KEEP

Keeping Emulation Environments Portable

Long-term preservation of digital objects

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KEEP

Motivation, problem area

Allow long-term preservation, access and rendering of digital objects

- Sustain a long-term and easy access to digital documents
  - Static objects (text, image, sound, video)
  - Dynamic objects (multimedia, software, data base, video game, website)
- By developing tools allowing to store and emulate via an *Emulation Access Platform, and* represent the content of the original media
- Create a « universal » virtual machine to run the emulator
  - This software needs to be easily adaptable to any future computer to ensure a sustainable emulation platform

➔ a solution for memory institutions, companies and individuals to access digital documents through time

Research Objectives

- Because Multimedia carriers gradually become obsolete

➔ Transfer carriers to files (images)

  – tapes, disks, CDs, DVDs, cartridges deteriorate
  – drives allowing to read them also do (mechanical parts, dedicated to types and generation of machines

- Because computers and consoles also become obsolete

➔ Replace machines by a program able to mimic the original machine (emulator)

Example Thomson TO7 (1982)

Carrier has to be :

READ, DIGITIZED

Binary information is being transferred to an image file

Program is run by the emulator

SUBSTITUTION / VIRTUALISATION

Example Thomson TO7 (1982)

Original environment

Contemporary environment

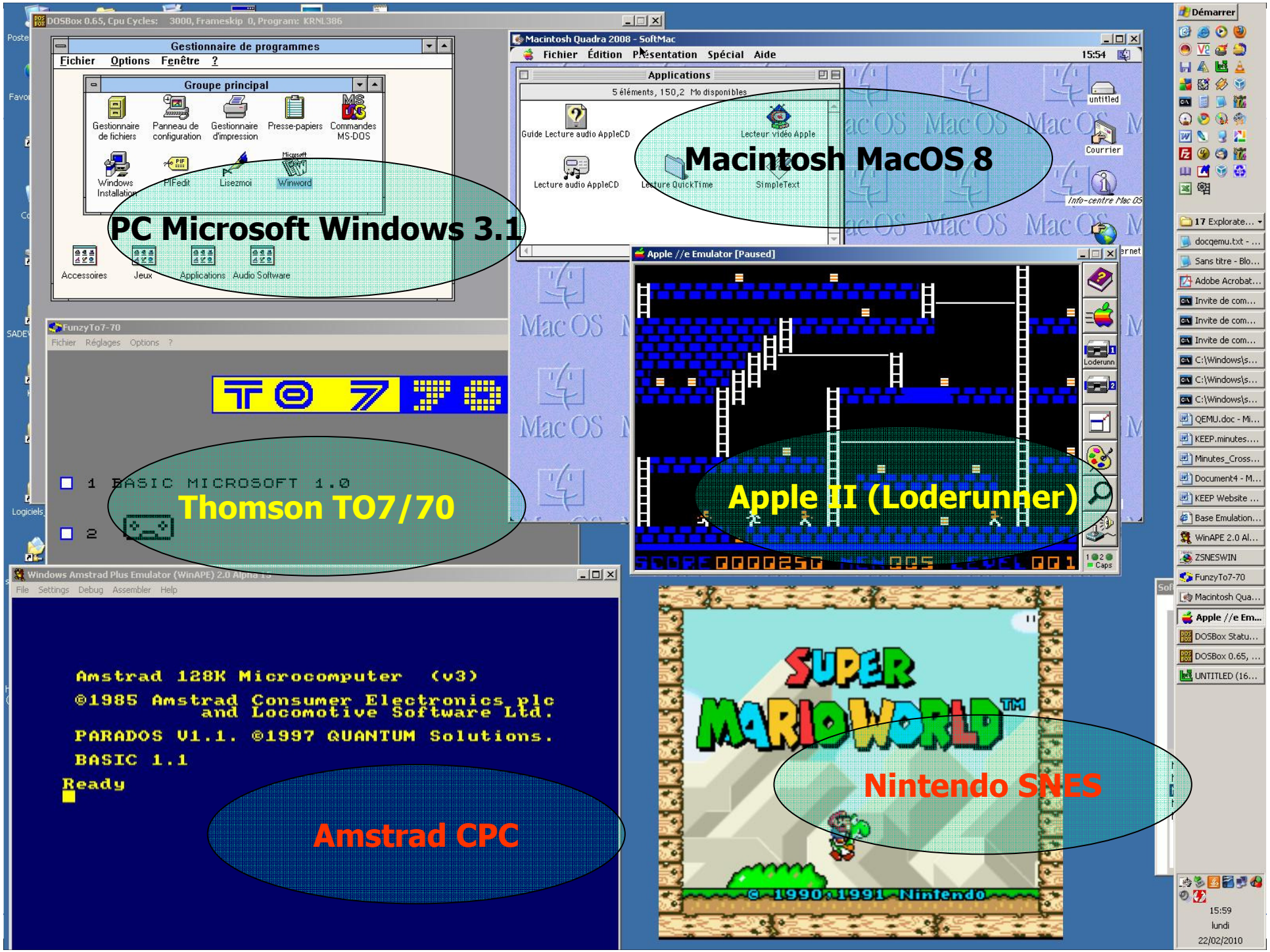
Original emulated environment

Range of objects

This example shows a videogame, but the original publication can be :

- Text
- Image, video, sound
- Program (wordprocessor, videogame, etc.)
- Data base
- Website
- etc.

… and it can be from various platforms and Operating Systems …

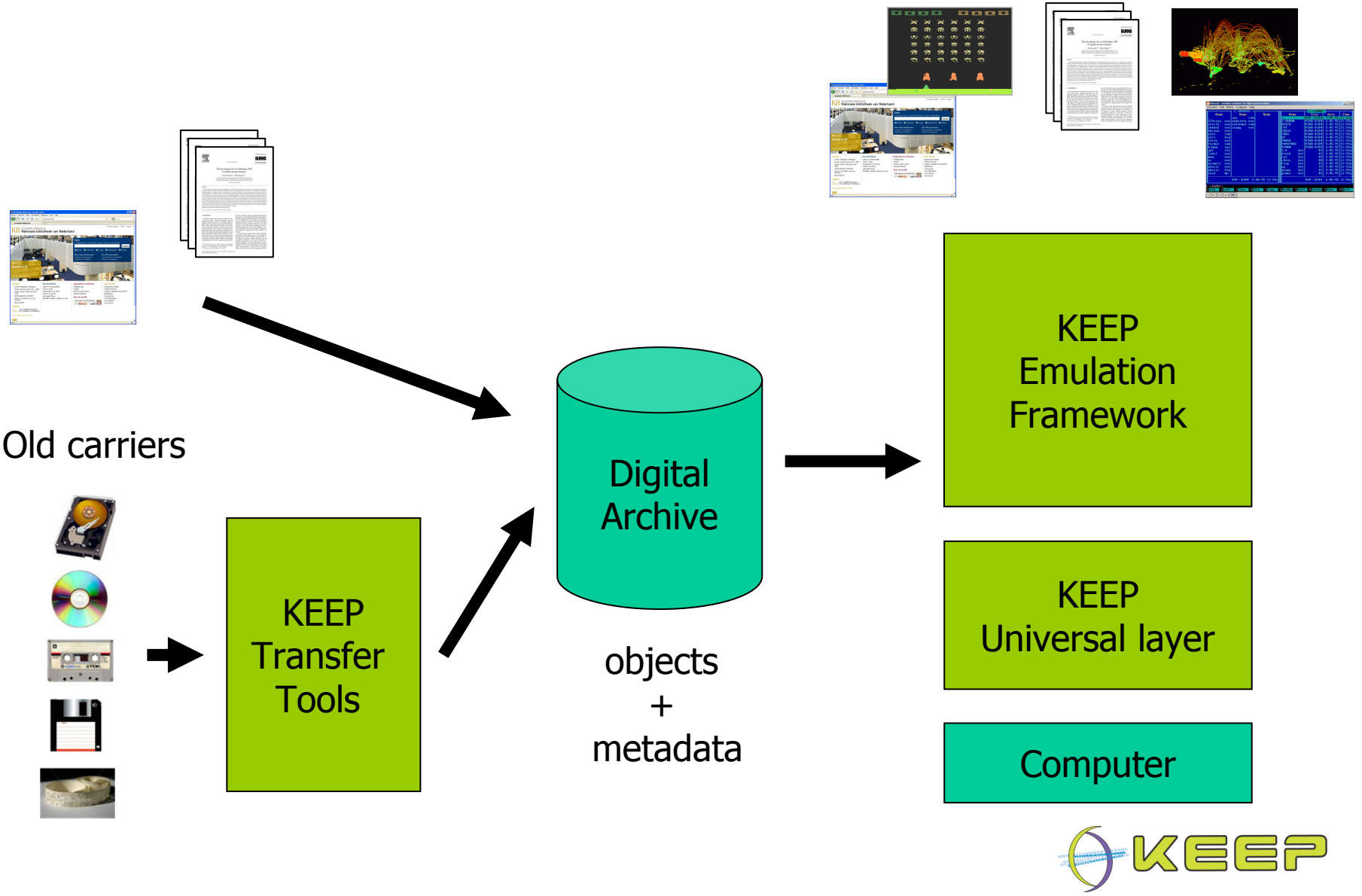

PC Microsoft Windows 3.1
Macintosh MacOS 8
Thomson TO7/70
Apple II (Loderunner)
Amstrad CPC
Nintendo SNES

Approaches to access digital items

- Migration = successively convert the digital format
  - Applicable to text documents, images, videos.
  - Less suitable for rare formats or applications for which no strict conversion is possible.

- Emulation = adapt modern computer to original environment
  - Applicable to all kinds of digital items,
  - Without successively having to adapt to each generation
  - but requires an important initial effort

Emulation in the KEEP workflow



KEEP : a European FP7 project

- **FP7 project**
  - **ICT Digital libraries and technology-enhanced learning priority**
- **From February 2009 to February 2012**
- **BnF is the Project coordinator**

- **8 partners ranging from libraries and universities to gaming industry :**
  - Bibliothèque nationale de France – France
  - Deutsche Nationalbibliothek – Germany
  - Koninklijke Bibliotheek – Netherlands
  - University of Portsmouth – UK
  - Joguin SAS – France
  - Tessella Support Service – UK
  - European Games Developer Fed. – Sweden
  - Computerspiele Museum – Germany

7 Workpackages (WP)

- WP1: Media Transfer
- WP2: Core emulation Framework
- WP3: Metadata research & Frontend emulation framework
- WP4: Portability emulators, KVM
- WP5: Integration testing validation, and technical sustainability
- WP6: Dissemination
- WP7: Project management and coordination

Information and Contacts

Questions?

www.keep-project.eu

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