



Press Release
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5G Steel - the first enhanced mobile broadband use cases to decarbonize the steel industry and work in mobility on an industrial site in France

- Launched by ArcelorMittal in November 2021, 5G Steel, the largest 4G/5G network in an industrial environment, is now operational
- The first industrial use cases requiring enhanced mobile broadband (eMBB) are being launched, from steel recycling management to connected operator functionalities
- 5G Steel is built with the expertise of Orange Business Services, an operator integrator, and the technologies of Ericsson, a private network partner

February 2, 2023 – ArcelorMittal France announces the operational launch of 5G Steel, the largest 4G/5G network in the industrial environment, with Orange Business Services and Ericsson. The initiative, supported by the French government as part of the France Relance economy revival plan, is now enabling the first industrial use cases to be implemented at the ArcelorMittal site in Dunkerque.

The industrial use cases of 5G Steel include:

- **The connected operator:** The mobility of people and processes enabled by 5G Steel is transforming the way people work in industrial environments. For example, on the hot strip rolling mill, data collection, entry and sharing operations can be done more quickly and intuitively with the help of tablets: inspections during maintenance operations, safety audits, lockout/tagout procedures...
- **Steel recycling:** ArcelorMittal's recycled steel yard management is facilitated by the extensive coverage and high throughput. Steel arriving at the site for recycling is weighed and scanned to assess its density and composition. This data is then automatically transmitted by the operators in charge of quality control from the field via 5G Steel. Machinery operators (crane and stackers) receive the information directly from the production program and can inform about the actions taken through 5G Steel.

Future industrial use cases to be developed on ArcelorMittal's sites include other initiatives in terms of mobility of people in work situations, autonomous rail vehicles in Dunkerque and Florange, autonomous road vehicles, the generalization of mobile maintenance with field information feedback, virtual or augmented reality and safety devices.

Currently deployed on the ArcelorMittal sites in Dunkerque and Mardyck (North of France), 5G Steel will be extended to other sites, in particular Florange (East of France) in 2023.

5G Steel's capabilities meet the challenges of tomorrow's industry thanks to:

- **Extensive coverage:** the mobile network covers all ArcelorMittal's complex industrial sites, outdoors and indoors, including underneath high-rise metal structures. This coverage provides greater freedom of movement for operators and connectivity anywhere in the company.
- **High speed** in response to the high throughput needs of modeled processes, connected objects, production data, etc.
- **Low latency:** reduced latency supports the deployment of autonomous vehicles and remote control cockpits as well as security in high-risk areas
- **Network slicing** to offer a level of service adapted to each of the needs of the operational processes
- **Data security:** the private mobile network protects sensitive industrial data.

The objective of deploying 5G Steel is also to enable **the development of the French ecosystem** around the value chain of these industrial use cases. 5G Steel will cover the main seaport of Dunkerque and ArcelorMittal's Digital Labs in Dunkerque and Florange, and tests are being carried out to extend the network to the Hauts-de-France and Grand Est regions.

David Glijer, Director of Digital Transformation at Arcelor Mittal France, commented: "ArcelorMittal, a leader in the digitalization of the steel industry, is transforming the way it works. Industry 4.0 technologies improve the reliability, operator safety and comfort, productivity, and quality in all our factories. Today, the contribution of 5G is key with these use cases."

Franck Bouétard, CEO of Ericsson France, commented: "The private network will allow ArcelorMittal to accelerate the digitalization of the various critical industrial processes on the site and to extend it to the Port of Dunkerque. Connectivity everywhere, real-time monitoring, and security requirements are at the heart of the solutions implemented. We are proud to support ArcelorMittal to pave the way for industrial 5G in Europe and France."

Valérie Cussac, Executive Vice President Smart Mobility Services, at Orange Business Services, said: "We are delighted to support ArcelorMittal with our dual expertise as an integrator operator. 5G Steel allows maximum use of their critical data in complete security. By combining the performance and robustness of 5G with our ecosystem of partners and start-ups, we provide innovation and digital technology to our innovative industrial customers, like ArcelorMittal, to create a positive impact."

5G Steel in figures

- 9 radio sites with 4X4 MiMo antennas to cover the Dunkerque and Mardyck sites
- 1 core with dynamic geographic redundancy to manage up to 50,000 users
- 1 monitoring tool to manage and operate the 5G Steel network
- 19 Cradlepoint routers, a subsidiary of Ericsson
- 80% of the area is above speed targets

Network construction

- Nov 23, 2021: Project launch
- Dec 8, 2021: Defining the positioning of the antennas
- Apr 22, 2022: Installation of the core and the 1st antenna
- Aug 5, 2022: Installation complete
- Sep 1, 2022: Authorization to use frequencies
- Oct 13, 2022: The network at the Dunkerque site is switched on

About Orange

Orange is one of the world's leading telecommunications operators with sales of €42.5 billion in 2021 and 136,500 employees worldwide as at September 30, 2022, including 75,000 in France. The Group had a total customer base of 286 million worldwide as at September 30, 2022, including 240 million mobile customers and 24 million fixed broadband customers. The Group is present in 26 countries. Orange is also a leading provider of global IT and telecommunication services to multinational companies, under the brand Orange Business Services. In December 2019, the Group presented its "Engage 2025" strategic plan, which, guided by social and environmental accountability, aims to reinvent its operator model. While accelerating in growth areas and placing data and AI at the heart of its innovation model, the Group aims to be an attractive and responsible employer, adapted to emerging professions.

Orange is listed on Euronext Paris (symbol ORA) and on the New York Stock Exchange (symbol ORAN).

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