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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.

CEN/TC 468 Business Plan

Date: 2022-03-31

Version:

#2

Page: 2

49 Benefits

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

52 Dedicated work on digital preservation will:

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

67 Priorities

- 68 ⇨ Identify existing activities and standards in use within the European market, whether national or
69 international deliverables.
- 70 ⇨ Identify existing terms and define additional terms for the sector and its multiple concepts, in a
71 common vocabulary
- 72 ⇨ Complete suitable standards and technical specifications by developing European standards in ar-
73 eas including Preservation, Integrity, Digital sustainability¹, Cloud Storage, Security
- 74 ⇨ Develop relationships with key stakeholders including the European Commission
- 75
- 76

¹ Digital sustainability is all about reducing the ecological footprint of digital technology

77 **1 BUSINESS ENVIRONMENT OF THE CEN/TC**

78

79 **1.1 Description of the Business Environment**

80

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

85

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

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

101

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

105

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

113

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

121

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

CEN/TC 468 Business Plan

Date: 2022-03-31

Version:

#2

Page: 4

126
127 Interoperability is another important and necessary feature of digital preservation. The different solutions
128 must be interoperable, using data exchange protocols to allow data sharing and distribution. Interoperability
129 also promotes choices for users and healthy competition between providers.
130 Today, this sector is facing important challenges with regards to the compliance with legal and regulatory
131 requirements, the control of data protection and security related risks as well as ensuring the durability of
132 documentary heritage and facilitating its use.

133
134 At the European level, the three main current regulations are:

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

150
151 However, these regulations often set clear objectives but give a lot of freedom on the means to be
152 implemented to provide for them, without mentioning any clear requirements. Their application is thus often
153 defined as soft law, which entails uncertainties depending on the country of application. In this context,
154 standardization work within CEN appears essential to meet the requirements of these regulations, both in
155 terms of quality, security, interoperability and to ensure the integrity and preservation of digital information.
156 Moreover, as a consensus-based process, standardization would allow European countries to collectively
157 work on defining a new state of the art.

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

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

167
168 The main categories of impacted stakeholders are:
169

- 170 - **Large enterprises** (those employing 250 staff or more): any enterprise, as information producers, in
171 any sector can have need of preserve digital information. Relevant sectors are especially:
172 healthcare, pharmaceuticals, energy and aeronautic industries, banking and insurance groups, trusted
173 third parties (law offices, judicial officers, consultancies), electronic invoices companies. Also,
174 enterprises providing solutions and services related with digital information (third party digital
175 archives; technology providers, consultancies; EDI companies, cloud services), as well as
176 information producers, will benefit from a clarified state of the art and a coherent set of standards to
177 answer legal requirements.
178
- 179 - **Small and medium sized enterprises (SME)**, (those employing 250 staff or fewer): any enterprise,
180 as information producers, in any sector can have need of preserve digital information. Relevant
181 sectors are especially: healthcare, pharmaceuticals, energy and aeronautic industries, banking and
182 insurance groups, trusted third parties (law offices, judicial officers, consultancies), electronic
183 invoices companies. Also, enterprises providing solutions and services related with digital
184 information (third party digital archives; technology providers, consultancies; EDI companies, cloud
185 services), as well as information producers, will benefit from a clarified state of the art and a
186 coherent set of standards to answer legal requirements.
187
- 188 - **Public sector**: Public archives, cybersecurity services, Ministries of Economy, Health, Justice,
189 Home affairs, Culture, national and local administrations ... will be able to promote the initiatives and
190 best practices implemented in the past 20 years with regards to this issue (such as the definition of
191 personal qualification for staff handling preservation of digital information. It will also allow the public
192 sector to share concrete experiences coming from the implementation of national regulations in line
193 with European requirements. It will also address the transfer of information for research programme
194 including the field of history.
195
- 196 - **Consumers**: ANEC, national consumers associations and **Labour**: trade unions:
197 This standardization will be a trust building tool. Indeed, products, like digital strong box, are so
198 complex, that consumers can't assess themselves the service level and quality. Furthermore,
199 interoperability and data transfer from one provider to another is a European requirement.
200
- 201 - **Non-governmental organizations (NGO)**, preservation professional associations and federations
202 such as International Council on Archives (ICA), European archivist group (EAG), Open
203 preservation foundation (OPF), Digital preservation coalition (DPC), Aristote Groupe PIN,
204 International Federation of Library Associations and Institutions (IFLA), UNESCO, Preservation and
205 Archiving Interest Group: again, this standardization will be a tool for trust building in the products
206 and services.
207
- 208 - **Academic and research bodies**, research laboratories, research projects and programs:
209 These stakeholders can be considered both as users and will help them to identify the best solution
210 according to their needs. They can also be considered as contributors, promoting their research
211 results in standardization.
212
- 213 - **Standards application business** (e.g. testing laboratories, certification bodies), certification bodies:
214 They will have standardized common methods.
215
216

217 1.2 Quantitative Indicators of the Business Environment

218
219 The following list of quantitative indicators describes the business environment in order to provide
220 adequate information to support actions of the CEN /TC:

CEN/TC 468 Business Plan

Date: 2022-03-31

Version:

#2

Page: 6

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2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC

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.

3 PARTICIPATION IN THE CEN/TC

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

4.1 Defined objectives of the CEN/TC

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).

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 digital preservation;
- Interoperability and information exchange between systems and services;
- Procedures and processes supporting legal admissibility.

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

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

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

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

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

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

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

301

302 **4.2 Identified strategies to achieve the CEN/TC.s defined objectives.**

303

304

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

307

308 **A) Co-operation with other committees will be of high importance, notably through the implementation**
309 **of liaisons with** (*list may be expanded depending on needs and TC evolution*):

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- **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.

CEN/TC 468 Business Plan

Date: 2022-03-31

Version:

#2

Page: 8

- 314 - **ISO/TC 171/SC 1 Quality, preservation and integrity of information,**
- 315 - **ISO/TC171/SC2 Document file formats, EDMS systems and authenticity of information**
- 316 - **ISO/TC 42/JWG 26 Imaging system capability qualification for archival recording and**
- 317 **approval**, which has been created to standardize tools and techniques for maintaining consistency
- 318 when digitizing cultural heritage materials.
- 319 - **ISO/TC 46/SC 4 Technical interoperability**— in particular Data Exchange Protocol for
- 320 Interoperability and Preservation (DEPIP) which specifies a standardized framework for the various
- 321 data exchange transactions, including both data and related metadata, between archives and their
- 322 producers and consumers.
- 323 - **ISO/TC 46/SC 11 Archives/records management**, responsible for developing standards on
- 324 records/archives management.
- 325 - **ISO/JTC1/SC23 Digitally Recorded Media for Information Interchange and Storage**, which
- 326 develops and facilitates standards within the field of removable digital storage media for digital
- 327 information interchange.
- 328 - **ISO/IEC/JTC1/SC 27/WG 1 Information security management systems,**
- 329 - **ISO/IEC JTC 1/SC 32 Data management and interchange**
- 330 - **ISO/TC 59/SC 13 Organization and digitization of information about buildings and civil**
- 331 **engineering works, including building information modelling (BIM)**
- 332 - **ISO/TC 20/SC 13 Space data and information transfer systems**
- 333 - **CEN/TC 224 Personal identification and related personal devices with secure element,**
- 334 **systems, operations and privacy in a multi sectorial environment**, which develops standards for
- 335 strengthening the interoperability and security of personal identification and its related personal
- 336 devices, systems, operations and privacy in a multi sectorial environment, and covers applications
- 337 and services such as electronic identification, electronic signature, payment and charging, access
- 338 and border control.
- 339 - **CEN/CLC/JTC 13 Cybersecurity and Data Protection**, which primary objective is to transport
- 340 relevant international standards (especially from ISO/IEC JTC 1 SC 27) as European Standards
- 341 (ENs) in the Information Technology (IT) domain, on cybersecurity and data protection challenges.
- 342 - **CEN/JTC19 Blockchain and distributed ledger technologies**, covering the following aspects:
- 343 organizational frameworks and methodologies, including IT management systems; processes and
- 344 products evaluation schemes; blockchain and distributed ledger guidelines; Smart technology,
- 345 objects, distributed computing devices, data services.
- 346 - **CEN/TC 457 Preservation of digital cinema movie**, aiming to find a data structure and a set of
- 347 file formats for long term preservation of digital movies
- 348 - **CEN/TC 434 Electronic Invoicing**
- 349 - **CEN/TC 440 Electronic Public Procurement**
- 350 - **CEN/TC 442 Building Information Modelling (BIM)**
- 351 - **ETSI/TC ESI Electronic Signatures and Infrastructures**, which covers the format of digital
- 352 signatures, as well as policy, security and technical requirements for trust service providers (TSP)
- 353 such as certification authorities, time-stamping authorities, TSP providing remote signature creation
- 354 or validation functions, registered e-delivery providers, and long-term data preservation providers.
- 355

356 B) Work programme

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

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

368

369

370 4.3 Environmental aspects

371

372

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

381

382 Thinking over the coming years should make it easy for everyone to understand the energy cost of a digital
383 preservation service or system. It seems more interesting to define performance indicators for the future with
384 a focus on the energy/cost ratio of the document kept while preserving the performance indicators that are
385 really useful but by weighting them. Numerous factors must make it possible to establish a digital
386 sustainability² scale for digital preservation,

387

388

389 5 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC WORK

390 PROGRAMME

391

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

396

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

² Digital sustainability is all about reducing the ecological footprint of digital technology

CEN/TC 468 Business Plan

Date: 2022-03-31

Version:

#2

Page: 10

- 402 - Possible redundancies with the work of ISO/TC171, ISO/TC46, and ETSI
- 403 - Legal or regulatory issues such as uncertainties in relation to possible EC regulation
- 404 - The development of the Gaia X initiative, which aims at creating a European sovereign cloud, with
- 405 involvement of non-European actors. The Gaia X initiative already includes non-European members
- 406 whose interest may diverge from European members'. TC468's work should support EU regulations
- 407 which do not always align with non-European interests.
- 408
- 409

410 These can be addressed thanks to:

- 411 - CEN collaboration tools and process
- 412 - A favourable agenda for European regulation: DSA, DMA, the revision of the eIDAS regulation, etc ...
- 413 - The numerous and varied works already carried out at the national or local level, which will provided
- 414 a substantial base for European work, with various opportunities for European harmonization
- 415 - A substantial and vast European expertise on the mentioned subjects
- 416 - The establishment of relevant liaisons
- 417