

Saving the Web

The Promise of a Belgian Web Archive



Welcome

Sara Lammens – KBR

Dr Karel Velle – State Archives Belgium



Keynote

Prof. Dr Niels Brügger – Aarhus University



The PROMISE project and a Belgian strategy

Friedel Geeraert – KBR / State Archives Belgium

Dr Peter Mechant – Ghent University

Alejandra Michel – CRIDS – UNamur

Dr Rolande Depoortere & Sébastien Soyez – State Archives Belgium

Sophie Vandepontseele – KBR



Introduction

Sophie Vandepontseele - KBR



Testimonials

Il est très souhaitable que les informations successives publiées sur des sites officiels publics belges restent accessibles à tous, si possible via un site internet d'archives lui-même officiel. **C'est utile en termes de sécurité juridique, pour les chercheurs et bien sûr pour les archivistes.**

It is highly desirable that the successive information published on Belgian official public websites should remain accessible to all, if possible via an official web archive. This is **useful in terms of local security, for researchers and of course for archivists.**

Didier Coeurnelle
Conseiller stratégique communication
Service Public Fédéral (SPF) Sécurité sociale



Testimonials

For the most part, **historians cannot write histories of the 1990s unless they use web archives**: with them, military historians will have access to the voices of rank-and-file soldiers on discussion boards; political historians, to blogs, the cut and thrust of websites, electoral commentary and beyond; and of course, social and cultural historians, to the **voices of the people on a scale never before possible**.

Ian Milligan, *International Journal of Humanities and Arts Computing* 10.1 (2016): Lost in the infinite archive: the Promise and Pitfalls of Web Archives, p. 79-80.



What happens if we do nothing?

Irremediable loss of information and historical sources

Historians will be unable to write about our history taking into account all sources



Starting late, is that positive ?

Limitation of youth diseases

Benefit from the latest technologies

Take into account the current user needs

Participate in the development of new fields of research



The PROMISE project

Friedel Geeraert – KBR / State Archives Belgium



What is web archiving?

Web archiving is the process of **collecting** portions of the World Wide Web, **preserving** the collections in an archival format, and then serving the archives for **access and use**.

IIPC. (2019). Web archiving. Available online at <http://netpreserve.org/web-archiving/>. Last accessed on 08/08/2019.





The PROMISE project

AIM

To develop a federal strategy for the preservation of the Belgian web

TIMING

July 2017 – December 2019

FUNDING



The PROMISE project goals

Identify best practices in the field of web archiving

Develop a Belgian web archiving strategy

Pilot the archiving of the Belgian web and provide access to the collections

Make recommendations for the implementation of a sustainable web archiving service



The PROMISE project

Identify best practices in the field of web archiving

- Literature review
- Interviews with representatives of web archiving initiatives





Library and Archives Canada
Bibliothèque et Archives Canada

Canada

BAnO



The National Archives

LIBRARY
HSILIRB

KB na
nationaal archief

netarkivet.dk



Bibliothèque nationale de Luxembourg
Nationalbibliothek

BnF
ina



ARQUIVO.PT



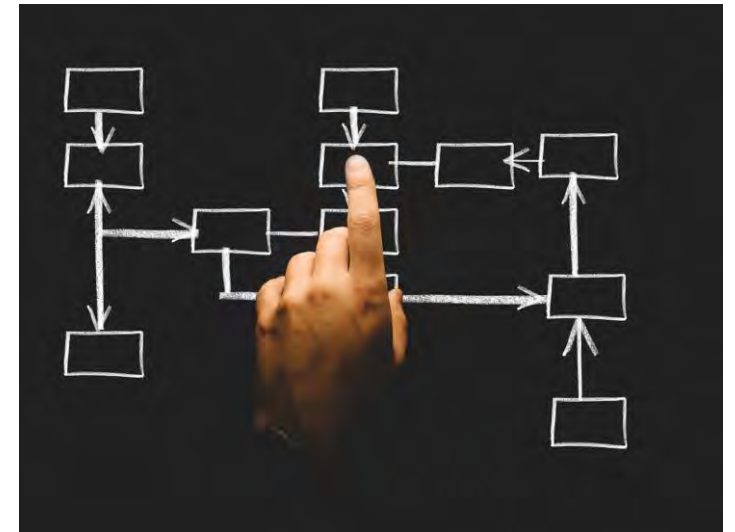
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Eidgenössisches Departement des Innern EDI
Schweizerische Nationalbibliothek NB

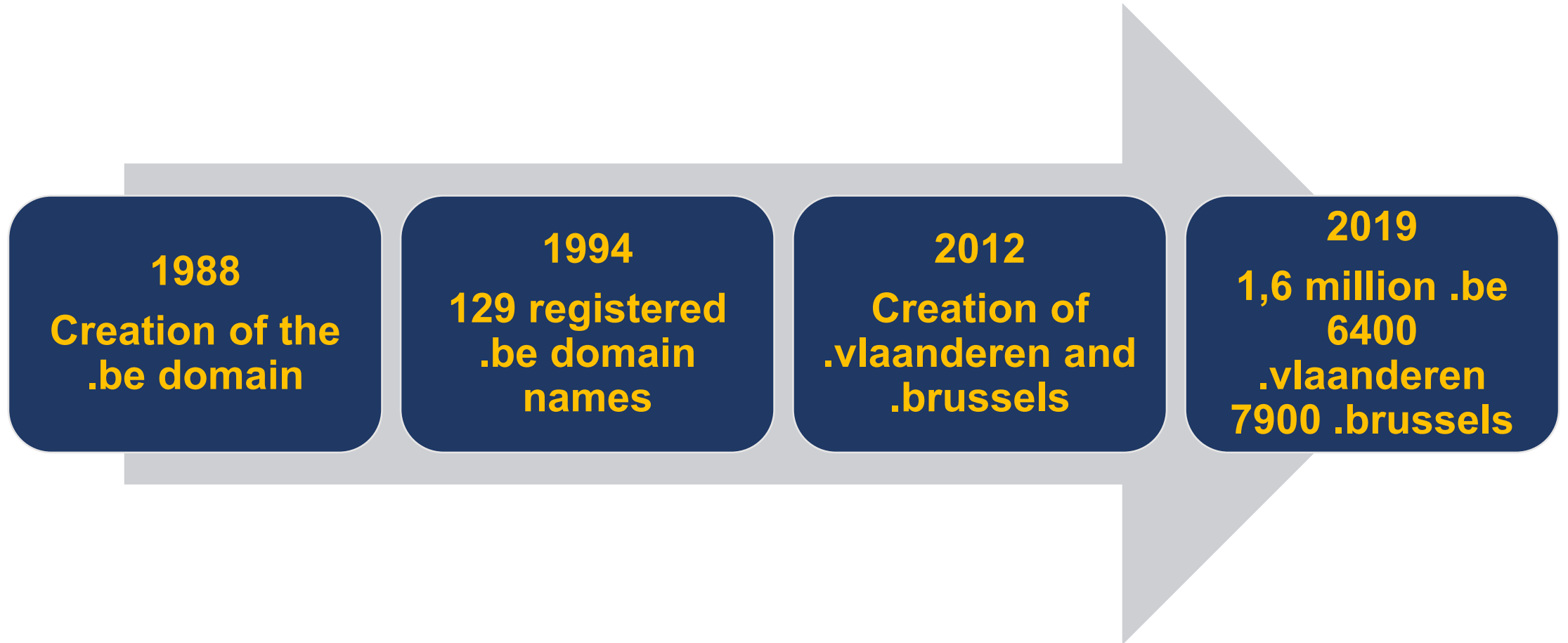
The PROMISE project

Develop a Belgian
Web Archiving
Strategy

- Results 'state of the art'
- Legal analysis
- Survey UGhent on user requirements
- Continuous dialogue State Archives & KBR



The Belgian web: a history



Which extensions do Belgians choose for their domain name?

- Only 54,42% of Belgians choose the .be domain for their website.
- Other popular domain names are .com, .eu, .net etc.
- It is very important to keep the relevant content outside of the .be domain into account when developing selection policies



The PROMISE project

Pilot the archiving of the Belgian web and provide access to the collections

Make recommendations for the implementation of a sustainable web archiving service



Conferences

InterPARES
Trust



WEB
ARCHIVING:
BEST PRACTICES
FOR DIGITAL
CULTURAL HERITAGE
29-30 April 2018
National Library of Israel, Jerusalem, Israel

Dag van de Nieuwste
Geschiedenis
Journée de l'Histoire
Contemporaine

digital
humanities × Benelux
× Amsterdam
× 2018



DLM FORUM

IIPC
netpreserve.org

INTERNATIONAL
INTERNET
PRESERVATION
CONSORTIUM



RESAW

A Research infrastructure for the Study of Archived Web materials



DARIAH-EU
Digital Research Infrastructure
for the Arts and Humanities

VVBAD



KBR

Rijksarchief
Archives de l'État
State Archives
Staatsarchiv
www.arch.be

GHENT
UNIVERSITY

HE2B
HAUTE ÉCOLE
BRUXELLES-BRABANT

UNIVERSITÉ
DE NAMUR
crids

Publications

- Michel, A. (2018). **Web archiving: need for a Belgian federal strategy (about PROMISE project)**. [Poster].
- Chambers, S., Mechant, P. & Geeraert F. (2019). **Towards a National Web in a Federated Country: a Belgian Case Study**. In N. Brügger & D. Laursen (Eds.), *The Historical Web and Digital Humanities: the Case of National Web Domains*, Routledge.
- Vlassenroot, E., Chambers, S., Di Pretoro, E., Geeraert, F., Haesendonck, G., Michel, A., Mechant, P. (2019). **Web archives as a data resource for digital scholars**. *International Journal of Digital Humanities*, 1(1); DOI 10.1007/s42803-019-00007-7; <https://link.springer.com/article/10.1007/s42803-019-00007-7>.
- Mechant, P. (2019). **Web 25 Book review**. *International Journal of Digital Humanities*, 1(1).; <https://link.springer.com/article/10.1007/s42803-019-00010-y>.
- Chambers, S., Geeraert, F., Vlassenroot, E., Mechant, P., Haesendonck, G., Di Pretoro, E. (2019). **Unearthing the Belgian web of the 1990's: a digitised reconstruction**. [abstract].



Publications

- Di Pretoro, E. (2019). **IIPC - Hackathon sur l'automatisation des contrôles qualité**. *Cahiers de la documentation*, 2019/2.
- Geeraert, F. and Willaert, T., (2019). [interview] **Through the black hole of information - Friedel Geeraert on building a Belgian Web Archive**, March 2019, Digital scholarship blog, <https://www.digitalscholarship.be/>.
- Geeraert, F. (2018-2019). **De weg naar een federaal webarchief**. *Science Connection*, 59, p. 32-34.
- Di Pretoro, E., Geeraert, F. and Soyez, S. (2019). **Behind the Scenes of Web Archiving: Metadata of Harvested Websites**. *ABB: Archives et Bibliothèques de Belgique - Archief- en Bibliotheekwezen in België in Trust and Understanding: the value of metadata in a digitally joined-up world*. Eds. R. Depoortere, T. Gheldof, D. Styven and J. Van Der Eycken, 106, pp.63-74.



The state of the art

Dr Peter Mechant – Ghent University







KBR





BROAD CRAWLS (superficial capture)

1. The national domain (top-level domain crawls)
2. Other websites that are considered interesting

SELECTIVE CRAWLS (complete capture)

1. Themes
2. Events
3. Emergencies



Country	Institution	Broad crawls	Selective: thematic	Selective: events	Selective: other
Netherlands	Nat. Library	No	Yes	No	No
France	Nat. Library	Yes (top-layers only)	Yes	Yes	Yes (emergencies)
UK	British Library	Yes (non-print legal deposit web)	Yes (open UK web archive)	Yes (open UK web archive)	Yes (emergencies- open UK web archive)
Luxembourg	Nat. Library	Yes	No	Yes	No
Denmark	Royal Danish Library	Yes	Yes	Yes	Yes (emergencies, research projects, videos)
Portugal	Arquivo.pt	Yes	No	Yes	No
Ireland	Nat. Library	Yes	Yes	Yes	No
Canada	Libr. & Arch. Canada	No (in preparation)	Yes	Yes	Yes (emergencies, risk of disappearing)
Canada	Nat. Libr. & Arch. Quebec	No	Yes	Yes	No
Switzerland	Nat. Libr.	No	Yes	Yes	No

	Facebook	Twitter	Youtube	Instagram	Flickr
France (Nat. Libr.)	Not anymore	Yes	No	No	No
Denmark (Roy. Libr.)	Yes	Yes	Yes	Yes	No
Luxembourg (Nat. Libr.)	Yes	Yes	Yes	Yes	No
UK (British Library)	Yes	Yes	No	No	No
Ireland (Nat. Libr.)	No	Yes	Yes	No	Yes
UK (Nat. Arch.)	No	Yes	Yes	No	No
Library and Archives (Canada)	Yes	Yes	Yes	Yes	No

[sobre.arquivo.pt](#) > [Collaborate](#) > Suggest websites to be preserved

Suggest websites to be preserved

International websites are welcome!

Websites (1 per line)

Description of websites

Your email

Submit

News



Arquivo.pt celebrates the World Digital Preservation Da...



Meet the winners of the Arquivo.pt Award 2019!



Arquivo.pt in Croatia



Sites crawled in 2017 are available through Arquivo.pt



Librarians as web curators in universities

[More news ...](#)

Participate and contribute

Saving websites from being lost is not only a service to the general public but a service to site owners in the first place. If you have a website or create a new one, let us know about it. If you see a website you think should be saved for the future, tell us about it. Suggestions, questions, comments on special collections, topics, data, or any other subject, we are all ears!

Suggest a website

Fields marked with an * are required

PLEASE ADD THIS WEBSITE TO THE LUXEMBOURG WEB ARCHIVE *

YOUR EMAIL ADDRESS *

FIELD OF INTEREST

I AM THE OWNER OF THIS WEBSITE

COMMENT OR DESCRIBE YOUR SUGGESTION



Country	Institution	Access method		Who has access?
		Open & freely accessible online	Physical access on location	
The Netherlands	National Library	No	Yes	Everyone with a paid library card. Big data researchers can gain access after a meeting and having signed a contract.
The Netherlands	National Archive	Yes (for websites with an 'open' status)	Yes (for websites with a 'restricted' or 'offline' status)	'Open' & 'offline' status websites: everybody. Some items are 'restricted', which means you need a special permission (a research proposal is required to obtain this permission or proof that the subject of the archived content is dead). Together with the special permission a signed form is needed stating you understand your own responsibilities under the privacy-law.
France	National Library	No	Yes (but also from within the 26 partner libraries)	Authorized users of the BnF (18 years or older and for university studies, professional or personal research. For the latter two categories, interviews are conducted before accreditation is given.)
Luxembourg	National Library	No	Yes	only possible from within the National library of Luxembourg (terminals in the reading rooms or via BnL Wifi)
UK	British Library	Yes (for the UK web archive)	Yes (for the legal deposit UK web archive and JISC domain dataset)	Everyone with a reader's pass.
UK	National Archives	Yes	No	Everyone
Denmark	Royal Danish Library	Yes (only for researchers conducting research on a Ph.D-level or above)	Yes (only for researchers)	Only for research purposes after filling an application form that needs to be evaluated.
Portugal	Foundation for Science & Technology	Yes	No	Everyone
Ireland	National Library	Yes	No	Everyone

“A common feature of most web archiving backed by legal deposit legislation is some sort of restrictions on the access afforded to the end user of the archive” (Webster, 2017: p. 180).

Types of access:

- ✓ Open and freely accessible online + physical access on location:
 - For everyone
 - For certain profiles and/or for certain content only
- ✓ Only physical access on location
- ✓ No access



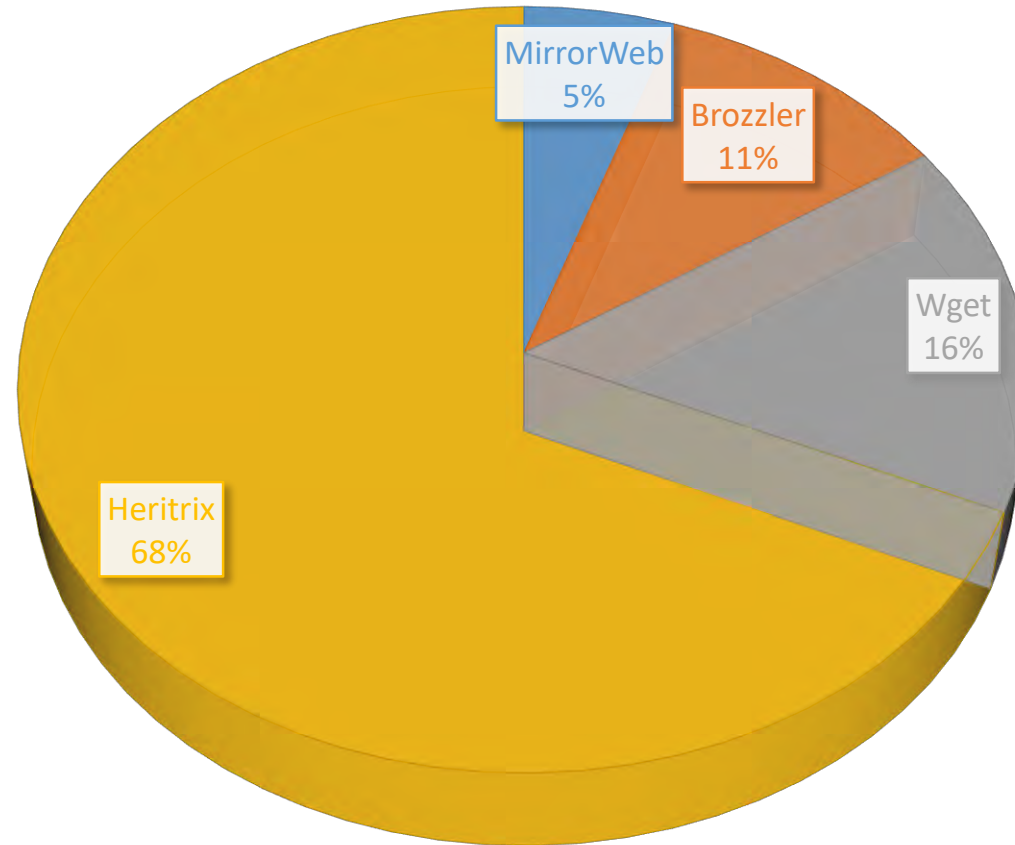
Country	Institution	Search options			
		URL	Full-text	Topical browsing	Alphabetic browsing
The Netherlands	National Library	Yes	No	No	No
The Netherlands	National Archive	No	No	No	No
France	National Library	Yes	Yes	Yes	No
Luxembourg	National Library	Not open for the public yet.	Not open for the public yet.	Not open for the public yet.	Not open for the public yet.
UK	British Library	Yes	Yes	Yes	No
UK	National Archives	Yes	Yes	No	Yes
Denmark	Royal Danish Library	Yes	Yes	No	No
Portugal	Foundation for Science and Technology	Yes	Yes	No	No
Ireland	National Library	Yes	Yes	No	Yes



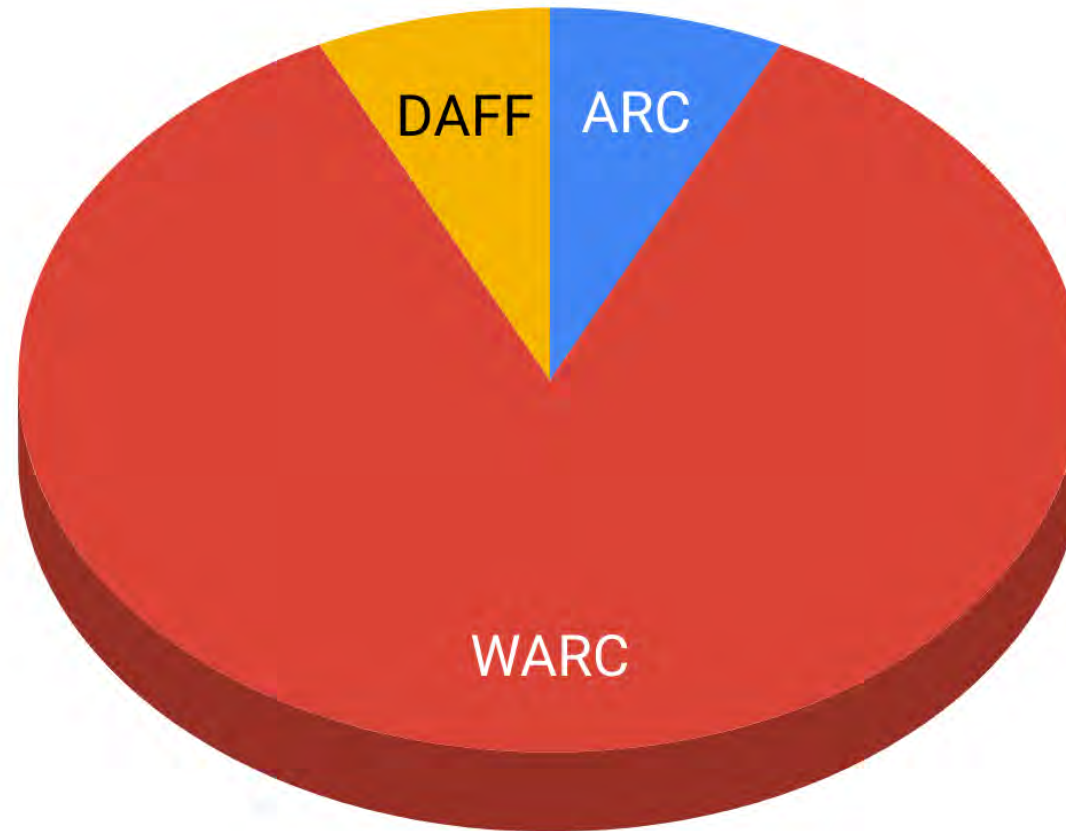
KBR



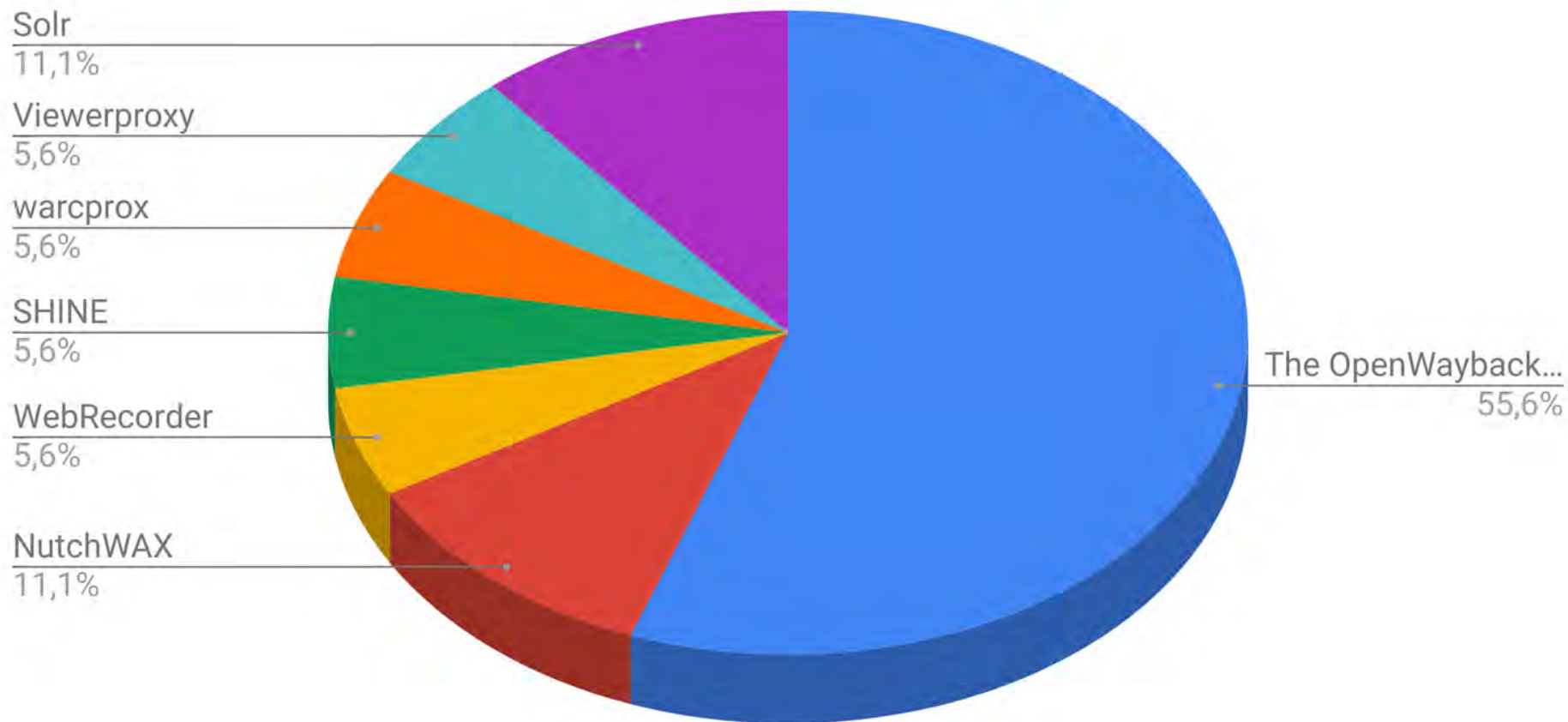
Webarchive Crawl technology



Webarchive file formats



Webarchive playback technology



Vlassenroot, E., Chambers, S., Di Pretoro, E., Geeraert, F., Haesendonck, G., Michel, A., Mechant, P. (2019). Web Archives As a Data Resource for Digital Scholars. *International Journal of Digital Humanities*, 1(1).



[International Journal of Digital Humanities](#)
April 2019, Volume 1, Issue 1, pp 85-111 | [Cite as](#)

Web archives as a data resource for digital scholars

Authors: [Eveline Vlassenroot](#), [Sally Chambers](#), [Emmanuel Di Pretoro](#), [Friedel Geeraert](#), [Gerald Haesendonck](#), [Alejandra Michel](#), [Peter Mechant](#)

Research Article
First Online: 08 March 2019

Part of the following topical collections:
• [Special Issue on Born-Digital Archives](#)

Abstract

The aim of this article is to provide an exploratory analysis of the landscape of web archiving activities in Europe. Our contribution, based on desk research, and complemented with data from interviews with representatives of European heritage institutions, provides a descriptive overview of the state-of-the-art of national web archiving in Europe. It is written for a broad interdisciplinary audience, including cultural heritage professionals, IT specialists and managers, and humanities and social science researchers. The legal, technical and operational aspects of web archiving and the value of web archives as born-digital primary research resources are both explored. In addition to investigating the organisations involved and the scope of their web archiving programmes, the curatorial aspects of the web archiving process, such as selection of web content, the tools used and the provision of access and discovery services are also considered. Furthermore, general policies related to web archiving programmes are analysed. The article concludes by offering four important issues that digital scholars should consider when using web archives as a historical data source. Whilst

Research Article
First Online: 08 March 2019

48	81k	2
Shares	Downloads	Citations

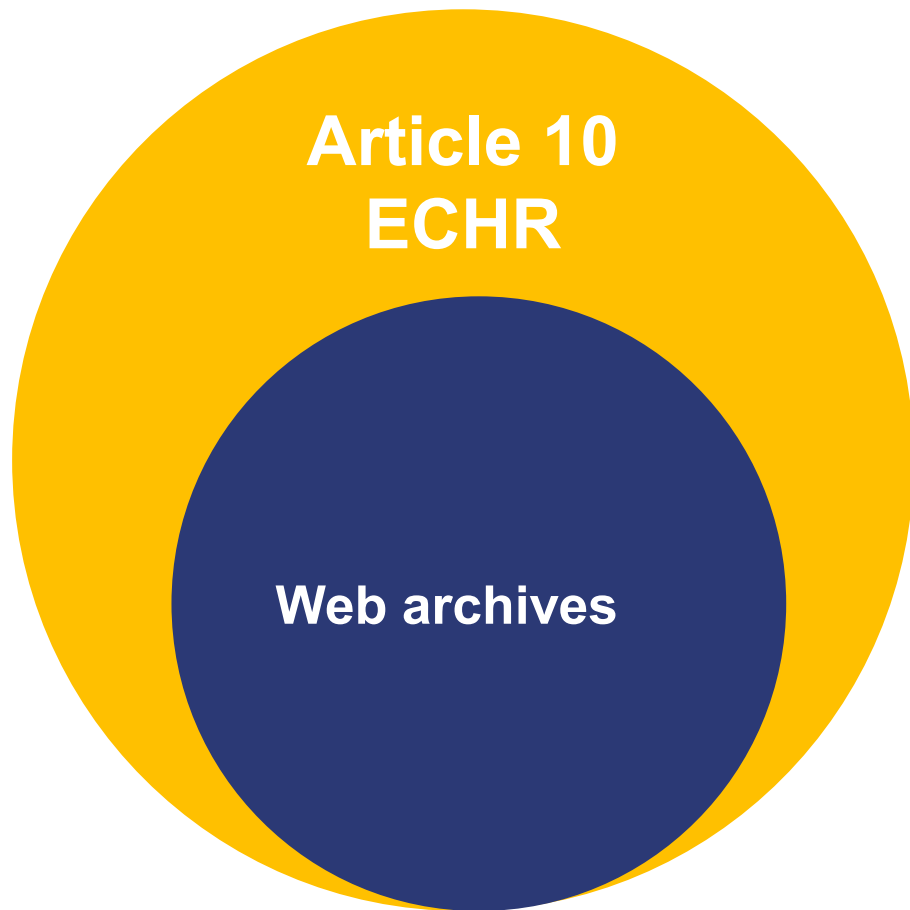


Legal analysis

Alejandra Michel – CRIDS – UNamur



Legal context of web archiving



Legal context of web archiving

“The maintenance of **Internet archives** is a critical aspect [for enhancing public’s access to news and facilitating the dissemination of information] and the Court considers that such archives **fall within the ambit of the protection afforded by Article 10**”

ECHR (4th section), case *Times Newspaper LTD v. the United Kingdom (Nos 1 and 2)*, 10 March 2009, §27.



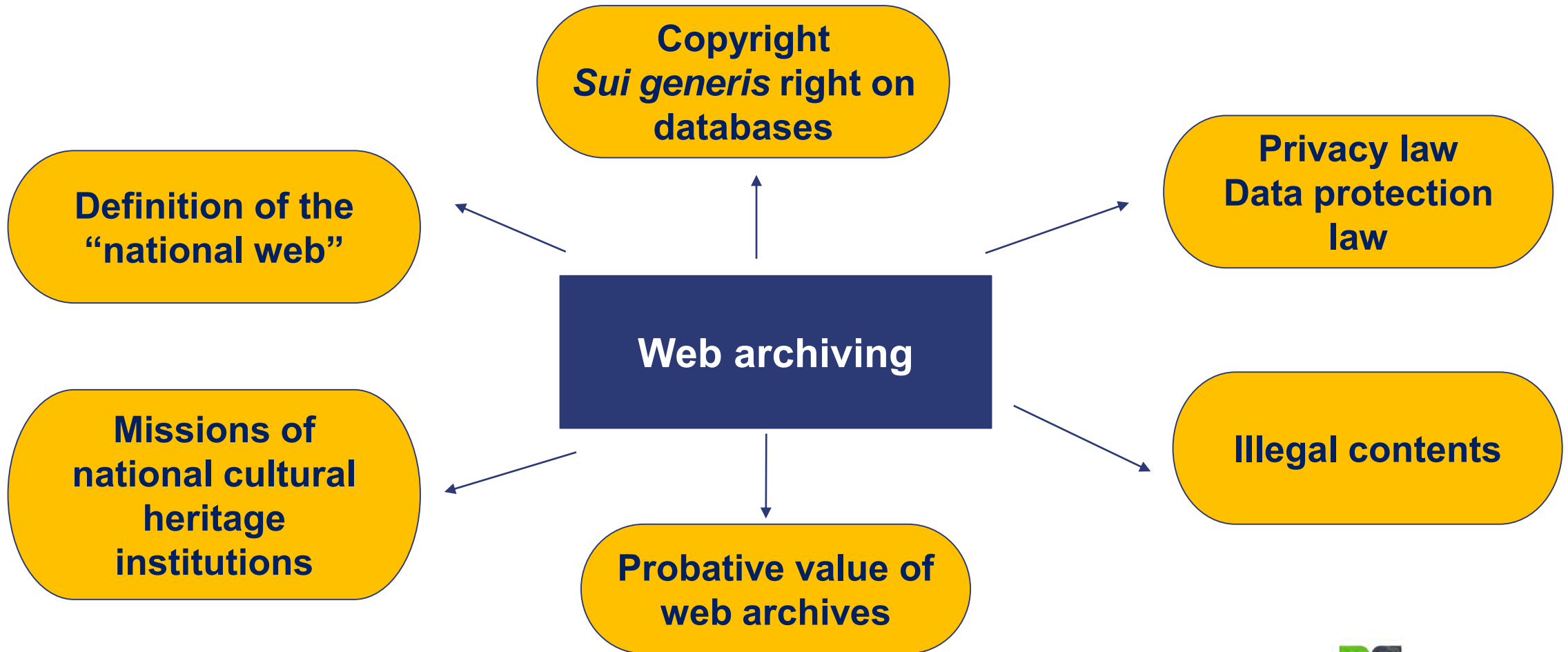
Legal aspects of web archiving

However, **even if** web archives are protected by Article 10 ECHR, **they raise** many legal issues **at different stages**:

- Selection
- Collecting
- Archiving
- Long-term preservation
- Access



Legal aspects of web archiving



Any questions?

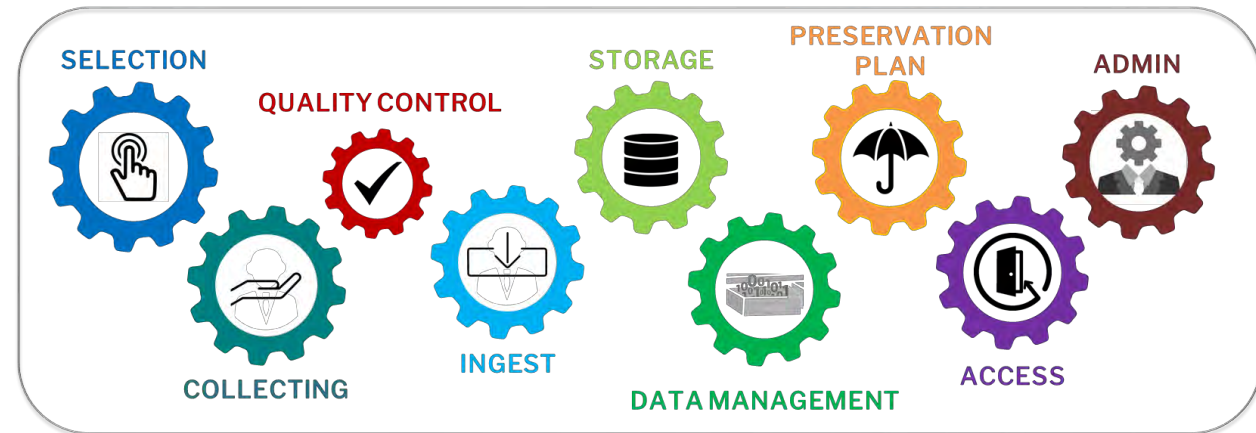
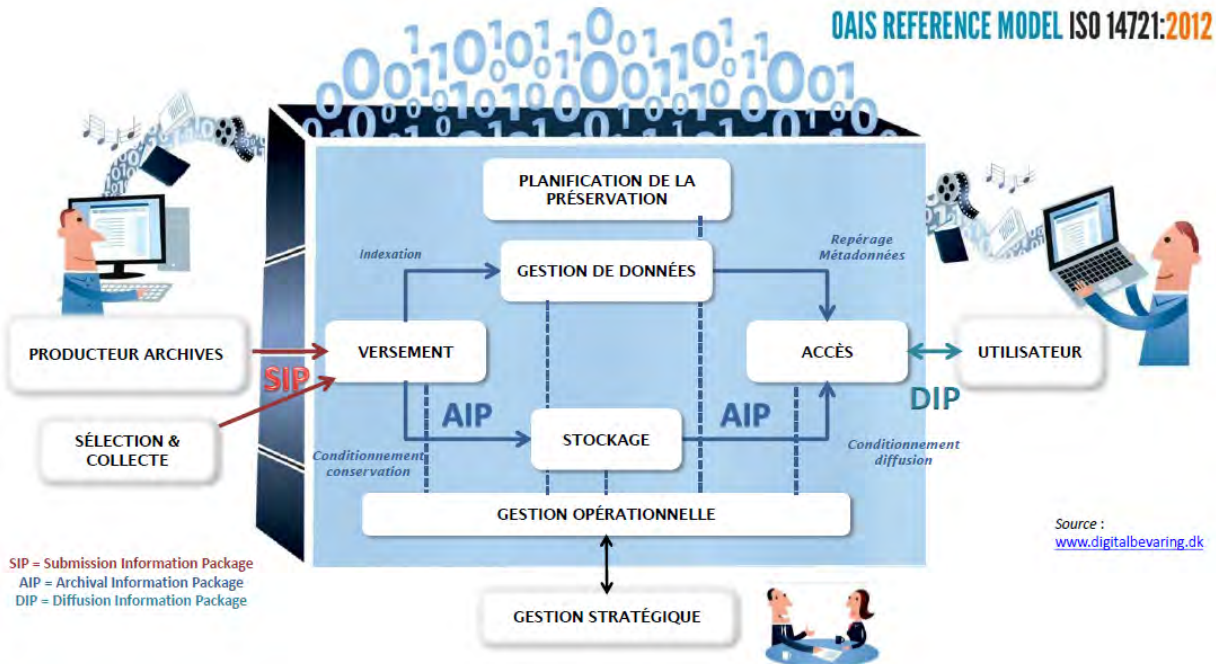


Strategy & Options

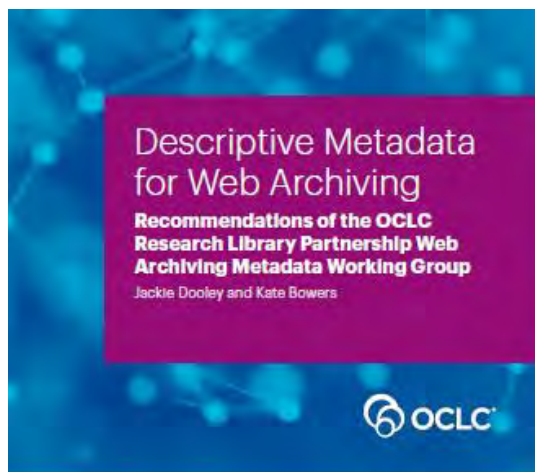
Sébastien Soyez – State Archives Belgium



Strategy based on OAIS-model



Metadata schema : OCLC choice (14)

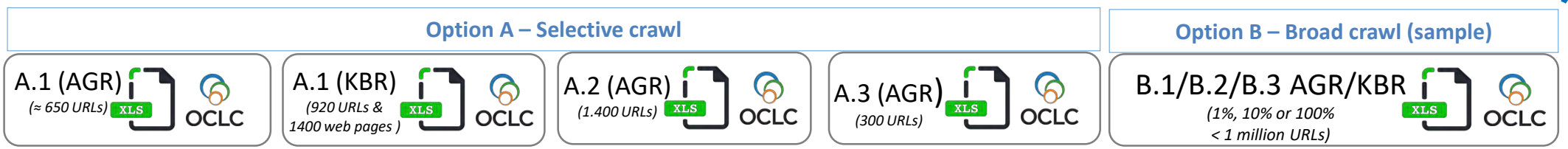


URL	Collector	Description
Title	Genre/Form	Extent
Creator	Relation	Rights
Contributor	Subject	Date
Language	Source of description	

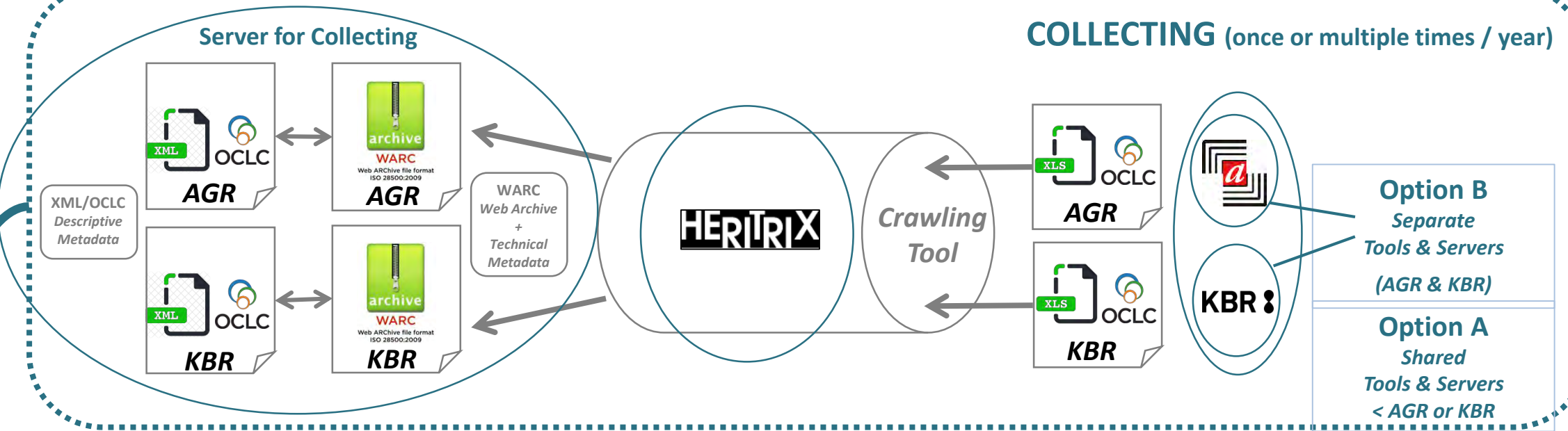
Available online at: <https://www.oclc.org/research/publications/2018/oclcresearch-descriptive-metadata.html>

URL	TITLE	CREATOR	CONTRIBUTOR	LANGUAGE	COLLECTOR	GENRE/Form	RELATION	SUBJECT
http://www.fmre-gske.be	Fondation Médicale Reine Elisabeth	Fondation Médicale Reine Elisabeth	Geneeskundige Stichting Koningin	fre # dut # g	Archives de l'Etat en Belgi	Site web organisationn	Archive web services	E1 # Maison royale # Koninklijk Huis # Königl
http://www.sfp laurent.be	Fondation Prince Laurent # Stichting	Fondation Prince Laurent # Stichting	Prins Laurent	fre # dut	Archives de l'Etat en Belgi	Site web organisationn	Archive web services	E1 # Maison royale # Koninklijk Huis # Königl
http://www.sk-fr-paola.be	Fondation Reine Fabiola # Stichting	Fondation Reine Fabiola # Stichting	Koningin Paola # Königin Paola-Stiftu	fre # dut # g	Archives de l'Etat en Belgi	Site web organisationn	Archive web services	E1 # Maison royale # Koninklijk Huis # Königl
https://www.kbs-frb.be	Fondation Roi Baudouin # Koning Bo	Fondation Roi Baudouin # Koning	Boudewijnstichting # König-Baudouin-	fre # dut # g	Archives de l'Etat en Belgi	Site web organisationn	Archive web services	E1 # Maison royale # Koninklijk Huis # Königl
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http://www.dekamer.be	De kamer.be # La chambre.be	Kamer van volksvertegenwoordigers #	Chambre des Représentants	fre # dut	Archives de l'Etat en Belgi	Site web gouvernemen	Archive web services	E2 # National/Fédéral Parlement - Chambre
http://www.lachambre.be	La chambre.be # De kamer.be	Chambre des Représentants # Kamer	van volksvertegenwoordigers	fre # dut	Archives de l'Etat en Belgi	Site web gouvernemen	Archive web services	E2 # National/Fédéral Parlement - Chambre
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https://www.tribunaux-rechtbanken.be	Cours et tribunaux en Belgique # Ho	Collège des cours et tribunaux #	College van de hoven en rechtbanken	fre # dut # g	Archives de l'Etat en Belgi	Site web gouvernemen	Archive web services	F # Cours et tribunaux depuis 1795 # Hoven
http://www.const-court.be	Cour constitutionnelle de Belgique #	Cour constitutionnelle de Belgique #	Grondwettelijk Hof van België # Ve	fre # dut # g	Archives de l'Etat en Belgi	Site web gouvernemen	Archive web services	F0 # Cour constitutionnelle (anciennement
https://www.om-mp.be	Ministère public # Openbaar ministe	Ministère public # Openbaar ministerie		fre # dut	Archives de l'Etat en Belgi	Site web gouvernemen	Archive web services	F22 # Parquets généraux # Parketten-Gener
http://www.raadvst-consetat.be	Conseil d'Etat # Raad van State # Sta	Conseil d'Etat # Raad van State #	Staatsrat # Council of State		Archives de l'Etat en Belgi	Site web gouvernemen	Archive web services	H4 # Conseil d'Etat # Raad van State # Staat

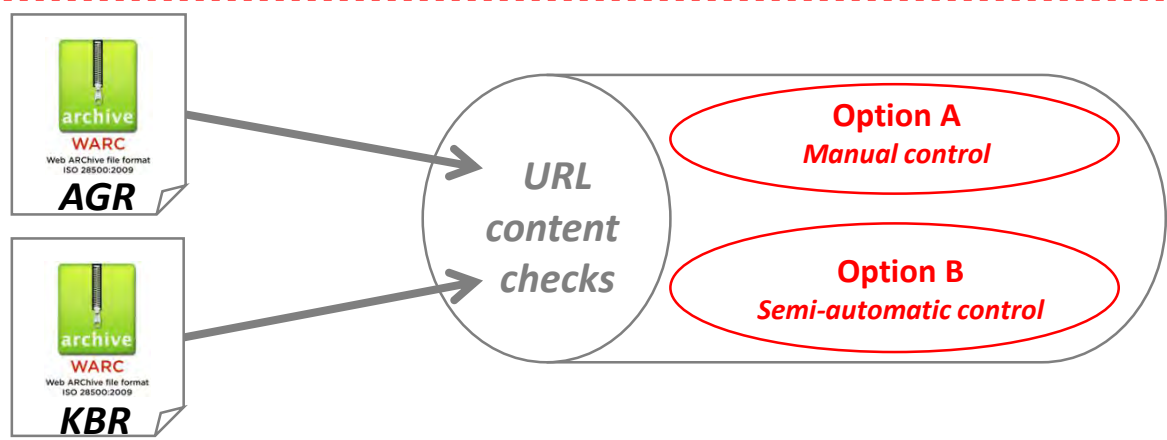
SELECTION



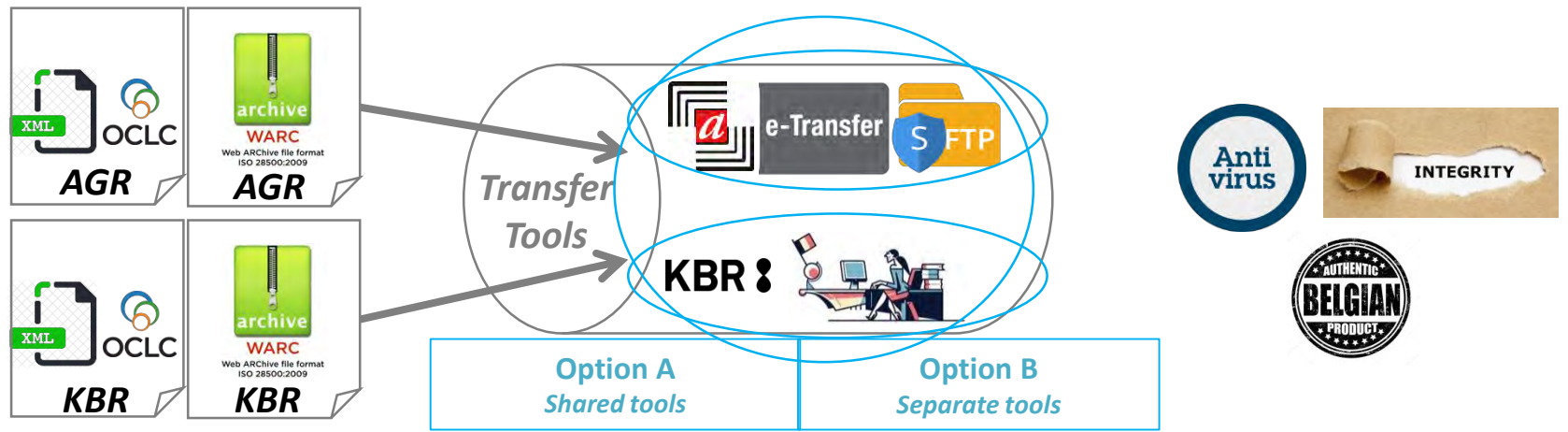
COLLECTING (once or multiple times / year)



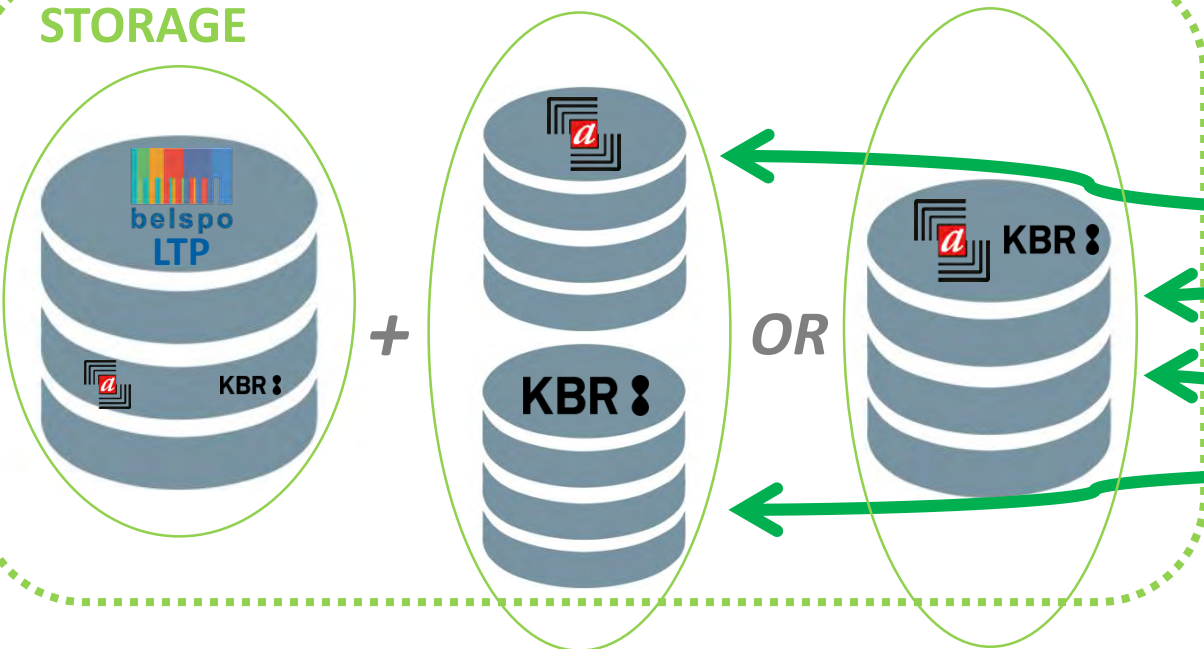
QUALITY CONTROL



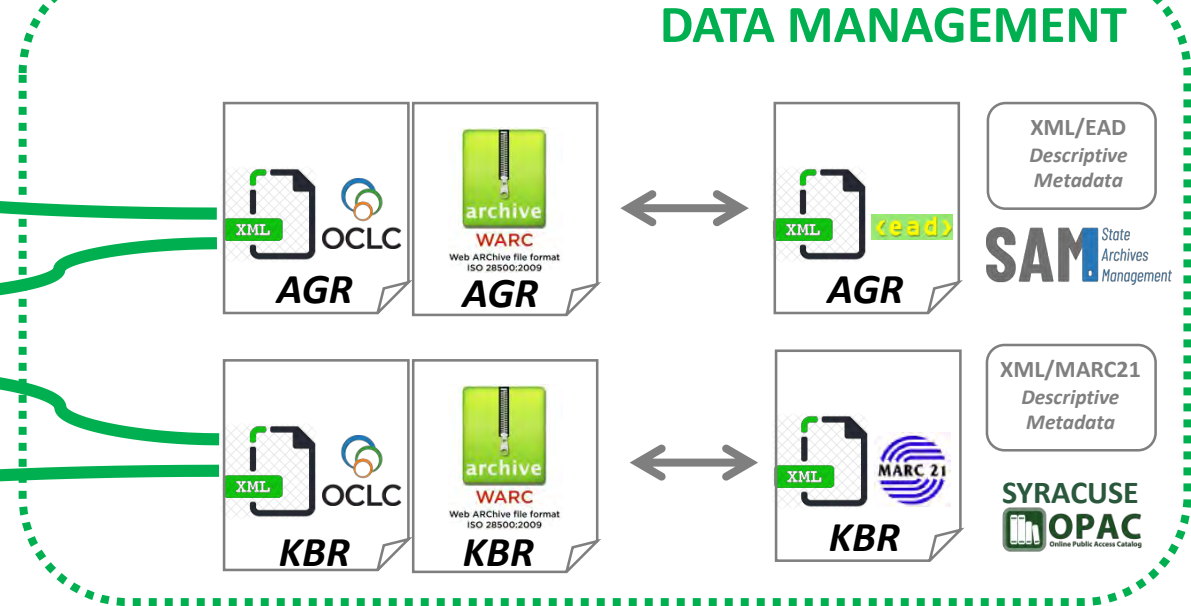
INGEST



STORAGE



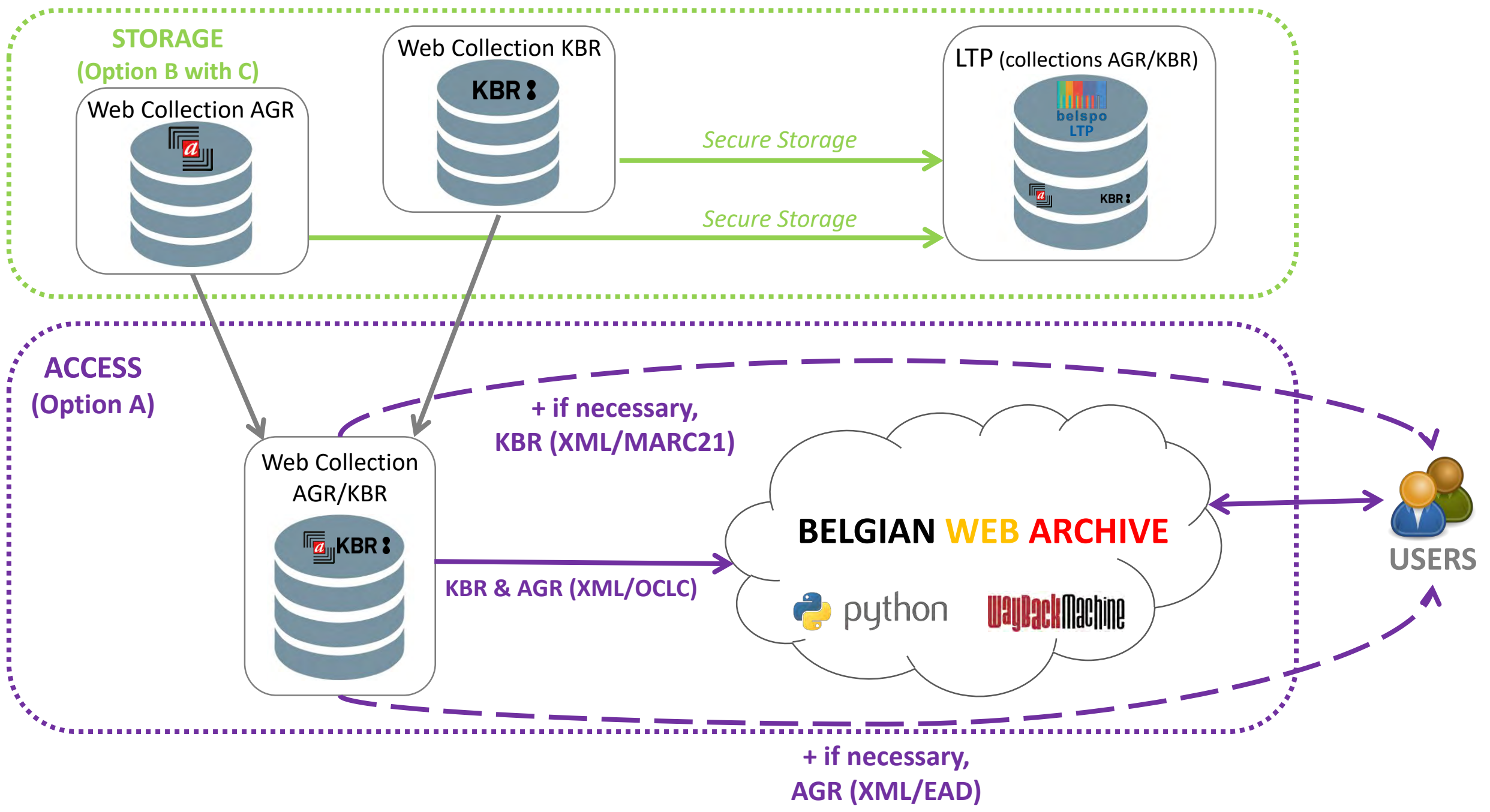
DATA MANAGEMENT

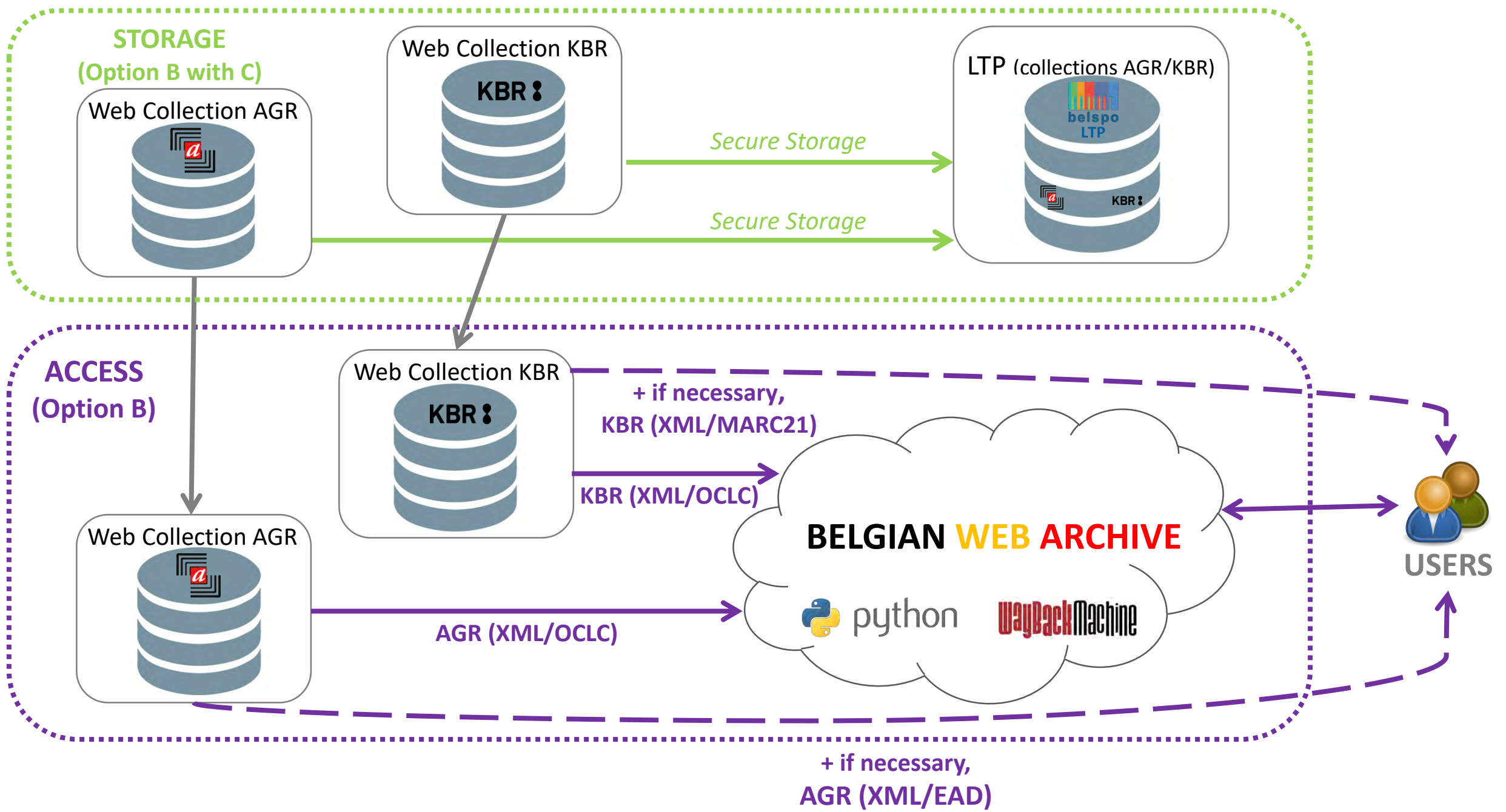


Option C = Secure Storage

Option B = Separate Servers

Option A = Shared Servers





The envisioned scenarios

Dr Rolande Depoortere – State Archives Belgium
Sophie Vandepontseele – KBR



4 SELECTED SCENARIOS

SCENARIO 1 = FULL

A.1 A.2 A.3 A.1 B.3

SCENARIO 2 = MEDIUM

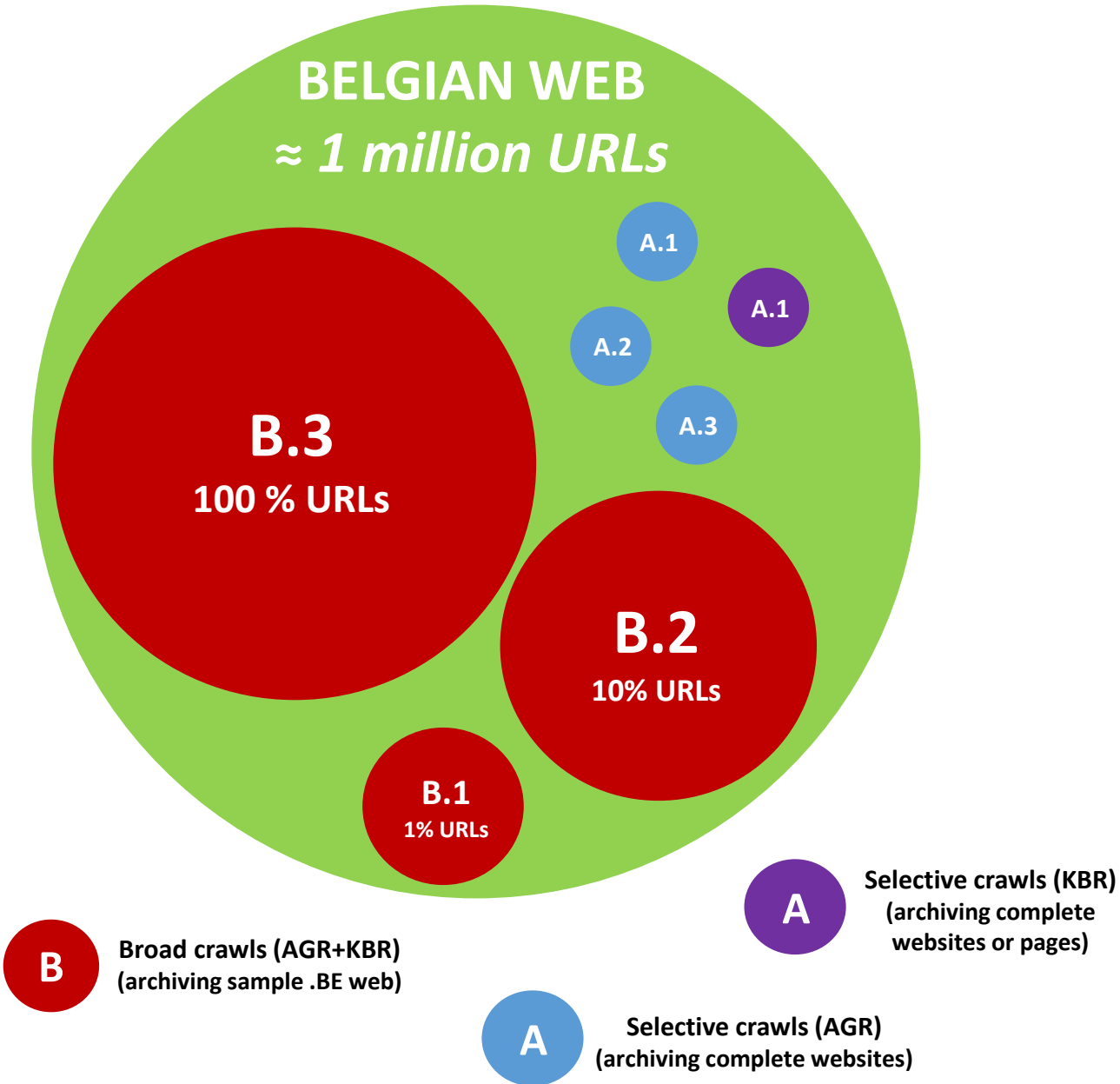
A.1 A.1 B.2

SCENARIO 3 = BASIC

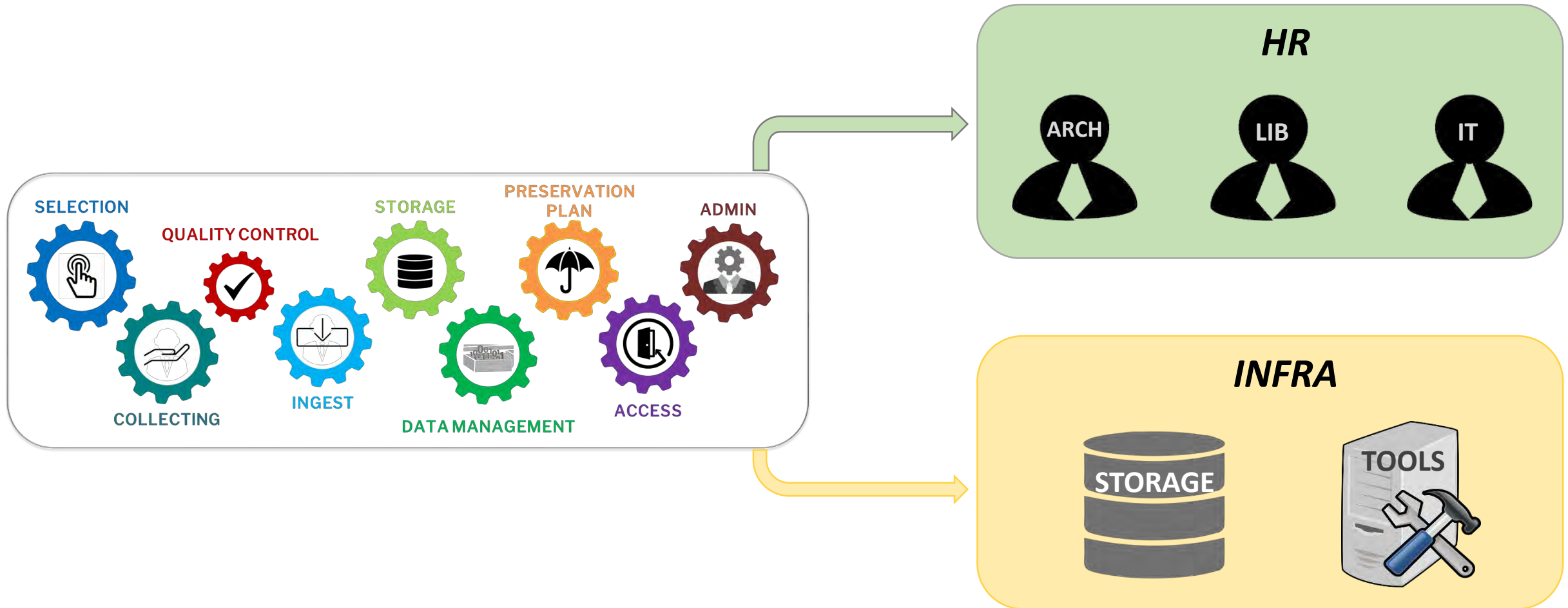
A.1 A.1

SCENARIO 4 = FULL (OUTSOURCING)

A.1 B.3



COST CALCULATION METHOD



SCENARIO 1 = FULL (AGR+KBR)

A.1 650 URLs <i>(full)</i> AGR	A.2 1400 URLs <i>(full)</i> AGR	A.3 300 URLs <i>(full)</i> AGR	A.1 920 URLs <i>(full)</i> + 1400 pages KBR	B.3 1.000.000 URLs <i>(sample)</i> AGR+KBR
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ARCH **LIB** **IT** **5,76 FTE**

HR
273.840 €

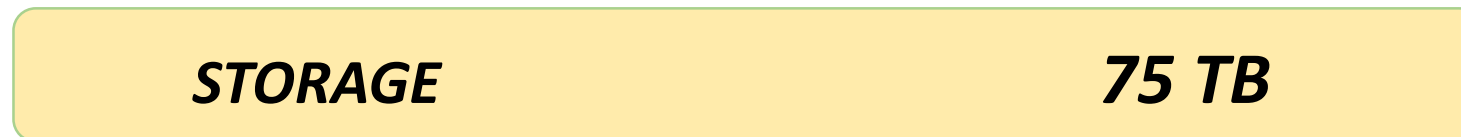
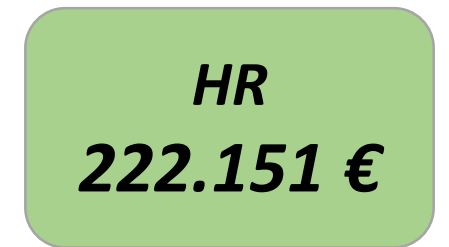
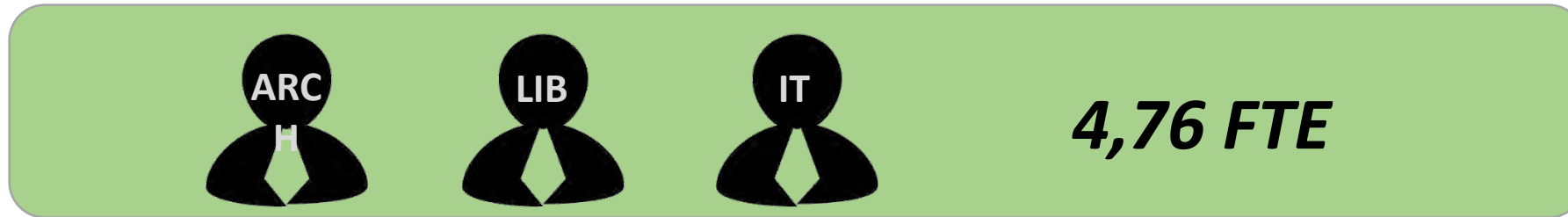
SERVERS / TOOLS  **HERITRIX**  python 

STORAGE **114 TB**

INFRA
205.266€

TOTAL ANNUAL COST **479.106 €**

SCENARIO 2 = MEDIUM (AGR+KBR)



SCENARIO 3 = BASIC (AGR+KBR)

A.1

650 URLs
(full)
AGR

A.1

920 URLs
(full)
+ 1400 pages
KBR



4,76 FTE

HR
222.151 €

SERVERS / TOOLS



HERITRIX



python wayBackMachine

STORAGE

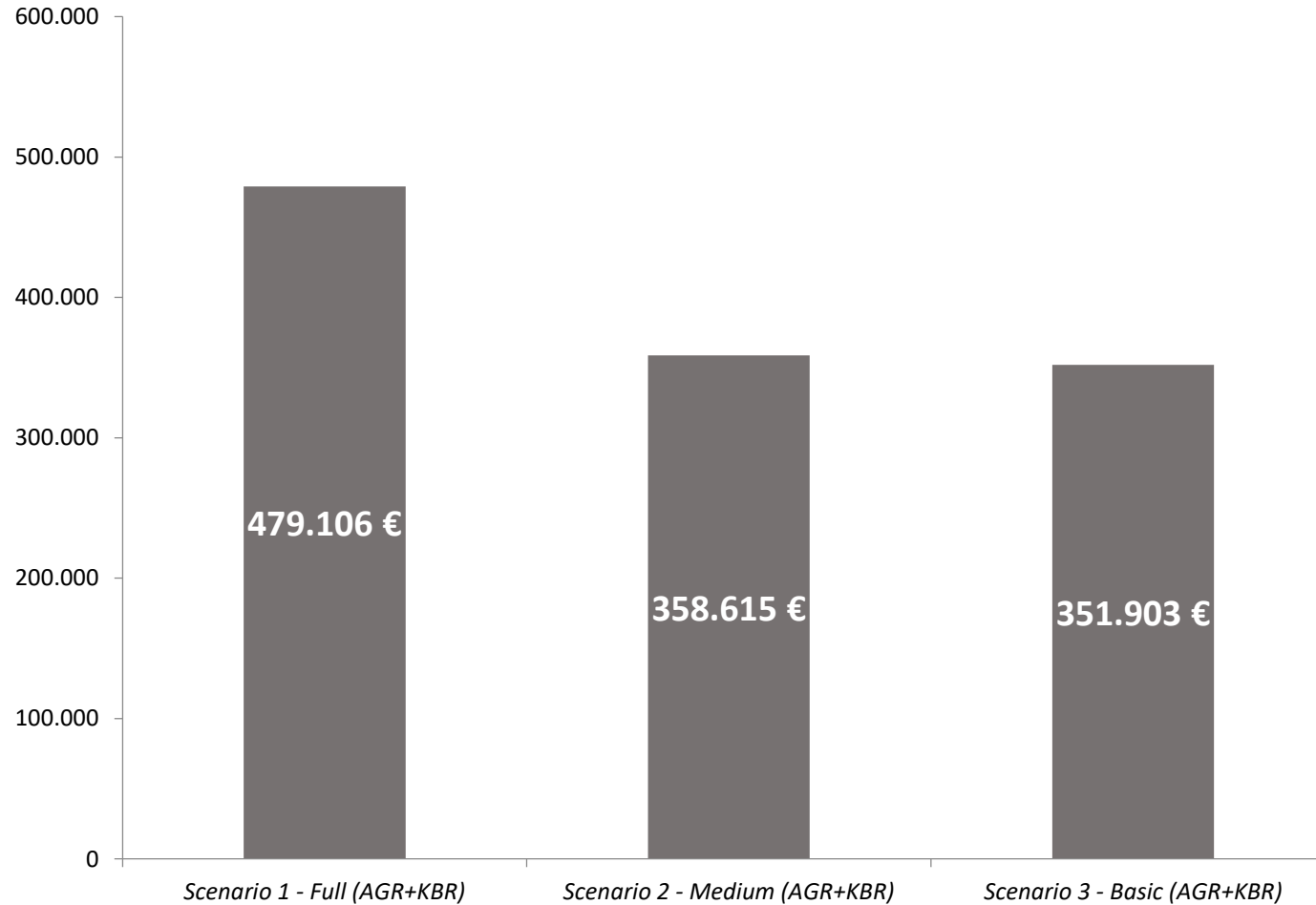
71 TB

INFRA
129.752 €

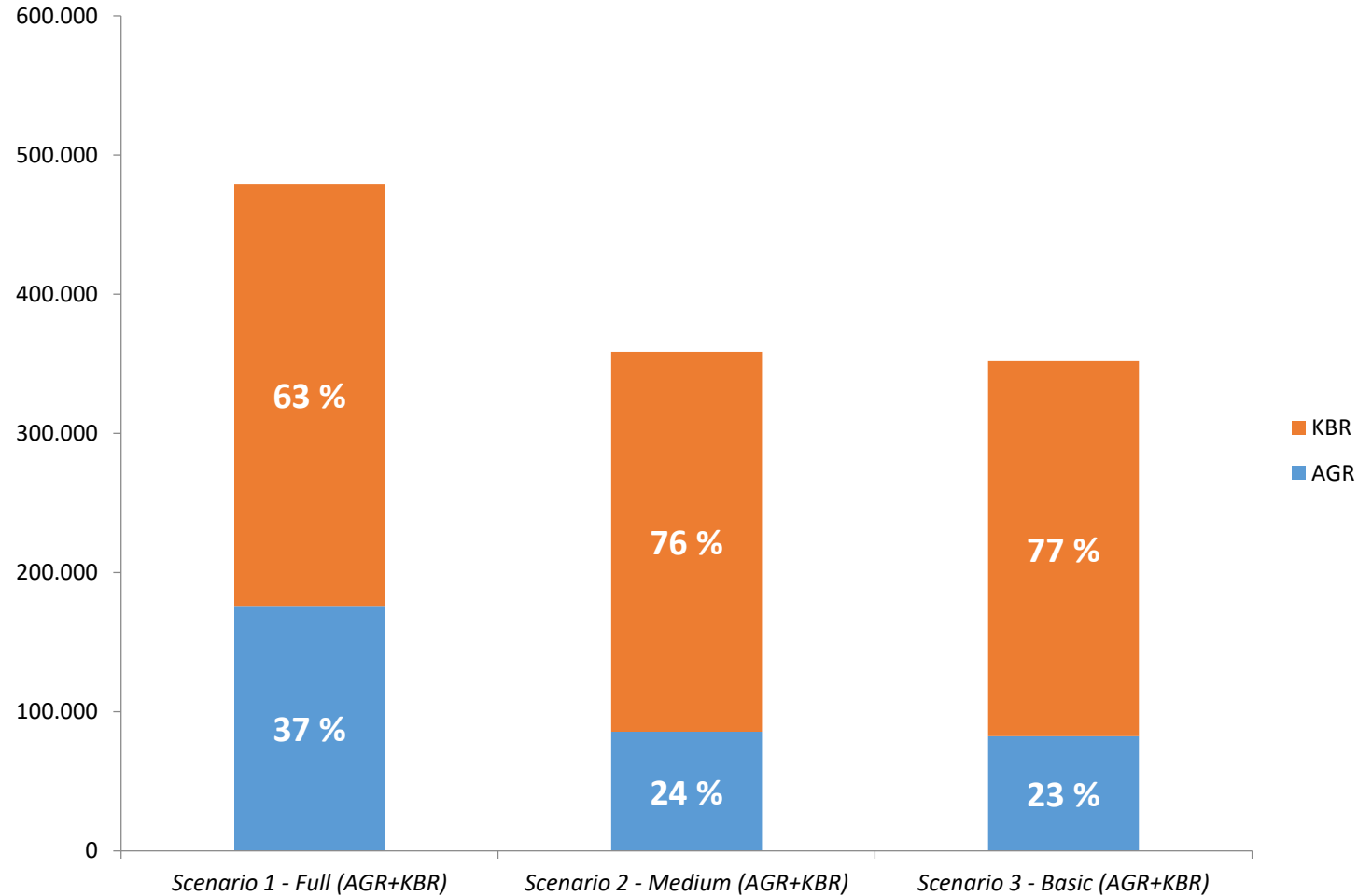
TOTAL ANNUAL COST

351.903 €

COMPARISON OF SCENARIOS – TOTAL ANNUAL COST



COMPARISON OF SCENARIOS – COST DISTRIBUTION AGR & KBR



COMPARISON OF SCENARIOS – COST DISTRIBUTION AGR & KBR (details)

Sc. 1	AGR		KBR		AGR + KBR
TOT	175.884 €		303.222 €		479.106 €
PERS	2,45 ETP	125.272 €	3,31 ETP	148.568 €	273.840 €
INFRA	50.612 €		154.654 €		205.266 €

Sc. 2	AGR		KBR		AGR+KBR
TOT	85.599 €		273.016 €		358.615 €
PERS	1,45 ETP	73.583 €	3,31 ETP	148.568 €	222.151 €
INFRA	12.016 €		124.448 €		136.464 €

Sc. 3	AGR		KBR		AGR+KBR
TOT	82.243 €		269.660 €		351.903 €
PERS	1,45 ETP	73.583 €	3,31 ETP	148.568 €	222.151 €
INFRA	8.660 €		121.092 €		129.752 €



Any questions?

