IN SITU
New generation security

LISA® – Our Hybrid Post-Quantum Security Software for Future-Proof and Resilient Data Processing

1. About Insitu

Insitu develops long-term security solutions for companies, public authorities and organizations with the highest information security requirements for data processing and collaboration.

LISA® is a visionary software platform that provides a long-term, highly secure solution for data processing in an era of increasingly complex cyber threats – particularly those arising from the future use of quantum computers and supercomputers.

The need for such a solution is already relevant today, particularly for infrastructure designed to last for decades (transport, industry, etc.), large software systems (which are generally designed for long service lives), and data for which long-term confidentiality is essential.

2. LISA® – Solution Description

LISA® is designed to enable highly secure, encrypted end-to-end data processing and collaboration on PCs between users within a network. **LISA®:**

- ➔ generates and distributes cryptographic keys
- ➔ encrypts and decrypts data on PCs according to user roles
- ➔ provides highly secure encryption for all forms of telecommunications (messaging services, video conferencing, etc.)

Depending on the customer's individual security requirements, different cryptographic methods (mathematical or very cost-effective physical methods) can be used to generate keys. The solution allows users to decide for themselves whether and how their data should be encrypted (from mathematical AES-256 encryption to the information-theoretically provably 100% secure one-time pad).

LISA® vs. LISA® MKD – Data Encryption Options

- **LISA®:** Uses mathematical AES-256 encryption
- **LISA® MKD:** Additionally uses an OTP (one-time pad): this type of encryption can be considered “unbreakable”

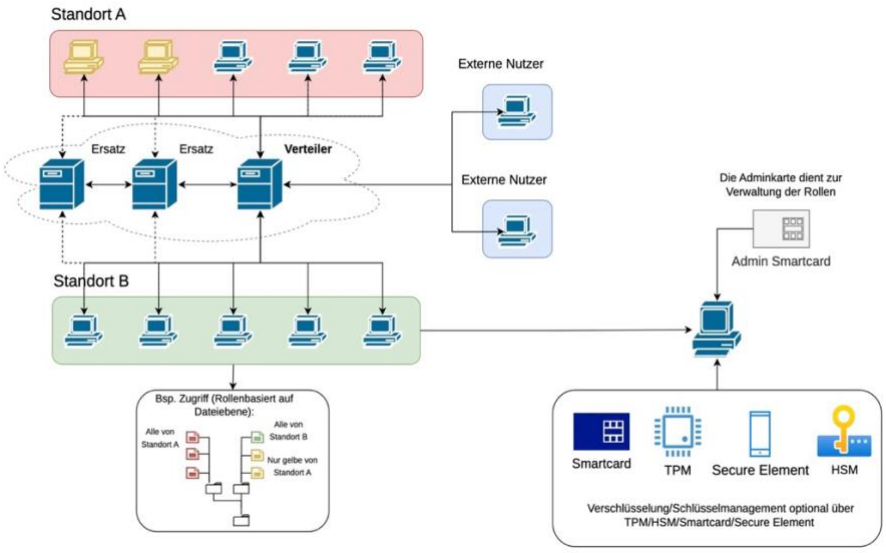
Key distribution and the encryption process are handled by the TPM chip integrated into the computer, secure smart cards and, for LISA MKD, a one-time pad.

A role-based cryptographic authorization system allows different encryption methods to be selected for each role according to security requirements. A user may also hold multiple roles.

The “distribution software” included in the software package ensures secure networking between devices as well as automatic, error-free data replication and synchronization across all end devices in the user network.

With LISA®, data can still be stored centrally or in the cloud. Files are uploaded and downloaded exclusively in encrypted form. Data is processed in plaintext only at the workstation.

3. LISA® Functional Diagram



In the standard version of LISA®, the software runs on-premises – locally on the user's PC. As middleware, it operates between the PC operating system and locally installed IT applications (e.g., Microsoft Office Suite, Photoshop or Acrobat).

If operation is required not on-premises but as a cloud-based browser application, our encryption logic could also be integrated within a Zero Trust Architecture (ZTA). Please contact us with a project inquiry.

4. Compatibility and Scope of Delivery

LISA® is supplied as a "software-only" package as standard. It is provided for download through prepared installation packages. Customers can procure the necessary hardware components (smart cards and/or the OTP) themselves based on our product recommendations.

The package includes middleware with encryption logic and a key management system, distribution software for audit-proof document distribution within the network, and a role-based cryptographic authorization system.

LISA® MKD additionally includes a one-time pad (OTP) and a photon generator for generating random numbers.

LISA®/LISA® MKD currently support all Windows PCs running Windows 11 or later. Linux support is planned for Q1 2027.

5. Unique Selling Points of LISA®



Secure – resilient, highly secure data processing, up to and including "quantum-computer-resistant" security



Innovative – state-of-the-art mathematical and/or physical cryptography



Cost-effective – industry standard: affordable to purchase and operate



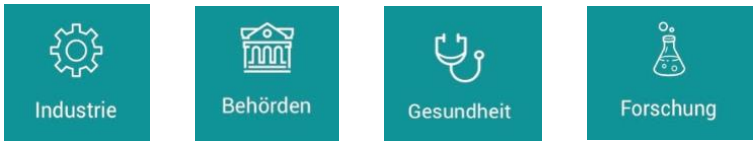
Adaptive and modular – easy integration into common PC operating systems and seamless extensibility with new encryption algorithms in the future



Compliance and data sovereignty – meets compliance requirements under NIS2, GDPR and the CRA

5. Who Is LISA® Designed For?

With LISA®, we address all types of companies and organizations, including public authorities, ministries and defense institutions, that require highly secure, future-proof data processing and collaboration.



5. Contact

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