From the Electrospindle to Data:
SMAU Innovation Award to Scm Group

Thanks to sensors, software, and artificial intelligence technologies,
Scm Group has transformed the electrospindle of a machining center into a
predictive monitoring and maintenance system capable of reducing costs and
downtime while optimizing the entire lifecycle of the machine.

Predicting a fault before it occurs, increasing production efficiency, and turning maintenance into a proactive service: this is the vision behind "Smart Spindle", the innovation developed by Scm Group and recognized at the 19th edition of SMAU, held in Milan on November 5–6.
A world leader in technologies for processing a wide range of materials and in industrial components, Scm Group has reimagined one of the key elements of its CNC machines—the electrospindle—turning it into an intelligent node within a broader ecosystem of smart services.

From Connected Component to Intelligent Ecosystem
Developed in collaboration with Hiteco, a Group company, the electrospindle is equipped with a smart control unit that collects and interprets data from sensors monitoring critical parameters such as temperature, vibration, and tool change cycles.
This data is processed in real time and shared with Scm Group's Control Room, where AI models analyze trends and detect anomalies. The system can anticipate faults, automatically open service tickets, and trigger predictive interventions before the customer even becomes aware of a problem. All of this takes place in full compliance with data governance and transparency principles: data remains the property of the customer, is anonymized, and used exclusively to optimize performance and service quality.

From Machine to Service: A New Business Model
"Smart Spindle" represents not only a technological evolution but also a strategic shift in Scm Group's digital transformation and servitization journey. From being a machine manufacturer to becoming a promoter of an ecosystem of intelligent services, the company is moving toward a model that enhances data sharing, collaboration among industrial partners, and continuous value creation throughout the product's lifecycle.
The result is up to 30% reduction in downtime, improved machining quality, and a significant decrease in operating costs.

The "Smart Spindle" project reflects Scm Group's vision of an increasingly connected, data-driven, sustainable, and customer-oriented industry—where collaboration between companies, technologies, and end users generates shared and lasting value.

The SMAU Innovation Award was collected on November 5 by Antonio Latella, Product Owner Smart Sensors, and Luca Bergantini, Business Manager for CNC Machining and Drilling Centers at Scm Group.

Scm Group is a global leader in technologies for machining a wide range of materials – wood, aluminium, plastic, glass, stone, metal and advanced materials - and industrial components. Across the globe, the group's companies act as highly reliable partners to leading industries in a wide range of product sectors, from furniture to construction, automotive to aerospace, and nautical to plastic machining.
Scm Group coordinates, supports and develops a system of industrial excellence, with highly specialised and integrated plants in Italy and other sites in Germany, the United States and Brazil with production dedicated to local markets.
Scm Group has a turnover of 900 million euro, more than 4,000 employees and a direct presence on five continents.

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