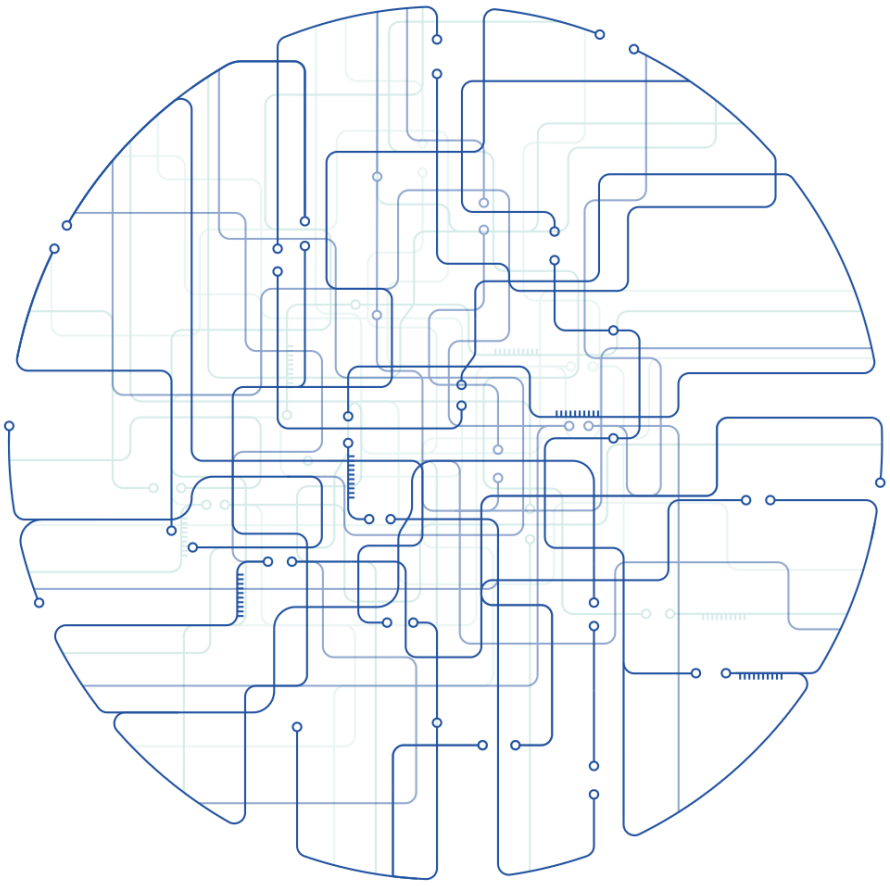


Rationale, Mandate and Structure of the

Office of the Chief Information Officer

2026-2030

Table of Contents

1. The CERN Chief Information Officer 2

1.1. Rationale 2

1.2. Why a CIO – and Why Now? 2

1.3. What is the Mandate? 3

1.4. A Strategic and Collaborative Role 3

1.5. Looking Ahead 4

2. The Office of the CIO Organisational Structure 4

2.1. The Chief Information Officer (CIO) 5

2.2. Digital Strategy (CIO-DS) 5

2.3. ICT Partnership Relations (CIO-PR) 6

2.4. ICT Policy, Governance, Cybersecurity and Compliance (CIO-GRC) 7

2.5. ICT Risk and Vendor Management (CIO-VM) 7

3. CIO Community Governance 8

3.1. Steering Committees 8

3.2. Programme and Technical Committees 8

3.3. The Governance Structure 8

1. The CERN Chief Information Officer

1.1. Rationale

CERN's scientific leadership is built not only on the expertise of its people but also on the strength and coherence of the technologies that support their work. As our digital landscape grows more complex, it is crucial that our ICT systems evolve to remain secure, integrated, efficient and aligned with our mission.

To support this evolution, CERN has established the role of Chief Information Officer (CIO) - a strategic leadership position aimed at strengthening CERN's digital foundations and guiding the Organisation to remain at the forefront of technological innovation.

1.2. Why a CIO – and Why Now?

The need for a CERN-wide strategy and clearer governance in digital matters has been repeatedly highlighted. Beyond responding to those findings, the creation of the CIO position is a proactive step toward reinforcing our ability to use digital technology responsibly, sustainably, and effectively in support of science.

In this role, the CIO guides CERN's digital strategy and drives its evolution in partnership with the CERN community, ensuring that technology advances the Organisation's mission with clarity, integrity, and innovation. The focus is not on directing how departments or experiments operate, but on aligning objectives, fostering collaboration, creating opportunities for external positioning and leadership of the Organization, coordinating special projects and digital innovation initiatives, and harmonising best practices within a principle of "freedom in a framework": empowering teams at CERN working in services or physics experiments to innovate while operating within an enabling governance structure that ensures coherence, efficiency, and shared purpose.

1.3. What is the Mandate?

Reporting directly to the Director-General and working as part of CERN's Senior Leadership Team, the CIO is responsible for:

- Leading the design and implementation of a comprehensive digital strategy aligned with CERN's mission and priorities including AI, Open Science and digital transformation. Overseeing ICT governance and risk management frameworks.
- Developing CERN-wide ICT policies and standards, including data governance, data privacy, and cybersecurity.
- Supporting the responsible and ethical adoption of emerging technologies across the Organization.
- Building strategic partnerships with academic, industrial, and international stakeholders.
- Managing vendor relationships and identifying funding opportunities to drive innovation.

Operational responsibility for ICT service delivery, project implementation, human resources and budgets remains with the departments.

1.4. A Strategic and Collaborative Role

The CIO works across the Organization and chairs or convenes the relevant governance bodies, ensuring that decisions are made efficiently, transparently, and with clear accountability, enabling fast and effective action to:

- Coordinate with the CERN community the definition of a CERN's digital strategy[1], ensuring long-term alignment with scientific goals in the governance and adoption of strategic technologies such as artificial intelligence, high-performance and quantum computing, and large-scale data analytics.
- Strengthen CERN's commitments to Open Science, Open Data, and Open Technology by defining strategies, platforms, infrastructures, and governance frameworks aligned with FAIR principles.
- Foster collaboration across departments and functions on ICT-related matters through active consultation of experts across the different services, improving opportunities for innovation, while balancing benefits and costs of digital transformation initiatives.
- Guide openness, privacy, transparency, security, and reproducibility in how CERN develops, shares, and governs digital tools and data.
- Develop a transparent CERN-wide approach to ICT architecture through standardisation and alignment to reduce duplication, streamline collaboration and lower operational burden.
- Mitigate risks associated with external ICT providers across different departments and prepare appropriate combined controls and action plans with the stakeholders while improving forecasting and exit strategies.

Adopt the management culture principles of the wider organization, including a commitment to collaboration, empowerment of staff, inclusion, gender and national diversity, and transparency.

1.5. Looking Ahead

The establishment of the CIO marks an important step in how CERN leverages digital technologies in the service of science. By working collaboratively across disciplines and departments, we can ensure that our digital capabilities evolve in line with CERN's core values: excellence, openness, collaboration, and innovation.

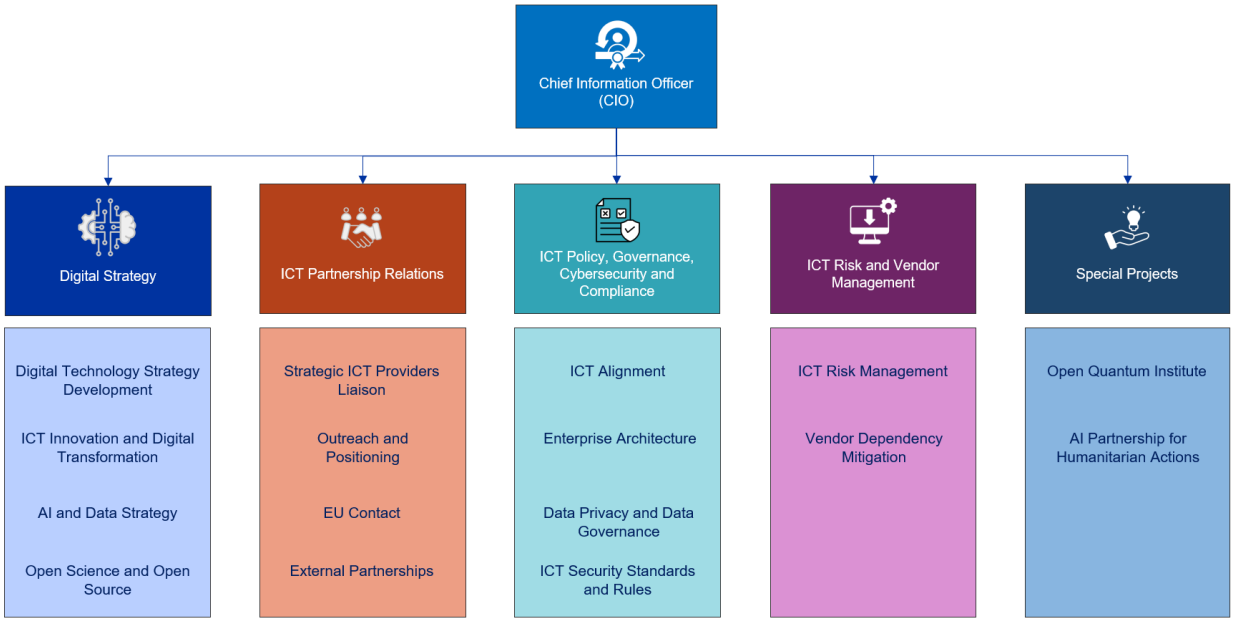
The Office of the CIO, led by the Chief Information Officer, encompasses five areas: Digital Strategy; ICT Partnerships Relations; ICT Policy, Governance, Cybersecurity and Compliance; ICT Risks and Vendor Management; and Special projects, each with dedicated leads. The Office builds on the capacity and expertise already present within departments to deliver on its mandate and to foster active collaboration across the CERN community through a two-tiered engagement model, including Technical Committees and Steering Committees that serve as structured channels for coordination and decision making across the Organization.

More information on the structure and members of the Office of the CIO can be found at https://cio.cern.ch.

[1] The terms Digital and ICT are often used interchangeably. However, they are not the same. Digital strategies explore the opportunities provided by emerging technologies like AI, data analytics, cloud, HPC and Quantum computing to expand the scope, impact and positioning of an organisation's activities. ICT refers more explicitly to the underlying technology infrastructures and their planning, management and optimisation.

2. The Office of the CIO Organisational Structure

The organisational structure of the Office of the Chief Information Officer (OCIO) is set out as below:



Digital Strategy

Develops and supports the implementation of an organisation-wide digital strategy aligned with CERN's long-term goals, covering AI and data strategies, ICT innovation, digital transformation, and coordination of the Open Science strategy.

ICT Partnership Relations

Strengthens CERN's visibility and influence in the international digital ecosystem by creating and maintaining long-term partnerships with strategic technology providers, EU initiatives, and international stakeholders, advancing CERN's strategic priorities in digital technologies

ICT Policy, Governance, Cybersecurity and Compliance

Develops and governs ICT policies and frameworks that align CERN's ICT architecture while ensuring compliance, data governance, ethical integrity, and cybersecurity through coherent standards and rules.

ICT Risk and Vendor Management

Assesses relationships with technology vendors and governs ICT and supplier risk management, ensuring that risks are identified and mitigated to maintain resilience and compliance across CERN's digital environment.

Special Projects

Coordinates CERN-level collaborative projects and initiatives focused on digital technologies with broad industrial, social, and economic impact

2.1. The Chief Information Officer (CIO)

The Chief Information Officer (CIO) is a director-level role within the CERN Senior Leadership team. The CIO reports directly to the Director General and is responsible for overseeing and guiding transversal digital strategies, policies and governance across all operations with decision-making authority. This includes the development of an organisation-wide digital strategy, integrating relevant technologies and methodologies such as AI and Open Science; the establishment and management of high-level partnerships with technology developers and vendors and the identification and positioning of collaboration opportunities; the development of a consistent approach to ICT governance and compliance, including the definition of data governance and privacy policies, and the oversight of cybersecurity; and the definition of risk and mitigations with dependencies from technology providers. The CIO is also responsible for overseeing the execution of special projects and initiatives with a wider impact on science and society (as for example, any flagship or special projects).

The CIO works in matrix mode through a small central coordination office (the CERN Office of the CIO) and links channels across the CERN Sectors that build trust, co-design solutions and facilitate open dialogue across the different communities. This involves stakeholders and users consultations by convening, chairing or participating in steering and engagement committees to drive strategic decision-making; participating in technical committees to work closely with experts to align technology initiatives and projects across the Organization; setting up time-limited taskforces, which spin up ad-hoc teams to integrate cutting-edge technologies and ensure digital evolution is both mission-aligned and user-centred.

The success of the CIO is measured by the alignment of digital and ICT policies and strategies with CERN's scientific objectives; support of the deployment of robust, scalable, secure, resilient, and cost-effective computing infrastructures; implementation of comprehensive data governance frameworks, ensuring that major technology initiatives incorporate privacy by design and vendor risk controls consistent with data privacy guidelines; fast and simple ways of discussing and prototyping new digital services with inclusive governance; and the establishment of key strategic partnerships that enhance organizational capabilities.

The expected impact is that the CIO Office is recognized as a strategic enabler, with ICT initiatives consistently aligned to the Organization's scientific and operational priorities. Key stakeholders across departments will value and adopt ICT policies and governance frameworks, reflecting strong institutional trust and coherence. Through effective participation in cross-functional committees and taskforces, the CIO will shape decisions that advance digital innovation and resilience. Strategic partnerships and vendor relationships will be leveraged to bring in cutting-edge capabilities, while stakeholder feedback will confirm the CIO's influence in guiding the Organization's digital evolution while delivery responsibility remains distributed across CERN departments and units.

2.2. Digital Strategy (CIO-DS)

The Digital Strategy function enables the creation and implementation of an organisation-wide digital strategy, aligned with CERN's long-term goals and priorities. It is responsible for the development of a coherent digital technology strategy, including the coordination of the AI and data strategy definition, the establishment of an organisation-wide ICT innovation and digital transformation roadmap, and the coordination of the Open Science strategy. Further strategic objectives are to strengthen CERN's influence in the broader international digital ecosystem and support the positioning of CERN in international digital technology infrastructures and initiatives. The CERN Digital Strategy is developed in close collaboration with the CERN sectors and the user communities, recognising and supporting their specific needs and in

the respect of their independent scientific mission, while improving flexibility and efficiency in the introduction of new technologies and promoting innovation.

The success factors for the Digital Strategy function include the definition and adoption of a high-level digital strategy with specific focus on AI (both for specialised scientific use and general productivity), high-performance computing and data infrastructures, and the enablement of a coherent Open Science strategy across the Organization and within relevant international initiatives. In this respect, building on the recognition of the leadership, expertise, and stewardship of the research community, CIO-DS keeps maturing the set of principles, policies, and enabling infrastructures that support how research is conducted, shared, and sustained and supports coherence, coordination, and alignment across the Organization, ensuring that CERN continues to lead credibly and effectively in this area.

The expected impact is to provide visibility, influence, and positioning of CERN in the community and international digital ecosystem, while ensuring CERN-wide alignment and coherence of the ICT strategy. A more transparent and shared collection and discussion of common technical requirements across the Organization would also enable and make the decision-making process more dynamic to identify, assess and introduce new technologies and tools avoiding duplication and fragmentation (e.g. coding assistants, project management tools, data and document repository, etc.). The definition and coordination of a review of the CERN digital tools and information management ecosystems leading to a more structured and easily navigable intranet for CERN users is also an expected impact as part of the digital transformation strategy. Key deliverables include the Digital Transformation Strategy, the AI and Data strategy, and the Open Science strategy.

This function includes the Digital Strategy Lead, reporting directly to the CIO, and the roles of Head of Open Science and of the Open-Source Program Office (OSPO) Chair, reporting to the Digital Strategy Lead. It also foresees contributions and participation from sector representatives in programme and technical committees (such as the AI Programme Committee and the OSPO), ensuring that Digital Strategy is consistently implemented and communicated across the Organization.

2.3. ICT Partnership Relations (CIO-PR)

Partnership Relations focuses on Strategic Technology Providers Liaison, EU Contact, External Partnerships, and Outreach and Positioning. Its role is to strengthen CERN's visibility and influence in the digital ecosystem by creating and maintaining long-term partnerships. The strategic objectives are to scale partnerships for digital transformation, to create models and value propositions for long-term partnerships, and to align outreach with CERN & Society, Stakeholder Relations, and Knowledge Transfer and position CERN as a recognised and trusted partner in digital innovation, capable of leveraging partnerships to advance strategic priorities.

The objectives are achieved by designing and negotiating co-development partnerships with industry and academia, building a network of collaboration with public institutions, and supporting clear, constructive relations with the user community and major initiatives, positioning CERN as a trusted partner for advancing science and technology. This function is also tasked with supporting the CERN Stakeholder Relation EU office in maintaining a strong, collaborative relation and positioning CERN in the most favourable way to drive and participate in EC initiatives and programmes.

The key deliverables are scaling up high-impact partnerships, ensuring stronger visibility in Europe and globally, and aligning outreach and positioning messages.

2.4. ICT Policy, Governance, Cybersecurity and Compliance (CIO-GRC)

This function is responsible for IT Alignment, Enterprise Architecture, Data Privacy and Governance, and Security Standards and Rules. It develops a consistent approach for computing policies, governance, cybersecurity and compliance.

The strategic objectives are to align IT architecture across CERN, to strengthen data privacy and governance frameworks, to enforce security standards and compliance rules, provide guidelines of what tools are available to whom, reduce duplication, improve control on the selection, licensing, use and retirement of software tools and services, most notably from external third parties, and facilitate their procurement by reducing the separation of different processes such as DPIA, Computer Security, and technical assessments.

This function would also be responsible for guiding the development security strategy and standards, developing a consistent and affordable suite of cybersecurity rules for CERN computing services and monitoring the roadmaps for implementation to be approved by IT Security Governance Boards chaired by the CIO. The security role in the OCIO is complemented by the team in IT who performs the security operations.

The success factors include clear and transparent IT policies, robust governance, and comprehensive data protection across CERN. The impact is to ensure CERN has consistent, transparent, and secure computing policies, aligned with its scientific mission, while enabling compliance with data protection and governance requirements. Key deliverables include common IT policies, IT architecture guardrails, and data privacy frameworks.

Regarding people and roles, the Unit Leader is the ICT GRC Lead, with participation in Digital, Data and IT Governance Bodies and other governance bodies, ensuring oversight and compliance. The continuous engagement with expert service providers in the development of strategies and governance frameworks is a core principle of the vision.

Within this function, there are roles for a Governance and Compliance lead along with an Enterprise Architecture responsible for alignment and identifying best practice to promote, leading to common and mature toolchains, sharing of experiences, reduced duplication and improving staff mobility.

2.5. ICT Risk and Vendor Management (CIO-VM)

The ICT Risk and Vendor Management function covers technology dependencies and supplier risk assessment, to secure a robust and resilient digital environment for CERN. It ensures CERN has a consolidated view of IT-related risks and vendor dependencies, integrated into CERN's enterprise risk framework, identifying risks and preparing controls and actions with the stakeholders and it provides vendor mitigations. The strategic objectives are to harmonize the risk assessments, improving forecasting and exit strategies, to protect the operations and the continuity and to reduce the risks. The impact is that CERN can rely on transparent risk frameworks, supplier due diligence, and consistent risk mitigation, reducing vulnerability and ensuring continuity. The key deliverables are consolidated IT risk registers, vendor dependency assessments, and mitigation plans. Regarding people and roles, the unit leader is the CIO, working in liaison with the Resilience Team in the Site Operation sector, Procurement and IT operations, to ensure that IT risks and vendor dependencies are managed consistently across the Organisation.

3. CIO Community Governance

The CIO Governance builds upon the two-tiered engagement model already established between the IT Department and CERN sectors for the planning and use of Information and Communication Technology (ICT) services, operating through the combined action of Steering Committees and Technical Committees.

3.1. Steering Committees

Steering Committees are inter-departmental and inter-organisational governance bodies that deal with matters related to strategies and the planning of ICT services across their respective domains. They are responsible for endorsing a five-year multi-annual roadmap, reviewing it annually, monitoring its progress and arbitrating to resolve identified issues.

3.2. Programme and Technical Committees

Programme and Technical Committees are inter-departmental governance bodies that establish and maintain yearly implementation plans of digital and ICT frameworks, services, and projects across their respective domains. They do so through the definition of appropriate technical initiatives and actions, assessing projects, disseminating know-how, leveraging external expertise, and maximising the positive societal impact of CERN's development in digital technologies.

The Chief Information Officer leads digital strategy, governance, policies, partnerships, and risk across CERN, chairing strategic committees to align efforts and ensure compliance. Technical Committees, led by OCIO members or senior CERN representatives, handle coordination and monitoring in their areas. Operational execution and resource management rest with the Departments. This model divides strategic oversight and governance from operational responsibilities, making engagement a shared responsibility. The approach aims for clear, rapid sharing of decisions and tools across CERN.

3.3. The Governance Structure

The full description and operative model of governance bodies are described in the CIO Governance document[2].

[2] https://repository.cern/records/rd6kb-dct47

CERN
CH-1211 Geneva, Switzerland
Office of the Chief Information Officer
https://cio.cern.ch/

