

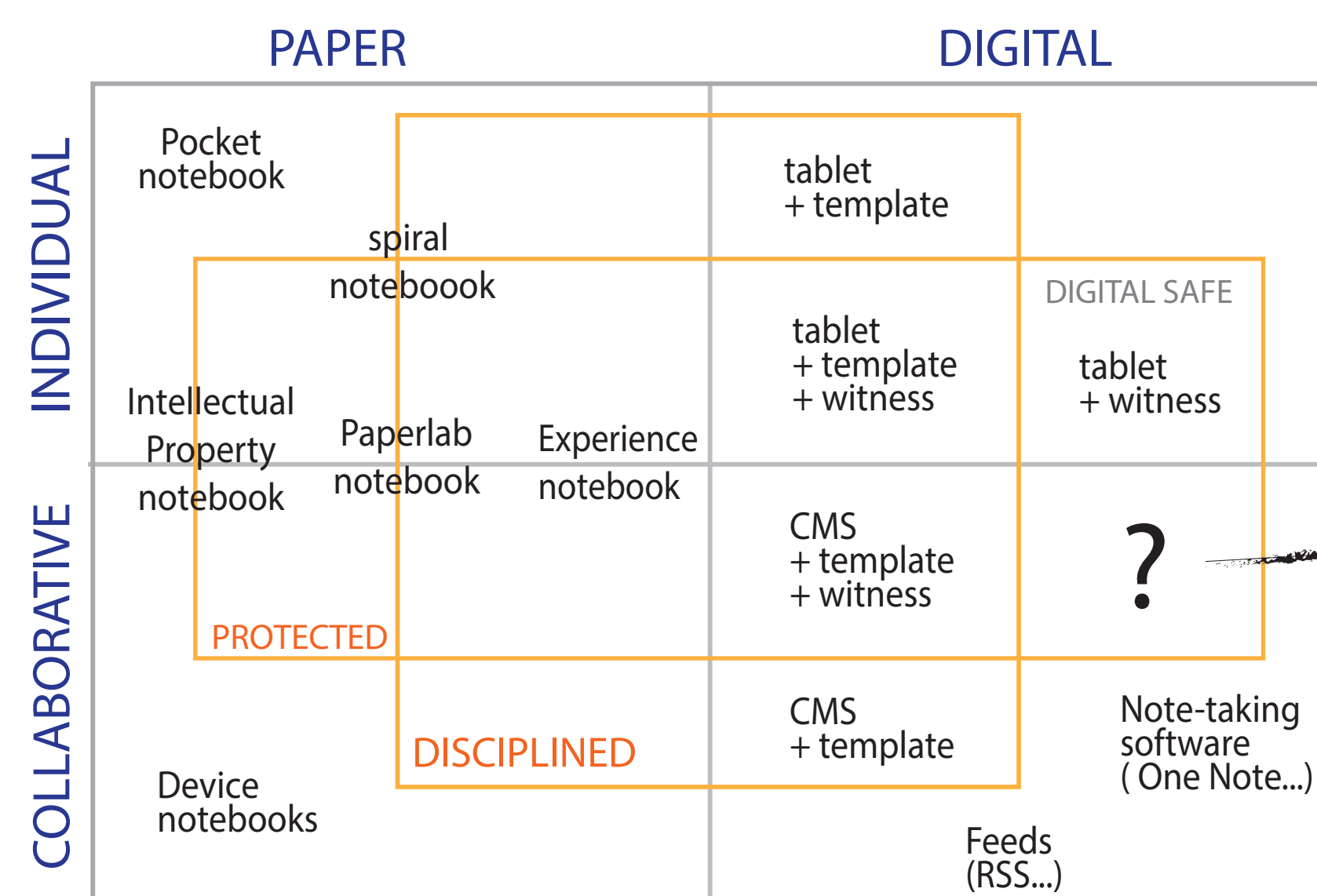
# Authenticity in a Digital Era: Still a Document Process

## The Case of Laboratory Notebooks

LORRAINE TOSI, AURÉLIEN BÉNEL  
TECH-CICO, UTT {UNIVERSITE DE TECHNOLOGIE DE TROYES,  
FRANCE, CNRS, ICD }

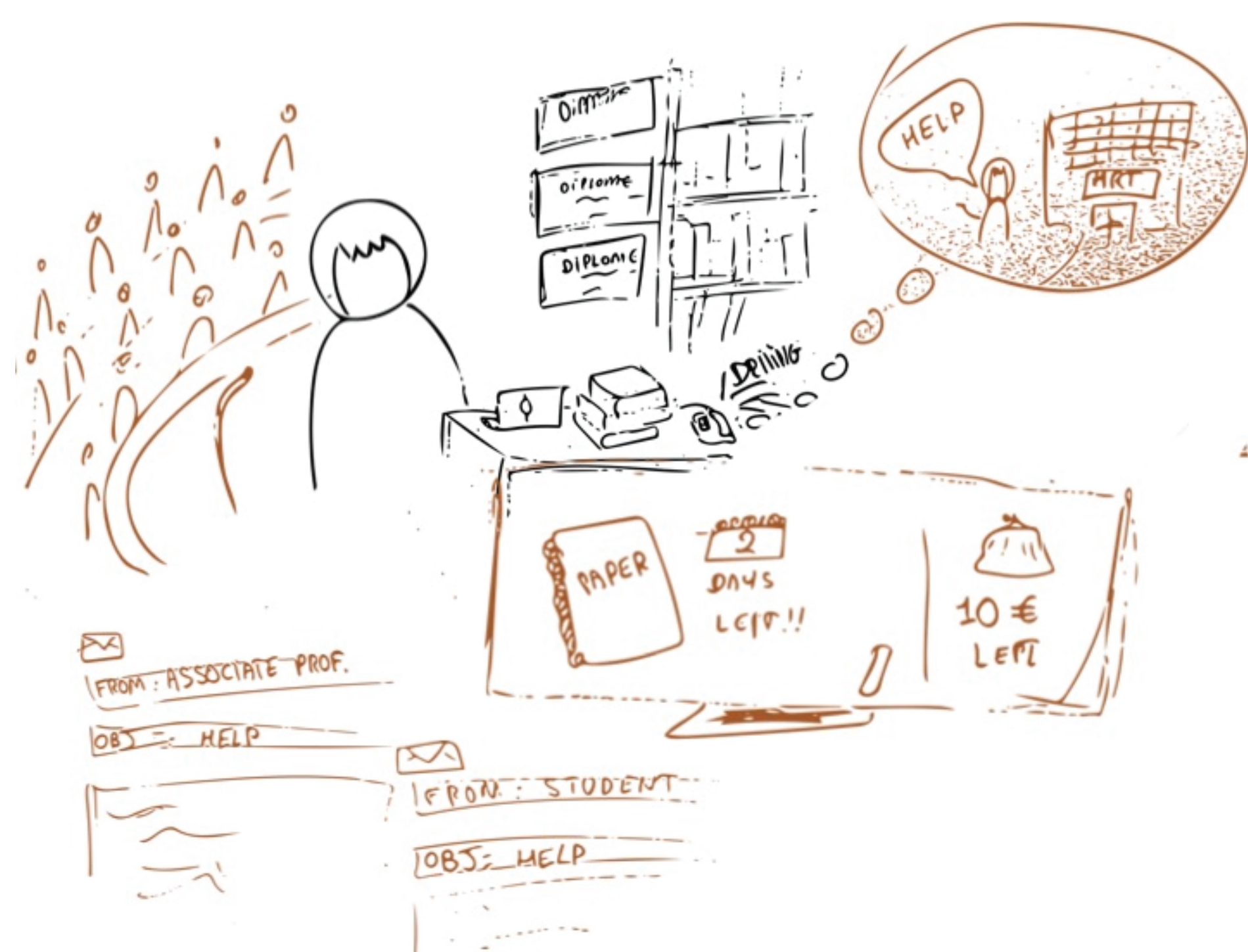
lorraine.tosi@utt.fr / @LorraineTosi  
aurelien.benel@utt.fr

State of the art (Four sets Carroll diagram) of laboratory notebooks artifacts  
[interdisciplinary studies from CSCW, CHI, ...]



Coexistence of a wide range of notebooks

Intellectual property management is a nightmare for researchers and innovators  
Risks are everywhere



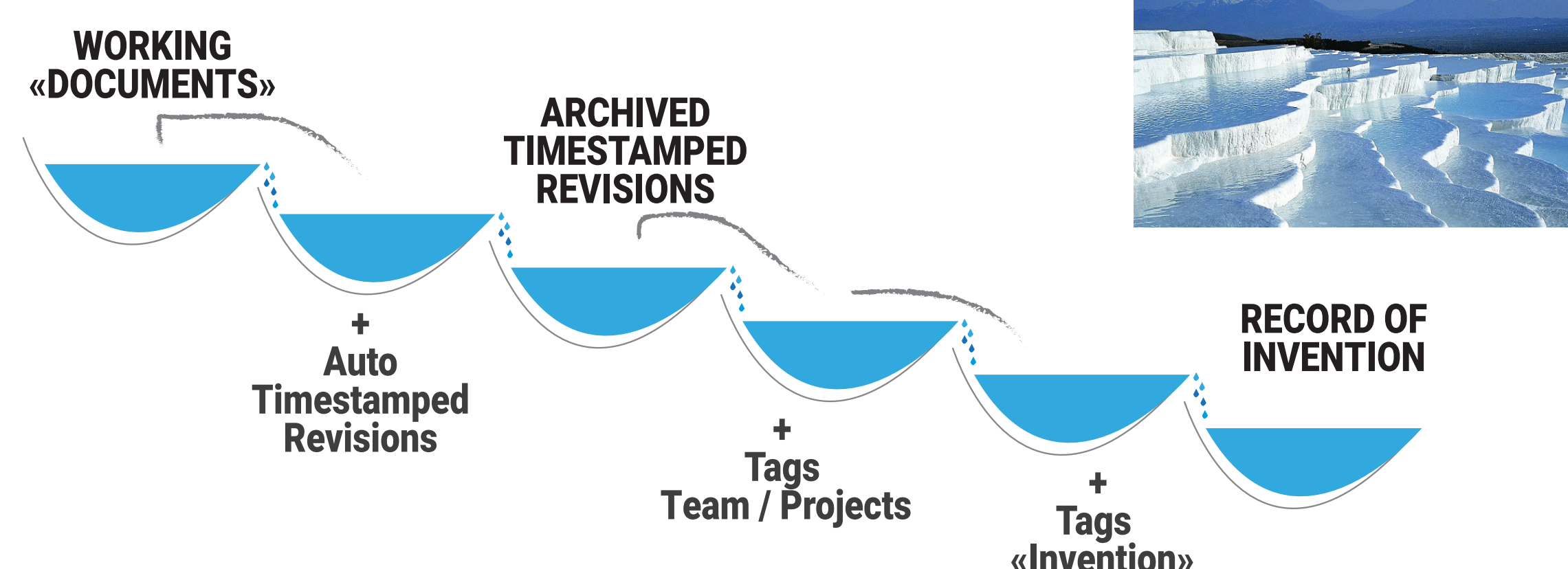
## Paradigms from Document Theory to design Lex4Lab

for intellectual property management

### 1) Becoming a document is a process

[S.Briet 2006, M.K. Buckland 1997, Caya 2004, Y.Pérotin 1966, M.Zacklad 2006]  
Document's preservation and description are processes :  
• standardized attributes (date, producers, and recipients)  
• adding heuristic attributes (such as tags) Lex4Lab +  
gradually to help interpret these documents

"Settling ponds" as a metaphor for 'documentarisation' of not perfect drafts at first, to most valuable working drafts to obtain an increasingly better proof



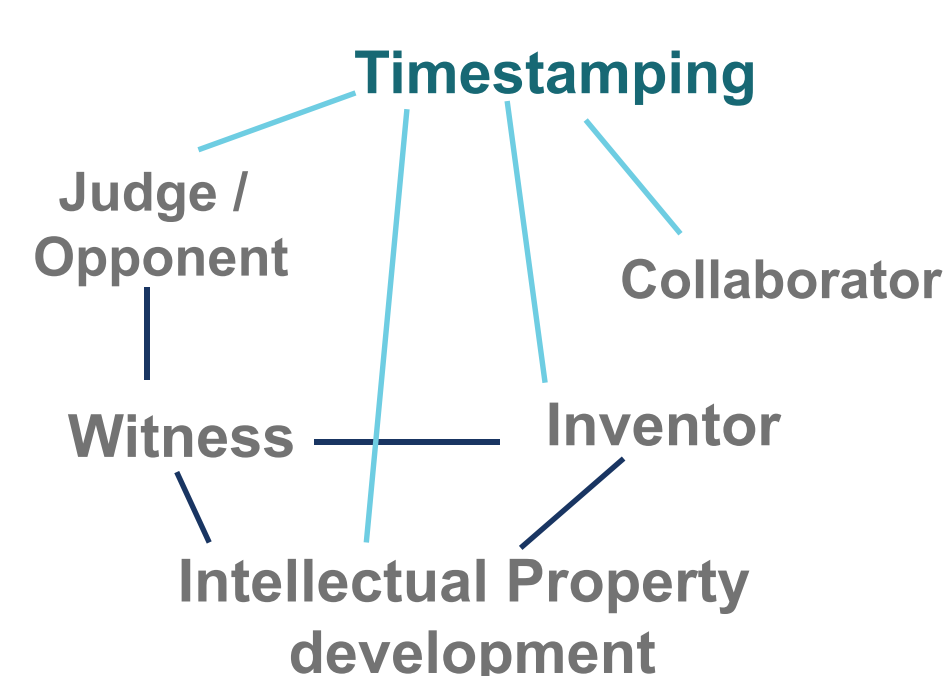
### 2) Everything can become a document

[S.Haber and W. S.Stornetta 1991, X509 2001, TSA 2003]

- Turning the laptop of every inventor into a laboratory notebook with a legal value. Timestamping allows each revision of a document to become a material item in any dispute

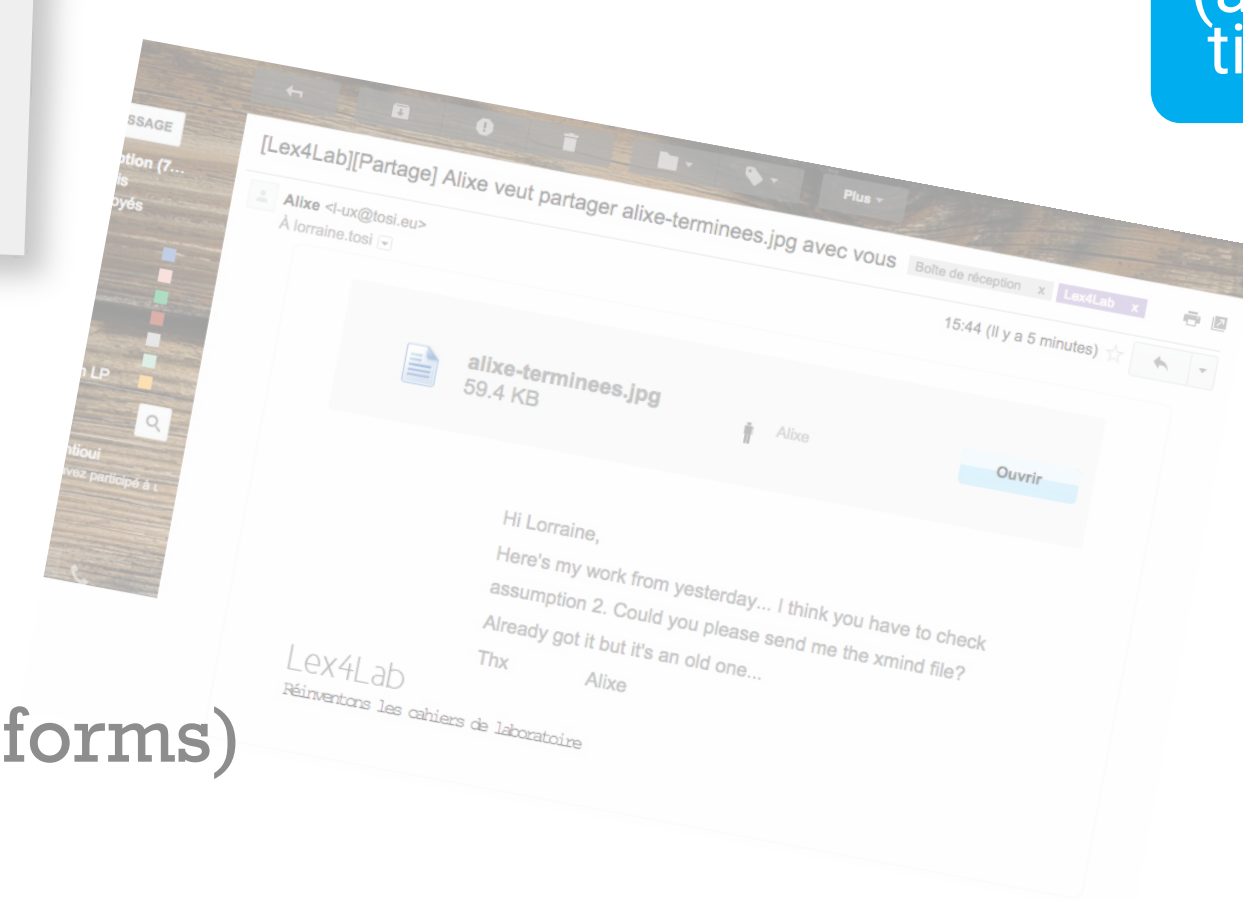
French Law  
eIDAS (european reg.)

- Timestamping as a third party, a warranty seal : it transforms trust issues between stakeholder, so the user focuses on documents



### 3) A document is a shared reference

- No duplication
- The user can maintain his own file management Remaining context and linking information
- Documents are timestamped in all exchanges ( email invitation link like well-known cloud platforms)
- No risk to contribute to a shared notebook !

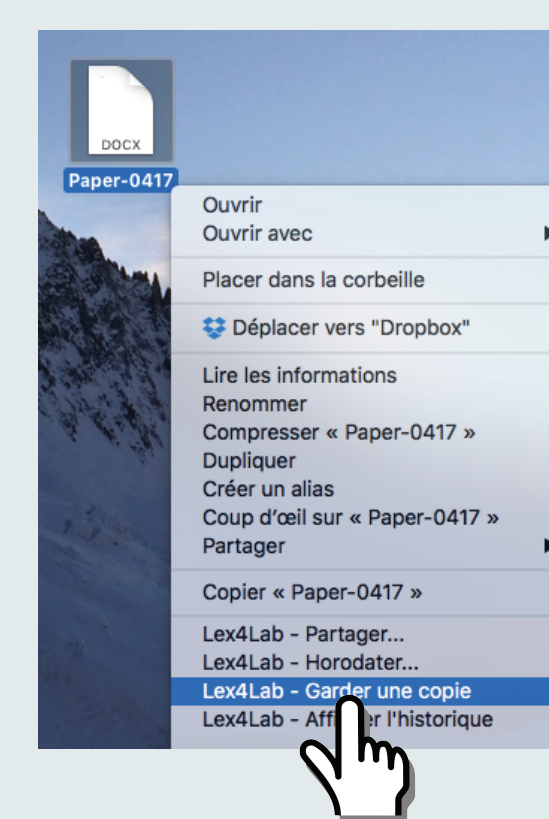


Testing -2015 to 2017  
Researchers, research engineers, and PhD students

The most sensitive documents  
(with respect to intellectual property considerations)

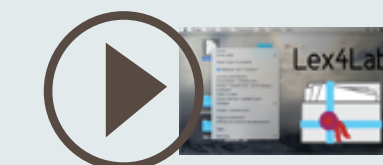
The most shared and the most described documents  
in the electronic notebook Lex4Lab

electronic laboratory notebook



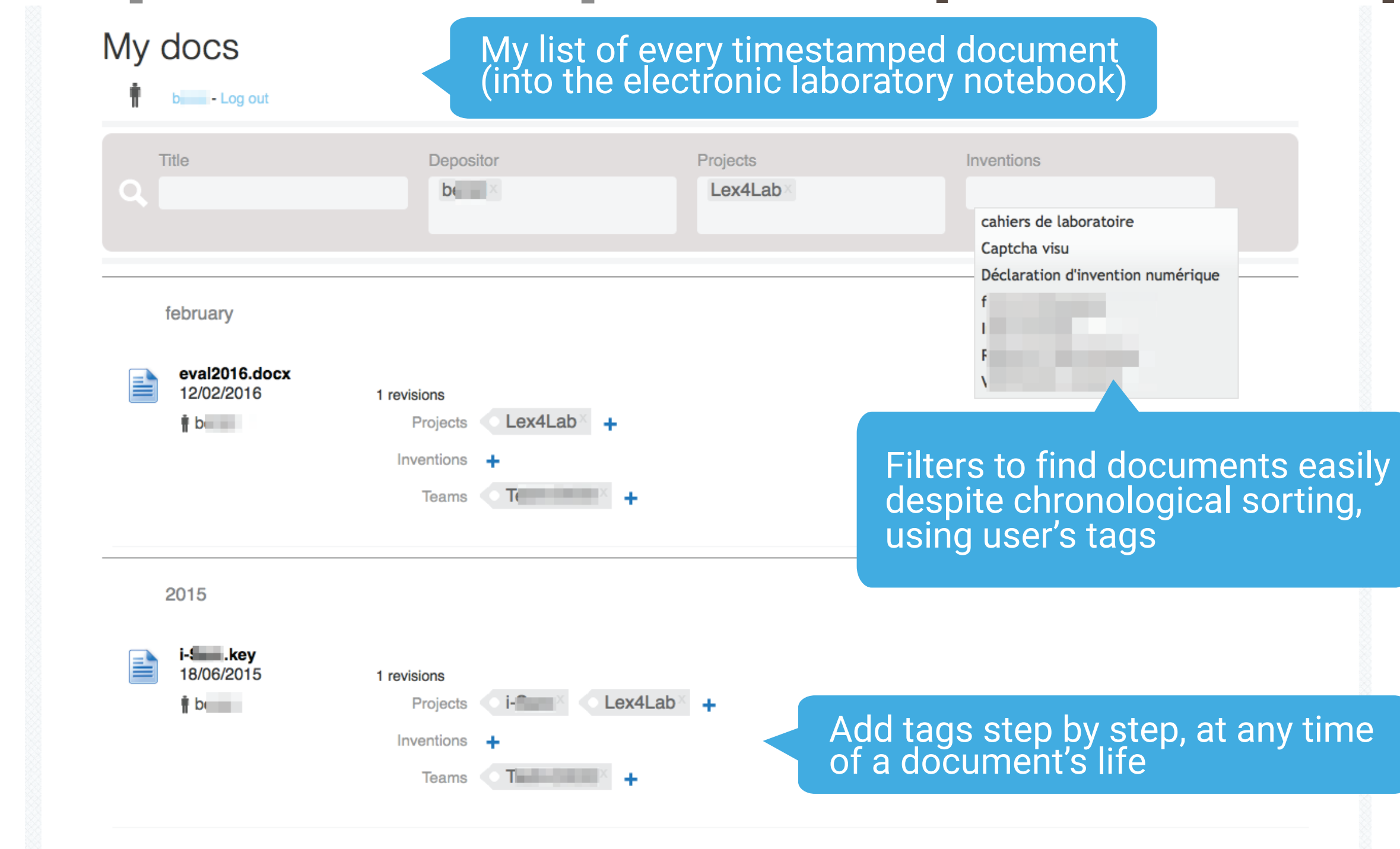
"One click" feature  
From a working draft to the electronic laboratory notebook  
On any digital file, timestamping related actions :  
share, timestamp, see history ...

See more  
lex4lab.utt.fr

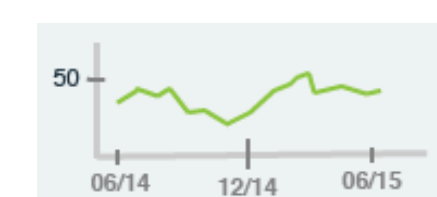


tosi.eu/demoL4L

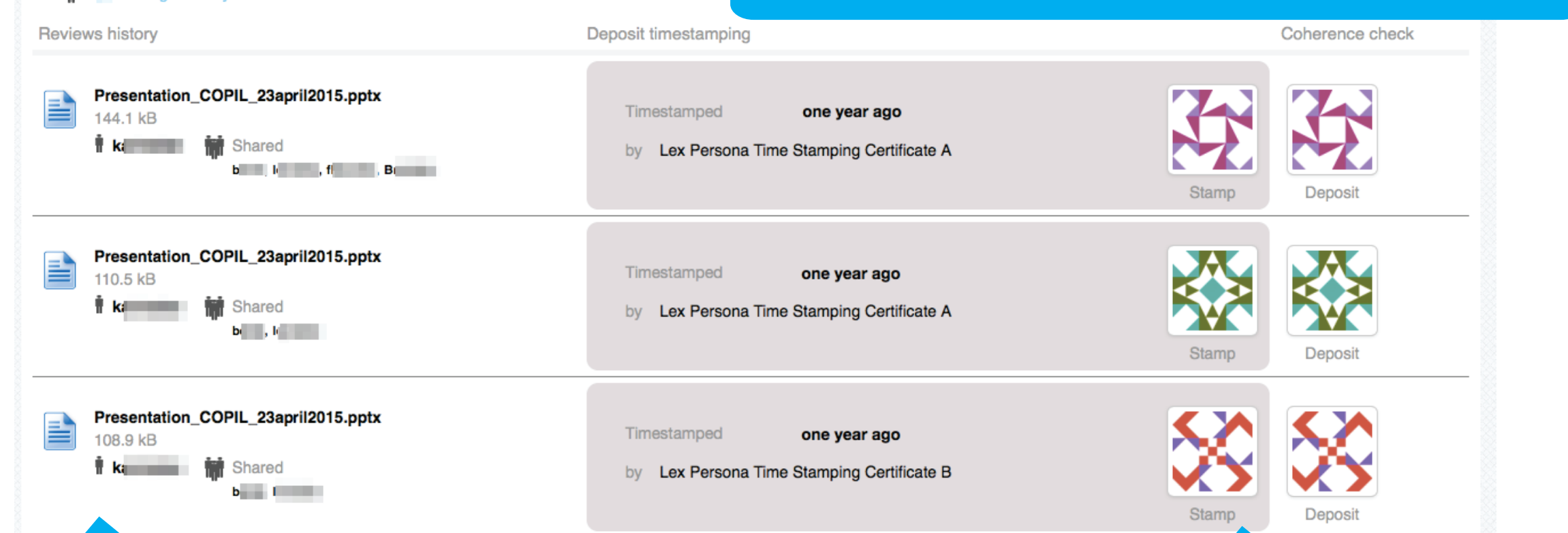
Complete list of timestamped documents [Lex4Lab screenshot]



Has an invention grown ?  
(increase of the timestamp number)



Presentation\_COPIL\_23april2015.pptx  
My timestamped shared document (part of the electronic laboratory notebook)



Revisions of my document (automatic or manually timestamped), and all reviewers.

Visual check of timestamping. No one revision can escape from a fast check by someone. An authenticity issue should be easily spotted.

History of a document shared and reviewed between several actors, in one's laboratory notebook  
[Lex4Lab screenshot]

## KEYWORDS

DOCUMENT SYSTEMS AND WORKFLOWS  
SECURITY AND PRIVACY  
USER EXPERIENCE  
COLLABORATIVE AUTHORIZING AND EDITING  
DIGITAL ARCHIVING

DocEng 2017 - Malta