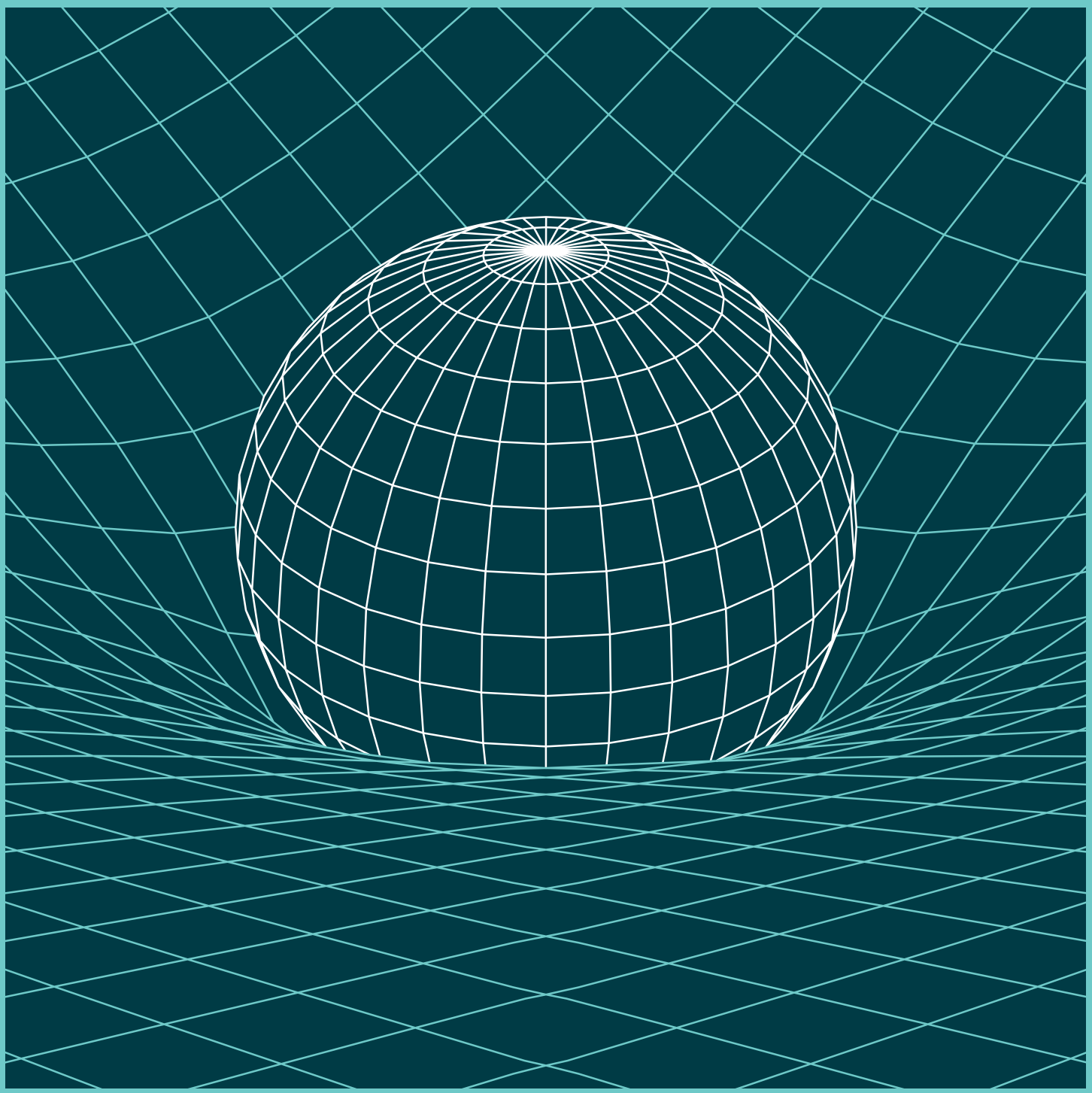
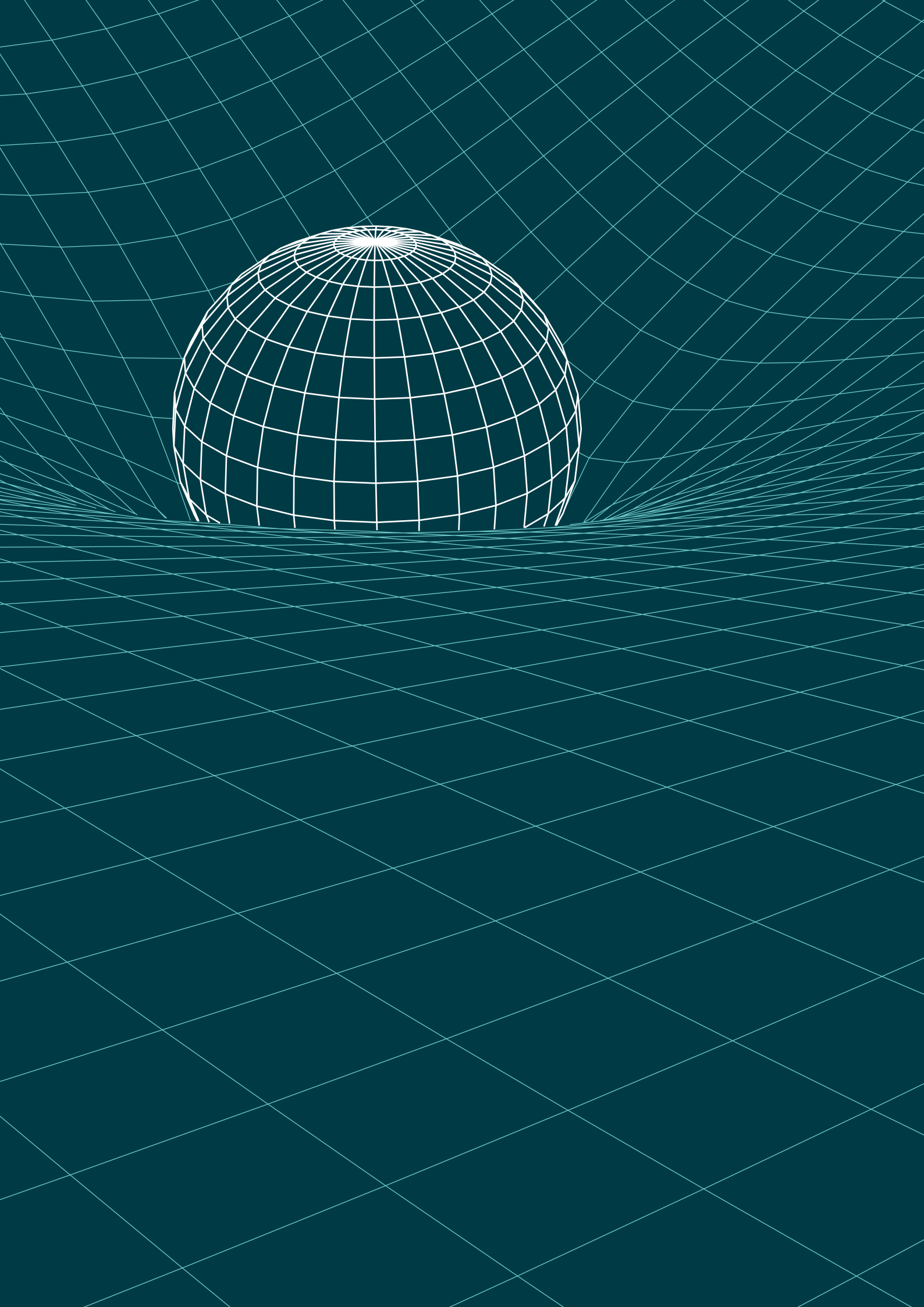
Bausano Sphera

The digital ecosystem for intelligent extrusion

Bausano's Sphera ecosystem enables smart, AI-powered extrusion with real-time monitoring, predictive diagnostics, and seamless connectivity, ensuring intelligent control and optimized performance across the entire production line.





The digital ecosystem for intelligent extrusion

Bausano Sphera is the integrated platform that digitalizes and optimizes the entire lifecycle of extrusion plants. Built on a modular and scalable architecture, it combines Industrial IoT technologies, Artificial intelligence, and advanced digital services to improve production efficiency, prevent downtime, and simplify technical management.
Bausano Sphera connects machines, data, and people, transforming extrusion into a smart, efficient process ready to meet the challenges of future industry.



1
Bausano Pharos



2
Bausano Scout



3
Bausano Ranger

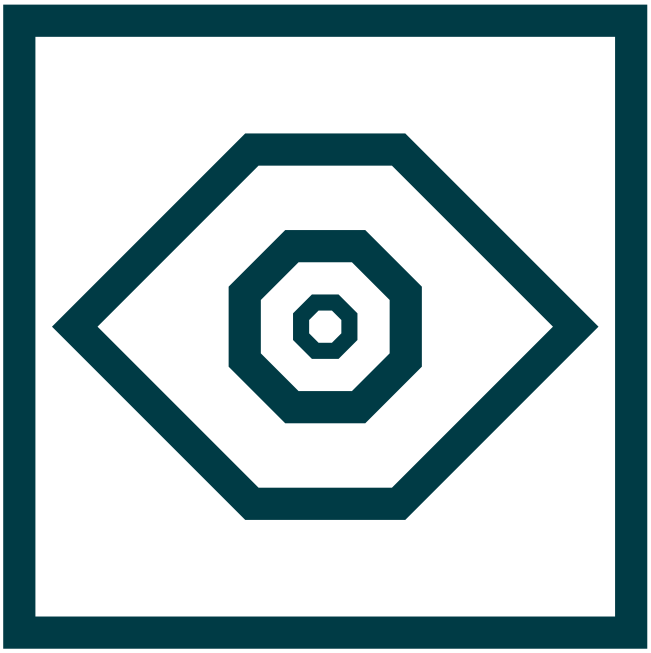
The ecosystem is structured around three fully integrated modules:

1. Bausano Pharos
It is the Industrial IoT module that enables the complete digitalization of the extrusion line, offering real-time monitoring, dynamic KPI and OEE calculation, and historical data analysis for continuous performance improvement.

2. Bausano Scout
It is the after-sales module for autonomous spare parts management. Through interactive 2D exploded views, it allows intuitive component selection, automatic quotation requests, and access to order history and technical documentation.

3. Bausano Ranger
It is the predictive intelligence and digital assistance module, acting as the intelligent core of the system. It leverages machine learning algorithms to prevent failures, offers decision-making support via a conversational interface, and provides multi-device access.

Bausano Pharos



The intelligent platform for a new vision of extrusion
Pharos is the digital core of the production line: a modular and scalable IoT platform designed to transform extrusion systems into connected, traceable, and intelligent environments.
Delivered as a Software-as-a-Service, it enables advanced production management by supporting data-driven operational decisions and enhancing performance throughout the process. Its purpose is to bridge the information gap between the equipment manufacturer and the end user, providing continuous, real-time, and historical visibility into machine performance and process parameters. Pharos is engineered to guide manufacturers towards smart, data-oriented production.

The images show Pharos interface screens, featuring real-time line monitoring, smart diagnostics, and customizable dashboards for efficient extrusion management.

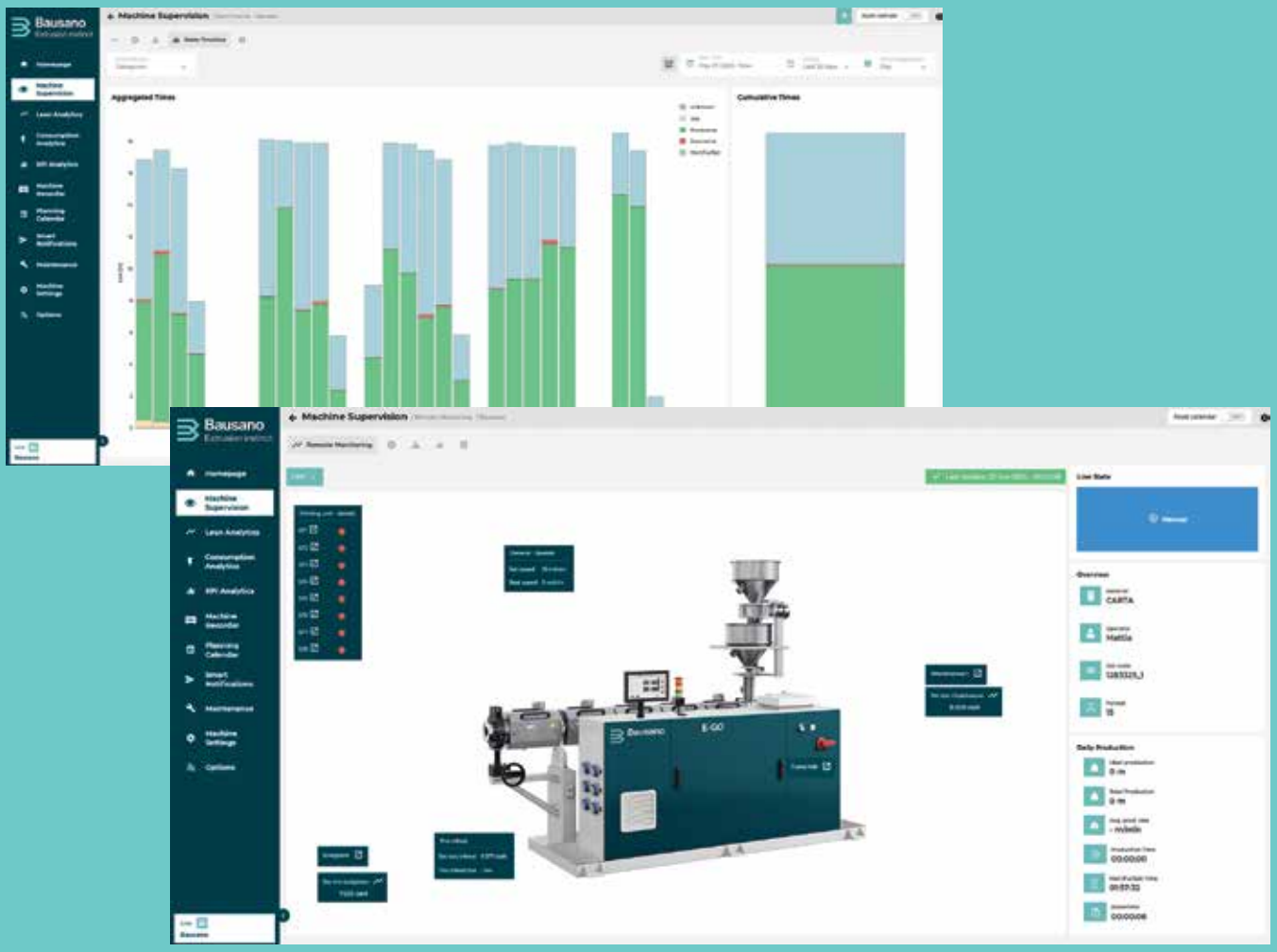
A platform with comprehensive capabilities
Pharos collects and interprets machine data through industrial protocols and sensors (OPC-UA, Modbus TCP, SQL), making valuable insights available to every stakeholder involved in production.

Continuous observation
Every machine in the line – extruders, feeders, haul-offs, cutters – is constantly monitored. Core parameters are updated in real time and made available through intuitive interfaces.

Smart analysis
Through advanced analytical models, Pharos identifies deviations, inefficiencies, and potential failures, helping ensure production continuity and process integrity.

Targeted intervention
The system communicates proactively with operators, providing clear guidance on corrective actions and process optimization based on real-time data.

Ongoing learning
By leveraging machine learning, Pharos progressively improves the accuracy of its analyses and the relevance of its recommendations, adapting to the unique characteristics of each production line.









Advanced features for complete control
Pharos offers high-level tools to monitor, anticipate, and optimize every step of the process:

Real-time monitoring
Live visualization of all critical parameters: temperatures, pressures, screw RPMs, energy consumption, alarm management.

Historical data and reporting
Archiving and analysis of production data through dashboards, graphical views, and exportable tables. Customizable reports and comparative analysis by shift, recipe, or line.

Predictive diagnostics and maintenance
Detection of process drifts, pattern recognition, and early alerts on failure risks. A reliable support system for operational stability and product quality.

Bausano Scout

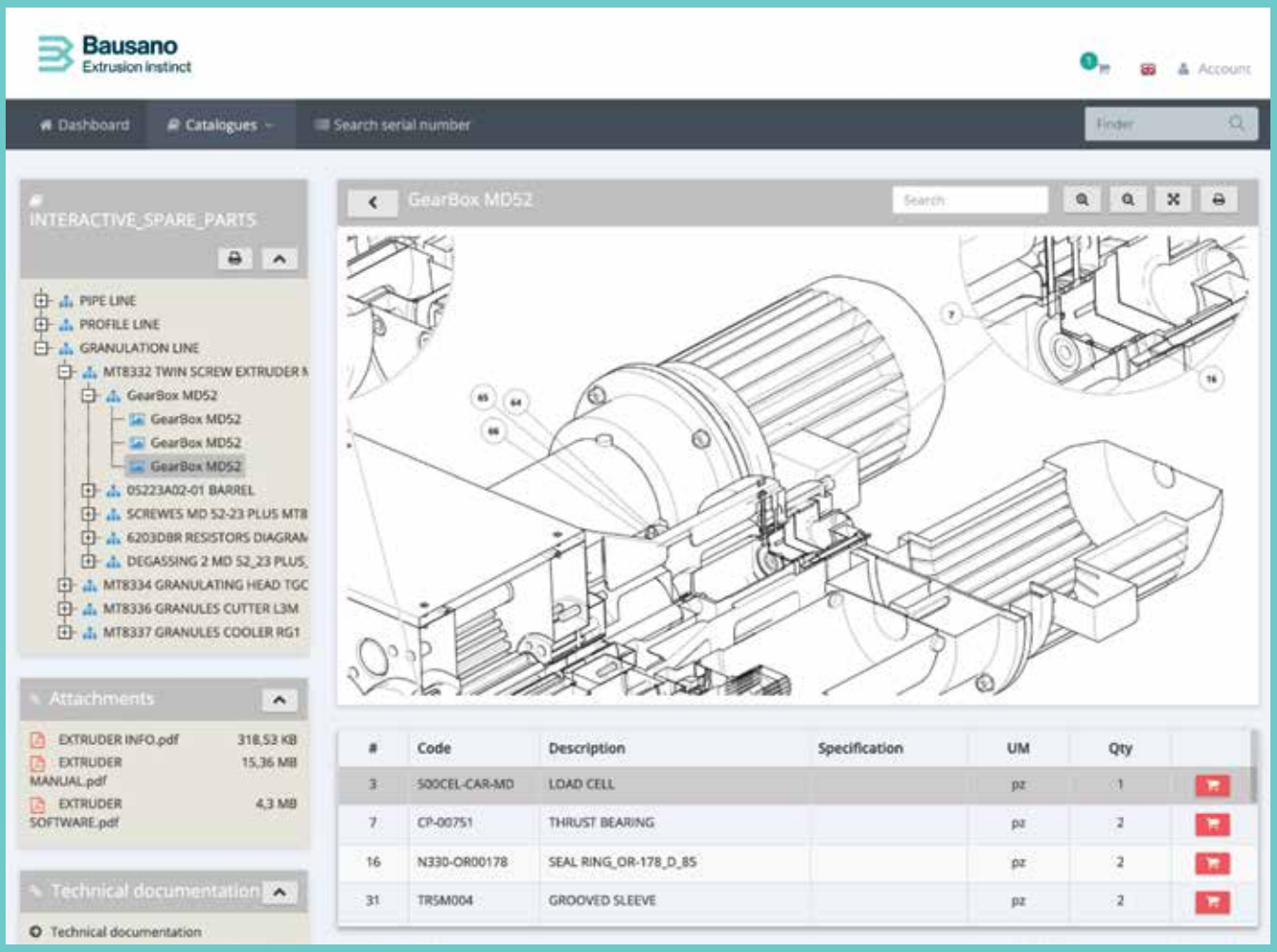


Genuine spare parts. Direct, secure and personalized access.
Scout is Bausano's intelligent spare parts management portal, fully integrated into the Bausano Sphera digital ecosystem. Designed to meet the concrete needs of maintenance and technical support, Scout is a high-level operational tool developed to simplify and streamline every phase of the spare parts process.
Accessible from any browser without requiring local installations, Scout is available at any time and from any location, ensuring structured, timely, and secure spare parts management.

A platform designed around the production line
Scout provides interactive 2D exploded views linked to each line's serial number, enabling visual and precise component selection. Users can identify the required part, verify its compatibility,
and send a quotation request directly to Bausano.
Access is personalized: each user views only the parts compatible with their specific equipment.
This eliminates uncertainty and accelerates the selection process.

Key features
- Interactive exploded diagrams and intuitive visual navigation.
- Search by code or description.
- Order history, requests, and technical documentation always available.
- Direct link to the machine's serial number.
- Accessible 24/7 from any connected device.

The images show Scout interface screens, with exploded views, smart part identification, and full access to order history and technical documents.

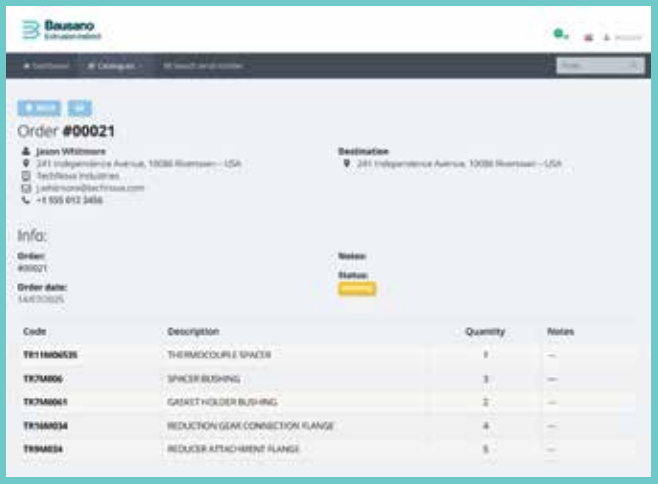


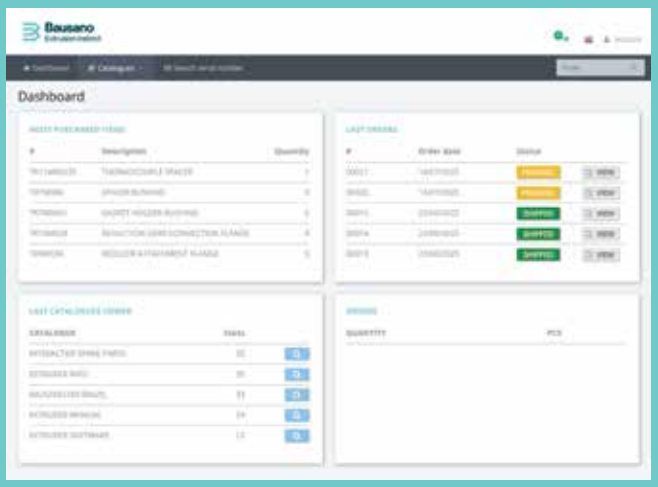
A smart system, fully integrated into the digital ecosystem

Scout is a native component of the Bausano Sphera environment, developed to seamlessly integrate with the machine's digital lifecycle.

Every activity performed within the portal is tracked and archived, directly associated with the line's serial number, offering complete and accessible visibility over the entire interaction history – from the initial request to the ordered part.

Communication with Bausano's spare parts department is immediate: requests are transmitted in real time, enabling quick responses and fast logistics activation. With Scout, spare parts management becomes an integral and efficient element of daily operations.





Bausano Ranger



The intelligent digital assistant for extrusion
Ranger is Bausano's next-generation virtual assistant, designed to provide continuous, intelligent, and contextual support to operators, technicians, and line supervisors. As a native component of the Bausano Sphera ecosystem, it acts as a natural interface between people and production systems, simplifying access to critical information and enabling guided interventions. Powered by advanced conversational AI algorithms, Ranger ensures fluid and prompt interaction, transforming every technical query into an opportunity to enhance operational efficiency.

An operational co-pilot across the entire production flow
Ranger is not a chatbot. It is a true digital co-pilot, created to close the gap between people, data, and processes. By integrating historical and real-time data, it delivers targeted, relevant responses in natural language – even in complex scenarios.

What it does:
- Delivers immediate technical support for alarms, process parameters, recipes, and line performance.
- Suggests corrective actions based on real-time data and predictive algorithms (abnormal consumption, pressure drifts, temperature trends).
- Assists with onboarding of new operators, offering technical yet accessible explanations tailored to the context.
- Integrates technical documentation and machine data to deliver precise guidance based on actual machine conditions.
- Collaborates with Bausano technical support, forwarding structured tickets, including machine parameters, alarm codes, and affected components.

Ranger turns every machine into a source of intelligence, enabling real-time monitoring, predictive alerts, and full process traceability. More than a dashboard — it's your strategic ally for reducing downtime, cutting costs, and making smarter production decisions.



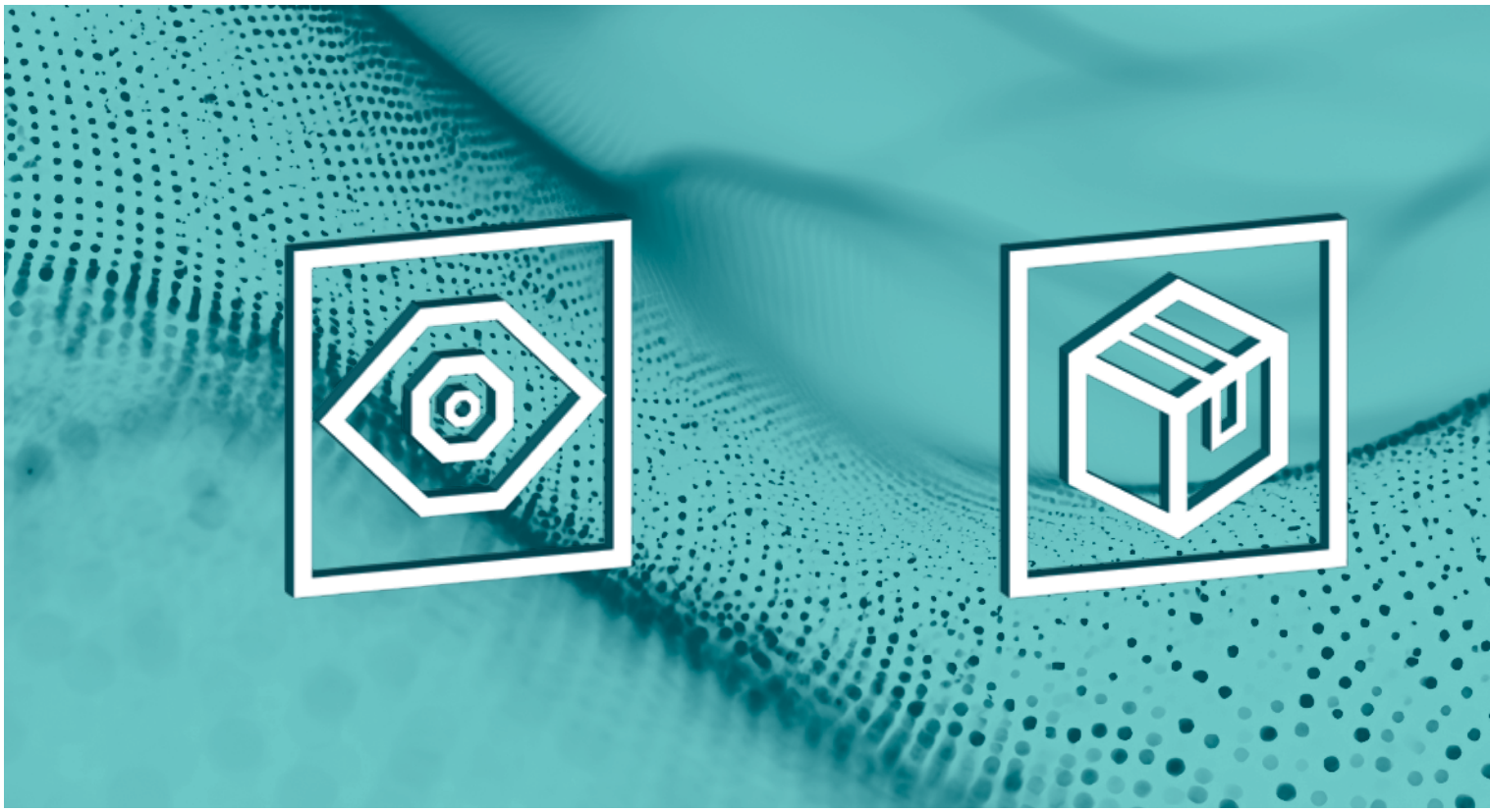
Conversational technology in service of productivity

Ranger operates via browser, machine HMI panel, or tablet, adapting to various working environments and ensuring assistance is always within reach – even without direct access to technical personnel.

Key benefits:

- Faster response times to production events.
- Continuous operational support without requiring specialized staff.
- Assisted, on-the-job training for new personnel.
- Improved accuracy in alarm handling and diagnostics.
- Seamless interaction between people and systems.

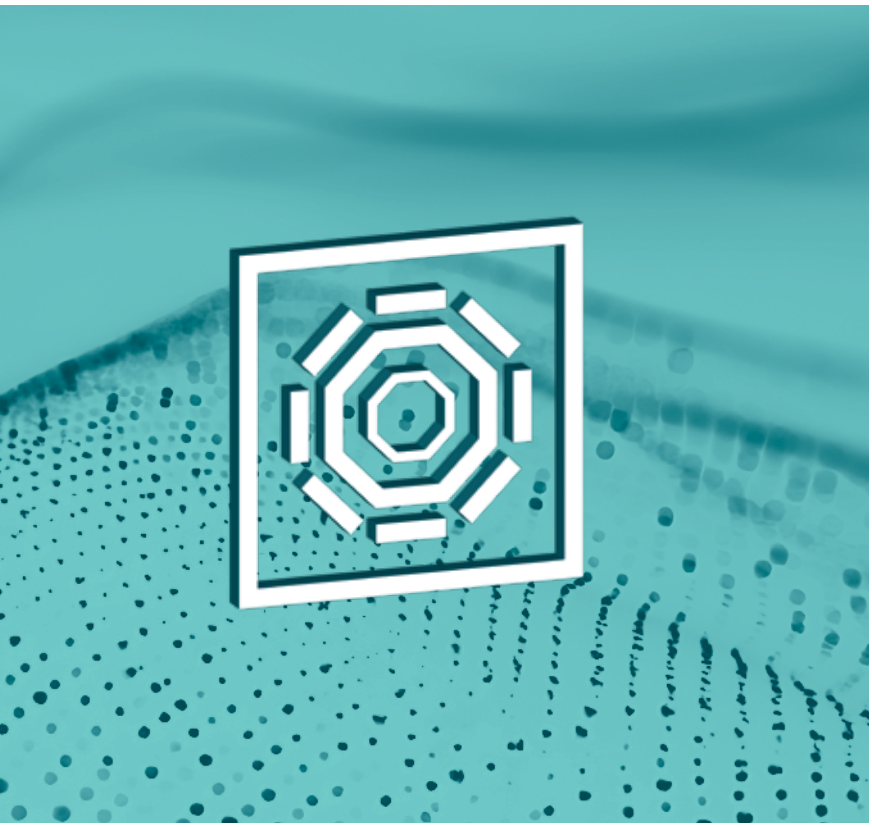
Securing intelligence



Security as the structural foundation of the Bausano Sphera digital suite
Bausano Sphera is not merely a platform for the digital optimization of extrusion lines. It is an integrated environment designed to manage and enhance sensitive data, operational decisions, and industrial infrastructure within a digital framework that is secure, traceable, and aligned with the most advanced cybersecurity standards.

Each module of the suite – Pharos, Scout, and Ranger – operates within a unified architecture built on open industrial protocols (OPC UA, MQTT, REST API) and certified cloud infrastructures (Microsoft Azure), fully compliant with international regulations (GDPR, ISO/IEC 27001). Communications are encrypted, access is protected through multi-factor authentication, and all operations are thoroughly tracked.

A protected ecosystem for informed production
Security is not an add-on; it is embedded in the DNA of Bausano Sphera. In an industrial context that is increasingly connected and automated, cybersecurity becomes an enabling condition for operational continuity, regulatory compliance, and the protection of company know-how.
Bausano Sphera connects, optimizes, and protects. Data, people, and production lines. Every day, every cycle, in total security.



Bausano Sphera ensures secure, encrypted communication, protected access, and full traceability, safeguarding industrial data and ensuring operational continuity.

Extrusion instinct

Bausano, international company founded in Italy in 1946, is a leader in developing high-tech industrial solutions for plastic processing.

Bausano

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