

Metals & Minerals

IDOM



IDOM

OUR COMMITMENT, YOUR SUCCESS
www.idom.com

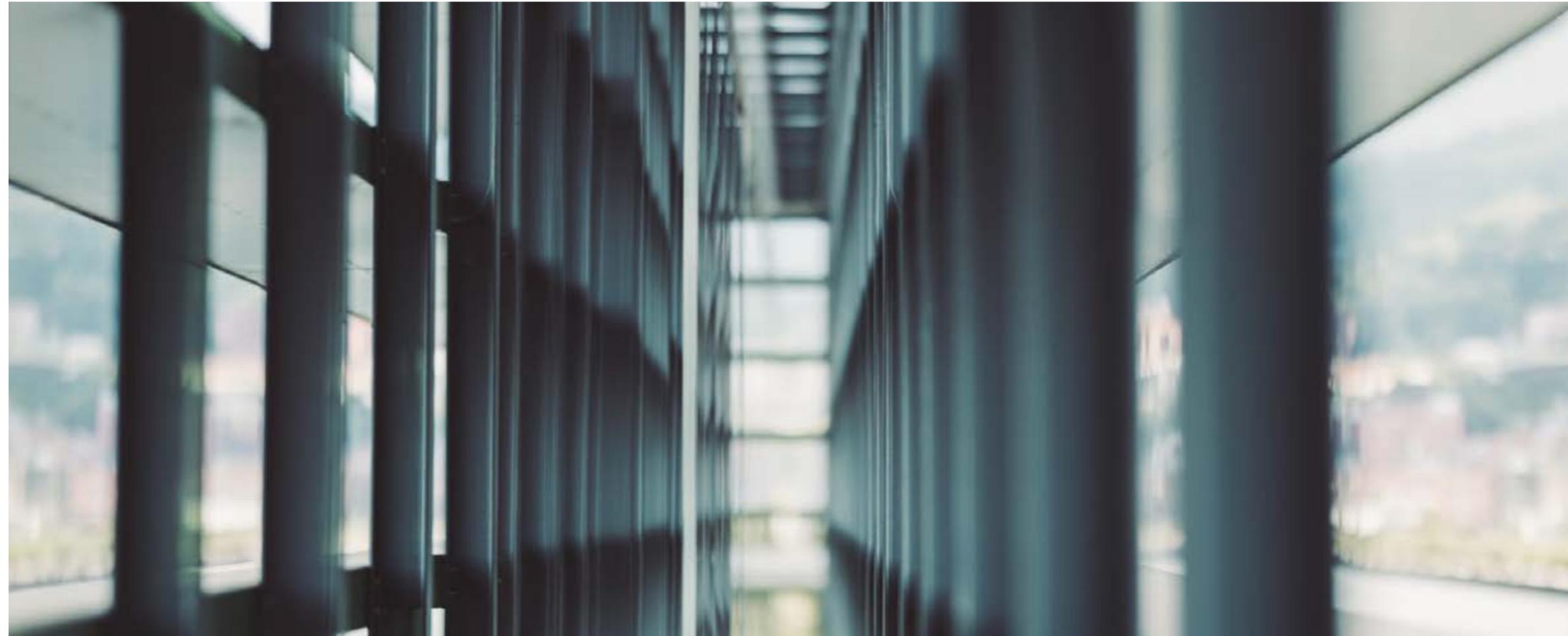
About IDOM

We are an association of independent professionals working in the fields of Consulting, Engineering and Architecture, united in our way of doing things and shared objectives, at the service of our clients.

- 1957
since
- 125
countries
- +5.500
professionals
- 45
offices
- 984
partners



If you want to know more about our activity and our projects, scan this code.



Our values

- **The Client** is the core of our activity.
- **People** are the heart and soul of IDOM.
- **Professional development** IDOM is a group of highly qualified people who strive for excellence.

Our pillars

- We pursue **excellence**. Our way of working is to do the best we know how and improve as we go.
- We believe in the power of **human relationships** as a motivating force to overcome difficulties.
- We are passionate about **resolving problems** that no one has solved.
- **Innovation** is present in all our activities.
- **Sustainability** is the fifth pillar, as this approach maximizes the contribution of our activity to the environment, to people, to local communities, to the planet, and to society as a whole.



“IDOM is leading the decarbonization of the sector and the use of green technologies. From the mine to the final product in the new route: mine, pellet, green DRI, green steel making”

Services

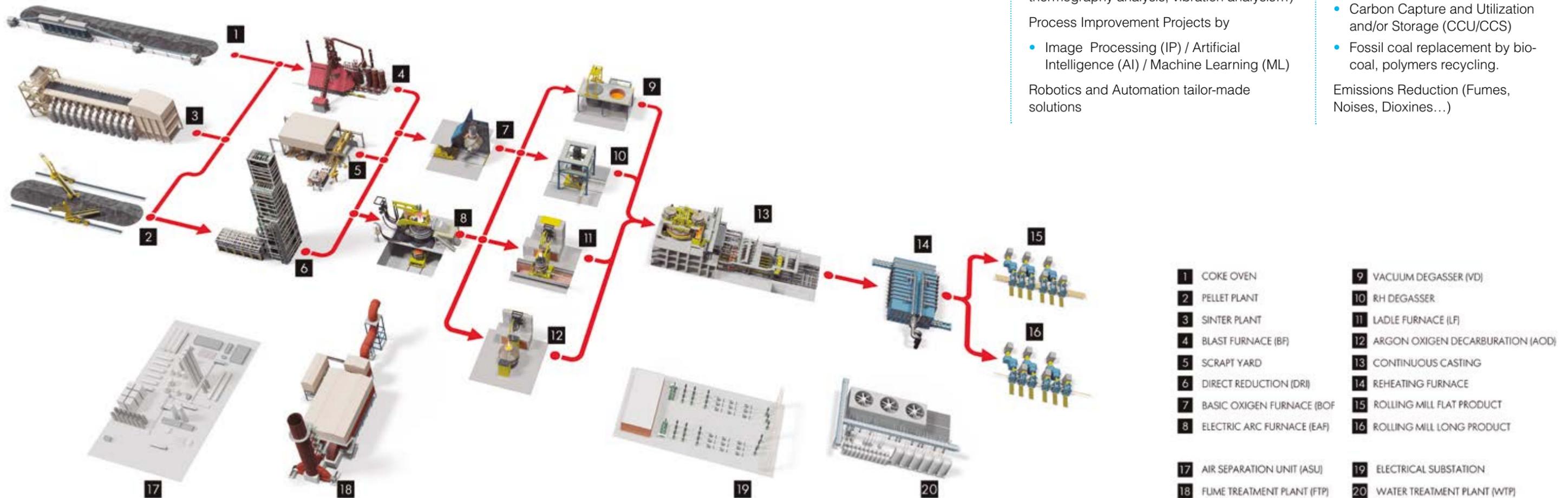
- Process optimization.
- Procurement technological consultancy
- FEL 1-2-3 & FEED services.
- Pre & Feasibility Studies (PFS/FS).
- AACE class CAPEX/OPEX estimates.
- Conceptual, basic & detailed design.
- EPCM & PMC services.
- Owner Engineering (OE).

Markets

- Iron making.
- Steel making.
- Green Steel.
- Non-ferrous metals.
- Iron ore mining.
- Copper mining.
- Other metals mining.
- Non-metals mining.

IDOM is redefining steelmaking with sustainability and innovation

Committed to the CO₂ emissions targets for 2030 and 2050, our multidisciplinary team tailors solutions to meet the specific needs of our clients. We support them through the decarbonization process and implement Industry 5.0 solutions to reduce emissions, improve efficiency, and maintain the high quality our clients expect.



Process and Technology Services

Digital transformation

Digital Transformation Proof of Concept Projects

- RM Process Modeling
- Water Treatment Plant (WTP) Digitalization
- Fume Treatment Plant (FTP) Digitalization
- CCM / RM Greasing Systems Digitalization

Training Management

Digitalization & Automation of Scrap Classification (AI)

Electrodes Consumption Control Digitalization

Automated Guided Vehicles (AGV)

Maintenance (Predictive Maintenance, thermography analysis, vibration analysis...)

Process Improvement Projects by

- Image Processing (IP) / Artificial Intelligence (AI) / Machine Learning (ML)

Robotics and Automation tailor-made solutions

Sustainability and Decarbonization

Circular Economy

- Slag treatment and valorization
- Valorization and recirculation of other by-products: briquetting/injection

Energy efficiency

- Electrical and combustion energy optimization
- Waste heat recovery
- CO₂ reduction studies
- Carbon Direct Avoidance (CDA):

Fossil fuel combustion replacement by Hydrogen, biofuels, Electrification

- Carbon Capture and Utilization and/or Storage (CCU/CCS)
- Fossil coal replacement by bio-coal, polymers recycling.

Emissions Reduction (Fumes, Noises, Dioxines...)

Decarbonization projects

Energy Efficiency Feasibility Study in Steelmaking

A technical and cost assessment explored three energy-saving initiatives: EAF Digitalization, Reactive Power Compensation, and Waste Heat Recovery. The evaluation involved simulations, electrical measurements, and CAPEX/OPEX estimations to quantify performance improvements and support applications for government funding. The objective was to boost energy efficiency and sustainability in steel production.

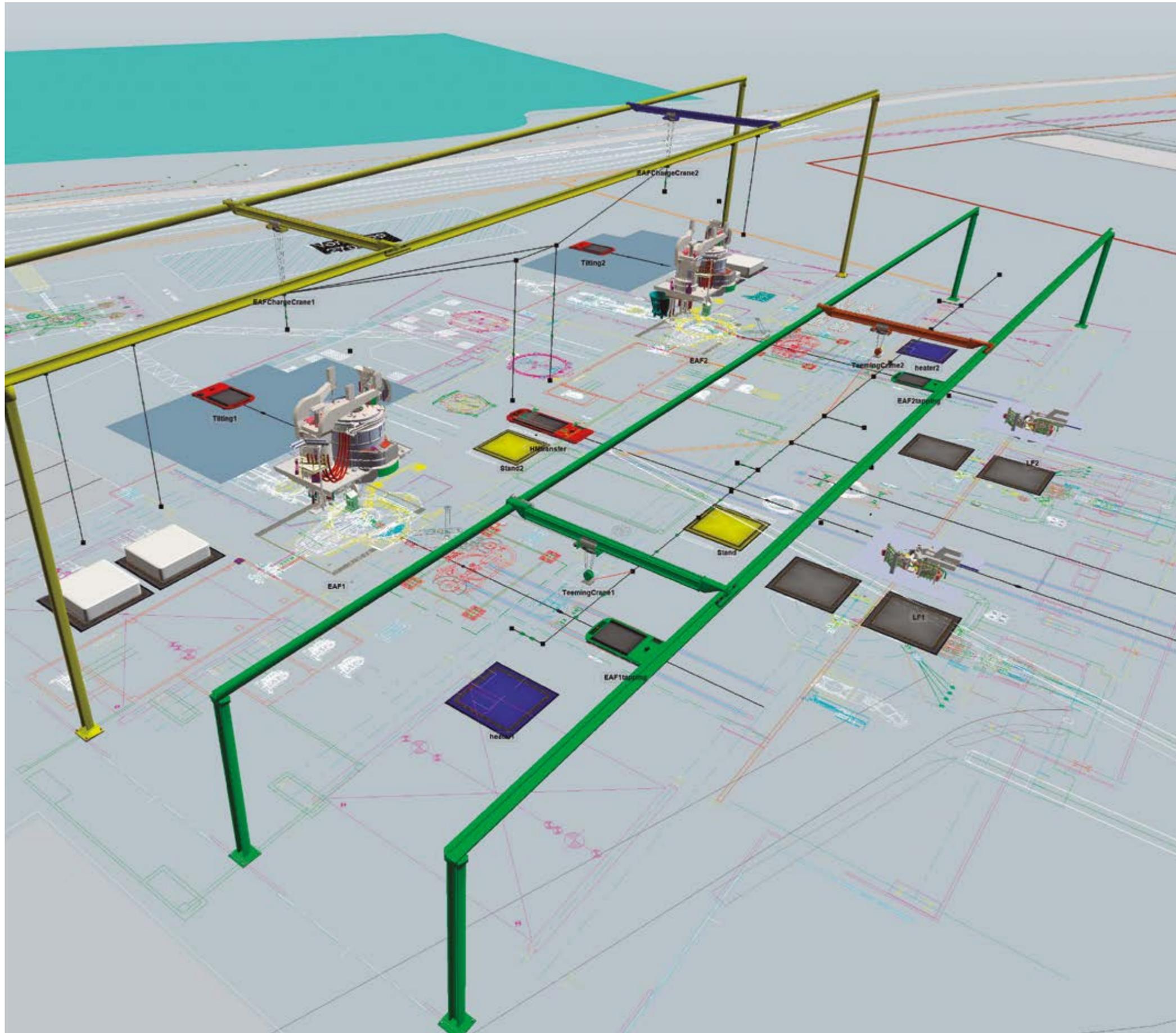
Smart Power for Smarter Steelmaking

IDOM assessed the implementation of a Reactive Power Compensator to improve the efficiency and stability of Electric Arc Furnaces (EAFs). Through advanced simulations and financial modelling, the initiative revealed significant energy savings, enhanced grid performance, and a strong return on investment. This solution contributes to more sustainable, cost-effective, and reliable steelmaking.

Annealing Furnace Decarbonization Study

IDOM analysed the current condition and energy performance of an annealing furnace used in flat steel production. The study investigates advanced decarbonization technologies to determine the most effective strategies for reducing emissions while maintaining high production standards.





Digitalization projects

Dynamic simulations are powerful tools for optimizing production and logistics planning in any steel plant, whether existing, new, or modernized. At IDOM, we leverage dynamic simulations to analyze planned production schedules, adapt the design parameters of new equipment, and optimize production planning for maximum efficiency.

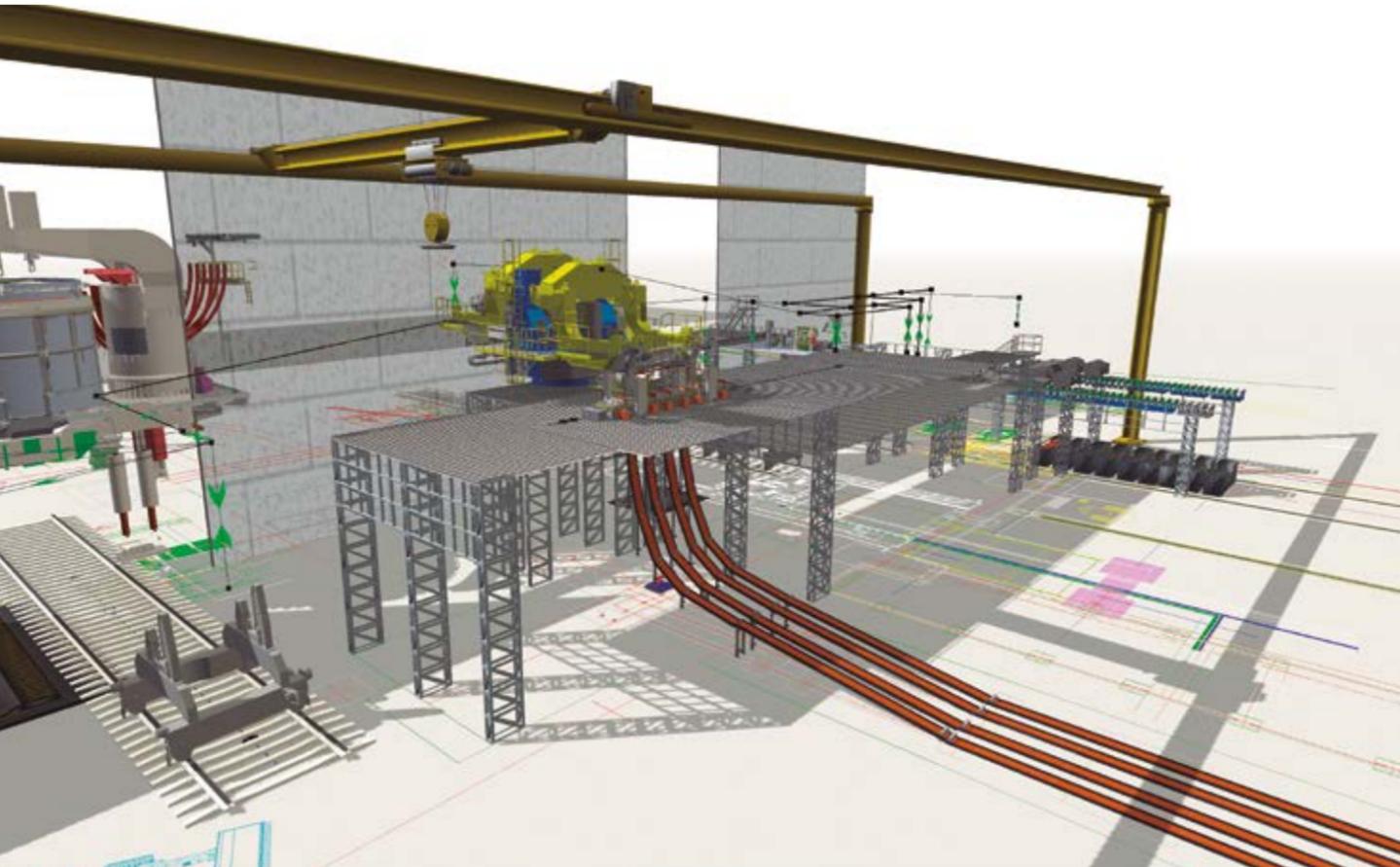
● IDOM is supporting driving the sustainable transformation of European steelmaking

As part of the decarbonization of the European Steel Industry, IDOM is contributing to the modernization of several steel plants in Europe.

The initiative focuses on significantly reducing emissions by replacing traditional production methods with Electric Arc Furnace (EAF) technology, paving the way for a cleaner and more efficient steel industry.

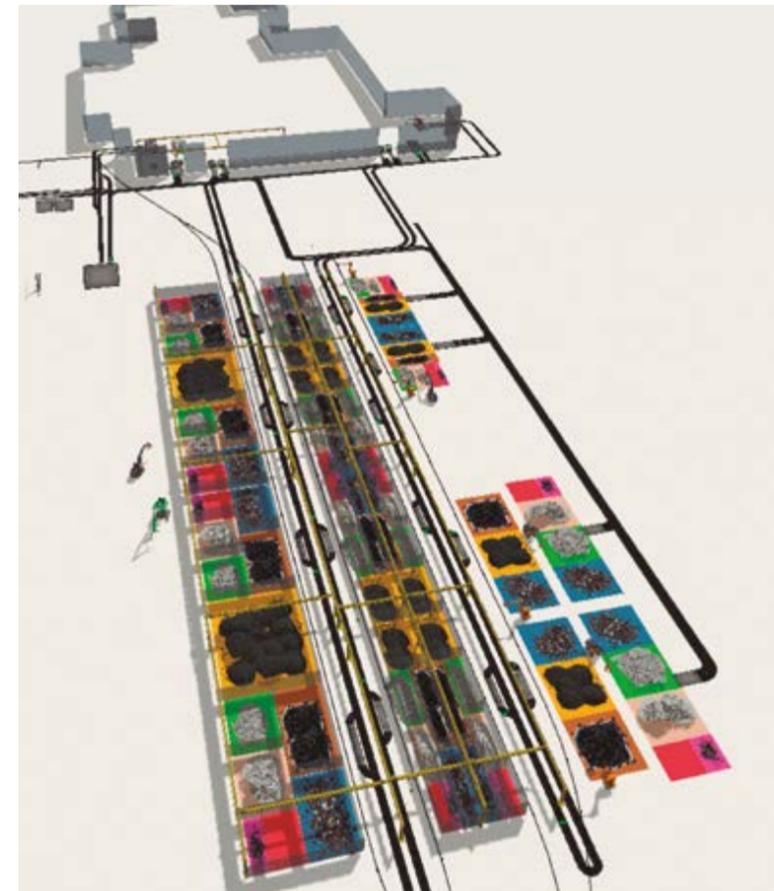
A key component of the project involves advanced logistic simulations using 3D simulation software, covering entire steelmaking facilities as well as specific areas like scrap yards. These simulations, along with detailed engineering documentation and energy efficiency studies, are essential to optimizing plant design, minimizing capital expenditure, and ensuring a successful transition toward a more sustainable steel production model.

Digitalization projects



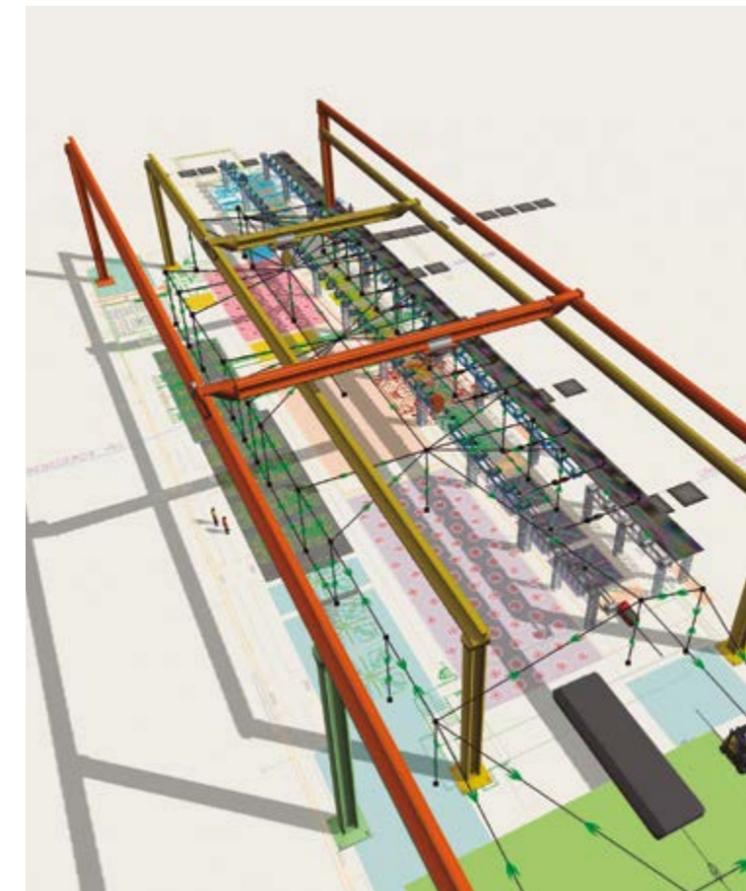
○ Increasing Productivity and Product Range in a Steel Complex

IDOM performed a simulation-based analysis to examine the effects of boosting productivity and diversifying the product range at a steel complex. Using FlexSim, the study identified operational constraints and proposed enhancements such as crane upgrades and improved storage systems. These measures were designed to ensure efficient material flow, support the introduction of stainless steel and ingot production, and maintain seamless logistics.



○ Scrap Yard Optimization for EAF Supply

To support two Electric Arc Furnaces (EAFs) within an existing steel plant, IDOM developed a feasibility plan for a new 3.2 Mtpy scrapyard configuration. FlexSim simulations were used to evaluate logistics such as bucket loading times, scrap reception by rail and truck, and slag pot handling. The dynamic modeling process enabled the optimization of layout, equipment selection, and operational flow, ensuring efficient scrap management and improved plant productivity.



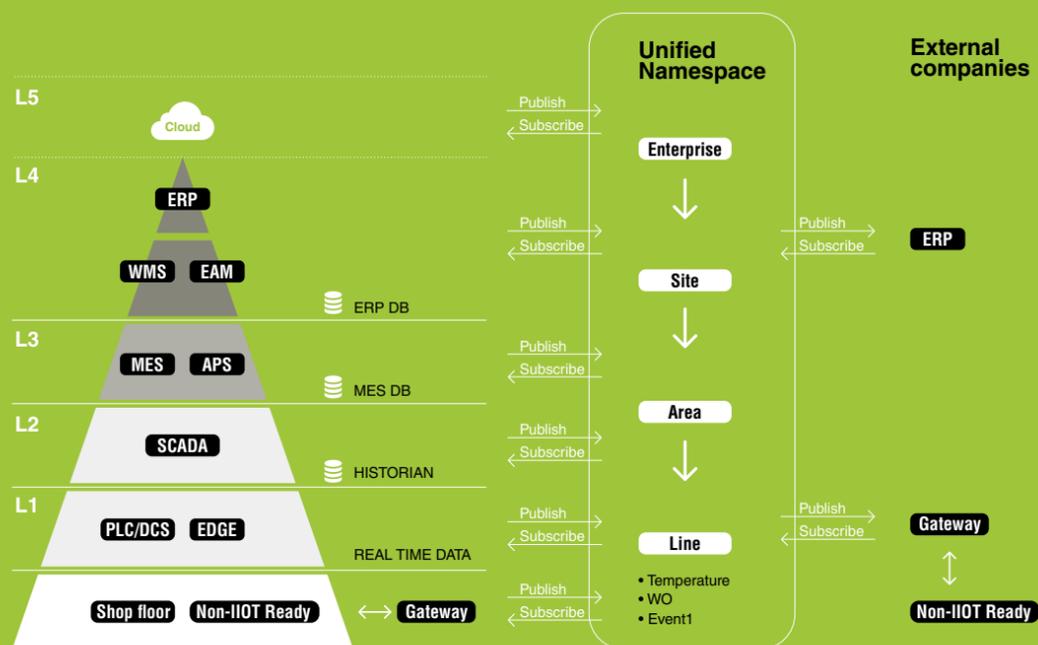
○ Rolling Mill Logistics Study

IDOM carried out a comprehensive logistics analysis for a rolling mill undergoing process integration. The study focused on equipment performance, space utilization, and truck flow regulation to enhance operational efficiency. FlexSim simulations helped identify bottlenecks, assess equipment occupancy, and refine layout configurations. The findings ensured proper stock levels and line feeding aligned with production planning, supporting a more streamlined operation.

IDOM delivers advanced digital solutions based on Industry 4.0 Integration Architecture, leveraging the Unified Namespace (UNS) powered by MQTT. This framework enables seamless integration of diverse data sources, real-time analytics, and enhanced cybersecurity within a scalable and intelligent infrastructure.

By implementing UNS, IDOM helps unify information flows, streamline operations, and enable faster, data-driven decision-making. Its continuous evolution, driven by emerging technologies and innovative applications, plays a key role in optimizing industrial performance, increasing resilience, and supporting sustainable growth in the manufacturing sector.

Architecture Reference Model for Industry 4.0



Case studies demonstrate notable improvements in efficiency and compliance in various steel manufacturing facilities:

Reducing energy consumption **12%**

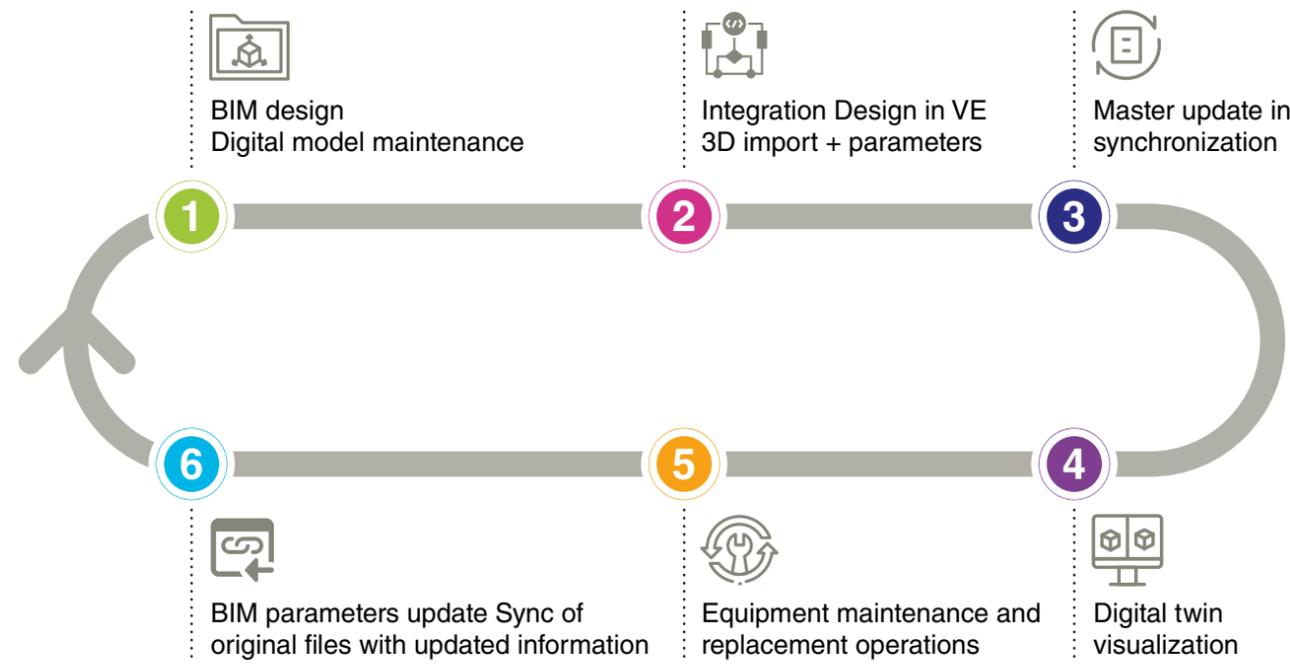
Increasing equipment efficiency **18%**

Reduced environmental penalties by **25%**

Increase in operational transparency **20%**

Reduction in decision-making latency **15%**

Digital twin model for predictive maintenance



IDOM develops digital solutions that harness the transformative power of digital twins to evolve maintenance strategies from traditional preventive models to predictive approaches powered by AI. The digital twin journey begins by establishing a robust data integration layer, enabling seamless communication between functional areas that previously relied on manual information exchange.

As the system matures, the integration of IoT and unified namespaces allows for scalable deployment across critical equipment, regardless of the underlying technology. Predictive maintenance, driven by AI algorithms, enables real-time diagnostics of key assets, improving operational efficiency and reducing energy consumption by at least 10%, based on IDOM's experience. This figure is expected to grow, delivering even greater cost savings and reliability in the coming years.



Projects



● FRANCE

GRAVITY

FEL 2 Engineering Services

IDOM provided FEL 2 engineering services to GravitHy for their project in France. It is a critical phase in which project risks are reduced, the design is aligned with the selected technology partner, and investment estimates are refined. This work lays the foundation for informed decision-making and prepares the project for full engineering development (FEL 3).

● SWEDEN

SSAB

IDOM appointed as the Project Management Consultant (PMC) for SSAB's fossil-free mini-mill in Sweden.

IDOM has developed the early engineering stages of the cold mill complex covering the FEL2 stage, Basic Engineering and Pre-Execution activities including designs and basic engineering, OEM coordination and technical support and project licenses application assistance. Now, SSAB and IDOM are moving forward together for the Detail Engineering execution.

In parallel to the cold mill complex engineering, SSAB selected IDOM as the Project Management Consultant (PMC) for the overall new mini-mill, which includes the melting and both the hot and cold rolling complex. This PMC role of IDOM will enable SSAB to monitor, control and manage the new mini-mill project, as well as the different project stakeholders participating along the whole project.



● SAUDI ARABIA
FEED Engineering for Integrated Steel Plant and Plate Mill

IDOM provided FEED engineering services for a 1.5 Mtpy integrated steel complex in Saudi Arabia. The facility featured a natural gas-based DRI reactor, Electric Arc Furnace, Continuous Caster, and Plate Mill, all designed to minimize CO₂ emissions and be hydrogen-ready. The scope of work included concept design, tender documentation, procurement strategy, CAPEX estimation, and project scheduling, covering the entire production process from the iron ore pellets to the finished plate.

● SWEDEN

STEGRA

EPCM for Hydrogen-Based DRI & BOP

STEGRA (formerly H₂ Green Steel) has appointed IDOM as the EPCM consultant for the world's first industrial-scale hydrogen-based integrated steel plant in Boden, Sweden. This groundbreaking facility will produce green steel with up to 95% lower CO₂ emissions than conventional methods. IDOM is managing engineering, procurement, and construction for the Direct Reduced Iron (DRI) unit, Material Handling System (MHS), and Balance of Plant (BOP), contributing to one of the most advanced and automated steelmaking operations globally.

● ALGERIA
**ALGERIAN
QATARI STEEL**

**EPCM services for the
Bellara steel complex**

IDOM participated in all phases of the project, providing design management services, assistance during the procurement phase, construction management, construction supervision, cost management, deadline control, and coordination during all phases. IDOM also acted as a PMC during the construction of the steel complex which now supplies 2 million tons/year of steel rod and wide rod.

In addition to the management of the works and the control of the suppliers, the scope of services included the design of the balance of plant: the design of the balance of plant, which covers the integration of the different main packages into which the works were divided.



Originally designed as the largest DRI production plant in the world, it remains today among those with the highest global capacity.



- PERU

- ACEROS AREQUIPA**

- EPCM services for the expansion of the facilities in Pisco**

- Since 2017, IDOM has been a strategic partner of Aceros Arequipa, contributing to over ten major industrial projects under the EPCM model. Key developments include the main steel mill, Rolling Mills RM1 and RM3, the Lime Plant, the VD system, and the Distribution Center. The new steel mill in Pisco, featuring an electric arc furnace, increased liquid steel production by 50%, reaching 1.25 million tons per year. In 2025, the successful hot rolling test of Rolling Mill No. 3 marked a significant step forward in the company's technological and operational progress.

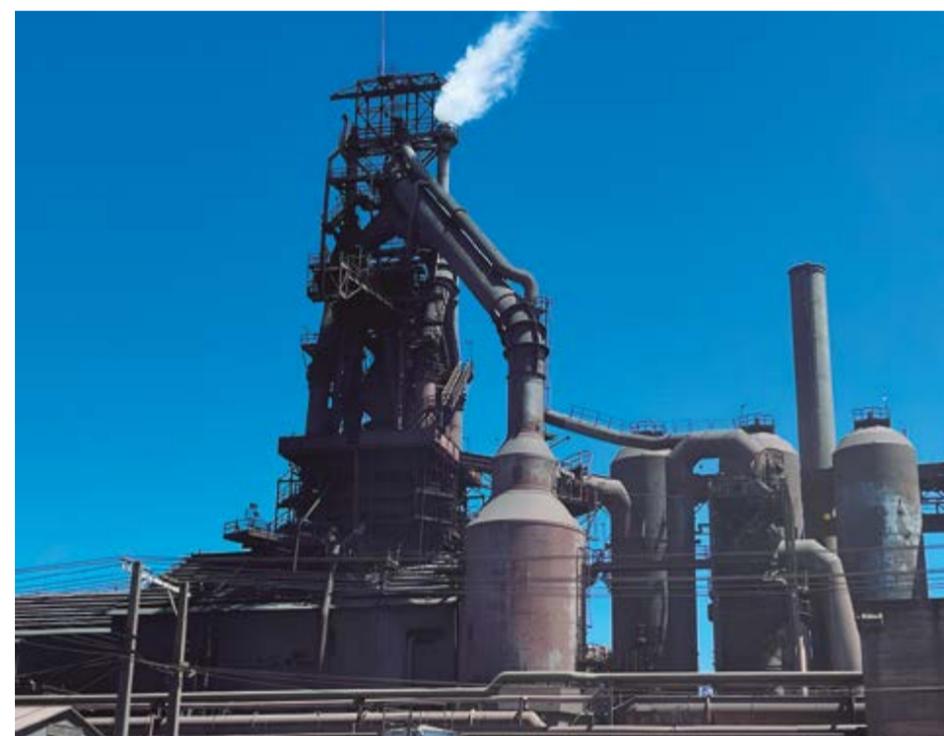


- SAUDI ARABIA

- SAUDI IRON AND STEEL COMPANY (HADEED)**

- Flat Products Expansion Project**

- IDOM carried out several trade-offs for technology and layout selection, followed by the execution of Front-End Engineering Design (FEED) services for HADEED's Flat Products Expansion Project in their premises in Jubail. The project aims to improve production capacity and optimize existing logistics.



- CHILE

- SIDERÚRGICA HUACHIPATO - CAP ACERO**

- EPCM services-Bell less top Blast furnace n°2**

- The Chilean steel producer successfully completed a major upgrade of one of its blast furnaces, incorporating the latest technology and meeting the highest environmental standards. This strategic investment enhanced infrastructure reliability, improved operational efficiency, and strengthened the overall stability of the production process. The revamped facility was fully commissioned by the end of 2023. To make this transformation possible, the company relied on IDOM for comprehensive EPCM services, including engineering, project management, procurement, and construction oversight.



- SAUDI ARABIA

- **SAMSUNG ENGINEERING / SMS SIEMAG**

- Detailed Engineering services for the new aluminum rolling operation

- IDOM played a key role in two major aluminum industry projects, delivering civil and structural engineering services for a new 380,000-ton-per-year rolling mill in collaboration with Samsung Engineering, and supporting SMS SIEMAG in the development of a state-of-the-art rolling and heat treatment line for aluminum sheets destined for the automotive sector. Both projects reflect IDOM's expertise in large-scale industrial infrastructure and its contribution to advancing global aluminum production.



- SCOTLAND

- **ALVANCE**

- FEL-3 Detailed Feasibility Study (DFS)

- IDOM is supporting ALVANCE British Aluminium in the development of a new recycling plant aimed at producing low-carbon footprint, high-value aluminium products. This project will boost ALVANCE's capacity by 100,000 tons per year, using both domestic and international scrap to manufacture aluminium billets for the construction and transport sectors. With a strong focus on sustainability and innovation, this initiative reinforces ALVANCE's leadership in environmentally responsible aluminium production

Metals references

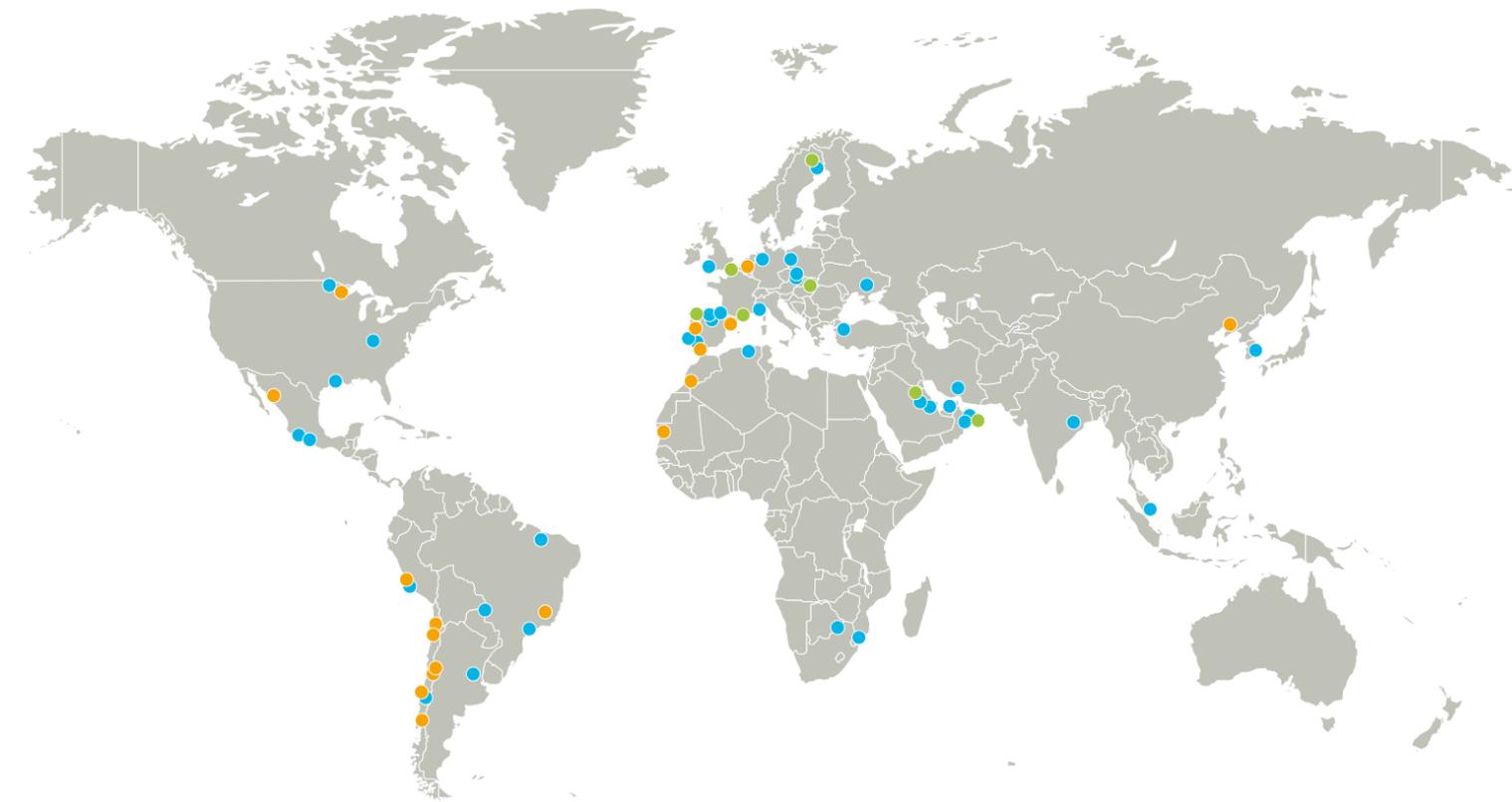
SERVICES

PROJECT	SERVICES				YEAR	CLIENT	COUNTRY
	Feasibility / Consultancy	Basic Design	Detail Design	EPCM / PMC			
FEL2 for Cold Mill Complex	●				2024	CONFIDENTIAL	SWEDEN
Engineering Services of DRI Handling from a DRI demonstration Plant	●				2024	CONFIDENTIAL	SWEDEN
Pre-Feasibility Study for 2 Mtpy HBI Plant with option to decarbonization (H ₂ /CCUS)	●				2024	CONFIDENTIAL	OMAN
FEL1 & 2 – Prefeasibility Green H ₂ Production & DRI Plant	●				2023-ongoing	GRAVITHY	FRANCE
EPCM for 2.1 Mtpy new green field H ₂ based DRI Plant & Balance of Plant	●	●	●	●	2023	STEGRA	SWEDEN
DRI Project Sponsors technical advisory services	●				2023	CONFIDENTIAL	OMAN
EPCM for Steel Decarbonization Projects, Europe	●				2023	CONFIDENTIAL	EUROPE
Steel Meltshop and Thin Slab Casting & Rolling Project	●		●	●	2022-2023	CONFIDENTIAL	SLOVAKIA
Technical Assistance for installation of Pellet-H ₂ ready DRI	●				2023	CONFIDENTIAL	UAE
Prefeasibility study for a 2.5Mtpy DRI	●				2023	CONFIDENTIAL	USA
FEED Engineering for a new 1.0 Mtpy Steel Melting Plant	●	●			2022	ARCELORMITTAL	SAUDI ARABIA
EPCM For Steel Pipe Manufacturing Project, UAE			●	●	2023-ongoing	TUBACEX	UNITED ARAB EMIRATES
FEED For Iron Concentrate And Pellets Complex	●	●			2022	TAKAMUL (Sabic+Snim Mauritanian Govt. Agency)	MAURITANIA
FEED Engineering for 0.6 Mtpy Continuous Billet and Bloom Casting	●	●			2021	COMPAÑÍA SIDERÚRGICA	CHILE
FEED Engineering for a 1.5 Mtpy Integrated Steel Plant with Plate Mill	●	●			2021	ARAMCO BAOSTEEL	SAUDI ARABIA
Early Engineering Services for a new Cold Rolling Mill	●				2021	METINVEST	UKRAINE
EPCM Services for brown field expansion of steel plant, rolling mill and BoP			●	●	2018-ongoing	ACEROS AREQUIPA	PERU
ZLD Water System For expansion of Steel Plant			●	●	2018-ongoing	ACEROS AREQUIPA	PERU
Pre-Construction Services for a New Melt Shop		●			2021	LIBERTY STEEL	OSTRAVA
Process upgrading and revamping in Steel Meltshop & Rolling Mill			●		2020	OPTIMUS STEEL	USA
Engineering and PMC Services for 2 Mtpy Greenfield Integrated Steel Plant			●	●	2014-2020	ALGERIAN QATARI STEEL	ALGERIA
Gas based DRI Plant 1.5 Mtpy	●				2019	MISCO	OMAN

SERVICES

PROJECT	SERVICES				YEAR	CLIENT	COUNTRY
	Feasibility / Consultancy	Basic Design	Detail Design	EPCM / PMC			
Aluminium Recycling Plant and Foil Rolling Mill	●				2019	CONFIDENTIAL	CONFIDENTIAL
By-Products Plant at COG Treatment Plant			●		2019	PAUL WURTH (Client AM)	SOUTH AFRICA
Wire Rod Rolling Mill 0.5 Mtpy			●	●	2019	CELSA	FRANCE
Revamping for Steel Meltshop upgrade			●		2019	GERDAU	BRAZIL
Revamping for Steel Meltshop upgrade			●		2019	ACERINOX	SPAIN
Steel Making plant and Thin Slab Caster and Rolling	●				2018	CONFIDENTIAL	CONFIDENTIAL
Cold Rolling Mill			●	●	2018-19	COATED SOLUTIONS	SPAIN
Meltshop Plant 1.4 Mtpy			●	●	2018	ACEROS AREQUIPA	PERU
Hot and Cold Strip Mill 2.5 Mtpy			●	●	2017-20	ARCELORMITTAL	MEXICO
Steel Making Plant 1.4 Mtpy	●				2017	ACEROS AREQUIPA	PERU
Blast Furnace Reline 2.5 Mtpy			●	●	2017-18	ARCELORMITTAL	MEXICO
Cold Rolling Mill			●		2016	ACERINOX	SPAIN
TSCR Project 3 Mtpy	●				2016	ARCELORMITTAL	MEXICO
Aluminium Casting			●		2016-17	ALUDIUM	SPAIN
Cold Rolling Mill			●		2015	NORTH AMERICAN STAINLESS	USA
Feasibility Study for New Integrated Steel Plant 2 Mtpy	●				2013	SIDER/ AQS	ALGERIA
New Integrated Steel Plant 1 Mtpy	●				2014	PETROEQUADOR	EQUADOR
Detailed design for new Meltshop 0.5 Mtpy			●		2014	FRISA	MEXICO
Feasibility Study for a DRI plant 1.5 Mtpy	●				2014	SIDER	ALGERIA
Aluminium Extrusion Plant			●		2013	TALEX SENNAT	ABU DHABI
MELTSHP BOP			●	●	2013	CONFIDENTIAL	CONFIDENTIAL
New Meltshop for 1 Mtpy	●				2013	SIPAR GERDAU	ARGENTINA
New Integrated Steel Plant 3 Mtpy	●				2012	SAMSUNG ENGINEERING	SAUDI ARABIA
HRM & HTL (Aluminium Automotive)			●		2012	SMS SIEMAG	SAUDI ARABIA
New Meltshop for 1 Mtpy		●			2012	GERDAU	BRAZIL
New Meltshop for 1.4 Mtpy			●	●	2012	CONFIDENTIAL	CONFIDENTIAL
New Billet Caster			●		2012	GERDAU	BRAZIL
New Meltshop 2 Mtpy			●		2011	JINDAL SHADEED	OMAN

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