

Long-term Preservation and Use of Recorded Data

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(Keywords) Long-term Preservation, Digital Data, Metafile Compiler

1. Cold Data

The lifespan of records of structures longer than that of the recorded structures is essential in order to support maintenance, alterations, and transactions. However, the lifespan of digital recording media is shorter than the structures, and the rapid obsolescence of recording formats has been an obstacle until today.

We propose a simple and permanent language to describe the steps in decoding preserved legacy data (grammar and key words). In the saving phase, a format defining file (metafile) written in this language will be attached to the 3D data file of structures and preserved as an attachment. Thus, data files in any format are preserved unchanged, except the attached metafile.

2. Programming Uses

The core of the systems of use is a simple compiler that converts metafiles into an executive function that can decode the 3D data and define the geometry of the structures by calling library functions. The definition of the language and the source codes of the compiler is filed permanently.

In addition to the current four examples, templates of library functions called from the metafile will be coded to execute the needed actions in future. One example shown in the photo is an AR application on a tablet that re-visualizes settlements lost in a tsunami in the original location (the vacant ruins are a memorial park today), using GPS and orientation sensors to superimpose rendered 3D data into a captured image on the site.

3. Future Scenario of Use

Technologies and uses of recorded 3D data varies from design, planning, and simulation to manufacturing and decoration of buildings today, suggesting more innovative values in future. In our current studies, records of old or empty structures are used for security control and will further serve as a memory of communities and families after demolition.

[Sources]

- 1) Research Report of NILIM (being prepared)
<http://sim.nilim.go.jp/MCS/phi>

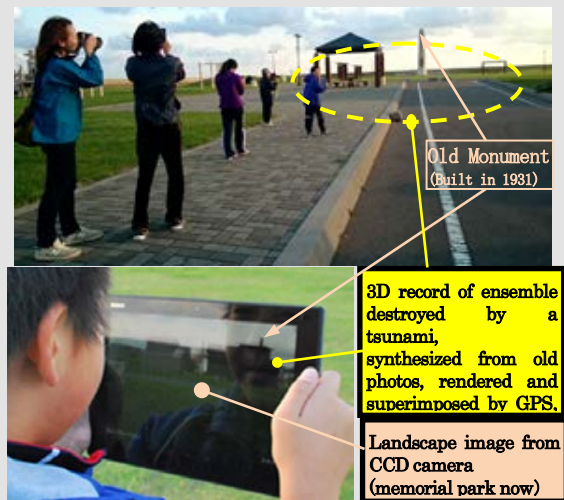
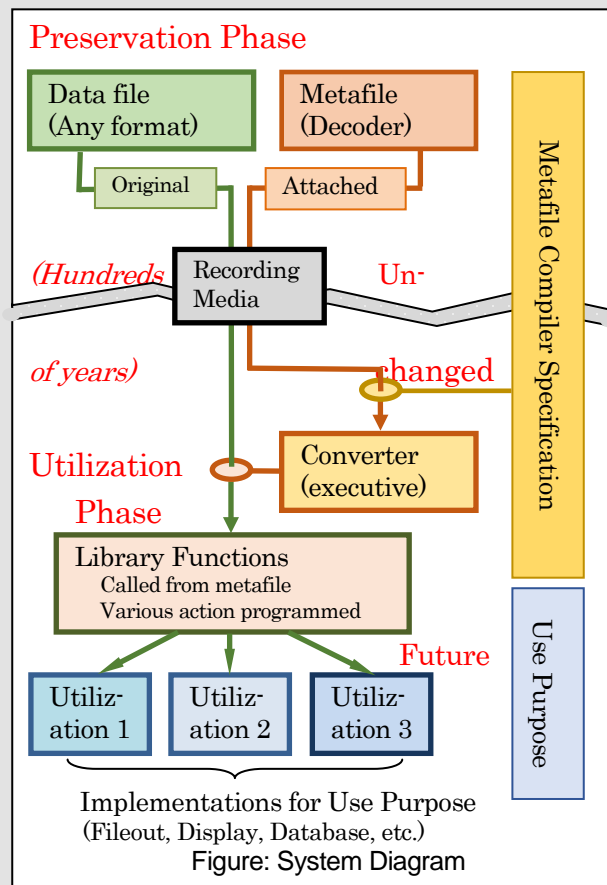


Photo: Pupils on Okushiri Island studying the disaster that occurred in 1993. (Oct. 2014.10)