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From Sensor to Cloud: Towards Building a Resilient Healthcare Ecosystem

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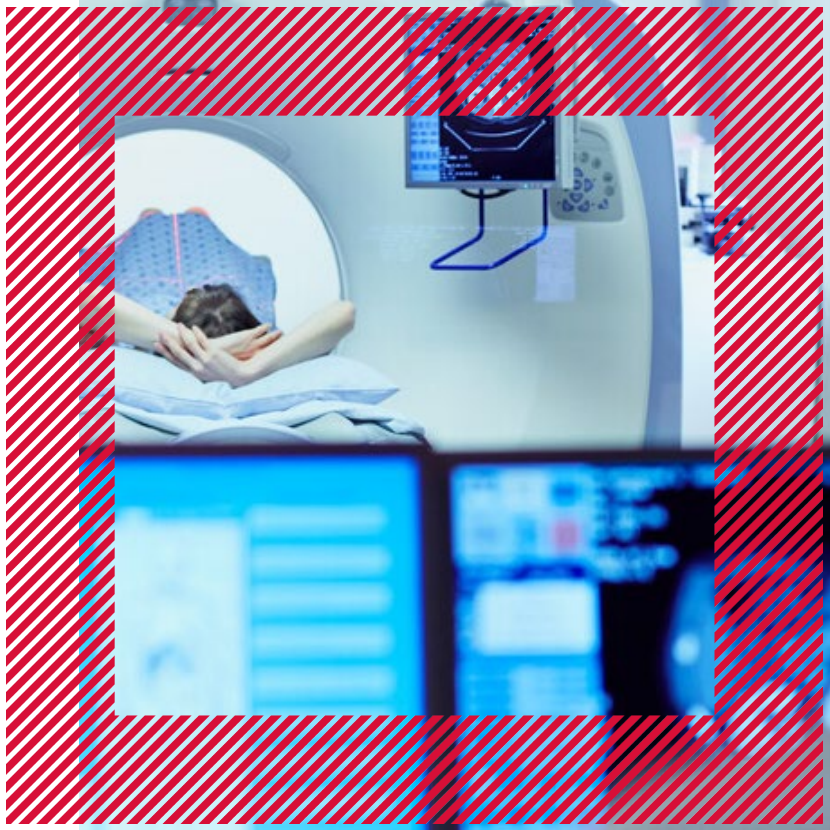


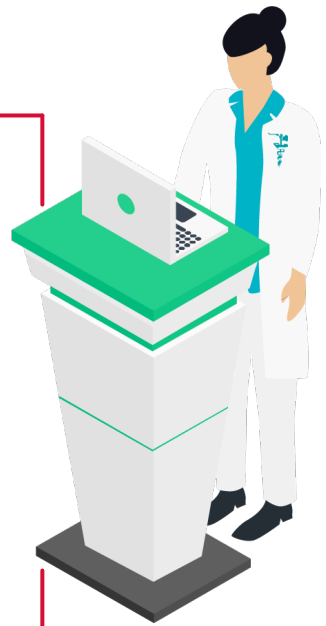
The future healthcare ecosystem will rely on data

Health care provider(s)

visits (virtually)

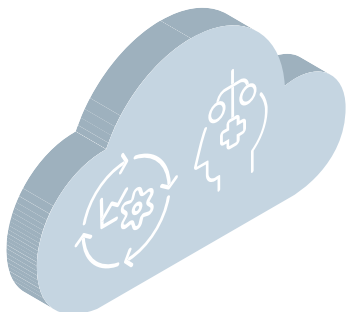
Patient

individualized treatment



Physician(s)

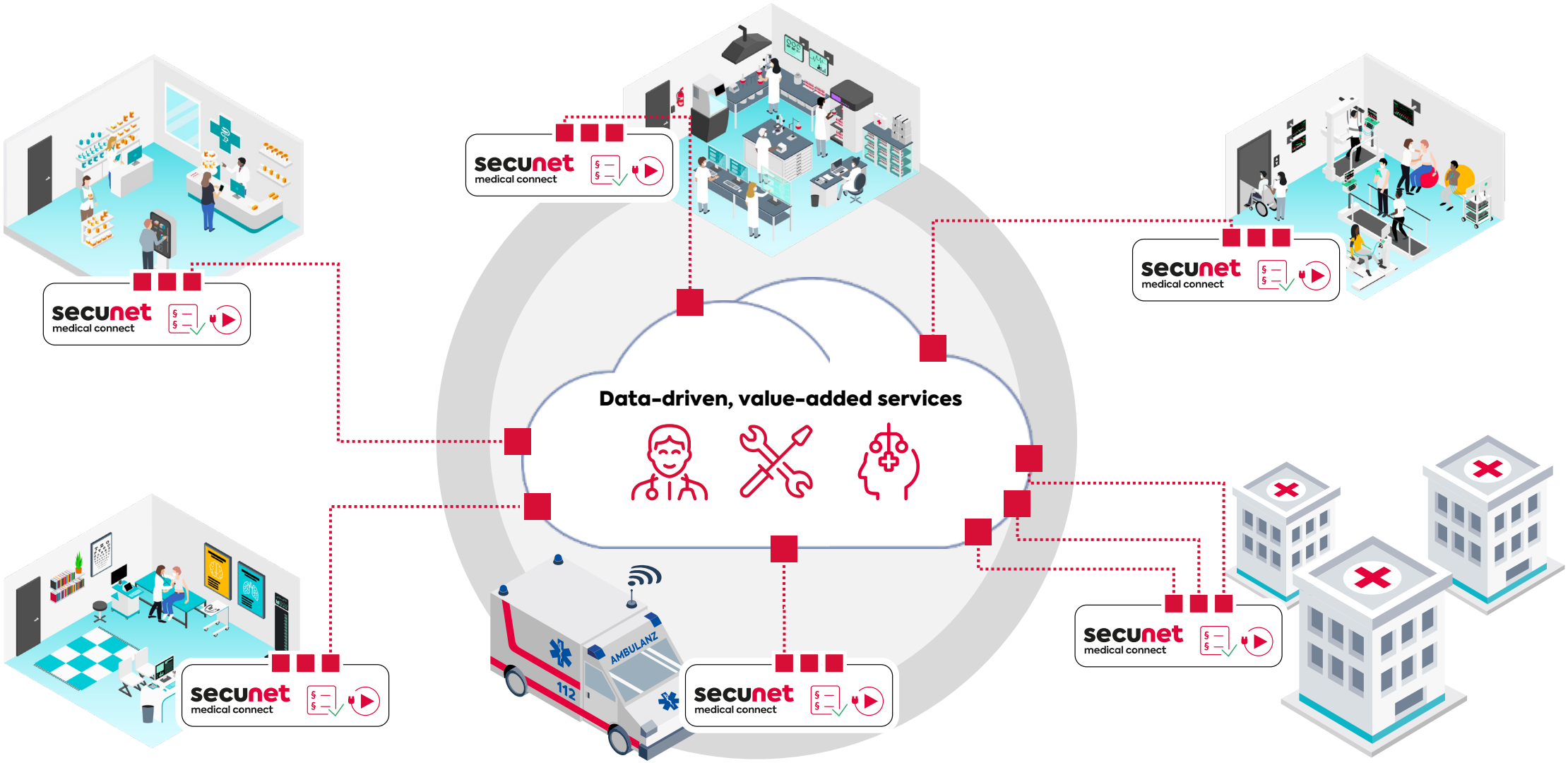
provide data from multiple devices



Data-driven, value-added services

real-time assessment

Connected medical devices?
The foundation for modern medicine!



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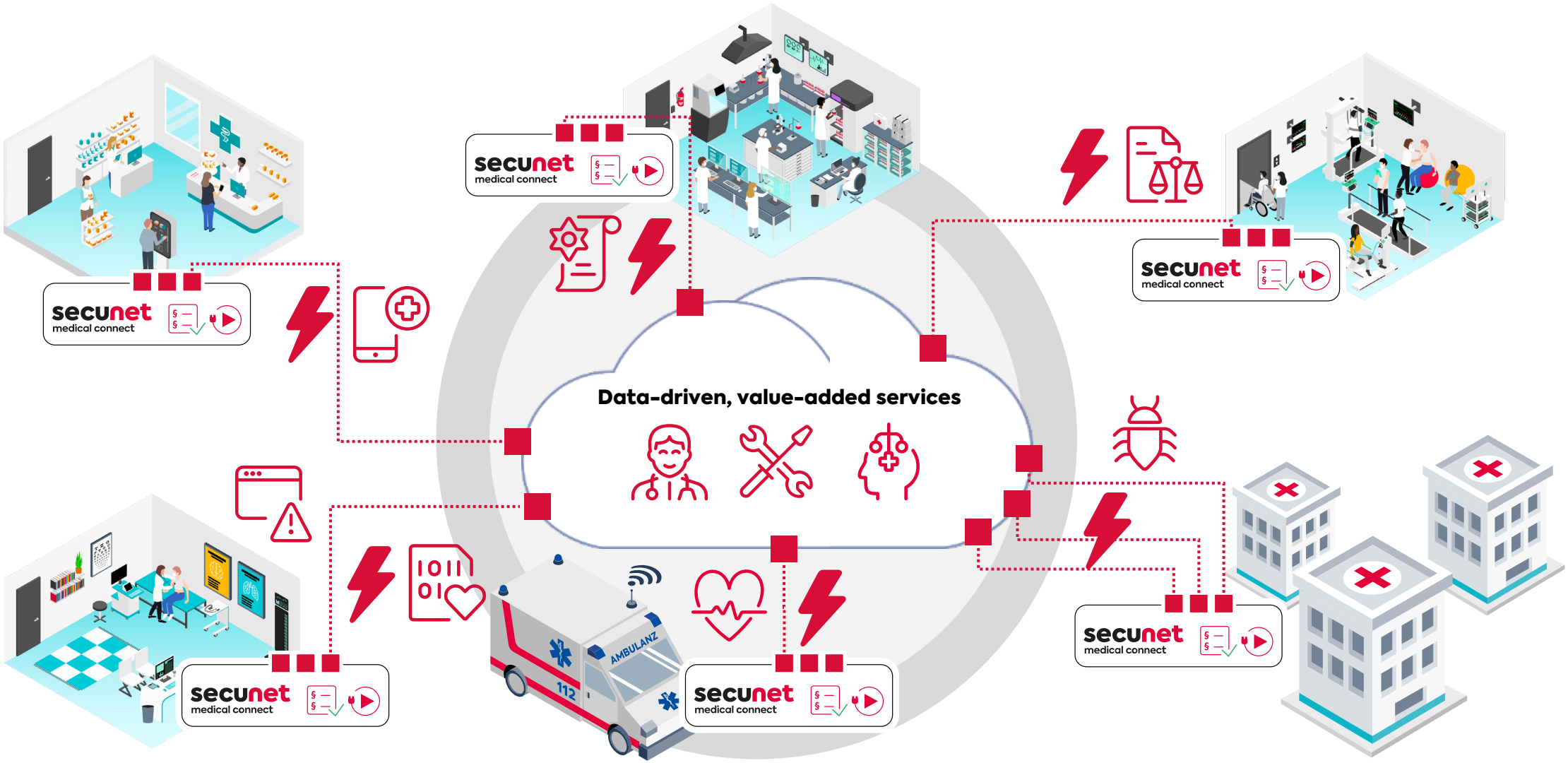
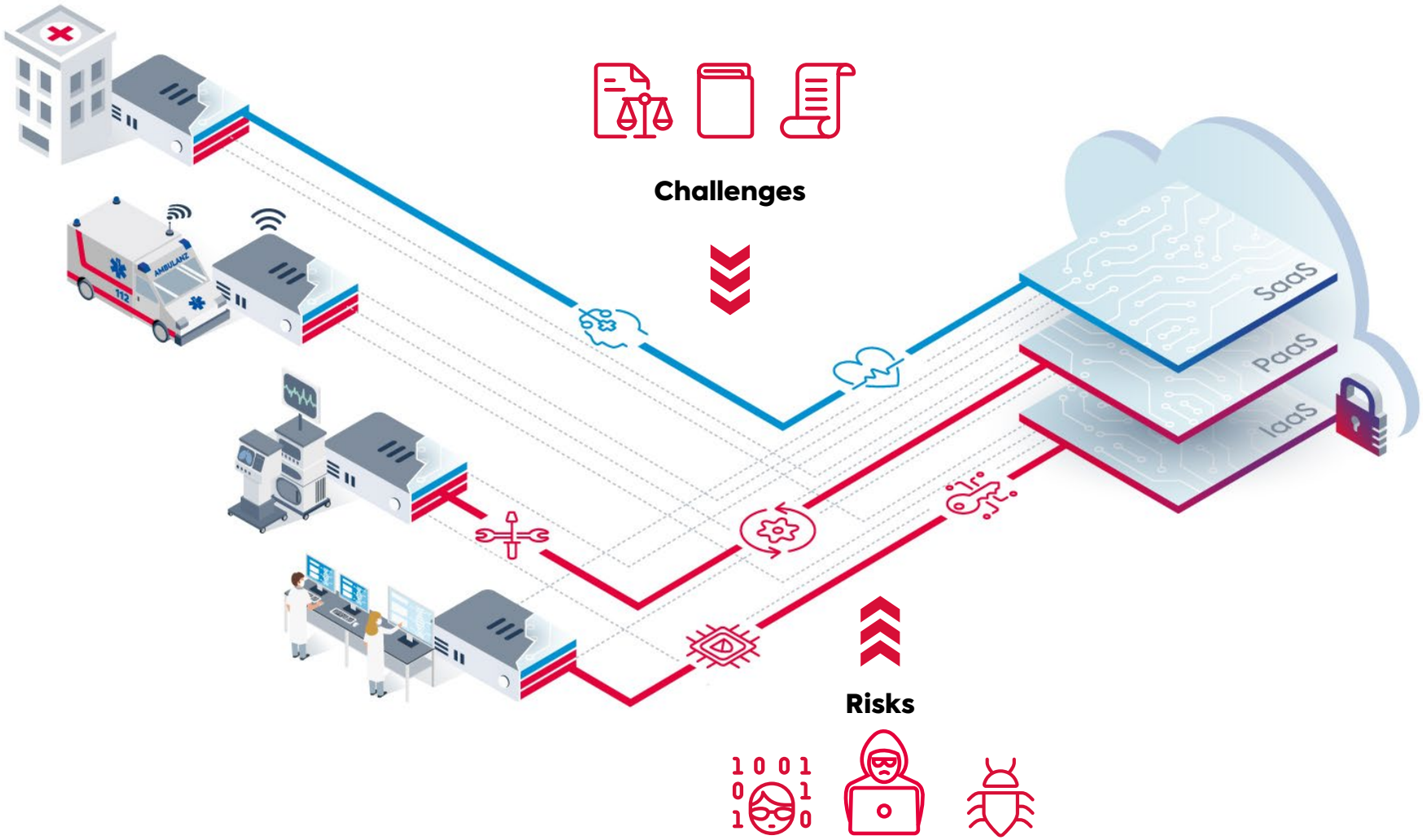
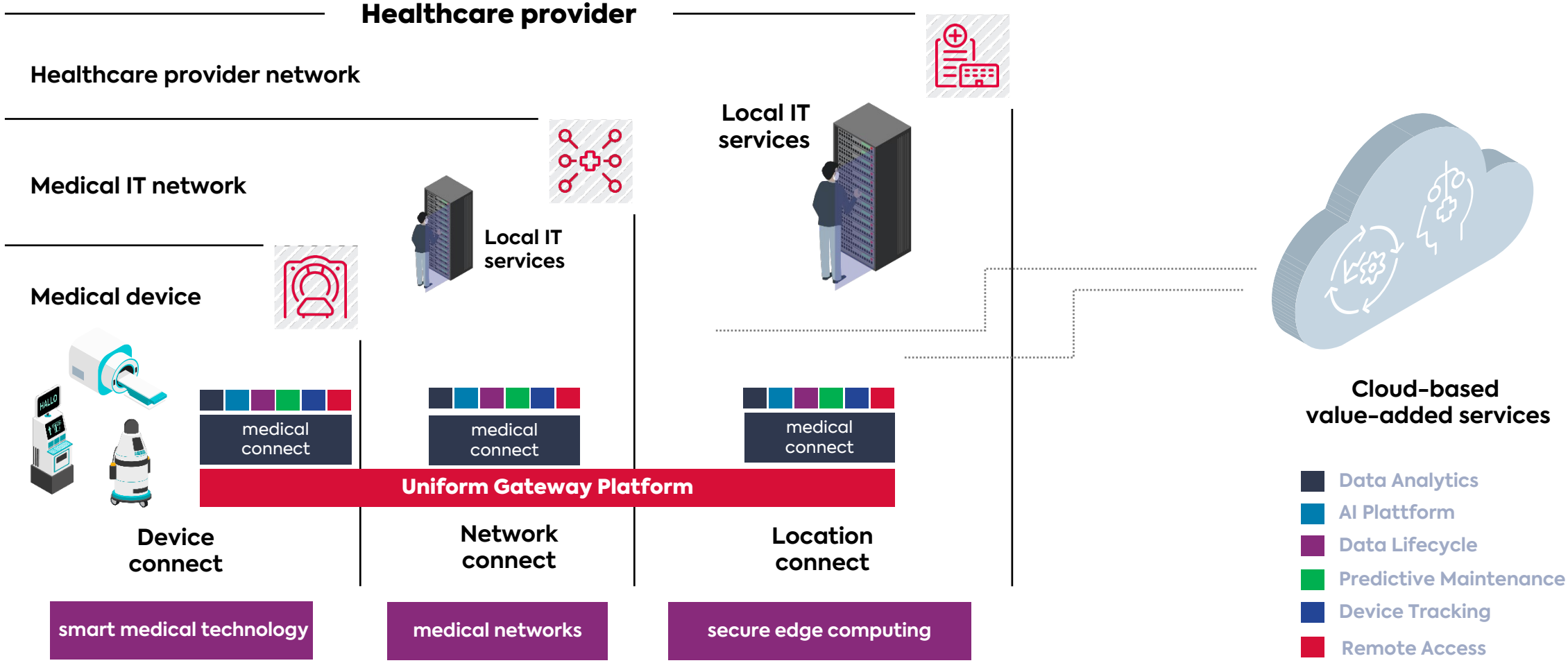


From Sensor to Cloud:
Trustworthy data processing in medical environments

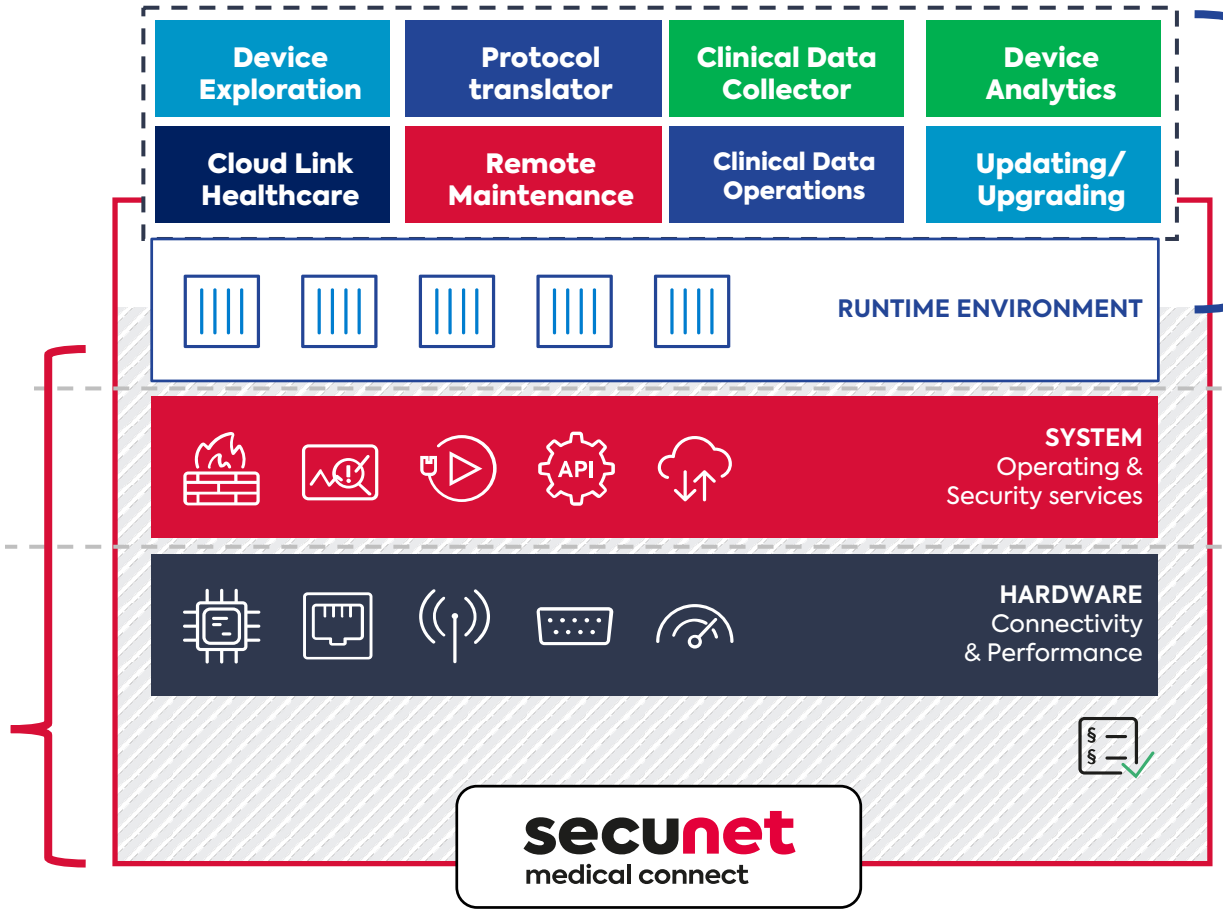


Protecting medical devices & clinical infrastructures



Uniform Gateway Platform

secure connect & compute & deploy



Manufacturer
Development of specific use cases

Application abstraction

Various applications on a secure, trustworthy, and compliat system base

Hardware abstraction

Flexible hardware suiting your use case and local environmental requirements

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Uniform platform for various devices and use cases

Example use case: GDPR-compliant research platform

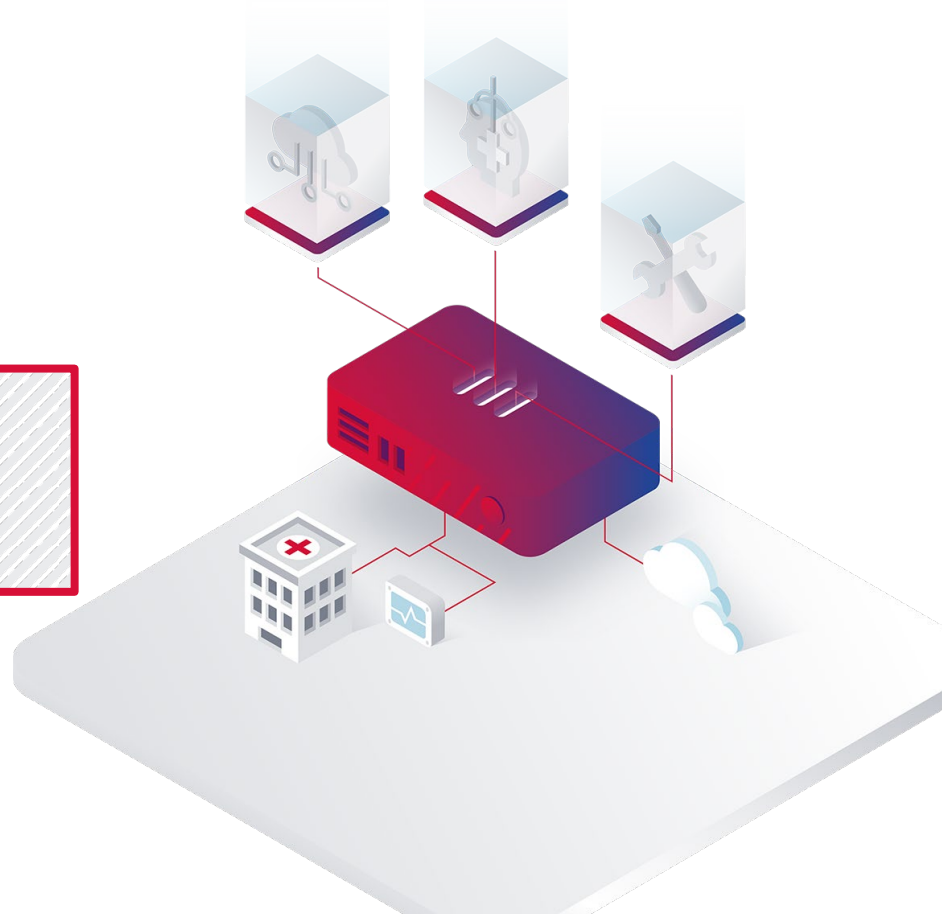
Data collection | **Secure cloud infrastructure** | **Data usage**

Digitalization, cybersecurity and flexibility are not always a contradiction

Digitalization will improve modern medicine

- New attack vectors will emerge
- Attack surfaces increase

RISKS MUST BE REDUCED TO ENABLE A TRUSTWORTHY DIGITALIZATION

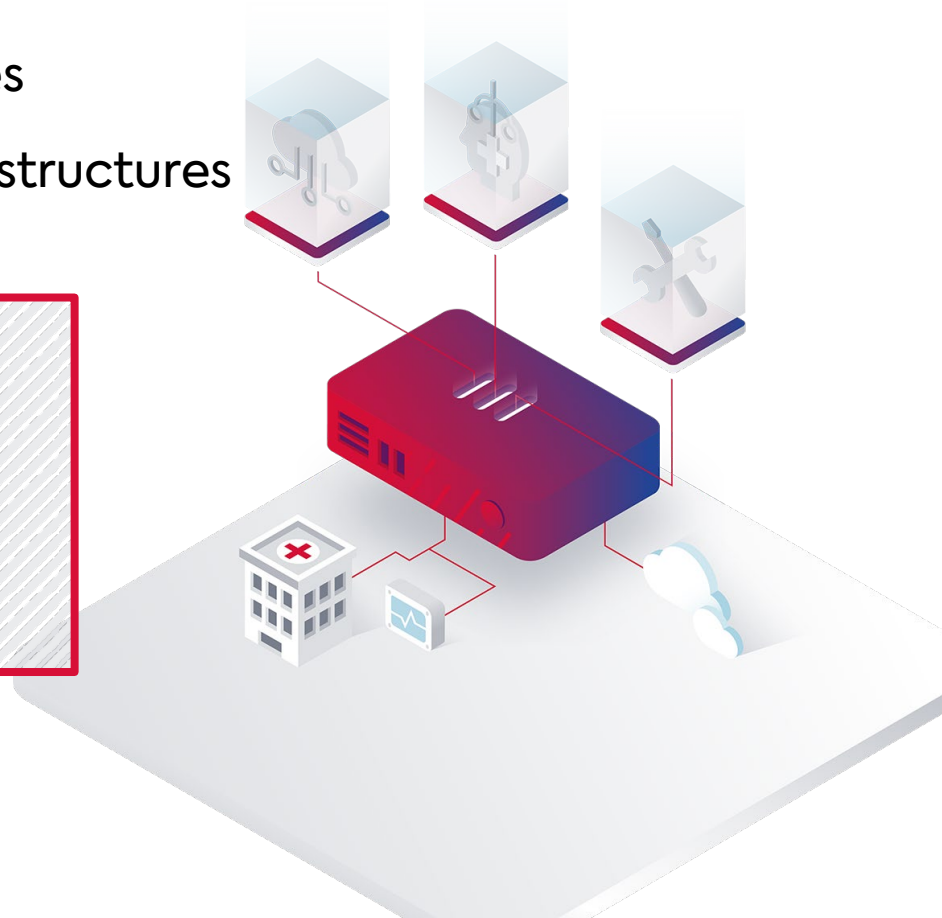


Digitalization, cybersecurity and flexibility are not always a contradiction

Modern and adaptive cybersecurity solutions are needed

- Along current regulations, standards and best practices
- Possible without severe interventions into existing infrastructures

THE PROPOSED CONCEPT ALLOWS A FLEXIBLE, TRUSTWORTHY, AND SECURE DIGITALIZATION WITHIN CLINICAL NETWORKS BASED ON MODERN CYBERSECURITY TECHNOLOGIES



Research

Goal: Secure cloud-native medical devices

Cluster4future: Secure Medical Microsystems and Communications (SEMECO)

Secure and trustworthy system architectures

Target objective

Certified security architecture for medical devices: from processor to (medical) cloud

AI-assisted regulatory for medicine and cybersecurity

Target objective

Unification of regulatories of various spheres: IT-Security & medicine; deduction of cybersecurity requirements and automatized reviews

Horizon Europe Program

Enhanced cybersecurity for networked medical

Target objective

Optimization of guidelines, standards, risk management and security by design principles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