

Date: 2022-03-31

Version: #2

Page: 1

# STRATEGIC BUSINESS PLAN CEN/TC 468 Preservation of digital information

# SCOPE CEN/TC 468 Preservation of digital information

Standardization of the functional and technical aspects of the preservation of digital information. In this field, the committee will develop a structured set of standards, specifications and reports, addressing business requirements, including compliance with the European legislation and regulation framework (e.g. GDPR, eIDAS).

On the following issues:

- Maintenance of characteristics (integrity, authenticity, reliability, usability etc.) of digital information during its life cycle;
- > Design, implementation and management of preservation systems processes (availability, confidentiality, etc.):
- Audit and quality control procedures for the preservation of digital information;
- Interoperability and information exchange between systems and services;
- > Procedures and processes supporting legal admissibility.

The committee will not develop any document that overlaps or substitutes published international or European standards, such as those developed by ISO/TC 46, ISO/TC171, ISO/TC20/SC13, and ETSI. It will liaise with these committees to avoid any overlapping in the future.

Products in the scope of CEN/TC 457 "Digital preservation of cinematographic works" are excluded from the scope.

#### **EXECUTIVE SUMMARY**

#### **Business Environment**

Standardization of digital preservation allows organizations to be in control of their information as they determine the modalities of preservation, and the organization can know where the information is kept. It also enables the organizations to identify and protect their confidential and strategic information. Starting from the creation of information, the process of digital preservation and management of digital information allows organizations to use the information however they need throughout its lifecycle, including as evidence. At a time when more trust is needed on the digital market and when information needs to be controlled according to EU values and principles, while also taking into account national requirements digital preservation is crucial.

In this context, digital preservation is part of a larger ecosystem for managing information, in compliance with personal information protection, for ensuring the authenticity and preservation of evidence and their accessibility. It can be part of the eIDAS-ecosystem, relying on a framework for eIDAS-based trust services and for European Digital Identities and preserving evidence.

Date: 2022-03-31

Version: #2

Page: 2

# 49 Benefits

50

51

52

53

54

55

56

57

58

59

60

61 62

63

64

65

66

67 68

69

70

71

72

73

74

75

76

Digital preservation is complementary to solutions such as electronic signature and digital identity, which are already addressed within CEN. It is presumed that all these elements can interact with each other. Dedicated work on digital preservation will:

- ⇒ Ensure a 360° approach of the sector and market of information preservation and risk management
- ⇒ Harmonize a European wide common strategic approach of digital preservation, with a focus on governance, risks and compliance
- ⇒ Ensure a higher level of trust on electronic evidence and information integrity in data spaces in Europe ;
- ⇒ Provide interoperability and portability between existing solutions and services using data exchange protocols, to allow data sharing and distribution. Interoperability also promotes choices for users and healthy competition between providers, including from different countries;
- Provide guidance on important challenges with regards to the compliance with legal and regulatory requirements: the control of data protection and security related risks, as well as ensuring the durability of documentary heritage and facilitating its use.
- ⇒ Answer the eIDAS need to harmonize the set of standards applicable to the whole digital ecosystem, and especially to provide a technical framework complementary to the provisions on the new eIDAS electronic archiving services and wallet services mentioned in the regulation.

#### **Priorities**

- Identify existing activities and standards in use within the European market, whether national or international deliverables.
- ⇒ Identify existing terms and define additional terms for the sector and it multiple concepts, in a common vocabulary
- ⇒ Complete suitable standards and technical specifications by developing European standards in areas including Preservation, Integrity, Digital sustainability<sup>1</sup>, Cloud Storage, Security
- Develop relationships with key stakeholders including the European Commission

<sup>&</sup>lt;sup>1</sup> Digital sustainability is all about reducing the ecological footprint of digital technology

Date: 2022-03-31

Version: #2

Page: 3

#### 1 BUSINESS ENVIRONMENT OF THE CEN/TC

#### 1.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this CEN/TC, and they may significantly influence how the relevant standards development processes are conducted and the information of the resulting standards:

The long-term preservation of digital information is highly relevant to all organizations, regardless of their nature. Digital preservation allows for the identification, authenticity and management of information over time. It also allows organizations to be in control of their information as they determine the appropriate level of confidentiality and the corresponding modalities of preservation (including a specific duration of the data processing), and can know where these information are. It also enables them to identify and protect their confidential and strategic information. Starting from the creation of information, the process of digital preservation and management of digital information allows organizations to use them however they need throughout their life-cycle, including as evidence. At a time when more trust is needed on the digital market and when information needs to be controlled according to EU values and principles while also taking into account national requirements, digital preservation is crucial.

Around preservation of digital information, there is an international market which include information producers, solution providers and organizations, such as archives, with the functions to preserve information for the future. There is an increasing market and several approaches in the countries of the European Union, as shown by the eArchiving project reuse Dashboard: <a href="https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Reuse">https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Reuse</a>

Awareness on data protection issues is strongly growing in Europe, as the EDPB (European Data Protection Board) revealed that in 2019, EEA (European Economic Area) supervisory authorities had logged 144,376 queries and complaints and 89,271 data breaches since the GDPR's enforcement date 1 year earlier.

In this context, digital preservation is part of a larger ecosystem for managing information, in compliance with personal information protection, for ensuring the authenticity of evidence and their accessibility. Indeed, preservation covers all means implemented to store, secure, restore, track, transfer and even destroy archived digital information. Digital preservation thus includes all the actions, tools and methods implemented to collect, identify, select, classify, delete and preserve digital information in a secure manner, with the aim of using it and making it accessible and readable/exploitable over time, whether as evidence or for information purposes.

Preserved information should be reliable and trustworthy, as it shall not be arbitrarily altered. In case of alteration, every alteration should be registered. Its authenticity is therefore its most crucial characteristic. It can be supported by many technologies and processes ensuring authenticity, integrity, reliability, and usability of the information. The maintenance and availability of documentation and metadata is also able to support the authenticity presumption when the original bit stream cannot be preserved for technological obsolescence. The duration of preservation depends on the value of the information and is most often defined on a broad sense.

In addition, the exponential growth in ransomware attacks over the 3 last years, is a factor that we cannot ignore. Digital information is one of the major targets for this kind of cyberattack. In this context, digital preservation needs to define new standards based on permanent security improvement on organization, ransomware protection, optimized architecture including on line, near line and off line copies information.

Date: 2022-03-31

Version: #2

Page: 4

Interoperability is another important and necessary feature of digital preservation. The different solutions must be interoperable, using data exchange protocols to allow data sharing and distribution. Interoperability also promotes choices for users and healthy competition between providers.

Today, this sector is facing important challenges with regards to the compliance with legal and regulatory requirements, the control of data protection and security related risks as well as ensuring the durability of documentary heritage and facilitating its use.

At the European level, the three main current regulations are:

- The Electronic Identification, Authentication and Trust Services (eIDAS, EU 910/2014) is a
  regulation on electronic identification and trust services for electronic transactions in the
  European Single Market, which regulates electronic signatures, electronic transactions, involved
  bodies, and their embedding processes to provide a safe way for users to conduct business
  digitally like electronic funds transfer or transactions with public services
- The General Data Protection Regulation (GDPR, EU 2016/679) on data protection and privacy and free movement of such data. The GDPR aims primarily to give control to individuals over their personal data and to simplify and unify the regulatory environment for businesses. This regulation also addresses the transfer of personal data outside the EU and EEA areas.
- The Regulation (EU) 2018/1807 on a framework for the free flow of non-personal data in the European Union.
- The Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union and its proposal of revision (NIS 2).
- Data Governance Act (DGA) / Digital Services Act (DSA) / Digital Market Act (DMA)

However, these regulations often set clear objectives but give a lot of freedom on the means to be implemented to provide for them, without mentioning any clear requirements. Their application is thus often defined as soft law, which entails uncertainties depending on the country of application. In this context, standardization work within CEN appears essential to meet the requirements of these regulations, both in terms of quality, security, interoperability and to ensure the integrity and preservation of digital information. Moreover, as a consensus-based process, standardization would allow European countries to collectively work on defining a new state of the art.

The TC will not address standardization of technologies but will exclusively focus on processes. These processes will allow to meet requirements and concerns related to any digital assets and will describe how to use these technologies in that respect, both for public and private organizations.

European countries operate in a very specific legal environment as regards of this issue, in particular due to the existence of major EU regulations (GDPR and eIDAS), which justifies launching this work at CEN level. The CEN technical committee will be complementary with the work done both at international (ISO/TC171 and ISO/TC46) and at local level by countries that have already been working for many years on the preservation of digital information, showing a high level of expertise that could be shared and provide harmonized solutions.

The main categories of impacted stakeholders are:

Date: 2022-03-31

Version: #2

Page: 5

- Large enterprises (those employing 250 staff or more): any enterprise, as information producers, in any sector can have need of preserve digital information. Relevant sectors are especially: healthcare, pharmaceutics, energy and aeronautic industries, banking and insurance groups, trusted third parties (law offices, judicial officers, consultancies), electronic invoices companies. Also, enterprises providing solutions and services related with digital information (third party digital archives; technology providers, consultancies; EDI companies, cloud services), as well as information producers, will benefit from a clarified state of the art and a coherent set of standards to answer legal requirements.

- Small and medium sized enterprises (SME), (those employing 250 staff or fewer): any enterprise, as information producers, in any sector can have need of preserve digital information. Relevant sectors are especially: healthcare, pharmaceutics, energy and aeronautic industries, banking and insurance groups, trusted third parties (law offices, judicial officers, consultancies), electronic invoices companies. Also, enterprises providing solutions and services related with digital information (third party digital archives; technology providers, consultancies; EDI companies, cloud services), as well as information producers, will benefit from a clarified state of the art and a coherent set of standards to answer legal requirements.
- Public sector: Public archives, cybersecurity services, Ministries of Economy, Health, Justice, Home affairs, Culture, national and local administrations ... will be able to promote the initiatives and best practices implemented in the past 20 years with regards to this issue (such as the definition of personal qualification for staff handling preservation of digital information. It will also allow the public sector to share concrete experiences coming from the implementation of national regulations in line with European requirements. It will also address the transfer of information for research programme including the field of history.
- Consumers: ANEC, national consumers associations and Labour: trade unions:
   This standardization will be a trust building tool. Indeed, products, like digital strong box, are so complex, that consumers can't assess themselves the service level and quality. Furthermore, interoperability and data transfer from one provider to another is a European requirement.
- Non-governmental organizations (NGO), preservation professional associations and federations such as International Council on Archives (ICA), European archivist group (EAG), Open preservation foundation (OPF), Digital preservation coalition (DPC), Aristote Groupe PIN, International Federation of Library Associations and Institutions (IFLA), UNESCO, Preservation and Archiving Interest Group: again, this standardization will be a tool for trust building in the products and services.
- Academic and research bodies, research laboratories, research projects and programs:
   These stakeholders can be considered both as users and will help them to identify the best solution according to their needs. They can also be considered as contributors, promoting their research results in standardization.
- **Standards application business** (e.g. testing laboratories, certification bodies), certification bodies: They will have standardized common methods.

#### 1.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the CEN /TC:

Date: 2022-03-31

Version: #2

Page: 6

221 222

#### 2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC

223224225

226

227 228

229

230

231

232

233

234

235

236

Several benefits are expected from this new work:

- Improve the long-term preservation of digital preservation, including any kind of information
- Ensure a 360° approach to the sector and market of preservation of digital information
- Harmonize a European wide common strategic approach of long-term preservation of digital information
- Ensure a higher level of trust on electronic evidence and information integrity in data spaces in Europe
- Enable long-term interoperability. Provide interoperability and portability between existing solutions
  and services using data exchange protocols, to allow data sharing and distribution. Interoperability
  also promotes choices for users and healthy competition between providers from different countries
- Provide guidance on important challenges with regards to the compliance with legal and regulatory requirements: the control of data protection and security related risks, as well as ensuring the long-term preservation of cultural heritage and facilitating its use.

237238239

#### **3 PARTICIPATION IN THE CEN/TC**

240241242

243

244

245

246

All the CEN national members are entitled to nominate delegates to CEN Technical Committees and experts to Working Groups, ensuring a balance of all interested parties. Participation as observers of recognized European or international organizations is also possible under certain conditions. To participate in the activities of this CEN/TC, please contact the national standards organization in your country. Technical liaisons can be offered to European or worldwide organizations to represent certain stakeholders

in the discussion.

#### 4 OBJECTIVES OF THE CEN/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

251252253

## 4.1 Defined objectives of the CEN/TC

254 255 256 The TC will develop standardization of the functional and technical aspects of the digital preservation. In this field, the committee will develop a structured set of standards, specifications and reports, addressing business requirements, including compliance with the European legislation and regulation framework (e.g. GDPR, eIDAS).

257258

# On the following issues:

259260

261

> Maintenance of characteristics (integrity, authenticity, reliability, usability etc.) of digital information during its life cycle;

262 263 Design, implementation and management of preservation systems processes (availability, confidentiality, etc.);

264

Audit and quality control procedures for digital preservation;

265

Interoperability and information exchange between systems and services;

266

Procedures and processes supporting legal admissibility.

Date: 2022-03-31

Version: #2

Page: 7

The pursued work will aim at achieving a European harmonization on best digital preservation practices. Indeed, it is demonstrated that harmonization contributes to interoperability, and vice versa, notably in sectors such as healthcare, justice, culture etc. Moreover, the work will aim at harmonizing interoperability, integrity, portability, etc. The development of these standards will follow the principles of Security by Design and Privacy by Design, in order to ensure highest security requirements and privacy protection for European citizens.

At a larger scale, it will therefore benefit citizens who now live in a fully Europeanized environment, and need to access harmonized and interoperable information, no longer with a national approach, but rather with a European one. The main issue here is to place the user, the individual, at the heart of European concerns on the digital preservation topic.

One of the main objectives for the TC will be to coordinate and share national approaches and knowledge, in order to identify similarities and common views that will help to elaborate, through consensus, a European approach to the subject matter. Ex: SEDA / MEDONA / DEPIP standards

This work will be done in the continuity of the existing European regulatory framework: e-IDAS, GDPR, Regulation (EU) 2018/1807 on a framework for the free flow of non-personal data in the European Union, the future DSA and DAM, etc. Each national expertise will also add value to the work, through participations to working groups.

By pooling members' expertise, the TC will be able to develop a common standardization culture of data preservation for the proper application of European legislative framework, and other relevant policy initiatives such as the European Commission's eArchiving Building Block initiative. Indeed, the EU has been invested in several projects about digital information preservation. Their results are the basis of the eArchiving Building Block, offered to different stakeholders when building their own digital information projects. It provides a universal set of core specifications for transmitting, describing, migrating and preserving digital information, together with free software components and a knowledge centre including a Maturity Model and an Architecture Reference Model for Digital Preservation. CEF eArchiving facilitates a universal set of core specifications for transmitting, describing, migrating and preserving digital data, which could be of inspiration for CEN/TC 468. The specifications are financed by the European Commission and maintained by the Digital Information LifeCycle Interoperability Standards Board."

The committee will not develop any document that overlaps or substitutes published international or European standards, such as those developed by ISO/TC 46, ISO/TC171, ISO/TC20/SC13, and ETSI. It will liaise with these committees to avoid any overlapping in the future.

Products in the scope of CEN/TC 457 "Digital preservation of cinematographic works" are excluded from the scope.

# 4.2 Identified strategies to achieve the CEN/TC.s defined objectives.

Each national expertise will be promoted within the group, which will allow to benefit from national specificities and pre-existing work.

- A) Co-operation with other committees will be of high importance, notably through the implementation of liaisons with (list may be expanded depending on needs and TC evolution):
  - ISO/TC 171 Document management applications, which standardizes technologies and processes involving capture, indexing, storage, retrieval, distribution and communication, presentation, migration, exchange, preservation, integrity maintenance and disposal in the field of document management applications.

Date: 2022-03-31

Version: #2

Page: 8

314	- ISO/TC 171/SC 1 Quality, preservation and integrity of information,

- ISO/TC171/SC2 Document file formats, EDMS systems and authenticity of information
- ISO/TC 42/JWG 26 Imaging system capability qualification for archival recording and approval, which has been created to standardize tools and techniques for maintaining consistency when digitizing cultural heritage materials.
- ISO/TC 46/SC 4 Technical interoperability— in particular Data Exchange Protocol for Interoperability and Preservation (DEPIP) which specifies a standardized framework for the various data exchange transactions, including both data and related metadata, between archives and their producers and consumers.
- ISO/TC 46/SC 11 Archives/records management, responsible for developing standards on records/archives management.
- ISO/JTC1/SC23 Digitally Recorded Media for Information Interchange and Storage, which develops and facilitates standards within the field of removable digital storage media for digital information interchange.
- ISO/IEC/JTC1/SC 27/WG 1 Information security management systems,
- ISO/IEC JTC 1/SC 32 Data management and interchange
- ISO/TC 59/SC 13 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)
- ISO/TC 20/SC 13 Space data and information transfer systems
- CEN/TC 224 Personal identification and related personal devices with secure element, systems, operations and privacy in a multi sectorial environment, which develops standards for strengthening the interoperability and security of personal identification and its related personal devices, systems, operations and privacy in a multi sectorial environment, and covers applications and services such as electronic identification, electronic signature, payment and charging, access and border control.
- CEN/CLC/JTC 13 Cybersecurity and Data Protection, which primary objective is to transport relevant international standards (especially from ISO/IEC JTC 1 SC 27) as European Standards (ENs) in the Information Technology (IT) domain, on cybersecurity and data protection challenges.
- **CEN/JTC19 Blockchain and distributed ledger technologies,** covering the following aspects: organizational frameworks and methodologies, including IT management systems; processes and products evaluation schemes; blockchain and distributed ledger guidelines; Smart technology, objects, distributed computing devices, data services.
- CEN/TC 457 Preservation of digital cinema movie, aiming to find a data structure and a set of file formats for long term preservation of digital movies
- CEN/TC 434 Electronic Invoicing
- CEN/TC 440 Electronic Public Procurement
- CEN/TC 442 Building Information Modelling (BIM)
- ETSI/TC ESI Electronic Signatures and Infrastructures, which covers the format of digital signatures, as well as policy, security and technical requirements for trust service providers (TSP) such as certification authorities, time-stamping authorities, TSP providing remote signature creation or validation functions, registered e-delivery providers, and long-term data preservation providers.

Date: 2022-03-31

Version: #2

Page: 9

# B) Work programme

The following projects could be initially included in the programme (provided that they are approved by TC members through NWIP ballot), which will be further extended thanks to members proposals:

- ⇒ Identify and mapping existing initiatives and standards in use within the European market, whether national or international deliverables;
- Define a common vocabulary for the sector and its multiple concepts. This will allow to create a supporting basis for future work and perspectives, and will make future projects more understandable by the sector;
- Develop a first set of European standards, technical specifications and reports including on preservation in the public sector, preservation in the private sector, consumers and citizen's needs, in response to relevant regulations. All of these should lay solid foundations for the development of more technical standards.

#### 4.3 Environmental aspects

With consistent work revolving around standardization and regulation focusing on long-term digital preservation, it is important to keep in mind and reflect on the financial, environmental, and technological costs induced by long term preservation. Indeed, digital preservation implies control of their entire lifecycle (notably for the ability to delete them), in particular with regards to the eIDAS regulation and the GDPR. This creates an opportunity to reflect on ways to control storage costs and technological evolutions related to formats. Not only is there a question of assessing the most optimum financial cost of preserving electronic files, but it poses an environmental challenge for the 21st century, which was not necessarily envisioned at the end of the previous century.

Thinking over the coming years should make it easy for everyone to understand the energy cost of a digital preservation service or system. It seems more interesting to define performance indicators for the future with a focus on the energy/cost ratio of the document kept while preserving the performance indicators that are really useful but by weighting them. Numerous factors must make it possible to establish a digital sustainability<sup>2</sup> scale for digital preservation,

# 5 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC WORK PROGRAMME

The success of CEN/TC468 will depend on the willingness and availability of the various experts in the field. The diversity and legitimacy of experts in the field of digital preservation will be required for the progress of the work. Experts should have strong awareness of business goals, practical experience in digital preservation and standardization. Factors that have the potential to negatively impact the work may be:

- A lack of harmonization and coordination between European practices and expertise
- A lack of national resources (expertise, financial, time...) or implication, which would challenge NPs approval
- A possible prolongation of virtual meetings through 2022, which would pose challenges in terms of experts' involvement, coordination, interactivity and group cohesiveness

<sup>2</sup> Digital sustainability is all about reducing the ecological footprint of digital technology

Date: 2022-03-31

Version: #2

Page: 10

402 403 404

405

406

- Possible redundancies with the work of ISO/TC171, ISO/TC46, and ETSI

- Legal or regulatory issues such as uncertainties in relation to possible EC regulation

- The development of the Gaia X initiative, which aims at creating a European sovereign cloud, with involvement of non-European actors. The Gaia X initiative already includes non-European members whose interest may diverge from European members'. TC468's work should support EU regulations which do not always align with non-European interests.

407 408 409

410

411

412

413

414

415

These can be addressed thanks to:

- CEN collaboration tools and process
- A favourable agenda for European regulation: DSA, DMA, the revision of the eIDAS regulation, etc ...
- The numerous and varied works already carried out at the national or local level, which will provided a substantial base for European work, with various opportunities for European harmonization
- A substantial and vast European expertise on the mentioned subjects
- The establishment of relevant liaisons