During the last year, the Cluster has grown at an unprecedented pace at international level, being part of European organisations and consortiums of great scope.





3.1 | INSTITUTIONAL PRESENCE // REGIONAL

Asturias Cluster Network

The Asturias Cluster Network is the meeting point for the 9 existing Clusters in the Principality, among which is **MetaIndustry4**.

The development of this group arises in response to the need to generate a sector policy that allows the design of support instruments capable of responding to the specific needs of certain sectors.

Advisory Council of Industry 4.0 of the Principality of Asturias

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

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

This Council is made up of a score of experts, from among other areas from the University of Oviedo, the Technology Centers, the main driving companies in the region, the Government of the Principality of Asturias and the IDEPA, as well as another series of business organizations among which is **MetaIndustry4**, represented by its president Guillermo Ulacia.







3.2 | **Institutional presence** // National and International



FENAEIC

The National Federation of Innovative Business Groups and Clusters was established in Madrid in March 2009, and currently has around 60 partners, spread throughout the national territory, among which is MetaIndustry4, which is also a member of the Board Board of the Federation.

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



Bronze Label

MetaIndustry4 is recognized, at European level, with the Cluster Management Excellence Bronze Label.

This seal is awarded by the European Secretariat for Cluster Analysis (ESCA), under the approach of analysis and comparative evaluation with other organizations in the same technological field within the European scope.











Register of Innovative Business Groups

Metalndustry4 is one of the 79 entities registered in the Ministry of Economy, Industry and Competitiveness, as AEI.

This recognition is an essential requirement to access national financial support programs, specific for Innovative Business Groups, aimed at promoting innovation strategies and business competitiveness..

For **MetaIndustry4** and its partners this recognition means:

- An activation and linkage engine between the different players in the industry.
- A meeting point between companies, clusters and other agents in order to exchange knowledge and obtain business opportunities.
- An excellent tool to access projects of common interest, both at national, European and international level.
- An observatory to identify market trends and needs.
- A broader perspective on the business, through contact with other companies with different visions and realities.
- National and international visibility acting as a joint positioning tool for companies and the sector.
- Recognition and better assessment in funding applications for innovation and digital transformation projects in regional calls for proposals.



European Lightweight Association

MI4 has joined the emerging European Lightweight Association, an association born in central Europe, with associations and clusters from Germany, Switzerland and Austria, whose main objective is to strengthen the competitive position of its member companies and aspire to create a common position in Lightweight technology.

The Association is committed to being a powerful base to make companies realize the benefits of reducing emissions for trade and climate protection. MI4 joins ELA in its effort to greatly support the Green Deal promoted by the European Commission.



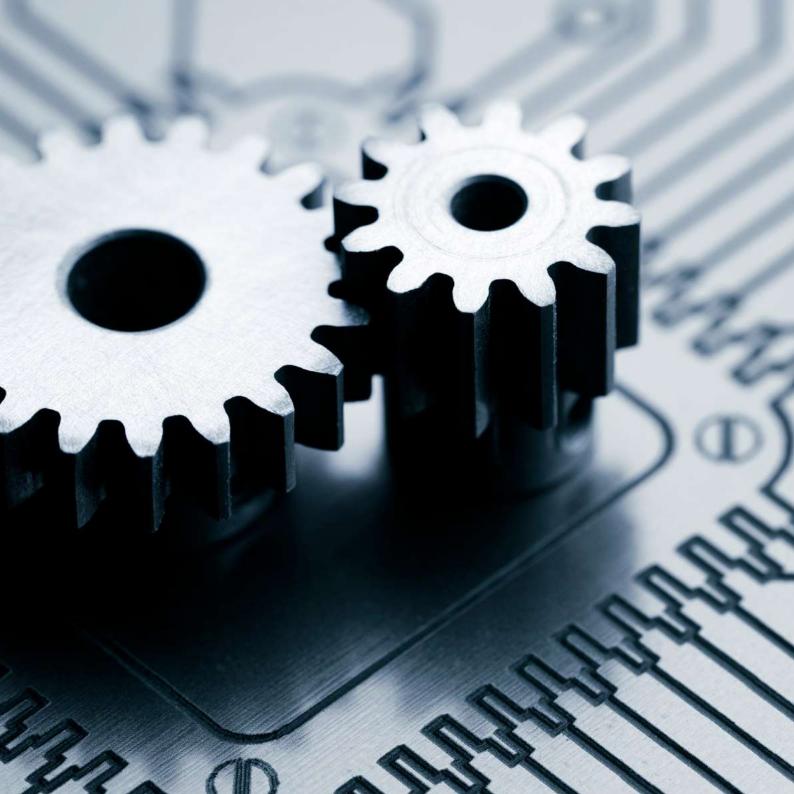
European Cluster Collaboration Platform

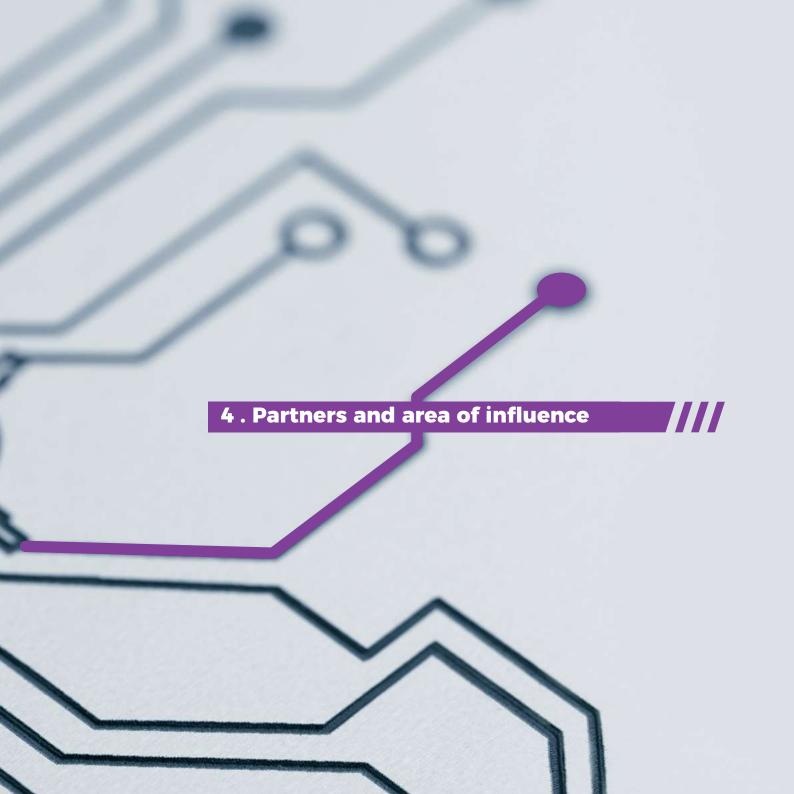
MetaIndustry4 is registered and actively participates in the different initiatives organized by the European Cluster Collaboration Platform, ECCP.

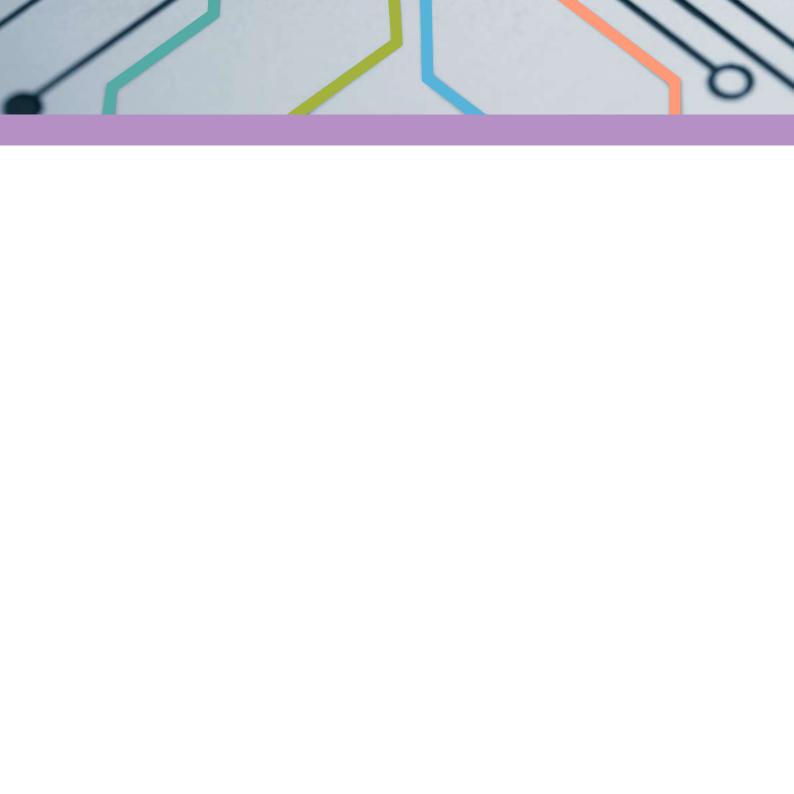
Promoted by the European Commission, the ECCP is the instrument to promote and support the activities organized by the European Clusters, in order to improve their performance and increase their competitiveness, by stimulating transnational and international cooperation.











4. Partners and area of influence

The updated data on the sector indicate that, in Asturias, the Metal Industry includes 760 companies, excluding the self-employed, with a turnover of more than 6,300 million euros. This represents 11% of the regional GDP. On the other hand, in 2020, Metal Sector exports reached 2,585.59 million euros in 2020, which represents 66.08% of the total value of Asturian exports in this period.

The different partners of the **MetaIndustry4** Cluster carry out their activity around activities related to advanced manufacturing and its entire value chain. In this way, we find companies related to the manufacture, installation and repair of metal products, as their main auxiliary and complementary activities in the operational field (58.1%), or industrial digitization (16.1%).

The companies related to the AM and its value chain represented 52% of the business volume in 2019 with respect to their area of influence.

These companies represented a business volume of 2,600 million euros in 2019, which would be equivalent to 52% representativeness with respect to their area of influence. In addition, the partners include companies whose activity is related to other advanced services (12.9%), technology and knowledge centers (4.8%) and business support organizations (8.1%).





INDUSTRY

- 1. ALEASTUR. ASTURIANA DE ALEACIONES
- 2. ASTURFEITO
- 3. ATOX SISTEMAS DE ALMACENAJE
- 4. CARROCERÍAS FERQUI
- 5. CONTENEDORES Y EMBALAJES NORMALIZADOS, BULLBOX
- 6. COUTO MAQUINARIA
- 7. CURVASTUR
- 8. DAORJE
- 9. DBV SERVICES
- 10. DELFIN TUBES
- 11. ESTAMPACIONES Y DECOLETAJES RODISA
- 12. FÁBRICA DE PERSIANAS METÁLICAS CIERRES DEL HOGAR
- 13. FEDECOR
- 14. FUNDICIONES Y SERVICIOS, FUNDYSER
- 15. GRUPO NAVEC SERVICIOS INDUSTRIALES
- 16. HIERROS Y APLANACIONES, GONVARRI
- 17. IDESA. INGENIERÍA Y DISEÑO EUROPEO (GRUPO DANIEL ALONSO)
- 18. INDUSTRIAL DE ACABADOS, INDASA
- 19. INDUSTRIAL MOREYPI
- 20. INGENIERÍA Y SUMINISTROS ASTURIAS, ISASTUR
- 21. INGENIERÍA. PROYECTOS AND CONSULTING LANZA
- 22. INSTALACIONES ELECTROASTUR
- 23. ITURCEMI

- 24. JUNTAS INDUSTRIALES Y NAVALES
- 25. MECANIZACIONES Y FABRICACIONES, MEFASA
- 26. METÁLICAS SOMONTE
- 27. OXIPLANT
- 28. SAMOA INDUSTRIAL
- 28. SISTEMAS ESPECIALES DE METALIZACIÓN, SEM
- 30. TALLERES LUMAN
- 31. TEKOX
- 32. TSK ELECTRÓNICA Y ELECTRICIDAD
- 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

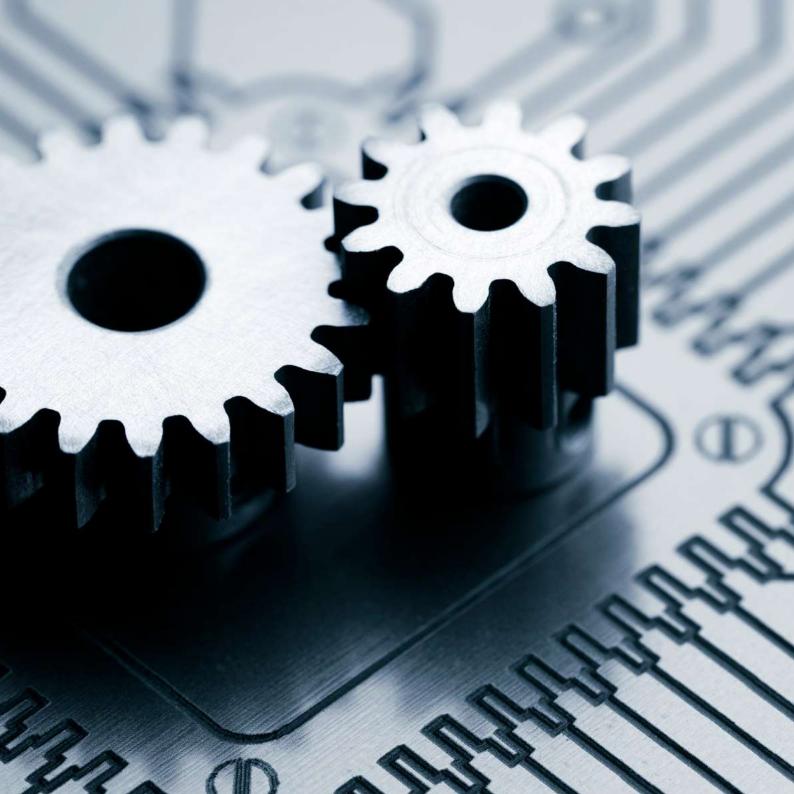
ADVANCED SERVICES

- 1. APPLUS NORCONTROL
- 2. CASINTRA
- 3. COGITRANS PLATAFORMA LOGISTICA
- 4. CORDES, CORPORATE DEVELOPMENT SERVICES
- 5. DINAMET INGENIERÍA
- 6. DOGRAM
- 7. FLINOR
- 8. ENCAJA EMBALAJES DE MADERA
- 9. GRUAS ROXU
- 10. INGENIACITY
- 11. KNOW-HOW INNOVATIVE SOLUTIONS
- 12. PEREZ Y CIA
- 13. TRIDITIVE

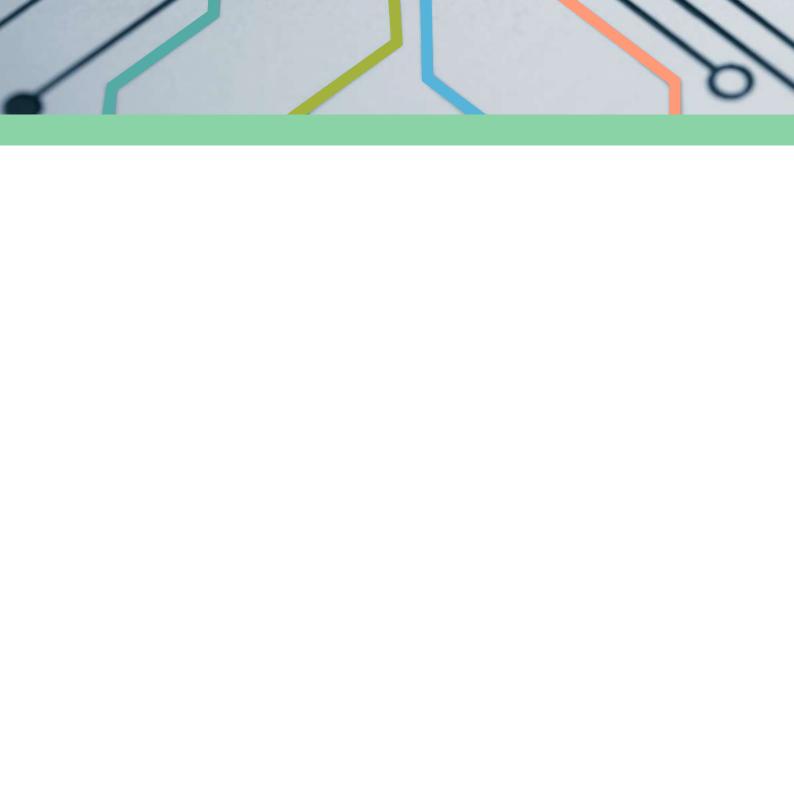
BUSINESS SUPPORT ORGANIZATIONS

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









5. Management Report

5.1 I STRATEGIC PLAN 2021-2024

One of the most important milestones that occurred in this period has been the update of the Cluster Strategic Plan for the 2021-2024 periods. This update has also been designed following the criteria and requirements demanded by the Registry of Innovative Business Groups of the Ministry of Industry, Tourism and Commerce, to renew the consideration of MI4 as an Excellent Cluster.

During the process, not only a comprehensive review of the previous plan in its strategic lines has been carried out, but also an analysis of the macroeconomic context at a global, European and national level, as well as an analysis of the economic, socio-labor, business, economic and technological environments of the Principality of Asturias.

The advances of the metal sector at an international, national and regional level, as well as the industry in the European Union, and global value chains related with metal have been taken into account.

In addition to this external analysis, data has been collected on the current members of the Cluster, as well as the sector in which they operate to determine both their representativeness and their degree of compliance with the requirements demanded by the Ministry. A review and update of the Cluster diagnosis has been carried out based on the SWOT analysis and the strategy has been reformulated, adapting the vision and mission to the new external and internal circumstances, and the strategic axes and objectives.

The Cluster presents its new strategic plan 2021-2024, updating its working lines and adapting to the new tempos of the sector.



STRATEGIC PLAN 2021-24

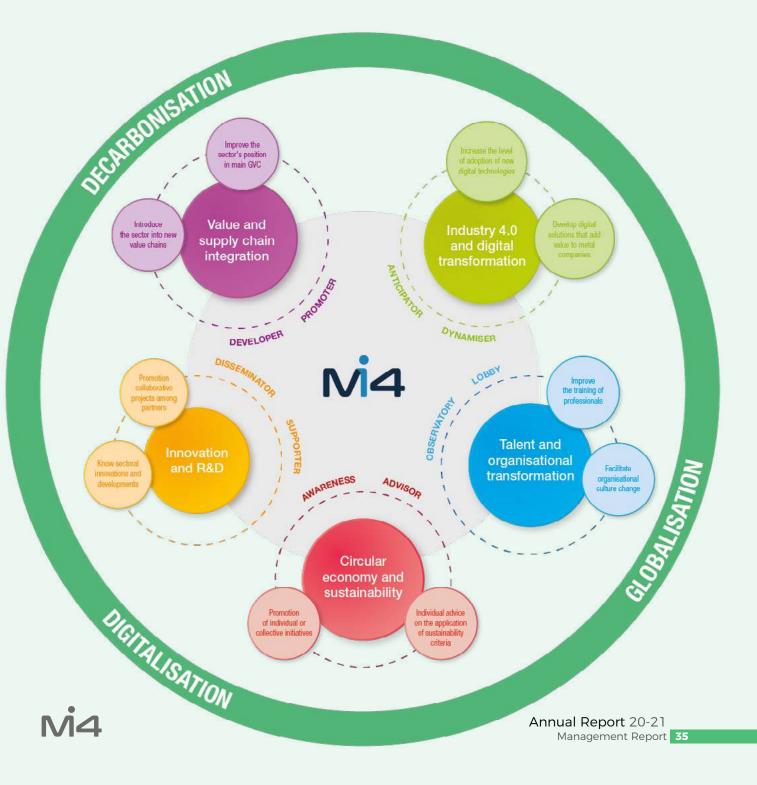
DECARBONISATION | DIGITALISATION | GLOBALISATION

The new strategic plan revolves around 5 main axes that range from business development and innovation to talent management or sustainability. These are:

- Position of the sector in its main value chains, and introduce the sector into new value chains.
- Innovation and R&D, in which work will be done to learn about and disseminate the "state of the art" of innovations with application in the sector, as well as to promote collaborative projects between partners.
- Digital transformation and Industry 4.0. The main purpose is to improve the level of incorporation of new digital technologies in the sector and develop digital solutions that provide added value to customers of metal companies.
- Circular economy and sustainability; this new axis focuses on promoting the circular economy and sustainability of the sector.
- Talent and organizational transformation will continue working in the line of improving the training of professionals of the present and the future, as well as promoting and facilitating the change of organizational culture in companies in the sector.

Likewise, MI4 has endowed itself with a new Mission and a new Vision that are set forth in the Governance section of this activity report.

MI4's new lines of work are orchestrated under the new needs of the sector. allowing Cluster partners to position themselves as providers of innovative solutions.



5.2 I MANAGEMENT AND ORGANIZATION

Metalndustry4, like all companies in the sector, has undergone a period of adaptation in recent months, trying to improve and evolve along the way, dealing with changes efficiently and strengthening the relationship with partners. These 12 months have been key to demonstrate the capacity of the Cluster in its management and organization, and the implementation of the following actions has been essential:

The last few months have required a constant adaptation that the Cluster has faced trying to improve and evolve its activity.

- The creation of a fully customized project management tool for the needs and circumstances of the Cluster. The main objective of this tool is to facilitate the control and monitoring of the increasingly numerous projects developed by the organization. The tool, of simple and practical operation, is endowed with meaning and value thanks to the internal team of the Cluster, in charge of filling in all the corresponding information. Among the functionalities of the tool are:
 - . Comprehensive project management, collecting all the necessary information in the different stages of the process.
 - Document management of the project.
 - . Comprehensive monitoring and control of project development.
 - . Manage staff and team dedication for each project.
- An analysis of the current functionalities of the CRM tool has been carried out, in order to improve the existing ones and include those that enhance the organizational and administrative management of the Cluster's activity and in its relationship with the associates.

- The cluster has continued to use a mail-list platform, which has more than 600 suscribers and which facilitates communication with partner companies.
- Due to the fact that external circumstances to the Cluster continue to promote remote work for security reasons, activities and meetings have continued to be carried out online, through the Zoom platform, as well as with the help of tools such as Miro or Mural, which allow collaborative work, based on design thinking, to be carried out safely from each our computer.



5.3 | SOCIALIZATION

MI4 is working to become an important and consolidated presence in the main institutions and networks in its area of influence, but also knows the importance of positioning itself internationally. Therefore, during these months the presence in forums and events in European countries has been reinforced, as well as association with international organizations. In this way, work continues to remain an agent that is present in the different initiatives and relevant events, formalizing stable frameworks of collaboration with other agents of interest...

During this year, **MetaIndustry4** has participated in the following public events:

- Global Cluster Leadership Program. 2020.
- IntraEuropean Matchmaking Event. June 2020.
- Digitalising Manufacturing Conference 2020. October 2020.
- Workshop in Bialystok Poland. October 2020.
- ELA Goes Live event. November 2020.
- MI4 CEO's meeting. November 2020.
- EU Industry Week. February 2021.
- ELA Goes Live II event. February 2021.
- IDEAM Cluster Official Launch, March 2021.

Following the recommended measures for this type of event, all of them have been carried out online, through video platforms.



MI4 CEO's Meetings Recovery plans against COVID19, and the role of the Cluster

The initiative started in 2020, arising from the situation of uncertainty by which all companies were affected and it has continued in 2021, followed the line of the first meeting: bringing together the main representatives of MI4 partner companies that reflect the motivation and drive that has been so necessary in the most adverse moments.

The second CEO's Meeting, took place in November 2020, and was focused on enhancing the role that Clusters play in recovery plans, and especially, the role that MetaIndustry4 plays. This meeting was attended by 36 representatives of companies, and was attended by the General Director of Industry of the Principality of Asturias, Rosana Prada. A presentation of the president of the European Cluster Alliance and president of the Spanish Federation of Clusters and AEIs, Antonio Novo, took place as well. The main objective of the meeting was to present the manifesto "Industrial Clusters need to be included in the European Recovery Plans" and to open the debate regarding the strategies carried out in the national and European sphere for the definition of these recovery plans.

The second meeting illustrated the value of the role of Clusters in recovery plans.

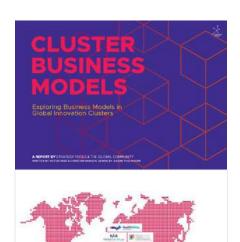
MI4 as advisor on European projects

During this period, the Cluster has been elected as a member of the advisory council of the European DigiCirc project, a European project aimed at accelerating innovation programs in the field of bioeconomy and blue economy, through cascade financing actions and other advanced services aimed at crosssector collaboration at European level between SMEs.









• The MI4 case in the Cluster Business Model report

Another example of the commitment to the socialization and positioning of the Cluster, is the incorporation of the Business Model Case of **MetaIndustry4** in the global report Cluster Business Model, prepared by Christian Rangen, CEO of Strategy Tools and Victor Haze, responsible for internationalization of the Health Valley Cluster in the Netherlands. The **MetaIndustry4** model is analyzed as a reference along with five other Cluster models at a global level.

Expansion of the network of European contacts

The Cluster's efforts in its international positioning have resulted in an extensive network of contacts at the European level, with which joint actions such as Webinar or inter-cluster meetings of interest to members have been carried out. Some of these organizations are Luxinnovation, the Luxembourg innovation agency or the Materalia Competitiveness Pole (France) or Pole Mecatech and Skywin, both Belgian.



European Industry Week in Asturias

In a collaboration between Metalndustry4 and Innovasturias, with the recognition of the European Commission, the European Industry Week was organized in February for the first time in Asturias. The event, which had close to 500 attendees and around 50 panelists, fulfilled the objective of bringing us closer to a more digital, greener and more resilient industry. It was organized through five days, oriented to different technologies and current concerns of the industry and there were debates on how to develop innovative solutions and design the industry of the future.

During this week, a day was dedicated to the celebration of the ELA Goes Live! Event, organized by MetaIndustry4, with the European Lightweight Association. With the main objective of knowing the capabilities of "lightweight" technology and how it can collaborate in the European industry's path towards a digital, cleaner and more efficient future, the conference consisted of two parts: getting to know the opportunities and experience under the two perspectives, the Asturian and the European, and a second part starring technological and industrial companies and research and technology centers, which showed project ideas in search of partners, thus promoting rapprochement between organizations.

Within the framework of this event, the presence of #MI4partners has been encouraged, and there has been an active participation of attendees who shared their experience and success stories in the development of a more digital and sustainable industry of partners, such as: TSK, Telecable, Seresco, Idonial, CTIC or Casintra.

Asturfeito, Táctica Tic, Triditive and Know How Innovative Solutions also participated in the **ELA** goes Live event.





5.4 | WORK COMMITTES

During the leading period in this report, the Cluster has still been governed based on the three main lines or axes defined in the first Strategic Plan, which are: Integration in Global Value Chains, Collaborative Innovation and Technological Improvement and Human Capital Management.

The working committees have continued to be a space for Strategic reflection for the identification. prioritization and selection of actions in each area.

These three lines are the ones that mark the orientation of the different Work Commissions that control the activity related to each one of them. The Committees 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 opportune decisions at all times.

The main functions of each of the Commissions are:

- Update the analysis on the different strategic areas in which the Cluster is constantly aligned.
- Exercise a leadership role on the projects framed in their field of interest, performing functions of direction, coordination and monitoring of the proposals and actions, promoted by each of the Committees.
- To be a space for strategic reflection for the identification, prioritization and selection of action recommendations in each area.

In addition to these three main axes, it is necessary to highlight a fourth transversal axis of General Cooperation, which extends to each and every one of the Cluster's actions, and without which the collaborative nature and joint learning pursued by MetaIndustry4 cannot be understood. This axis pursues that all the agents involved achieve a useful and enriching collaboration network, in order to be more competitive as a whole.





Continuing with the aim of promoting cohesion and synergies between the partners during this period, MetaIndustry4 has carried out different networking and benchmarking activities. These activities have been carried out online, adapting their content and development to the circumstances of the moment, fulfilling the main objective: to generate a greater degree of knowledge and trust among the members of the Cluster and to generate new joint cooperation initiatives.

The activities carried out to achieve the goals of each of the Commissions have ranged from workshops and informative webinars to the presentation of collaborative projects, both nationally and internationally, always following the objectives defined by the axes: the improvement of positioning competitiveness of companies and their integration into global value chains, the commitment to collaborative innovation and the incorporation of Industry 4.0 and support for the development of talent.

The committees have continued with the usual coordination structure, maintaining the shared leadership between the coordinator, acting as the main organiser, and the vice-coordinator.

Both figures play their role on the basis of shared support and management. Their attributions are reoriented towards the promotion and impulse of the Commission's work, as well as taking on the role of the coordinator.

Of the Commission, as well as taking on a role of greater public public representation of the Cluster in forums and meetings.

The objective of the Cluster's actions is to generate a greater degree of knowledge and collaboration among its members.



The panel of coordinators of each Commission is currently composed of the following:

Commission for "Integration in Global Value Chains"

Manuel Ocariz from Iturcemi.

Commission for "Collaborative Innovation and Technological Improvement"

Luis Saturnino from Hiasa-Gonvarri and Diana Álvarez from Mefasa.

Commission for "Human Capital Management"

Alejandro Blanco from Seresco and María Rivas from Isastur.

In this period, a total of nine Committee meetings have been held, complying with the provisions: quarterly meetings.

Commission for Integration in Global Value Chains. 12/06/2020.

 $\textbf{Commission for Collaborative Innovation and Technological Improvement.}\ 23/06/2020.$

 $\textbf{Commission for Collaborative Innovation and Technological Improvement.}\ 15/10/2020.$

Human Capital Management Commission. 02/12/2020.

Commission for Integration in Global Value Chains. 04/12/2020.

Commission for Collaborative Innovation and Technological Improvement. 06/04/2020.

Human Capital Management Commission. 07/05/2020.

Commission for Integration in Global Value Chains 13/05/2020.

The total number of attendees at the Commission meetings was 175 members.

9 meetings 175 members





5.4.1 | Commission for Integration in Global Value Chains

The main objective of this Commission has been since its inception, to facilitate a greater and better integration of the member companies of the Cluster in the different Global Value Chains in which they are involved.

The commission's coordinator, Manuel Ocariz from Iturcemi company, is in charge of, together with the Cluster team, carrying out all those actions that promote the approach to market trends and opportunities, as well as activities that promote a joint participation of the partners in the most advanced links and, of course, that they improve the competitive position of the Asturian metal sector in the markets of interest.

Development of the engineering, manufacturing, management and development value chain of projects associated with Hydrogen.

During the period analyzed, this commission has been much focused on the development of the Engineering Value Chain, manufacturing, management and development of projects associated with Green Hydrogen. Following its international strategy, with the aim that the Cluster and its companies are aligned with new trends and European projects, Metalndustry4, in collaboration with Asturex, launched this new project in which it has developed the value chain, characterizing the capabilities of Cluster companies to attract new business opportunities.

The European Commission has launched various lines to promote the development and recovery of European industry, with special emphasis on those that promote industrial ecosystems that include renewable energies. The Cluster has presented the project, identifying and showing the new business development opportunities associated with hydrogen.

9 activities 183 participants





ESECA project. European Sustainable Energy Cluster partnership for Africa

In its work to consolidate the position of Asturian companies in foreign markets, **MetaIndustry4** is part of the ESECA project: European Sustainable Energy Cluster partnership for Africa. The main objective of this project, in which MI4 participates within a consortium of four other European Cluster organizations, is to intensify network collaboration between European SMEs in the renewable energy and electricity generation, distribution and transmission sectors. The aim is to develop a joint internationalization strategy plan with common objectives towards the markets of sub-Saharan Africa, specifically in Senegal, Ghana and Mozambique, and an implementation roadmap that facilitates the internationalization of these SMEs. The project includes conducting market studies, exploratory trips, commercial missions and development of workshops in Europe for the formation of these consortia between SMEs to address these markets. The project will be developed in 36 months, and has a total budget of € 548,771.00.

PERTE INDØ project. Strategic Plan for Climate Neutrality and the Circular Economy of the Energy Intensive Industry

INDØ is a project aimed at transforming intensive industrial sectors towards an ecological and sustainable transition based on decarbonization and the circular economy. Key investments in mature green technologies will be addressed and will be complemented by R&D activities (TRLs 4 to 8, storage technologies and industrial use of H2), technological and process innovation activities.

The project has been presented at the national level, with the participation of more than a hundred companies and entities and with a budget that has totaled close to 2,000 million euros. In parallel, a regionalized version of the project has been carried out, submitted to the Principality's office for European projects. The Asturian version of this project has a budget of 7,5 million Euros.



Logistics working group

The Commission for Integration in Global Value Chains has developed a new Working Group focused exclusively on logistics issues in recent months.

This initiative arises for several reasons: firstly, an interest in this matter has been detected on the part of the main CEOs of the partner companies. In addition, it is the first specialized forum to deal with logistics from the ecosystem that includes Metalndustry4, being also the perfect space to go on with past projects and relevant contacts.

The main objectives of the Working Group are to generate a series of work lines, ranging from: the exchange of ideas and search for common solutions, the development of digital transformation proposals that respond to the needs of companies in logistics management, the approach of the reality of the transport sector to the industrial sector and vice versa; define lines of work related to internal logistics and external logistics, training or the use of new technologies applied to logistics, such as drones.

The logistics working group will be a forum to share knowledge and experience among all partners Ultimately, the Group will serve as a meeting and reference point for all partners, regardless of their activity profile, as it will be a forum to share knowledge and experiences from all points of view.



5.4.2 Committee on Collaborative Innovation and Technological **Improvement**

The axis of Collaborative Innovation and Technological Improvement has focused since its foundation on facilitating greater and better integration of technological advances and innovation of the Cluster companies. The key during all these years has been to find a way to improve the degree of knowledge about key technological trends in the sector, anticipating them and acting as a channel of opportunities. For this, it has been essential to promote the development of innovative projects, always from the collaboration between the partners, in which the new 4.0 technologies are incorporated.

Luis Saturnino, from Hiasa Grupo Gonvarri, occupies the role of coordinator of the Commission, forming a team with Diana Álvarez from Mefasa. as vice-coordinator.

Over the last twelve months, this Commission has held a total of 42 meetings, with activities such as committee meetings (3), follow-up meetings of the projects carried out in this period, and informative workshops and Webinar on 4.0 technologies. The total attendance was 461 participants.

461 participants

MI4 projects developed or in full development

As previously mentioned, one of the keys to this axis is the promotion and development of new projects in the field of digital transformation and industry 4.0, innovation and circular economy, among which the following stand out:





Gijón Impulsa

4C's: Collaborative and Competitive Management towards the Change of the Supply Chain



The project, completed in March 2021, arose from the growing trend of the use of additive manufacturing in different sectors, as an alternative when managing spare parts and tools. The objective was to analyze how this application could be transferred to the environment of industrial SMEs in Gijón.

In this way, with the collaboration of Gijón Impulsa and the Idonial Technological Center, an analysis was carried out on nine companies in the municipality, all of them dedicated to different processes within the industrial sector, to find out how additive manufacturing could be an option in your spare parts management. In addition, the project has dedicated a key part to the theoretical dissemination on various fields, from the application of technologies in their application to industrial processes, the existing success stories in this sector and the solutions and services that are offered today in the region.

The objective is to analyze how additive manufacturing can be transferred to the environment of industrial SMEs in Gijón.

The results of the project have materialized in an Global Report for the participating companies and in a video summary of the development of the process, in which important keys are given when approaching the process of applying additive manufacturing in the company.

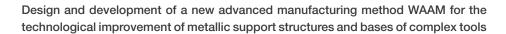


AEIs 2020 projects

Production planning using optimization algorithms and machine learning

The objective of this technological innovation project has been to develop a prototype of advanced data software, based on machine learning algorithms, that allows automating and optimizing the non-serial production planning process in industrial companies, from the data collection from industrial company systems to the creation of a query API that allows predictions of times and related costs, through training and selection of a predictive algorithm with the highest possible efficiency.

With duration of nine months, the project was developed by the companies Idesa, Izertis, Mefasa and Talento Transformación Digital.



Presented at the same call as the aforementioned project, the objective of this has been to assess the possibilities that WAAM technology combined with the potential of generative design offers for the design and manufacture of fixed metal structures (taking as a reference case those of support of photovoltaic panels), as well as the design and development of the prototype for its validation and commissioning on a laboratory scale.

At the end of the project, the objective was to have a new WAAM advanced manufacturing model bounded and technically validated for the production of metal structures, replacing the solid support pieces, studying their manufacture under working conditions in situ (open field), thus such as its application to pillartype metal parts, bases for control tools, bases for large stamping tools and bases for medium-sized cast iron tools, replacing solid parts.









The duration of the project has been nine months, and the following companies have participated: Bezzier, Hiasa - Gonvarri, Idonial, Metálicas Somonte, and the Capital Goods Cluster of Castilla y León.

Horizon 2020

Mine.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

Mine.The.Gap is the first Horizon 2020 project in which the Cluster participates. Since last September, it has begun its development with the aim of developing a network and a support platform for SMEs in the raw materials and mining sectors to improve their productivity, competitiveness and innovation capacity, promoting the introduction of new (disruptive) technologies and promoting access of new products and services to the market.

The project, with duration of 36 months, has a budget of close to 5 million euros, of which 75% will be dedicated to offering cascade financing for the development of technological modernization projects in companies directly or indirectly linked to the Mining Value Chain.

MetaIndustry4 is one of the 11 partners of this consortium in which organizations from countries such as Germany, France, Poland, Bulgaria, Finland, Portugal, as well as Spanish representatives are represented. The first Open Call took place in May, which will finance two types of projects: those whose objective is to design and implement a prototype or proof of concept to demonstrate the viability of the proposed solution, or those that develop and test, in a production environment, a demonstration or pilot test that evidences the main features of the solution.







5.4.3 | Human Capital Management Commission

The Human Capital Management commission is focused on generating actions that facilitate better training and management of the present and future human capital of its partners. Improving the degree of knowledge about sectoral trends in qualifications and promoting the adaptation of these and their training offer to the changing activity of the sector, are its main objectives. From **MetaIndustry4**, access to new knowledge, benchmarking and the exchange of experiences is promoted and facilitated.

This Commission is led by the coordinator Alejandro Blanco, from Seresco, who is accompanied as vice-coordinator, by María Rivas, from Isastur. In the last twelve months, the Commission has met twice with 33 representatives in attendance.

Some of the actions carried out in this period have been focused on the study of new digital and personal skills that will affect the metal industry in the future. These have been:

Erasmus+ AttTrak project

Employer empowerment to attract, transfer and keep young people in metal industries, AttTrak was the first European Erasmus + project for Metalndustry4. Its objective was to develop and strengthen the skills of employers of companies in the metal sector for the recruitment and development of staff, empower companies to recruit young people, make them fit for the job market in the metal industries and prepare them for the challenges of the future. In addition, the project promoted a change of vision about personal development from the point of view of the company.

2 activities 33 participants







AttTrak, made up of a consortium of five partners from Germany, Italy, Poland and Lithuania, in addition to Metalndustry4, included a series of international Workshops in which the partners met to carry out outreach activities regarding the project. After MI4's shift in March 2020, the next Workshop was hosted by the Polish partner, in the city of Byalistok, where the Cluster team had to travel to personally attend the conferences and online workshops that were sent later to the rest of the attendees. For a week, all the partners were in charge of preparing a session for the rest of the partnership and attendees.

The first of the sessions, promoted by the partner, and project leader, the Institute for Occupational Educational Research in Berlin, IBBF; was focused on the analysis and repercussions of the installation of the automotive company TESLA in the Brandenburg region and its impact on the offer of vocational training in the region.

The second day was led by Metalndustry4, and was focused on the development of an active-participatory workshop in which more than 30 attendees worked through online design thinking workshops to identify the key factors to transform the organizational culture of the industrial company and adapt it to the new times and needs, marked by digitization and the millennial generation. The workshop counted on the dynamization of the technical team of the cluster supported by the expert consultant in people management and facilitator of organizational change, María Rosell. The following days, by

experts from Lithuania, Italy and Poland, the analysis topics revolved around motivation at all levels and the formula to stimulate it. In this sense, the professors Vidmantas Tutlis, from the Vytautas Magnus University of Kaunas and Luca Fumagalli, from the Polytechnic University of Milan, focused their presentations and debates on the formulas and instruments to motivate the attraction of young people from the world of vocational training and from the industrial world.

The fifth day was led by the Polish host who organized a workshop in which they worked with the different participants in the new skills to be developed by Vocational Training teachers to adapt to the new needs of the industry and the characteristics of millennials.

The project came to an end in the last months of 2020, when the partners analyzed the results obtained in the different actions and initiatives to find the most appropriate formulas to transfer and give continuity to the main lines of work identified throughout this process.

Metalndustry4 is a key player in the progressive adaptation of the Advanced Manufacturing concept in Asturias.







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

MetaIndustry4 has concluded during this year the analysis of the professional competences of the metal sector in which the different changing scenarios in the industry and in the region have been taken into account. The "Study of technical and personal skills for the digitization of Asturian metal" has met the established objectives, determining both the technical skills and the personal skills necessary for companies in the metal industry in Asturias to successfully address their digital transformation processes. In addition, the existing gaps between the current situation and the desirable one have been identified, both at the level of technical and personal skills, providing the possible lines of action to be executed to solve or minimize these gaps.

The study illustrates an X-ray of the traditional profiles of the sector, and the present and future needs that it presents, identifying three possible new professional roles that could appear in the context of the Asturian metal industry derived from the digital transformation, which are:

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

MetaIndustry4 has also fulfilled the objective of fostering a constant dialogue with the Administration, working together to adapt the training offer (Regulated and non-regulated) to the new reality of Industry 4.0.

Currently, MI4 is working on a Digital Competency and Skills Development Plan for the industry, in which the most relevant training for industrial companies in the region will be prioritized and organized.



Erasmus +

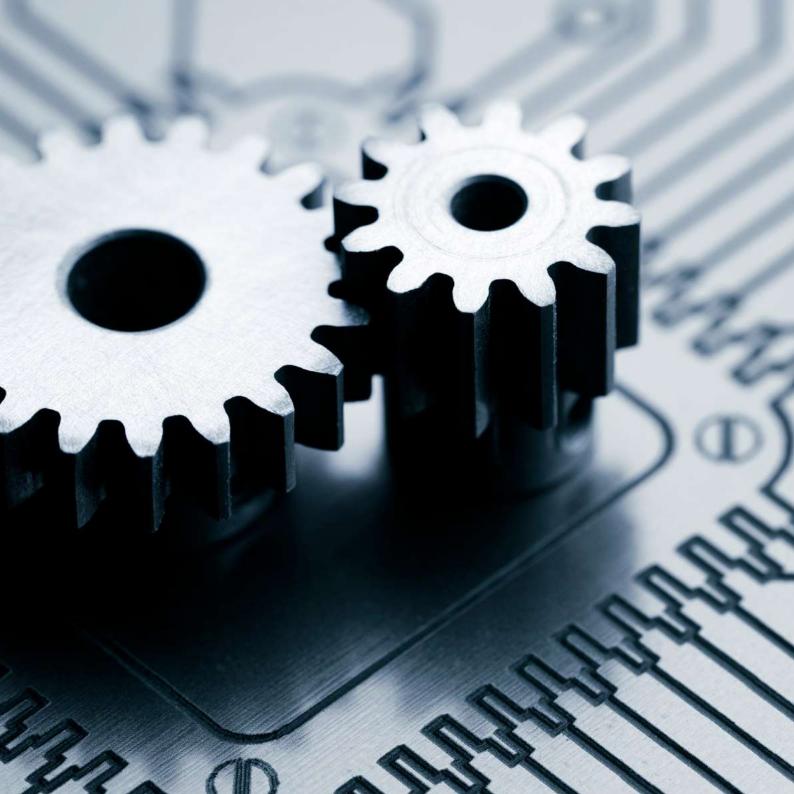
Circular Economy in Metal Industries VET. CEMIVET

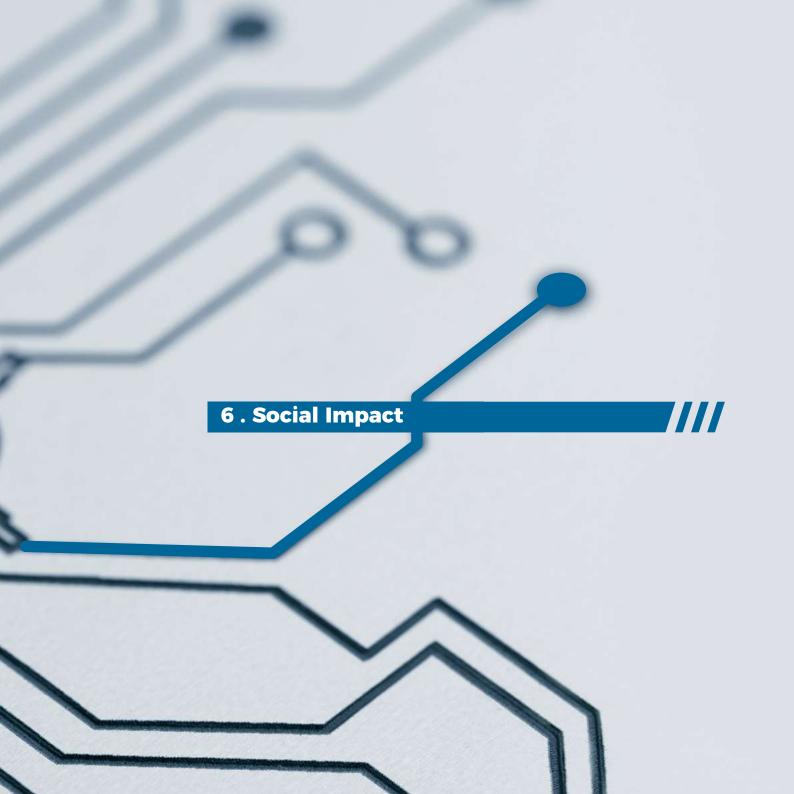
The European project CEMIVET, aims to support SMEs in metal clusters and their staff to better understand the transformations underway (for example, the climate crisis), recognize their impacts and undertake appropriate adaptation measures, demonstrating to turn the possibilities of the Circular Economy in the sector of metal working and manufacturing. With a duration of 36 months, Metalndustry4 will work on this project together with six European partners, carrying out an analysis phase in which the existing competencies in metal work and manufacturing, their processes and their current competencies will be determined. Based on the results, the new key competences to be taught will be defined using appropriate methods, with adaptable and convincing concepts,

For the health reasons mentioned above, it has not been possible to carry out face-to-face activities within the framework of this committee, such as meetings to exchange good practices in Human Resources.











6. Social Impact

The Metalndustry4 website is a fundamental means for communication between Cluster and partner. In it you can find all kinds of relevant information for the member companies and collaborators of the Cluster, from internal activities to news and articles of interest.



Since its creation in 2017, more than 370 entries have been published, of which 90 have been during the period covered by this report, all of them related to news, activities and projects related to the Cluster.

All entries are published in Spanish, and some of them are translated into English.







Social Media. Twitter, LinkedIn & Instagram

The positioning of Metalndustry4 in social networks has been growing in this period thanks to the constant communication and personal interaction that takes place in them with partners and agents within the Cluster's space of influence. Currently, the Cluster is present on the three most important platforms: Twitter, with a total of 1,125 followers; LinkedIn, in which the Cluster page has more than 1,300 followers, and Instagram, with a total of 343 followers.



















¿Cuáles son las competencias y habilidades digitales prioritarias para tu empresa?

Desde la Comisión de Capital Humano, se ha presentado recientemente el Plan de Desarrollo de competencias y habilidades digitales para la industria. El plan está disponible en la parte privada de la web de Metalndustry4, a la cual se podrá acceder indicando su clave personal.

El Plan está comprendido en cuatro bloques. en los que se comprenden más de 50 acciones formativas específicas dirigidas a: personal directivo y mandos intermedios, responsables de calidad, de Industria 4.0 y transformación digital, así como para los especialistas en Automatización de Procesos y Productos y los responsables de Sistemas y TI.

Con el objetivo de acelerar la puesta en marcha de este plan, desde la Comisión pedimos la colaboración de los socios con el fin de priorizar aquellas formaciones que resulten de más interés y de más rapida aplicación para las empresas industriales.

Por ello, se ha elaborado este formulario en el que se recogen las diferentes acciones para que se seleccionen aquellas que se consideren más prioritarias.

Agradeciendo de antemano su colaboración no dude en consultar con el equipo del Clúster cualquier duda que pueda surgir.

METAINDUSTRY4

Marqués de San Esteban, 1-7º 33206 Gijón, +34 985 356 546 @MetaIndustry4 www.metaindustry4.com

80 newsletters

630 subscribers



Newsletter MI4 News

MI4 News is already a recognized newsletter among the Cluster's associates and collaborators. Every Tuesday, every fortnight, a new edition reaches the mailboxes of the more than 630 subscribers that the Cluster has. In this newsletter, the most current and relevant information of the moment is included, such as activities, news, new projects or new members. Currently, the newsletter has more than 80 editions.

As a complementary action to MI4 News, a new type of communication has been designed. MI4 Flash News, which supports the newsletter in sending relevant and urgent information. It is a more agile communication that aims to save the fifteen days that separate each edition of MI4 News.

Flash News is more focused on communications to partners, and can also be sent to the complete list of subscribers, depending on its content.





Economía

LA NUEVA ESPAÑA | 25

El metal asturiano revela carencias formativas en sus plantillas para dar el salto a la industria 4.0

Los trabajadores del sector, sobre todo los de producción, necesitan mejorar en fabricación aditiva e inteligencia artificial, señala Femetal

Oriota, Joea Luis SALINAS.

El potente sector asuriano del metal, corzoló de la industria responsa, quiere acelerar ya el paso hacia la transformación digital de sus empresas y no quedarse descolgado de sus compresidores, que vienen con el cuchilio entre los dientes. Con ese escenario de fondo, la putronal regional de este sector. Fementa, a traves de el disser Metalmodastyl, y en colaboración con el del Pinicipado (IDEPA), emmerso instituto de Desarrono Económico del Principado (IDEPA), empren-dió hace unos meses un estudio pa-ra saber cuál era el grado de digita-lización –además de analizar otro tipo de competencias- de sus empleados. Los resultados no son na-da alentadores. El dominio que tie-nen los trabajadores de estas nuevas herramientas digitales que es-tán llamadas a revolucionar la in-dustria es mínimo. Tanto que el es-

y ahondar un poco más. Ahora en-tre la plantilla. "Queríamos saber que necesidades de formación y de

sos humanos para afrontar con éxisos humanos para afrontar con éxi-to esa transformación", señala la secretaria general de Fernell, Mar-tia Horza El camino hacia la indu-nta 40 transita, explica, por des vi-de ellas la forman las inversiones que tiene que realizar la industria para modernizar su magiunaria, y el otto, es la formación que precisaria nuevas tecnológias, que van incor-poriadose en las empresas. ¿Cuáles son cass muevas her-mientas que menos conocera los transjadores del sector 1º Según de en las técnicas de fabricación adifi-u- es decir, en la impresión en -es decir, en la impresión en

en las técnicas de fabricación aditi-va—es decir, en la impresión en 3D-; ni en inteligencia artificial; ni en lo que se ha denominado como "machine learning", o sea, el aprendizaje automático de las má-quinas. En esas tres incipientes dis-ciplinas y que están llamadas a transformar por completo la forma ciplinas y que están llamadas a transformar por completo la forma en la que la industria trabaja, los empleados del sector del metal es-tín pez. Sobre todo, los de produc-ción, En cambio, hay otras compe-tencias sobre las que si qui teinen bastante dominio, dice el estadio. Entre ellas está el manejo de algu-nos programas de diesirlo, o para-bas automatización y la robotiza-ción. "Uno de los opietivos de este anflisis es el de dar la voz de alar-ma, ver dónde se debe de actuar para. ma, ver dónde se debe de actuar pa-ra impulsar la competitividad del sector, mejorar el talento de los trasector, mejorar el talento de los tra-bajadores y favorecer el crecimien-to de las empresas", señala Alejan-dro Blanco, coordinador de la co-misión de gestión del capital huma-



RFID El grado de dominio medio sectorial de las Cloud 20 MES Herramientas colaborativas 15 Ciberseguridad 14 30%

Machine learning 0

Sensórica O

Realidad virtual y aumentada O

no del chister Metalndustry4. Y afade: "La transformación digital y apartis, y o senzamos a un rimo, y apartis, y o senzamos a un rimo y apartis, y o senzi y a demassido tarde".

Es miss, en este mero mundo al que se encaminan las empresas, en protagonista embris surpirin nuevos roles, mevos puestos de trabajo. Femetal ha identificado algante de la composiçua d

la empresa hacaa esa transforma-menta de la composición de la composición de mutización de processo y produc-tos, y especialistas en analítica de datos. En un tiempo, a no muy tar-dar. tumbién haria fialta especialis-sables de ciberceguidad y trabaja-dores de producción que tengan amplios conocimientos de infor-mácia.

Mantipo de la composición de la composición por la composición de la composición de malizada las carencias técnicas que precisan sus trabajadores, tam-bién har realizado un análistos de una finidades blanda—que las planti-lidades blanda—que las planti-ses comos como "soft sidila" o ha-tecta cimbio, y soprendentenente, o caracterista de la composición de la cetado importantes carencias entre extendatectado importantes carencias entre el personal en competencias tan reel personal en competencias tan re-levantes como la adaptación al cambio-fundamental para afrontar todo este proceso-, la capacidad de aprendizaje-igual de relevante-, o la planificación y gestión del tiem-po. A la contra, sí que sacaron mepo. A la contra, sí que sacaron me-jores pantuaciones en trabajo en quipo, cen la capacidad de análisi y resolución de problemas, y en la autonomís. La patronal asturiana que es el personal del departamento informático y los directivos quien-eso obienen mejores notas en estas competencias personales. mental, debra servir altora para "modernizar y transformar la ofer-ta de Formación Profesional, in-comportado de manera progresiva los contenidos y prácticas relaci-sos contenidos y prácticas relaci-las y procesos de las y procesos de las y procesos de las y procesos de procesos de

ran que será necesario promover la formación entre los trabajadores y los parados que quieran buscar suerte en el sector.



Los trabajadores del metal

Un estudio de Metaindustry4 revela que de media solo dominan el 30% de los conocimientos que exige la industria 4.0

64% Los trabajadores de

ASTURIASINNOVA+ | ECONOMÍA | 59

70%

La principal habilidad personal con la que cuentan los empleados del sector del metal

en Asturias suspenden en competencias digitales

SANDRA S. FERRERÍA

Planificación y gestión de tiempo DIGITALES

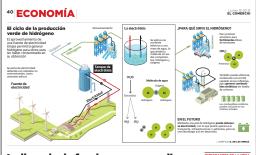
PLM Mecatrónica Big Data

Las empresas asturianas del sector metal buscan especializarse en esta energía para atraer inversiones

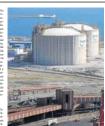
ECONOMÍA 33







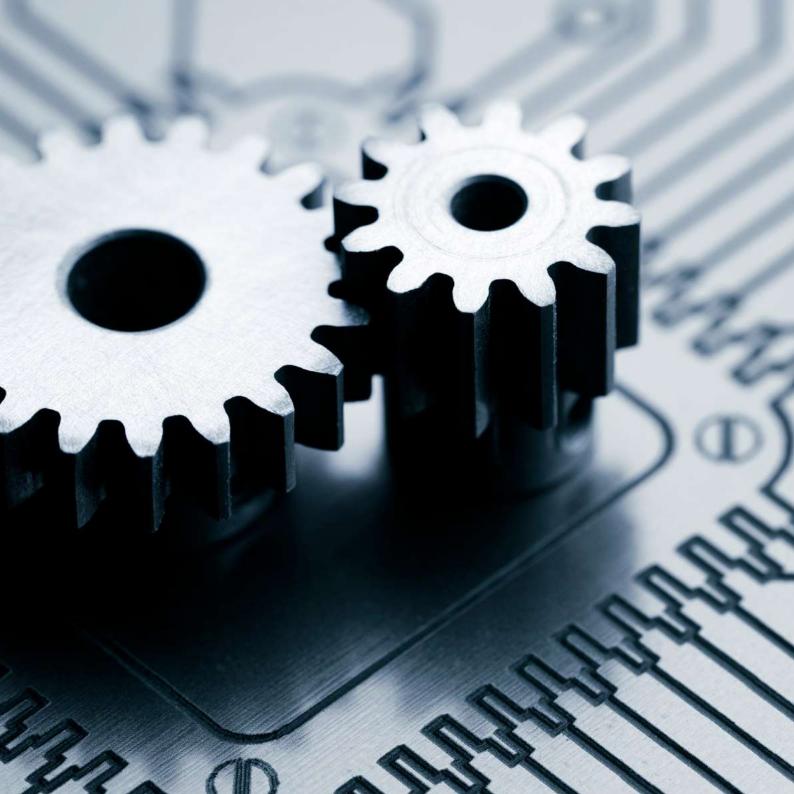
La llegada de fondos europeos dispara el interés por el hidrógeno en Asturias

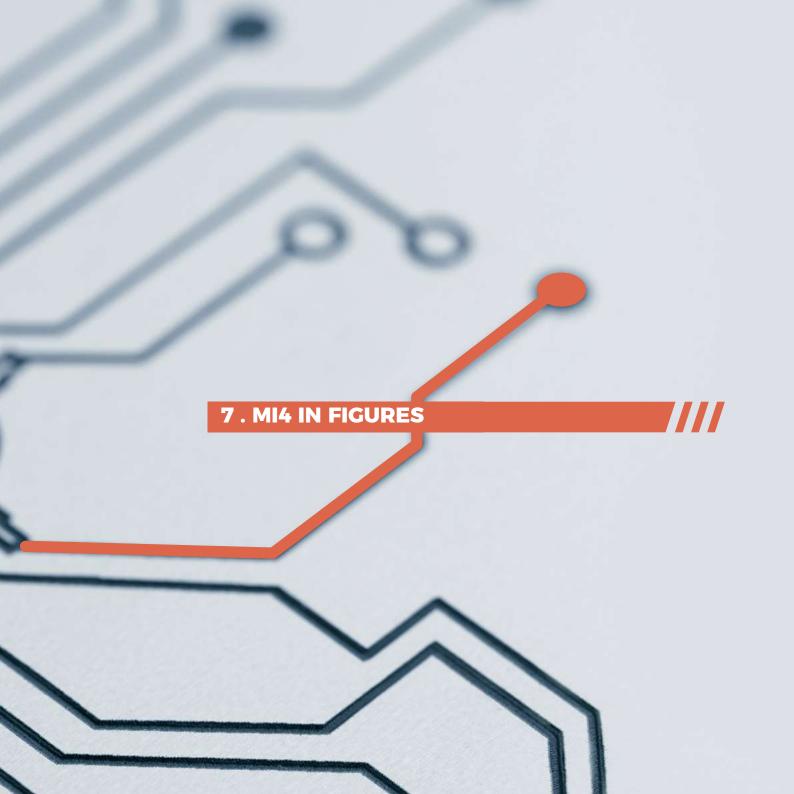


industria&empresa 33 LA NUEVA ESPAÑA | Viernes, 29 de enero de 2021 Metalndustry creará una cadena de valor en torno al hidrógeno para

astunanas que aportan valor y detectan oportunidades de negocio internacion







MI4 IN FIGURES



