



Sovereign Cognitive Intelligence for a Safer Europe

Percipion™ – Trustworthy Threat Intelligence and Resilience

Introduction

In an era of increasing cyber threats, disinformation campaigns, and complex information warfare, organizations require reliable tools to transform raw data into actionable intelligence. Threat intelligence has become essential for anticipating and mitigating risks before they materialize.

Percipion™, developed by Aeteos™, is a sovereign cognitive computing solution specifically designed to address this need.

Built with transparency, security, and trustworthiness at its core, Percipion™ offers a fundamentally different approach to information processing, one that is deterministic, explainable, and fully controllable by humans.

This white paper presents how Percipion™ delivers robust threat intelligence capabilities while maintaining complete sovereignty and operational resilience.

Threat Intelligence

Threat intelligence is the systematic process of collecting, analyzing, and transforming raw data about potential and emerging cyber threats, including threat actors' motives, tactics, techniques, and procedures, into actionable, contextual insights that enable organizations to anticipate, prevent, and respond effectively to attacks.

Rather than reacting to incidents after they occur, it empowers proactive defense by providing the “who, why, and how” behind evolving risks.

Percipion™ supports this critical need through its sovereign, minimalist, and fully transparent architecture combined with its advanced Cognitive Computing Engine.

By operating with zero dependencies, static compilation, and a deterministic knowledge-based approach, it delivers explainable and auditable analysis of qualified data without any black-box mechanisms, learning, or data memorization. This ensures that threat intelligence remains accurate, ethical, and protected against poisoning or alteration, while its low attack surface, quantum-resistant encryption, and total resilience allow organizations to maintain continuous, trustworthy situational awareness, even in offline or high-security environments.

Cognitive Computing Engine

At the heart of Percipion™ lies its Cognitive Computing Engine, a sovereign and deterministic approach to information processing that fundamentally differs from statistical or probabilistic AI systems.

The engine works by first encoding information through clean and simplified language, transforming raw data into structured, high-quality input. It then leverages VirtualBrains™ (knowledge schema), a powerful categorized symbolic object structure analog to the human long-term memory and based on hyponym-superordinate relationships, enabling true symbolic representation and understanding of natural language. This foundation allows Percipion™ to genuinely understand text, perform deductive reasoning, compare documents with precision, and search either by exact words or by semantic meaning. The system can memorize new concepts by processing semantic noise to detect emerging words and expressions, while offering rich communication capabilities through multiple user-ready reports and instant messaging. Finally, it can act autonomously by launching scripts or external applications based on reasoned outcomes.

This integrated cognitive cycle (Represent, Understand, Reason and Communicate) delivers transparent, explainable, and fully controllable intelligence that organizations can trust for critical decision-making.

Advanced Textual Analysis

Percipion™ provides powerful advanced analysis capabilities for textual content, going far beyond traditional keyword or sentiment detection.

The Cognitive Computing Engine performs deep psychological assessment by identifying affective states, primary and secondary emotions, human needs, psycho-social risks, and motivational drivers. It analyzes semantic and psychological valences, takes into account grammatical context, and accurately transcribes Emojis and Algospeak into clear, usable language.

The system detects semantic signals, including strong and weak signals as well as words carrying multiple or ambiguous meanings, delivering nuanced understanding of intent and underlying messages.

In addition, Percipion is capable of evaluating a wide range of sensitive and strategic knowledge areas, including disinformation, conspiracy theories, corruption, conflicts of interest, workplace satisfaction, soft skills, client experience, hate speech, scamming, bullying, human trafficking, self-harm, sexual offenses, child grooming, false documents, illegal drugs, as well as specific high-risk domains such as violence and ultra-violence, weapons and ammunition trafficking, explosives, and general content moderation.

This advanced analysis relies on analogical data processing, grounded in fuzzy logic, neuro-physiological studies, and linguistic principles, enabling Percipion to extract reliable, context-rich insights from complex human-generated text.

These capabilities make it particularly effective for high-stakes applications such as disinformation detection, insider threat identification, and psychosocial risk assessment.

Orchestrator

Complementing the Cognitive Computing Engine is Percipion's™ powerful real-time orchestrator, a lightweight software daemon designed to seamlessly connect multiple software services and create sophisticated business scenarios.

Operating continuously in real time, the orchestrator enables organizations to define and automate complex assessment scenarios tailored to their specific needs.

Whether linking threat intelligence feeds (documents, websites, social networks, instant messaging, mailboxes, ...) or internal business applications, it provides the flexibility to build custom workflows that transform raw data into business reports and actionable decisions.

Fully aligned with Percipion's™ principles of sovereignty, security, and trustworthiness, the orchestrator remains transparent, auditable, and free from third-party dependencies, ensuring that automated business processes stay under complete human control while delivering speed, reliability, and operational efficiency.

Sovereignty

Percipion™ is designed from the ground up to deliver complete technological and operational sovereignty.

Built exclusively in Pure C (ANSI C99) and running natively on GNU Linux with Debian, the solution supports both RISC and CISC architectures while maintaining zero dependencies on any libraries or third-party components.

It can be deployed on-premise or in the cloud and requires no GPU, enabling efficient operation on standard, low-cost hardware.

This minimalist, self-contained architecture ensures full control: every line of code is auditable, execution is fully transparent, and there are no black-box mechanisms.

Entirely coded in France by Aeteos™, Percipion™ maintains complete independence from any supplier or third-party provider, guaranteeing that organizations retain full ownership and mastery over their data-processing environment without external influence or hidden dependencies.

Security

Percipion™ is engineered with security at its core, delivering an exceptionally small attack surface by relying on a limited, minimalist software stack with no dependencies on external libraries or third-party components.

Fully statically compiled in Pure C, the solution eliminates risks of source poisoning and drastically reduces the number of potential vulnerabilities compared to traditional systems composed of thousands of components.

On the exfiltration front, Percipion™ ensures strict data protection through a no-learning, no-reuse architecture that prevents any form of model or data memorization.

It features no memory leaks or unauthorized copies, incorporates quantum-resistant encryption for both stored data and data in transit between hosts, and guarantees no IP loss by never copying or storing user data. With no persistent storage of sensitive information and minimal exposure to external networks for updates and upgrades, Percipion™ can operate fully offline when required, providing organizations with robust, future-proof protection against both current and emerging cyber threats.

Trustworthiness

Percipion™ is designed to deliver the highest level of trustworthiness, ensuring full compliance with the EU AI Act and the NIS 2 directive. The solution is inherently reliable: it performs no prediction and no recommendation, remains non-autonomous, and operates under permanent human control.

Every process is fully explainable, deterministic, and protected against poisoning, whether at the binary or data level. As a knowledge-based system, Percipion™ relies exclusively on accurate, qualified data with a verifiable pedigree, guaranteeing ethical outcomes that are free from any discriminatory bias.

It uses an encrypted knowledge schema that cannot be poisoned or altered, providing organizations with a transparent, auditable, and responsible foundation for critical operations.

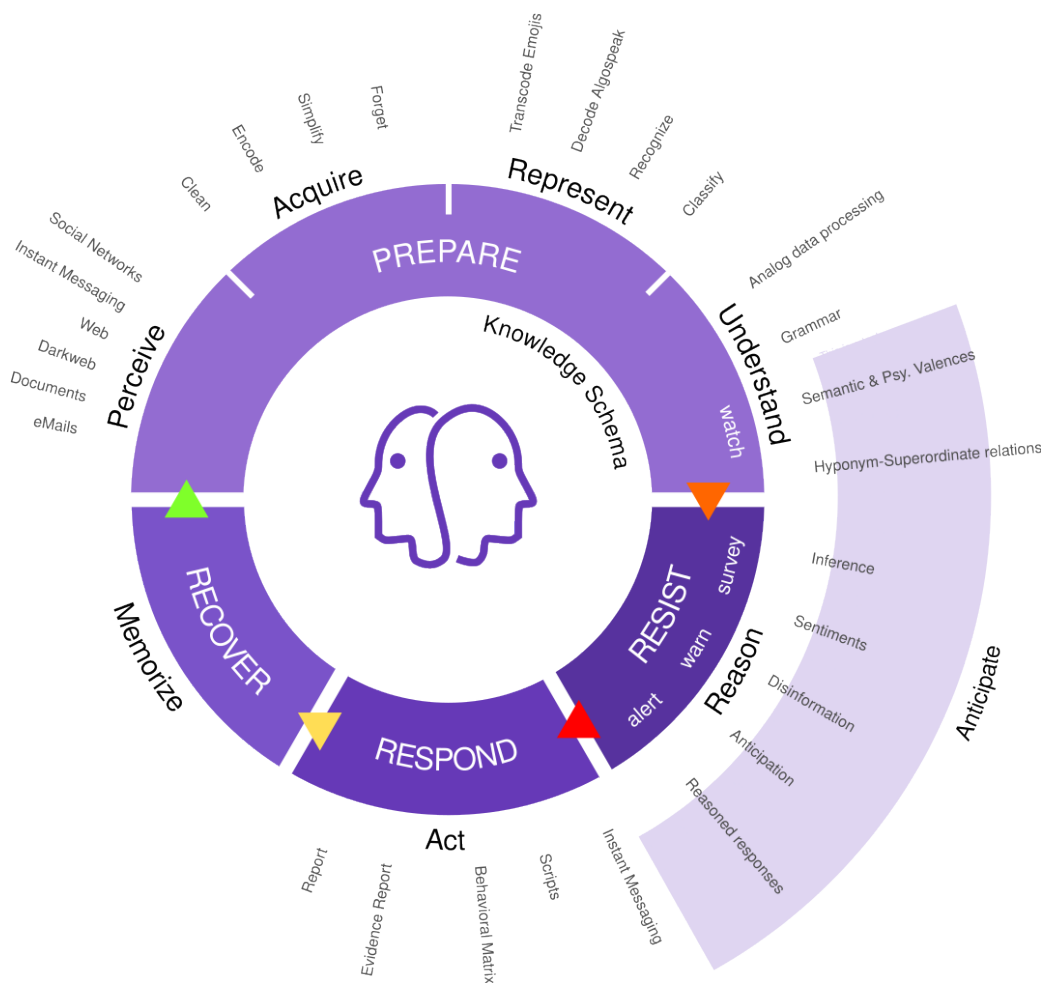
Sustainability

Percipion™ embodies a strong commitment to sustainability through its exceptionally low resource consumption. Designed with a minimalist architecture, the solution requires very low energy (2.37Wh per CPU Core) while running and maintains minimal memory usage thanks to its drastically reduced number of software components and memory optimization.

This efficient design not only lowers operational costs and environmental impact but also contributes to superior stability. By avoiding complex dependencies and unnecessary layers, Percipion™ ensures outstanding technological longevity, allowing organizations to deploy a future-proof solution that remains reliable and efficient over the long term without frequent upgrades or hardware refreshes.

Total Resilience

Percipion™ delivers total resilience by acquiring textual content, representing it within its internal memory, searching for related engrams across contextually connected knowledge schemas, and linking those that are relevant to their parent symbolic object. This process enables the system to understand situations deeply, better evaluate threats, and act with anticipation.



The resilience capability is structured around four key stages.

In the Prepare phase, Percipion™ continuously monitors the environment, identifies emerging patterns, and flags potential threat actors.

During the Resist phase, it evaluates threat levels and provides appropriate responses to survey, warn, or alert.

In the Respond phase, the system rapidly extracts relevant evidences to support and accelerate human intervention.

Finally, in the Recover phase, Percipion™ assesses relevant contextual semantic noise to uncover overlooked patterns and build long-term resilience through bias-free processing.

This comprehensive Prepare-Resist-Respond-Recover cycle makes Percipion™ a truly dependable foundation for critical operations in uncertain and high-threat environments.

Main Use Cases

Percipion™ is particularly suited for critical organizations and high-stakes environments, where it delivers tangible value across a wide range of strategic and operational use cases.

Tier 1 (T1) use cases address the most urgent threats and include Disinformation and Cognitive Warfare, Proactive Threat Detection, Insider Threats, and Industrial Espionage & IP Theft.

Tier 2 (T2) applications focus on deeper risk management and encompass Forensic Analysis, Talent Attrition & Workforce Morale, Psychosocial Risks Assessment, and Supply Chain Risk Monitoring.

Tier 3 (T3) use cases extend to broader organizational intelligence needs such as E-reputation Analysis & Crisis Monitoring, Behavioral Assessment & Psychological Matrix, and Content Moderation.

By supporting this comprehensive spectrum of scenarios through its sovereign, secure, and explainable architecture, Percipion™ empowers organizations to anticipate risks, protect sensitive assets, and maintain operational resilience in an increasingly complex threat landscape.

Benefits

Percipion™ delivers immediate and tangible value to organizations by providing instant operational capability with no learning phase: simply install and start assessing critical situations right away.

It brings high-level expertise directly to environments and teams that lack specialized analysts or dedicated threat intelligence resources.

The solution operates on a transparent flat-rate model with a monthly fixed price of 2 200€ per server that includes all features, unlimited usage, updates, and support, eliminating hidden costs and unpredictable expenses.

Furthermore, Percipion™ is deployed as a fully secured platform that can operate standalone or within a collaborative environment such as NextCloud, giving organizations the flexibility to choose the deployment model that best matches their security and teamwork requirements.

These benefits combine to make Percipion™ a fast-to-deploy, cost-predictable, and highly sovereign solution for critical organizations seeking trustworthy cognitive intelligence.

Summary

Percipion™ is a sovereign, secure, and trustworthy cognitive computing platform built entirely in Pure C with zero third-party dependencies. Its Cognitive Computing Engine, advanced textual analysis capabilities, and real-time orchestrator enable powerful, explainable threat intelligence and automated assessment scenarios. Fully compliant with the EU AI Act and NIS 2, offering low resource consumption, total resilience across Prepare-Resist-Respond-Recover stages, and instant deployment, Percipion™ addresses critical use cases from disinformation detection to supply chain monitoring while maintaining complete human control and data sovereignty.

Conclusion

In a world where trust in technology and protection of sensitive information are paramount, Percipion™ stands out as a reliable, future-proof solution. By combining deep cognitive capabilities with uncompromising sovereignty, security,

and sustainability, it empowers critical organizations to master complex information environments without compromising on ethics, transparency, or independence. With immediate value, predictable costs, and broad applicability across high-stakes use cases, Percipion™ provides the trustworthy foundation organizations need to navigate today's evolving threat landscape with confidence.

About Aeteos™

Aeteos™ is a French family-owned company founded in 2016 by cognitive psychologists Mark and Béatrice Pohlmann. Specializing in third-generation cognitive artificial intelligence, Aeteos™ develops sovereign symbolic cognitive computing solutions inspired by neuroscience, cognitive psychology, and linguistics. With roots dating back to 1994 and over twenty years of experience in digital transformation for major European organizations, the company is driven by a clear mission: to translate complex human mental processes into transparent, secure, and eco-responsible machines that assist, rather than replace, human decision-making.

Entirely "Made in France," Aeteos™ designed Percipion™ as the embodiment of this philosophy: a trustworthy, deterministic, and human-centered platform that delivers explainable intelligence while respecting the highest standards of technological sovereignty, security, and sustainability.