

**Trust and Understanding :
the value of metadata
in a digitally joined-up world**

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**Trust and Understanding :
the value of metadata
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Rolande DEPOORTERE, Tom GHELDOLF,
Dorien STYVEN, Johan VAN DER EYCKEN (eds.)

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METADATA AND THE DIGITAL TRANSITION : THE CASE OF THE BELGIAN “DIGITAL ACT”

Sébastien SOYEZ

Introduction: Digital Belgium

*Belgium has been one of the pioneers in the field of electronic identification in Europe by replacing old paper-based ID document with a smartcard containing identification and signature certificates to all its citizen since 2004.*¹ In Belgium, the implementation of the electronic identity card since 2004 marks the launch of a new trust service in the European countries². Ten years later, in order to harmonise these developments, Europe decided to bring a new regulation into force: the EU Regulation e-IDAS on electronic identification and trust services for electronic transactions in the internal market³.



Figure 1: © FPS Chancellery of the Prime Minister – www.belgium.be

In this paper, we will give a short introduction to the Digital Act⁴, which is the translation of the e-IDAS Regulation into Belgian law. Acting again as a pioneer, Belgium decided in 2016 to introduce a new trust service: the *Digital Archiving Trust Service*, including digitisation and digital preservation. Beyond the new legal obligations, we will describe the key metadata that are part of the new legislation. Furthermore, we will present some advice provided by the State Archives of Belgium aimed at ensuring a successful implementation of the new legal framework requirements.

¹ <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/2018/07/23/Belgium+and+Portugal+eID+schemes+pre-notified+under+eIDAS>, consulted on 29/03/2019.

² <https://www.ibz.rn.fgov.be/fr/documents-didentite/eid/documentation>, consulted on 29/03/2019.

³ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R0910>, consulted on 8/04/2019.

⁴ http://www.ejustice.just.fgov.be/cgi/article_body.pl?language=fr&caller=summary&pub_date=2016-09-28&numac=2016009485, consulted on 29/03/2019.

Acting Digital: from Europe to Belgium

Starting point: the e-IDAS Regulation

On 23 July 2014, the Regulation on electronic identification and trust services for electronic transactions in the internal market (in short e-IDAS) was adopted by the European Parliament and the Council of the European Union⁵. The main purpose of this new regulation was to build *...trust in the online environment (...). Lack of trust, in particular because of a perceived lack of legal certainty, makes consumers, businesses and public authorities hesitate to carry out transactions electronically and to adopt new services.* The specific trust services provided by the e-IDAS Regulation are the e-signature, the e-seal, the e-time-stamp, and the e-delivery. Additional identification services are also foreseen, such as e-identification (e-Id) and web-authentication. But there is no trace of Digital Archiving in the list of the European Trust Services. This truly is a *missed opportunity* for creating a global trust environment, if the last piece of the puzzle – namely digital archiving – is still missing within the European Union.



Stepping into the Digital Act

Two years later, on 21 July 2016, Belgium transposed the e-IDAS Regulation into law: the Digital Act was born. The purpose of this legal framework was first of all to implement the e-IDAS Regulation. In addition to that, the Belgian legislator – with the assistance of the Ministry of Economy – decided to add a new trust service, precisely the one which was missing in the e-IDAS Regulation : the Electronic Archiving Trust Service.

Even if Belgium was the first one to promote this legal scope within the framework of the e-IDAS Regulation, it is not the only country in Europe to provide it in a way or another. In France , for instance, a new legal framework on legal substitution by digitising already exists since 2016: the Civil Code gives the general lines, and a specific decree provides the conditions to fulfil the legal obligations. Another example in Luxemburg: a law was published in 2015, and gives a generic and well-defined environment for digitisation and digital preservation services.

The Belgian *Electronic Archiving Trust Service*

The Electronic Archiving Trust Service in Belgium actually consists of two types of sub-services: firstly, the digitisation of paper documents (legal substitution⁶); and

⁵ E-IDAS Regulation (910/2014) –

https://ec.europa.eu/futurium/en/system/files/ged/eidas_regulation.pdf

⁶ Legal substitution of a document = the digital version has the same legal value as the paper version.

secondly, the digital preservation of digitised or digital-born documents. This specific framework applies to public authorities but also to the private sector. Therefore, the supervisory body⁷ that controls the trust services in Belgium is the Ministry of Economy.

Legal principles

As mentioned above, the Electronic Archiving Trust Service in Belgium is divided in two sub-services: digitisation and digital preservation. The legal principles are clearly mentioned in the Digital Act, and can be summarised as follows. In order to be recognised as a trust service, digitisation⁸ must:

- ensure faithful, sustainable & exhaustive reproduction,
- operate targeted & periodic quality-control,
- record and classify the data,
- describe the documents and
- preserve digitisation data.

For the digital preservation⁹, a trust service must:

- ensure data readability during their legal retention period,
- ensure data integrity and authenticity, facing the inevitable technical transformations (storage media & file format)

Beside the legal principles, a specific list of mandatory metadata is mentioned in the law (*Digital Act*¹⁰). It concerns two main categories :

- the file/the document:
 - **Name** (name of the file / the document)
 - **Id /code** (unique identifier)
 - **Author/Creator** (person(s) or body(ies) who created/wrote the document)
 - Description (a short description (of a list) of file(s)/document(s))
 - Date (date of creation = date of digitisation)
 - Retention period (period of retention and starting point)

⁷ The supervisory body function (in the sense of the e-IDAS Regulation) must be seen as the body which is in charge of the qualification and the supervision of service providers in Belgium (<https://economie.fgov.be/fr/themes/line/commerce-electronique/signature-electronique-et>, consulted on 08/04/2019).

⁸ Code de Droit économique / Wetboek Economisch Recht, Book XII, Art. XII N1 Annex 1, point h.

⁹ Code de Droit économique / Wetboek Economisch Recht, Book XII, Annex 1 of Titel II.

¹⁰ Code de Droit économique / Wetboek Economisch Recht, Book XII, Art. XII N1 Annex 1, point h.

- Final destination (can be preservation or destruction)
- Format (file format of the digitised file)
- the digitisation process:
 - Identity of the person in charge and of the operator
 - Type & object of the digitised documents
 - Dating of all pertinent actions (receipt, preparation, digitization, quality-control & archiving of documents)
 - Report of all disturbances
 - Digitising policy (description of all the processes)

As a complement to these mandatory metadata, the State Archives of Belgium gives advice regarding additional metadata in order to gather more descriptive, structural and technical information. It also provides clarification to the ones that are mandatory. For the digitisation process, these metadata can be presented into three categories:

- Descriptive
 - **Unique Id** (unique identifier)
 - Physical descriptions (media, dimension, general state)
 - **Title** (name of the file/the document)
 - **Author/Creator** (person(s) or body(ies) who created/wrote the document)
 - Language
 - Keywords/subjects
- Structure (ensure management & long-term preservation)
 - Title of page
 - Table of contents
 - Chapters
 - Parts
 - Erratum
 - Index
 - Entity-object relationship
- Technical
 - Scanner type & model
 - Resolution
 - Bit depth
 - Colour space
 - File Format
 - Compression
 - Light source
 - Owner
 - Copyright date
 - Restrictions for copy & distribution (*privacy, copyright*)

- Licence information
- Preservation activities (*refresh cycles, migrations/conversions*)¹¹

Metadata for digital preservation

As far as metadata for digital preservation are concerned, the *Digital Act*¹² stipulates that authenticity, integrity and readability must be guaranteed. We can extrapolate the legal framework by presenting a list of metadata that can fulfil these legal obligations¹³.

- Ensuring authenticity:
 - Author/Creator (person(s) or body(ies) who created/wrote the document)
 - Date¹⁴ (date of the final version of document/file)
 - Description / Context (unit, function, task in which a (group of) document(s) is (are) created)
- Ensuring integrity:
 - Technical metadata (a.o. interface, archival storage functions, integrity checks)
 - Ensuring readability:
 - File format identification (file format extension is not sufficient; need to be done with specific tools¹⁵)
 - File format conversion (preservation plan¹⁶)
- Ensuring security:
 - Retention period (i.e. for GDPR compliancy)
 - Measures against alteration or theft (duplication of media, security measures)
 - Disaster recovery plan

Key issues

The way that Belgium has decided to promote an Electronic Archiving Trust Service within the framework of the e-IDAS Regulation can be explained by different factors. First of all, the main purpose was to establish a general regulatory environment for digitisation and digital preservation. As a matter of fact, since the late 1990s, many isolated initiatives in specific sectors (a.o. social security, health,

¹¹ See the metadata foreseen for the “digital preservation”.

¹² Code de Droit économique / Wetboek Economisch Recht, Book XII, Art. XII N1 Annex 1, point h.

¹³ Code de Droit économique / Wetboek Economisch Recht, Book XII, Annex 1 of Titel II.

¹⁴ Using a precise date is ensured by using a trusted timestamping service (and qualified if needed).

¹⁵ Example of a specific tool for file format identification is DROID (developed and maintained by the National Archives UK): <http://www.nationalarchives.gov.uk/information-management/manage-information/preserving-digital-records/droid>, consulted on 08/04/2019.

¹⁶ This preservation plan can be seen as a function in the OAIS-model (ISO 14721).

pension) have been taken with regard to legal substitution of paper documents by their digitised version. This has led somehow to different legal regimes with regard to the validation and the compliance of the requirements, notably about the proper use of metadata.

Subsequently, by introducing the Electronic Archiving Trust Service in Belgium, the use of the qualification procedure was directly inherited from the e-IDAS trust services. This qualification notably gives the opportunity to properly verify the good implementation of the legal and functional requirements determined by the Digital Act. For a user of the Electronic Archiving Trust Service for instance, qualification offers key advantages. In the case of digitisation, the digitised documents will receive the same probative value as the paper version. Digital/digitised documents preserved by a qualified digital preservation service become irrefragable – in other words – indisputable in front of a judge. The user of this qualified trust service will consequently no longer need to prove anything, and the burden of proof will bear on the accuser.

Another essential point in terms of qualified service use is included in the Digital Act. It states that if there is any legal requirement for keeping records (temporarily or definitively¹⁷), there is an obligation to use a qualified digital archiving trust service, although this point of the Digital Act is not yet enforced by the Belgian legislator¹⁸. Still, the users, notably from the public sector, must prepare themselves to comply to this significant change within a two-year time horizon.

Finally, the publication of a Royal Decree was almost required by the stakeholders in order to ensure a better efficiency of the qualification framework. This specific decree will make reference to an indicative list of selected standards¹⁹. By using this non-restrictive list, service providers, users and auditors can now easily implement digitising and/or digital preservation trust services by following these specific guidelines.

Conclusion

The next chapter of the Electronic Archiving Trust Service in Belgium is still to be written. The implementation of this service is currently in a inception phase, but

¹⁷ For the public sector, beside the legal obligations for preserving some specific documents (contracts, invoices, ...), the retention schedules identify perfectly which record needs to be kept and for how long. (for the complete list, see <http://www.arch.be/index.php?l=fr&m=fonctionnaire&r=trier-eliminer-des-documents&sr=tableaux-de-tri>).

¹⁸ Art. XII. 25, § 5 alinéa 3 : ... *lorsqu'une obligation de conservation de données ou de documents est imposée de manière expresse par un texte légal ou réglementaire, il est recouru à un service d'archivage électronique qualifié si l'utilisateur du service opte pour la voie électronique.*

¹⁹ For digitisation : AFNOR NF Z42026:2017 and ISO/TR 13028:2010 ; for digital preservation : ISO 16363:2012, ISO 14641:2018, ISO 16175-2:2011, CoreTrustSeal:2018 and Nestor Seal (based on DIN 31644:2012).

the rules and requirements, including those related to metadata, have already been settled in a law, and, as far as references to standards are concerned, will be specified in a Royal Decree, expected to be published very shortly²⁰.

The next phase should be to raise this issue at European level. The e-IDAS Regulation must be completed by an Electronic Archiving Trust Service, along with the existing European Trust Services. It is a prerequisite for allowing an effective harmonisation in EU countries, by identifying a common interpretation of the legal and functional requirements concerning the digitisation and the digital preservation. The examples of a few European countries show that there is place for a common denominator on this matter.

Our final message from Belgium to Europe: Bring in the last piece “Digital Archiving” to complete the e-IDAS puzzle, together with the existing Trust Services: *Together with Digital Archiving, e-IDAS Regulation will be stronger.*

²⁰ At the time of the redaction of this article, the Royal Decree was already signed by the Minister in charge of the Digital Agenda and will be published in the coming days (April 2019).

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