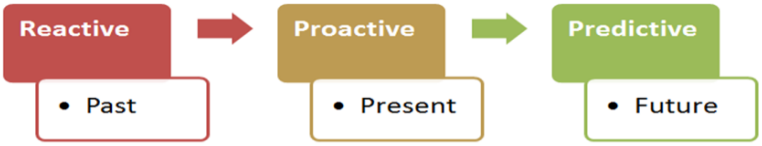
Platform Overview: INPRESEC, vSOC and Security Predictions

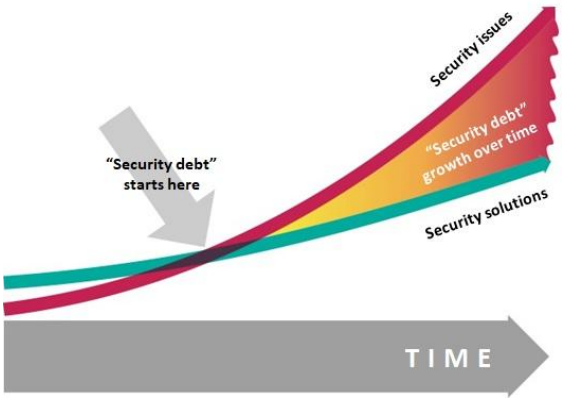
Artificial Intelligence and Machine Learning for better Information Security & Privacy

Paradigm shift in Information Security: Predict => Prepare => Prevent => Detect => React



Tens of millions of security interesting events happen monthly, some materializing as security incidents and breaches. Humans hardly can cope with all of them. Breaches cost a lot of money and not only money, but ruin the reputation of businesses. Single security breach can take an organization completely out of business.

In today's digital landscape, the frequency and sophistication of cyber threats are increasing at an unprecedented rate. Organizations must adopt proactive and predictive security measures to stay ahead of adversaries and protect their critical assets.



Security Debt

The problem of today's information security and the "security debt" growth over time is reflected through a rapidly increasing number of security breaches. Organizations are not able to cope with all of the threats, attacks and risks any more. There is:

- most of commercially available tools often deliver high percentage of false positives (noise)
- significant amount of manual work (drives cost)
- lack of focus and concentration leading to errors
- lack of skilled professionals and tools

Security debt accumulates as organizations delay or underinvest in security measures, leading to a backlog of vulnerabilities and increased risk exposure. Addressing security debt is essential for long-term resilience and compliance.

INPRESEC Solution: INPRESEC uses Artificial Intelligence, Machine Learning, Predictive Analytics, and Threat Intelligence to provide classification and prediction of security threats, issues and attacks.

INPRESEC Security Solutions are based on a Common Platform that employs modules that detect and prevent activities that violate security policy, including, but not limited to intrusions, data leaks and similar.

With our holistic approach, the system classifies these activities as normal or anomalies i.e., allowed or not allowed, or predicts activities that violate security policy. System alerts the security and/or network administrators about the occurrences of

events that are not allowed - and optionally reacts to them.

INPRESEC's AI-driven approach enables organizations to move from reactive to proactive and predictive security postures, reducing incident response times and improving overall security maturity.

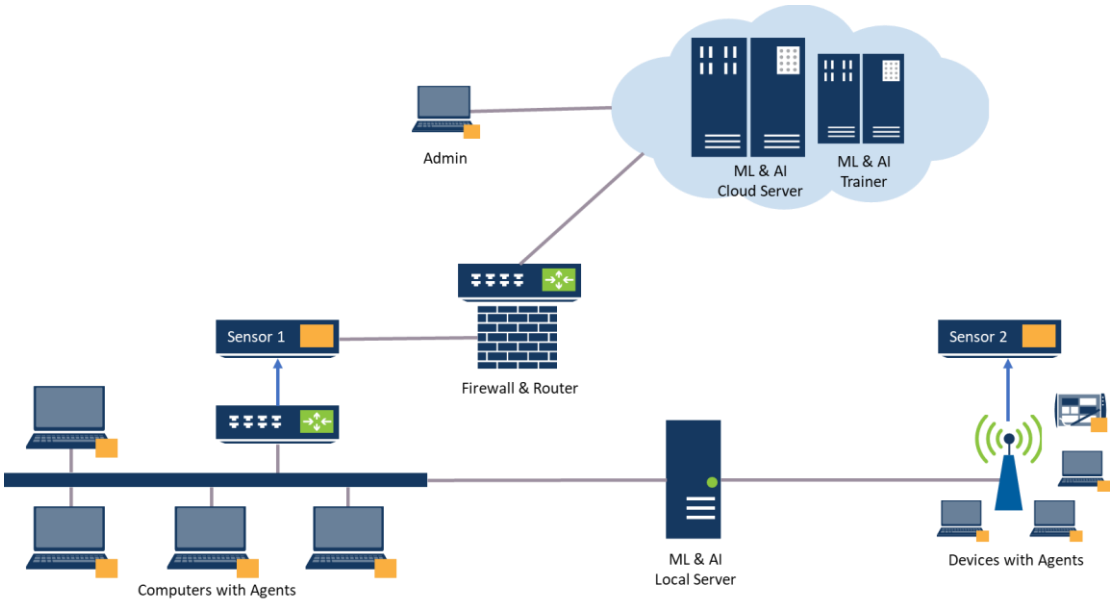
INPRESEC Platform consists of six components:

- Agent
- Sensor
- Server
- Administrative Panel
- Trainer
- Prediction Module

These components make a multilevel and multilayered system which operates on network level, on host level and protects system components, users, application and data, following the "defense in depth" approach. The platform also shifts the paradigm in the sense that it looks into issues within a "holistic approach", providing detection of various threats and attacks to the system and working in collaboration with the prediction module (currently in development).

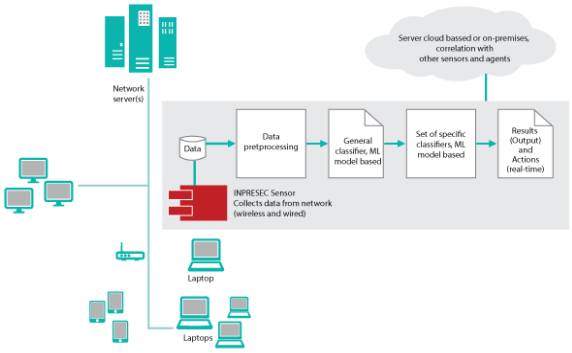
INPREEC Solution also provides additional "***security analyst in the loop***" concept, with supervised learning – the solution becomes more and more clever over time and requires less human intervention, saving significant amounts of time and money, while significantly improving security posture of the system and reducing the risk.

An example diagram of the INPRESEC platform is shown on the figure below.



Example of Deployment Model

Platform components



INPRESEC Sensor

INPRESEC Sensor is a network-based security system that analyzes network traffic and seeks possible security violations in it. Sensors may be implemented as software, deployed on a networked computer or separate appliance, set in the wired or wireless network environment. Sensor detects attacks, intrusions, data leaks and similar activities that violate security policy and reports, prevents or cancels these activities on the network. Sensor alerts the security and/or network administrators and collaborates with the INPRESEC Server.

Sensors provide real-time visibility into network activity, enabling rapid detection and response to emerging threats.

INPRESEC Agent is a host-based security system, implemented as software installed on a computer (e.g., server, desktop, laptop), mobile device (e.g., phone, tablet) or network device (router, firewalls or access point). In the future, it will be possible to install it on other IoT (Internet of Things) enabled devices. Agent analyzes events and behavior of the underlying systems and seeks for possible security violations. Agent detects attacks, intrusions, data leaks and similar activities that violate security policy and reports, prevents or cancels these activities. Agent collaborates with the INPRESEC Server.

INPRESEC Server is software that integrates functions of Sensors and Agents. Server collects information from Sensors and Agents deployed throughout a network and analyzes it. Server provides Sensors and Agents with updates and new classification and prediction models trained with Machine Learning algorithms. Server provides security and/or network administrators with information on system status and activities that violate security via Administrative Panel. Servers can be linked to SOC / CERT centers or with other security software or devices: antivirus software, SIEM tools and firewalls. Server can be deployed on the client's corporate network or used as an INPRESEC service.

INPRESEC Administrative Panel is a set of GUI tools intended to facilitate configuration, monitoring, management, tuning, and preparing reports about system components' activity. It can be accessed via a Web browser, locally or remotely, from the computer or mobile device. It is implemented as a part of the server software.

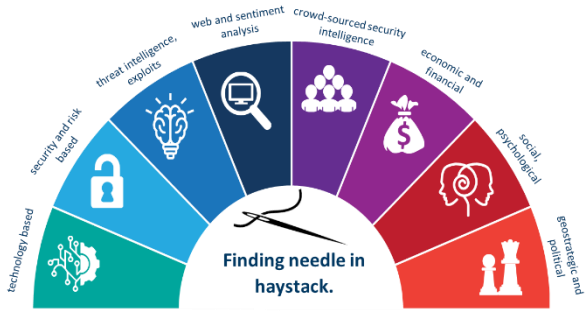
The server acts as the central intelligence hub, orchestrating detection, response, and reporting across the security ecosystem.

INPRESEC Trainer is a training system component based on machine learning (ML). Trainer uses labeled (annotated) data sets either created by security analysts or during annotation of events and reports of the working system and creates new models with higher detection accuracy. By machine learning, our system provides continual improvement of systems which is of paramount importance for customers and adapting to a variety of threats, attacks, as well as specific requirements that customers may have.

INPRESEC Prediction Module uses various parameters and input data from a set of internal and external sources, it analyzes them and, through a set of our proprietary algorithms, gives probabilities of possible threats and attacks. This component has

been moved to new product / service **∑∏ Security Predictions (SP)**. ML and AI can help with processing huge amounts of data and finding real threats. Using various parameters and input data from a set of internal and external sources, it analyses them and, through a set of proprietary algorithms, gives probabilities of possible threats and attacks.

Predictive analytics enable organizations to anticipate and mitigate risks before they materialize, supporting a proactive security strategy.



Security Predictions Inputs

Advantages and Value

This system provides set of advantages:

- Efficient protection of computer and communication networks and systems
- In-depth protection: users, applications, and data
- Detection and protection of individual systems/devices and networks
- In-depth protection: user's applications and data

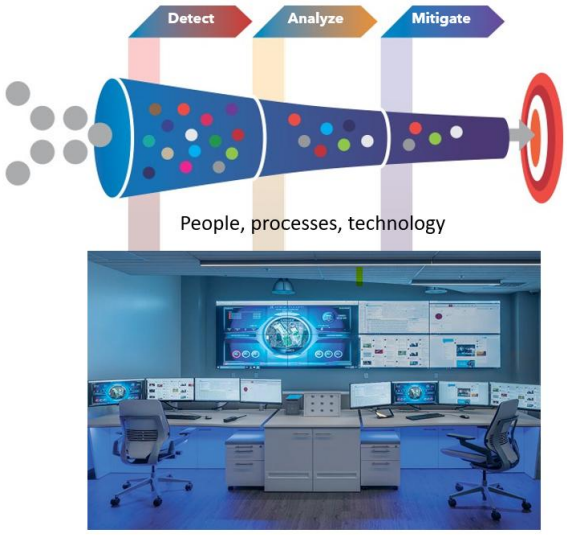
Value Proposition INPRESEC offers is: less pain, less risk:

- Predicts, prevents & detects security threats and attacks before they affect live systems
- Continual improvement process. Demonstrable accuracy of approximately 99% after a set of learning cycles.
- Minimizes work of security teams, while improving accuracy, reaction time and security solutions performance
- Saves significant amounts of money, time and efforts for companies and organizations.

INPRESEC's value is further amplified by its ability to reduce operational overhead, accelerate incident response, and support regulatory compliance initiatives.

Services and Product Model

INPRESEC can be an additional tool in the Security Operations Center (SOC) and vSOC (virtual Security Operations Center).



vSOC (Virtual Security Operations Center)

vSOC (Virtual Security Operations Center) - Uses INPRESEC and Glog.AI solutions, together with Security Predictions and other tools for building and operating virtual Security Operations Center – vSOC.

Depending on usage scenario, various business/deployment models can be used:

- Cloud based service
- On premises product model: hosted by the client, serviced by INPRESEC, depending on requirements
- Service model: Security as an (INPRESEC hosted) Service

In more details, INPRESEC provides choice of services and products offering through:

- Subscription model to information security services
  - Subscription to INPRESEC solution services as MSSP (Managed Security Services Provider)
  - Cloud based service - Virtual appliance and similar models
- Product & systems with licensing, implementation, integration and support for users and partners who want on-premises systems.

Also, other services can be provided:

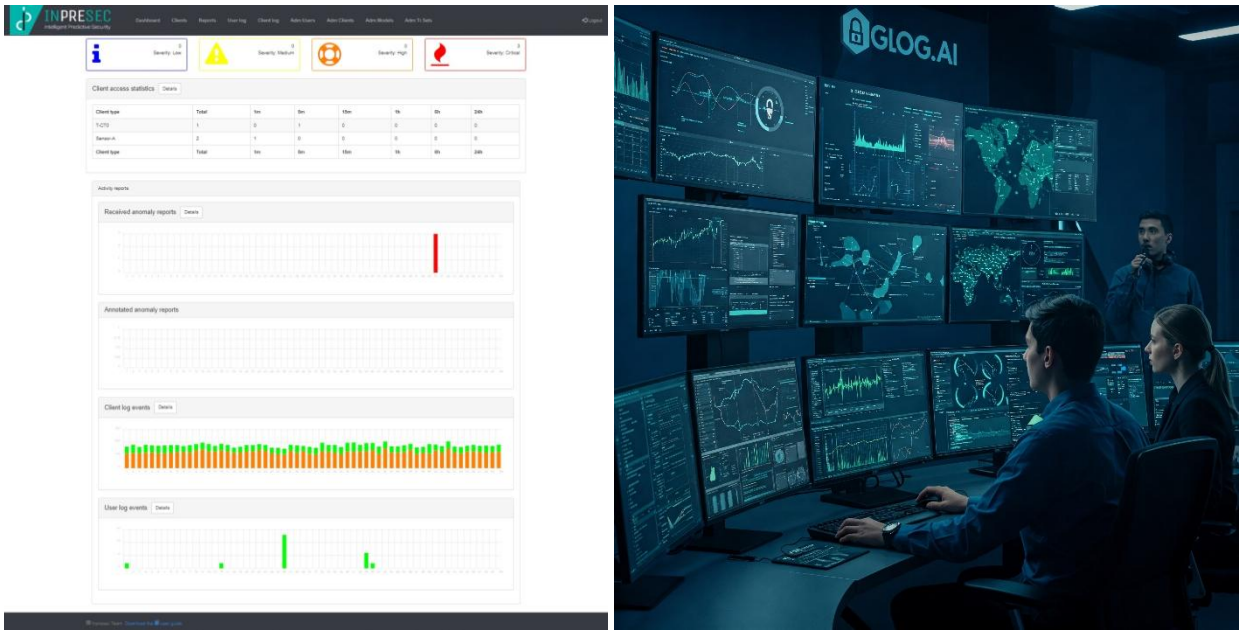
- Information gathering and dissemination through specialized data feeds (Threat Intelligence & Predictions)
- Services, SDK
  - System learning, fine tuning
  - Partners' training, education, learning
  - SDK libraries and tools for 3rd party use, royalties

Administrative panel

The Administrative Panel is accessed via a web browser. It is implemented as a responsive web application, with the aim to be usable with different browser geometries. It includes the following tools:

- Operation-supporting tools, including:
  - Dashboard
  - Clients viewer
  - Reports management
  - User actions log viewer
  - Client events log viewer
- Administrative tools
  - Users management
  - Clients management
  - Models management
  - Training sets management

On the screenshot below you can see the dashboard, designed to provide a bird eye-view of key recent activities of clients (sensors, agents) and users (security analysts reviewing and classifying the reports and doing other actions using the Administrative Panel).



Administrative Panel and vSOC

Licensing

Two models are available.

- **Licensing based on:**
  - Network traffic processed
  - Number of devices (physical + virtual)
  - Design and setup on specific infrastructure

Note: there is server and sensor setup fee and cloud service costs which client need to cover or it will be included in price of service toward client.

- **vSOC as managed security service:** Our vSOC team monitors your network and manages alerts together with the client's/customer's team. This includes use of our own INPRESEC and Security Predictions. You can add other tools.

  Note: Pricing includes use of INPPRESEC, vSOC and Security Prediction solutions. If you use 3rd party commercial tools, you will need to cover costs of procurement.

Penetration Testing Aided by AI

We provide penetration testing for our customers with advanced AI engines who will bring your cybersecurity to the next level. This includes white box and black box testing. Our tests include verification of results and "final touch" by experienced security analysts.

Our penetration testing services go beyond traditional approaches by combining expert human testers with advanced AI tools. This hybrid approach allows us to cover more ground faster, identify complex vulnerabilities that automated tools might miss, and provide more actionable remediation advice. We offer web application, mobile application, API, network, and cloud infrastructure penetration testing services, all tailored to your specific risk profile.

Benefits of AI in Our Penetration Testing

- Increased efficiency through automation of time-consuming tasks
- Enhanced coverage with AI analysis of vast datasets
- Improved accuracy with reduced false positives
- Deeper insights and more actionable remediation advice
- Faster turnaround times for quicker security improvements
- Scalability to handle larger and more complex environments

AI-driven penetration testing uncovers hidden vulnerabilities and provides actionable remediation guidance, helping organizations strengthen their security posture and meet compliance requirements.