Illumina Data Security and Privacy Statement

Protecting genomic data

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Overview

Innovations in genomic science and related technologies are rapidly changing the world in which we live. Through large-scale analysis of genomic data, scientists can better identify rare and undiagnosed diseases, discover variants associated with cancer, and enable insights for infectious disease research, among other possibilities. These advances are driving a new type of precision medicine, which offers the possibility of saving lives by tailoring health care to an individual. Across the countless ways that genomic data analysis can benefit human health and the healthcare industry, there exists a fundamental requirement to accelerate our understanding of the genome and facilitate discovery—we must aggregate, share, and analyze genomic and health data at scale.

As data are aggregated, shared, and analyzed by more organizations, people, and technologies, Illumina believes that security of data and privacy practices designed to ensure confidentiality and ethical use of data are essential. With practices becoming increasingly global, protection and processing of data being generated must be compliant with evolving data protection laws and regulations.

Our privacy vision

Illumina is committed to handling personal data in accordance with applicable laws and the following guiding principles as they relate to genomic data:

1. **Transparency:** We are committed to clearly communicating our privacy practices and disclosing how we use personal information, including genomic data.

2. **Responsible stewardship:** We will protect the genomic data entrusted to us and keep it confidential and secure through strong data security and privacy practices.

3. **Ethical use:** Maintaining the trust of our stakeholders is essential. We will only collect and use genomic data in a lawful and transparent manner for purposes that further our mission to improve human health by unlocking the power of the genome.

4. **Accountability:** We will remain accountable by complying with relevant legal requirements and promoting internal practices to achieve high standards of data privacy.

Driving strong security and privacy practices

Protecting the privacy of personal information, including genomic data, is fundamental to Illumina global business operations. Our approach to data protection and privacy, as articulated in our Corporate Privacy Policy,* aligns with key standards set by the General Data Protection Regulation (GDPR), California Consumer Privacy Act (CCPA), Health Insurance Portability and Accountability Act (HIPAA), and other localized laws and regulations. We work to meet or exceed the privacy and security standards in each locality where we provide our data solutions.

Illumina is also committed to maintaining strong internal data security and privacy practices. To realize this goal, Illumina has established a cross-functional team of relevant stakeholders to oversee and drive strong institutional security and privacy practices. The team assesses and coordinates privacy initiatives in response to evolving data privacy laws and regulations.

Strong institutional privacy practices rely on a successful information security program. Our ISO 27001–certified information security program is audited annually by independent third parties to certify that Illumina security controls meet the requirements of international standards. Illumina security practices are also reviewed by internal teams to assess alignment with the National Institute of Standards and Technology (NIST) Cybersecurity Framework. Illumina continues to enhance our third-party risk management program to further evaluate information security and privacy risk in relation to our business partners. At a technical level, Illumina provides robust capabilities for access management to realize a "least privilege" and "need to know" access model for personal information, ie, employees are granted the minimum level of access to perform their job function.

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* illumina.com/company/legal/privacy.html

Illumina aims to implement and maintain industrial-level security and privacy practices in its products. Illumina keeps the following key security and privacy features in mind when developing products:

- Full audit trails to ensure accountability for all actions and objects

- High-level data encryption both "in transit" (TLS 1.2) and "at rest" (AES-256) to maintain data confidentiality[†]

- Fully automated data management, retention, and performance of regular data integrity checks to protect against data loss

Embedding privacy and security in product development

Illumina recognizes the increased focus in our community on the privacy of genomic and other health data and we design our products to meet these evolving standards. Addressing risk at the earliest stages of product design is integral to Illumina privacy and information security programs.

The security features of all new product designs are assessed so Illumina and our customers can have confidence in our products' integrity. Enterprise-wide security practices are built into new Illumina instruments and devices to ensure that products are robust and hardened from cybersecurity risks and threats. For example, Illumina instrument operating systems are designed to have reduced attack surfaces and user access levels appropriate for the function of the machine without compromising the security of the data. Other security practices used during product development include secure design and architecture reviews, risk assessments, monitoring for vulnerabilities, and testing of software for security defects. Monitoring and reporting of cybersecurity threats and vulnerabilities are maintained after product development as an ongoing part of our products' life cycles.

Privacy is embedded into the product development process to ensure that customer data can be kept confidential and secure. Illumina uses a Privacy by Design approach that includes conducting assessments early in the development process to presuppose the identification, evaluation, and treatment of privacy risks. The Illumina Privacy by Design approach provides customers with visibility and transparency into our privacy practices to enable personal data to be protected with strong encryption standards, two-factor authentication, and role-based access controls. These activities are all a crucial and ongoing part of the Illumina Secure Development Life Cycle.

Illumina also applies exceptional security and privacy development approaches to our cloud-based products and platforms. Illumina performs security testing of software code for cloud software products and, as part of the standard build process, conducts static analysis for security defects regularly. Internal and external penetration testing experts are also used to validate existing cloud software products. Our cloud software products follow guidelines in accordance with international standards and regional data transfer requirements to ensure personal data are kept within region. For specific cloud software product regulations, refer to specific product details. Data processing addendums (DPAs), or business associate agreements (BAAs), are executed where necessary and in accordance with the applicable data protection laws and regulations to establish the roles and obligations of the parties in relating to personal data processing activities. Whether stored on-premise or in a secure cloud environment, the genomic data created, analyzed, or stored by our customers is kept secure and private.

As new innovations in genomics arise and thoughts on genomic data security and privacy evolves, Illumina continues to conduct internal reviews and practices to assess security and privacy protective product features. Illumina is dedicated to delivering secure, private, and compliant environments for customers' current and future data needs.

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† TLS, transport layer security; AES, advanced encryption standard.

Learn more

Data privacy and security, illumina.com/datasecurity

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