

Long-Term Strategy 2016-2021





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1. Foreword

The ETSI Long-Term Strategy for the five years spanning 2016 to 2021 develops and expands the objectives set out in its preceding Long-Term Strategy, as well as introducing new elements that reflect the evolving need and nature of standards for Information and Communication Technology (ICT), the way they are created and the scope of their application.

It sets the strategic framework for ETSI's work and its leading contribution to the digital transformation of private and public sectors, positioning ETSI technical standards as core to the digital economy.

ETSI produces technical standards and other deliverables intended for global use for digital technologies, products and services. The high quality of its work and its open approach to standardization has seen its reach extend from European roots to the entire world.

ETSI technical standards and other deliverables are produced by representatives of its members, through active participation, cooperation and consensus in an atmosphere of openness and transparency, where all contribute as equals.

ETSI members include Small and Medium Enterprises (SMEs) together with large enterprises, from the manufacturing and service sectors, government ministries, regulatory authorities, universities and societal interest organizations. With a diverse membership of more than 800 organizations worldwide, drawn from 66 countries and five continents, it counts among its members world leading companies and innovative R&D organizations.

ETSI partners include all relevant worldwide Standards Developing Organizations (SDOs), particularly those recognized as International

Standardization Bodies and European Standardization Organizations¹. Partners also include all major societal forces, communities, fora and consortia representing different elements of the society.

ETSI works at the forefront of emerging technologies, having close relationships with research communities and other innovative organizations, addressing the technical issues that will drive the future economy. Its processes ensure inclusiveness of all stakeholders, in particular SMEs and societal interests organizations.

ETSI is a not-for-profit organization created in 1988 and recognized by the European Union as a European Standards Organization (ESO) in 1992.



1. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:316:0012:0033:EN:PDF>

2. Introduction

The Long-Term Strategy originates from and is written so as to address the ETSI membership at large. It provides a high-level description of the major ambitions and aims of ETSI for the period 2016-2021, together with the rationale behind them. The new Long-Term Strategy builds on its preceding Long-Term Strategy from 2011².



The section entitled The Context describes the major factors in the ecosystem of the digital economy that determine or influence the technical standards that ETSI creates and enables. The section provides the socio-economic, political and technology context in which ETSI operates and in which its Long-Term Strategy is set.

The section entitled ETSI's Strategic Position provides ETSI's position in terms of its Vision and Mission taking as starting point the Basic Principles that characterize and underpin the way ETSI operates.

The section entitled ETSI's Strategic Objectives defines the aims and ambitions for the next five years.

These are described in terms of Key Strategic Objectives, each defining a major goal for ETSI. Together, they define ETSI's direction of travel and the developments underpinning the Key Strategic Objectives outline where ETSI is on the journey to reach its goals and the expected major stages of that journey.

The Long-Term Strategy will be supplemented by a plan outlining actions to implement identified strategic objectives and major goals for ETSI. The section entitled Strategy Implementation provides the way forward to realize the strategy laid out in this document.

2. http://www.etsi.org/images/files/Brochures/ETSI_Long_Term_Strategy_Brochure.pdf

3. The Context

Our societies, both at European and global level, are faced with economic and societal challenges such as sustainable development, modernization, ageing of populations and social cohesion.

The introduction of digital technologies in economic and societal processes is key to address these challenges and the world's economies are now undergoing a digital transformation.

This digital transformation of our economies impacts and is influenced by all aspects of life from the way we live, work, care and are cared for, to the way in which we are governed and interact with our governments.

Its influence and impact is expected to penetrate ever wider and deeper, driven by and creating a dynamic and evolving world of digital and cognitive technologies and their applications.

Standardization has enabled European successes in many business areas and will continue to play an important role in the digital transformation. Standardization ensures an interoperable and conducive business environment that enables and stimulates innovation and competitiveness of European businesses globally.

ICT standards are at the core of this transformation by providing widely adopted technology platforms, driving innovation in multiple ways and across multiple industry sectors. The impact of the digital transformation and the evolution of ICT can be seen through socio-economic, policy and technology trends.

Socio-economic Trends

Digital technologies are not only impacting our daily life at large, they influence economic models, open up new opportunities, as well as enable new ways of interaction not possible in the past.

They enhance access to culture and education for all, and revolutionize public services. The interplay between actors has changed, boundaries in industry and in other domains are moving – and change is continuing at an even increased pace.

ICT and its role in society – Digital technologies transform society at large, impacting individuals, households, businesses and governments.

They contribute to a major transformation of the social and economic models that define our modern world, impacting and influencing markets and economies locally, nationally, regionally and globally, and providing new ways for interaction and integration.

Players and their roles – The ecosystem in the digital world makes room and opens up new opportunities for many different players at many different levels, from service providers to manufacturers, from end users to administrations.

Each player may assume different roles depending on specific circumstances, and the nature of roles is changing. For example,

traditional consumers of services may become producers as well; small and medium enterprises increasingly expand their scope by being less locally or regionally constrained when it comes to offering their services; manufacturers and service providers are entering into new relationships with their customers; mass production is moving towards individualization of products.

These developments in the ecosystem of the digital world provide for new and disruptive business opportunities and competition between businesses that formerly operated in different markets or what has been regarded as different market sectors.

Industry sectors and the role of standards – ICT, and in particular digital technology, is a key enabler throughout all industry sectors, to the extent that the very concept of industry sectors is becoming less clear-cut.

The days where each sector, like automotive, industrial automation and healthcare supports its own standardization model, responding to market sector specific requirements, are giving way to inter-sector cooperation.

ICT standards allow for integration and for enriching physical layers with cognitive layers, including standards that are applicable across traditional sector boundaries.

Cognitive technologies enable new interaction models between people and machines, as well as between people.

Policy Trends

Global level – The digital economy is developing rapidly worldwide. It is the single most important driver of innovation, competitiveness and growth in the world.

The digital economy, and the associated need for ICT standards are high on the political and policy agenda in every region of the world. Common concerns, such as environment and sustainability or, the balance between security

For example, healthcare will see new patient-doctor relationships, and will enter into a new era of diagnosis and therapy based in part on availability and analysis of information provided by intelligent machine communications and processing.

Learning, education and skills – Digital technologies are transforming learning and having a major impact on education.

The ways in which people are accessing and retrieving information are changing with the global presence of and demand for digital tools and data repositories, providing almost instant access and contribution to knowledge.

Education will play a key role in developing people's skills to use and make the most out of new ICT technologies, which will be ubiquitous in our everyday life. Increasing digital literacy creates a virtual circle between market uptake and adoption of new technologies and the development of digital skills, where already today "Massive On-line Training" Platforms are becoming the new way of learning.



and personal privacy, are today addressed by policy makers throughout the world. ICT standards are here considered to be important for supporting such policy objectives and to stimulate innovation.

Smart environment, the industrial transformation, cybersecurity and the knowledge-driven society, are all areas where ICT standards will continue to play an

integral role. Connectivity will become the new ‘lifeblood’ of our society, and the impact of new technologies will induce a paradigm shift in existing industries and trigger the emergence of new industries and ecosystems, where the nature of ICT as cross-sectoral and pervasive infrastructure means that policies need to go beyond traditional models.

European level – Digital transformation and its impact on industries, markets and societies are long-standing issues for the European Commission and national governments.

At the European level, this has led to a wide range of comprehensive policy initiatives, aiming at keeping Europe at the forefront of the digital transformation era.

Digital technologies as enablers for competitiveness, entrepreneurship and innovation are highlighted in the Entrepreneurship 2020 Action Plan, encouraging the digital transformation of Europe. Initiatives like European Innovation Partnerships and Public-Private Partnerships are examples of initiatives aiming at addressing not only their targeted areas, but identifying any need for developing European policies going forward.

At the top of the European agenda are industrial policies for the globalization era, where a digital agenda for Europe is a key component building an innovation union:

- ✚ EU 2020 flagship initiatives³
- ✚ Entrepreneurship 2020 Action Plan⁴

Technology Trends

Technology is the driving factor of the digital transformation leading to fundamental changes in societies and economies. ICT standards have been available on a horizontal level and function as enablers for new innovative technology integration toward highly innovative vertical systems. In addition, specific vertical standardization activities contribute to promoting and facilitating

✚ Small Business Act for Europe⁵

Among policies and initiatives specifically framing ETSI activities as a European standardization organization are:

- ✚ Regulation (EU) 1025/2012 on European Standardization⁶ (2012), setting basic principles for the European standardization system including transparency and inclusiveness, and identifying the framework for ICT standardization that to a large extent defines the role of ETSI
- ✚ The Digital Single Market strategy for Europe⁷ (2015), with its 16 specific action programmes, addressing a number of areas of strategic operation interest to ETSI
- ✚ Upgrading the Single Market⁸ (2015), with its ambition amongst other actions to modernize the European Standardization System
- ✚ Cybersecurity Strategy of the European Union⁹ (2013), providing an overall strategic framework for the EU initiatives on cybersecurity, identifying relations to on-going ICT standardization work in order to serve the needs of industry vertical sectors and critical economic sectors
- ✚ The Radio Equipment Directive (RED)¹⁰ (2014), being at the core domain of ETSI activities
- ✚ Network Information Security (NIS) Directive¹¹ (2015), outlining security needs and links to standards

All these are areas to support the enabling of the digital transformation and hence the development of a Digital Single Market.

the adoption of new technologies and their market penetration. Such activities include, for instance, specific process standards, reference architectures and architecture frameworks, standards landscaping and roadmaps, and use cases.

Technology trends arise at an ever increasing pace and those here of strategic importance

3. <http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/flagship-initiatives>

4. <http://ec.europa.eu/growth/smes/promoting-entrepreneurship/action-plan>

5. <http://ec.europa.eu/growth/smes/business-friendly-environment/small-business-act>

6. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R1025&from=HR>

7. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0192&from=EN>

are those with the potential within the next few years to impact significantly the environment in which ETSI operates. New developments, such as 5G, will enable automating the world through real time processing and control capabilities, where connectivity will require guaranteed quality of service in terms of for example latency and reliability for critical sectors' needs.

Digital solutions will have to bring the required trust to safely enable IoT industries for innovative services using security “by-design” principles, enabling virtualization and Cloud innovation. ICT standards based solutions will be essential here to bring economies of scale.



Examples of trends having significant impact to the environment in which ETSI operates are:

Roles of hardware and software – The respective roles of hardware and software in digital and ICT products are evolving. Hardware becomes generic and cost-effective; software is bringing the value added to an increasing range of products and services.

Through the availability of tailored software comes speed of technology and product introduction, innovation and differentiation, resulting in new ways and shorter time of bringing products to market. Standardization will continue to adapt to this new pace and wide range of software developments.

Virtualization and Clouds – This is a new paradigm allowing for optimizing resources and making use of resource intensive computation regardless of locally available resources in computing power.

These technologies are a major enabler for innovation and for providing intelligent technology features to other areas and on all levels. Stable and secure connectivity is critical for a successful deployment of virtualization and cloud technologies and related services. Different forms of these technologies facilitate new applications and new ways of realizing ICT functionality. ICT standards significantly contribute to achieving interoperability as well as portability of data.

Security and Privacy – The need to address the security and privacy aspects of the systems with which people interact, or depend upon, is recognized as extremely important. Multi-user digital systems are especially vulnerable to security breaches if inadequately protected, as are the personal data processed by these systems.

On the other hand, information communicated or stored in digital form can readily be secured using advanced cryptographic and other multiple cybersecurity techniques that provide appropriate levels of security and privacy protection, despite the ever-evolving threat landscape.

There is a growing trend to require this privacy and security “by-design” in digital products, services and systems in order to mitigate the risk, and such techniques must be supported and promoted by the standards community. This effort will become even more important in the pervasive worlds of IoT, 5G, virtualized networks and clouds, where systems should support applicable privacy and security obligations and regulations.

Open Innovation and Collaboration – Open innovation is a major trend in technology development. Working across traditional borders, for example with open source communities and foundations, leads to a high acceleration in the development of new and innovative digital technologies.

Open Platforms are being created for providing an open and reliable basis on top of which competitive differentiation takes place on the level of implementation and service offerings.

8. <http://ec.europa.eu/DocsRoom/documents/14007?locale=en>

9. http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=1667

10. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0053&from=EN>

11. <https://ec.europa.eu/digital-single-market/en/news/network-and-information-security-directive-co-legislators-agree-first-eu-wide-legislation>

4. ETSI's Strategic Position

ETSI is underpinned by a number of basic principles that constitute its core and from which its strategy and activities stem. These principles are:

- ✚ ETSI's fundamental values with regard to the work it undertakes are timeliness, quality and responsiveness to market needs
- ✚ ETSI is inclusive with a global membership representing a wide range of stakeholders, a global network of partnerships and a consensus approach in its working methods
- ✚ ETSI is fully compliant with WTO/TBT provisions and EU Regulation (EU) 1025/2012
- ✚ ETSI works across all sectors of industry and society that make, use or rely on ICT technology
- ✚ ETSI works at the forefront of developing and emerging technologies
- ✚ ETSI produces technical standards aimed at being adopted by the most competitive markets
- ✚ ETSI promotes the adoption of its technical standards worldwide for the benefit of its members' competitiveness
- ✚ ETSI, in its role as an ESO, provides technical standards supporting EU regulatory requirements and policy
- ✚ ETSI produces technical standards that use spectrum effectively, minimize interference and avoid undesirable effects, in accord with appropriate regulatory frameworks



VISION

ETSI is a leading standardization organization for Information and Communication Technology (ICT) standards fulfilling European and global market needs



MISSION

To provide the platforms where interested parties come together and collaborate on the production of standards for Information and Communication Technology (ICT) systems and services that are used globally

5. ETSI's Strategic Objectives

ETSI aims to maintain and strengthen its strategic position through a number of Key Strategic Objectives, each defining a major goal for ETSI. Together, they define ETSI's direction of travel and the developments underpinning these key strategic objectives outline where ETSI is on the journey to reach its goals and the expected major stages of that journey.

Being at the Heart of Digital

ETSI provides a platform through which its membership can be at the vanguard of global standards in ICT.

ETSI is the preferred point of call for ICT related standardization, positioned for international adoption.

ETSI enables a comprehensive end-to-end vision of ICT architectures and technologies.

ETSI in drafting standards has a close cooperation with European spectrum authorities, ITU and global spectrum allocation discussions with the aim of maximizing the efficient use of the finite spectrum resource.

ETSI will continue assessing its ways of working to further explore concepts such as flexible spectrum and dynamic spectrum access to enable standards addressing the ever-increasing demand for use of spectrum.

ETSI leverages on its global membership, partnerships and liaisons, including collaboration with other standards setting organizations, to broaden its portfolio and engage with different market sectors, understanding and sharing their needs, concerns and methods.

ETSI is a preferred ICT standards partner of the European Commission and is recognized by the European Union as an ESO.

ETSI engages and works closely with academia, research and innovation communities to stay at the forefront of technology.

ETSI establishes effective liaisons with open source foundations and communities, and makes efficient use of open source to the benefit of ETSI's members and to further the global adoption of ETSI standards.

Being an Enabler of Standards

ETSI provides support and a range of tools to enable the identification of the needs and requirements for standards and their production and adoption.

ETSI is the place where its members come to debate and exchange ideas about the development and use of technology of central importance to their success. It also facilitates

industry-wide stakeholder workshops and other networking events for the exchange and dissemination of knowledge.

Through its relationship with the European Commission, national governments and other policy makers, and through its relationship with industry leaders and societal stakeholders, ETSI is the enabler of standards in response to regulatory, legislative and market needs.

ETSI develops and maintains processes, policies and tools that enable the acceptance and adoption of the standards it creates on its own or in partnership with others. These enablers include the ETSI intellectual property rights policy, its interoperability tests and

methodologies, and the processes it has developed to create European standards deliverables.

ETSI ensures its processes, tools, policies and information databases can fully meet the needs of its members.

ETSI continues to develop these means and tools, which serve to distinguish it from other standards bodies, to provide end-to-end support for the standards process from the embryonic demand for a standard to its adoption, including implementing processes, policies and tools that are needed to use open source and engage with open source communities.

Being Global



With a membership from across the world and a very wide set of partnerships covering all world regions and relevant sectors for ICT, ETSI creates technical standards intended for global use. ETSI supports the production of global standards through its collaboration with standards setting organizations across the world.

ETSI exploits and nurtures its unique membership mix and its market driven approach to attract new members, partnerships and standardization activities that require a broad consensus among private and public sectors.

ETSI performs the necessary promotion, education and other ways and means to

ensure that its work programme and activities are widely known, in order to make ETSI attractive to new members.

ETSI builds on its ESO status to contribute to the European economy, European Union legislation and policies, inclusiveness and competitiveness of European businesses globally, thereby furthering the goal of “Made in Europe for Global Use”.

ETSI endeavours to remain the first point of call for all telecommunications and telecoms related ICT standardization in Europe for its members and for mandates from the European Commission.





Being Versatile

ETSI is versatile in the methods it uses to create ICT standards.

ETSI innovates in its working methods, creating room for wide participation, innovation, time-to-deployment and global acceptance of ETSI standards.

ETSI produces technical standards and material to support compliance testing.

ETSI promotes and supports the development and implementation of leading-edge standards for the digital transformation of economies and societies.



ETSI adapts to the industry trend to support the creation and maintenance of test suites and reference implementations as a method of defining standards and verifying compliance.

ETSI has a flexible structure of technical bodies that enable the timely creation of standards by whatever technical methods are appropriate to the task at hand. There is participation in the standardization process from organizations that have expertise to bring to the work, including where appropriate organizations that are not ETSI members.

ETSI will, where appropriate, adapt to the industry trend and work in synergy with developer communities to support the creation and maintenance of test suites and tools, additional standards-related software materials, and reference implementations.

This will accelerate standards definition, foster adoption and dissemination, lower implementation costs and help verify compliance.

ETSI will continue to evolve and enhance its governance and flexible ways of working to meet its members' needs, without sacrificing the solidity and stability that help build trust and confidence.

Being Inclusive

ETSI supports an appropriate representation and effective participation of all relevant stakeholders and has a continuous dialogue among the members to ensure that their needs are taken into account and that its processes are open and inclusive.

ETSI is committed to attract, retain and engage all members in its work: large and small companies and research organizations, as well as other business, consumer, societal and environmental stakeholders. It promotes participation of SMEs and start-ups in standards-setting as a way to boost their competitiveness and access to markets.

ETSI produces technical standards to enable the automation of the world around us. To

further develop those, ETSI liaises with and invites actors from other sectors to work together in a coordinated effort to understand and incorporate sectors' needs in ETSI standards.



6. Strategy Implementation

The Long-Term Strategy will be supplemented by a plan outlining actions to implement the identified strategic objectives and major goals for ETSI. The strategic plan shall be subject to regular review and endorsement by the ETSI General Assembly.







World Class Standards

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