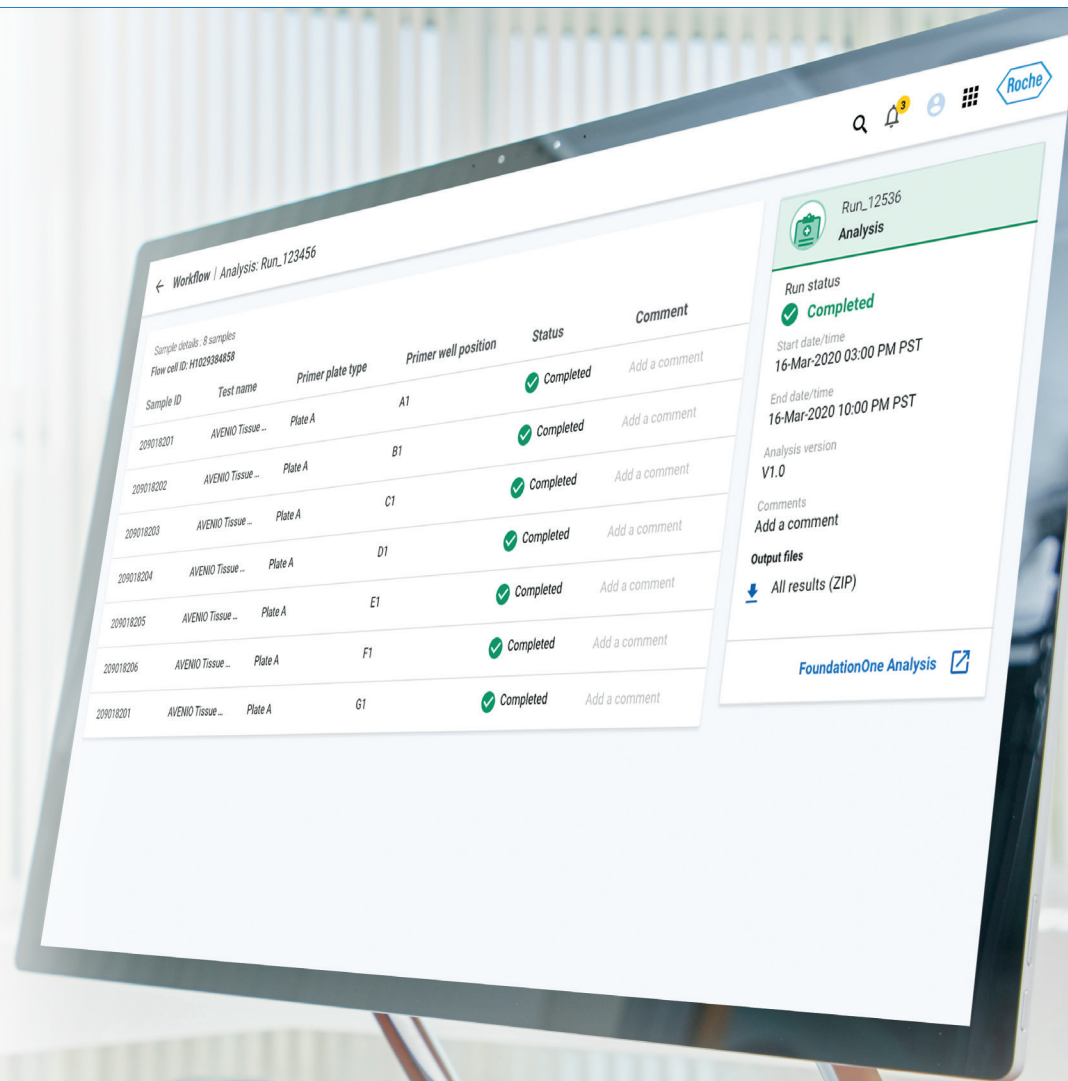# AVENIO Connect Software
Data Privacy and Security

AVENIO Connect Software safeguards and manages sensitive data

AVENIO Connect Software is a cloud-based Software as a Service (SaaS) solution designed to assist users with keeping sensitive data safe and accessible to healthcare providers and specialists.

AVENIO Connect Software contains many features that support data security.

What is AVENIO Connect Software?

The AVENIO Connect Software is a cloud-based solution for simplifying routine NGS testing for laboratories. The AVENIO Connect Software offers sample tracking and instrument integration through a unified interface, making workflows more efficient, enabling sample audits, and reducing data transfer errors from manual entries.

AVENIO Connect Software runs in the cloud, which may provide advantages such as data redundancy, location independence and capability to real-time run notifications. Roche incorporates privacy-by-design into developing its products, such as the AVENIO Connect Software, to enable and support user data security.

Security, reliability and dependability

We have developed an approach to data security that tracks the flow of data in transit and at rest in the cloud, **to help safeguard data flows,** and includes policies, procedures and technical measures that help enable customer compliance with applicable privacy regulations in each country or region where the product is available.

Here's how AVENIO Connect Software delivers the key functions and features important to healthcare IT professionals.

AVENIO Connect Software

ROBUST SECURITY

Leverage native Amazon Web Services (AWS) security components and innovative technologies to achieve a solid security approach.

DATA PRIVACY

Privacy-by-design principles have been incorporated into product development. Data encryption and Secure Key Management is used.

COMPLIANCE REQUIREMENTS

Benefit from a certified system that is continuously monitored to keep it stable and secure.

EFFICIENCY

Implement with little to no overhead using easy-to-deploy, scalable features.

RELIABILITY AND UPTIME

Deliver robust resiliency and disaster recovery capabilities.

How the AVENIO Connect Software protects sensitive data with multi-layer security

As a cloud-based solution, AVENIO Connect Software can help reduce the operational burden on your IT resources by providing solutions that support security functions and compliance requirements.

Roche recognizes the importance for safeguarding data which is why we chose to **partner with industry leaders to provide the core infrastructure and then offer supplemental security features as appropriate.** We partner with AWS leveraging its native security components and innovative top-notch industry technologies for a holistic cyber defense approach.

Additionally, AVENIO Connect Software architecture ensures customer data is segregated from other customers and that even within customers, records are shared with users only as individual permissions specified by the customer allow.

Cyber Defense Management

Customer Environment
Pathologist, Hospital/Lab

AVENIO Connect Environment
AVENIO Connect Software User Interface
Security controls:
- DDoS protection
- Anti-distributed denial of service measures
- Web application firewall
- Network whitelisting and firewall
- Cloud platform SecOps 24/7
- Identity management and protection
- Hardened hosts

Security management
- Platform disaster recovery
- Threat intelligence
- Continuous Vulnerability Management
- Security incidents handling
- Periodic penetration tests
- Bug bounty program

Data privacy:
- Data-level encryption
- Data encryption specific customer master keys and data keys
- Secure key management

Data In-Transit Encryption

Data In-Transit Encryption

AVENIO Connect Services

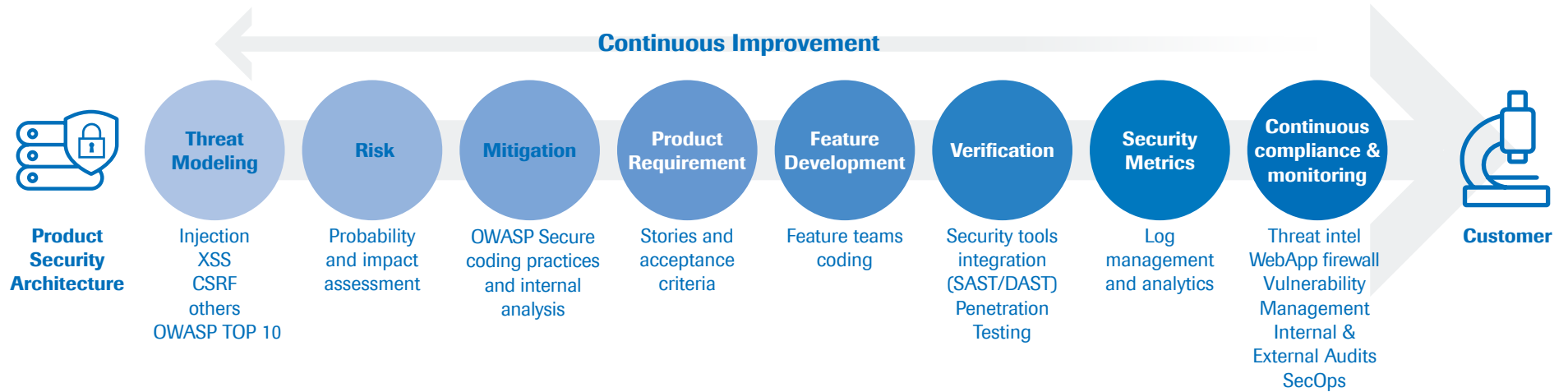*Data In-Transit Encryption*

Data Centers
- Physical security
- Data replication
- Business continuity and disaster recovery

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AVENIO Connect Software Cybersecurity and Privacy Lifecycle

Continuous Improvement

Product Security Architecture

Threat Modeling	Risk	Mitigation	Product Requirement	Feature Development	Verification	Security Metrics	Continuous compliance & monitoring
Injection XSS CSRF others OWASP TOP 10	Probability and impact assessment	OWASP Secure coding practices and internal analysis	Stories and acceptance criteria	Feature teams coding	Security tools integration (SAST/DAST) Penetration Testing	Log management and analytics	Threat intel WebApp firewall Vulnerability Management Internal & External Audits SecOps

Customer

AVENIO Connect Software cybersecurity and privacy achieves the highest security standards and regulations to protect Roche diagnostic workflows and sensitive data. This threat-oriented method covers all tasks from product design to active threat protection and production monitoring. It also enables the adequate management of potential vulnerabilities and security architecture.

The method starts with a security architecture definition aligned with business and compliance requirements. A targeted threat model is developed, followed by an exhaustive risk assessment. The threat landscape is defined and will guide the implementation and prioritization of mitigation controls and their proper monitoring in production.

The appropriate visibility strategy is defined and deployed, enabling and selecting all relevant logs and traces on all product technology layers. This data is forwarded and stored on a central platform where tasks like troubleshooting, monitoring, correlation and alerting take place.

Third-party security entities reinforce and improve security capabilities. AVENIO Connect Software is part of a threat intelligence network where healthcare industry participants and international security entities share information about current attack campaigns, recent vulnerabilities and actors. All this information is carefully analyzed and translated in preventive and remediation actions or new features restarting the lifecycle.

State of the art security tools (such as Tenable, Sonarqube, Mend and Detectify) are used during integration and deployment to ensure immediate detection and effective eradication of software vulnerabilities.

Upon deployment, AVENIO Connect Software will be continuously monitored against threats by third-party services and Roche's own cybersecurity team. Should a cybersecurity threat be detected, Roche's incident response procedures will be followed in order to respond in a manner commensurate to the threat.

Trust AVENIO Connect Software technology for data protection

Healthcare institutions need a trusted and experienced partner to offer solutions that can better support staff while also enabling compliance with privacy and security rules.

Roche, a global healthcare leader since 1896, is committed to the privacy and security of sensitive sample data. Medical institutions need an experienced partner with IT solutions that support staff and innovate while providing features to meet customer data protection needs.

To handle this sensitive data, Roche's global experience and history informed the design of the cloud-based AVENIO Connect platform. Recognizing that each region, country or locality has its own data security and privacy requirements, resilient data protection measures are included in Roche products to enable users to help keep sensitive sample data confidential and secure under various regulatory requirements that may apply to them.

Robust compliance ensures changing security needs are continuously met

CERTIFICATIONS	
ISO 27001	✔
ISO 27017	✔
ISO 27018	✔
ISO 13485	✔

Roche recognizes the importance of incorporating privacy and security principles into our product development process and has designed AVENIO Connect Software with features that enable users to operate under various laws and regulations, such as HIPAA (US) and GDPR (EU), in key jurisdictions where the product is available.

Advancements with AVENIO technology and data

Roche as a globally recognized and trusted healthcare leader continues to expand and grow its capabilities in medical insights and knowledge.

Investments that include building digital healthcare technologies such as the AVENIO portfolio*, acquiring access to companies such as Viewics, Flatiron Health and Foundation Medicine, and allying with industry experts, all build toward Roche's future vision of enabled decision support, personalized healthcare and value-based medicine.

* For research use only. Not for use in diagnostic procedures.

AVENIO Connect Software
Keeping sensitive data safe

For more information, contact your
local Roche Representative at
sequencing.roche.com/en/contactus.html

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