

Long Term Knowledge Retention Workshop

March 15-16, 2006

National Institute of Standards
and Technology

Our scope

- In scope
 - Knowledge representation methods
 - Form, function, behavior
 - Modeling languages
 - Engineering design data (not just geometry)
 - Exchange formats (possibly)
 - Rendering formats (possibly)
- Out of scope
 - Storage media
 - Software applications
 - Archive implementation
 - Compression and search algorithms

Why worry about LTKR?

- 3D digital data has no analog equivalent
- Product life cycles can be much longer than life cycles for computing hardware, applications, storage media
- Manufacturing becoming increasingly information-based - data a critical asset

Why “Knowledge” instead of “Data”?

- Semantic technologies needed
 - Metadata creation during archival
 - Intelligent retrieval
- Knowledge includes abstractions and generalizations. Data merely reflects the state of the world
 - (G. Wiederhold, *Knowledge versus Data*, in *On Knowledge Base Management Systems*, Springer Verlag, 1986.

Genesis of this workshop

- Bill Regli realized NIST, Drexel Univ. and NNSA Kansas City Plant all working on similar projects
- August 2005 meeting
 - NIST
 - Drexel
 - KCP
 - National Archives
 - Library of Congress

Observations from that meeting

- This area of interest mainly to manufacturers and archivists, not engineers at large
- The perfect is the enemy of the good enough
 - KCP saves CAD data + TIFF image + STEP file
- We (manufacturing community) are asking the same kinds of questions as other groups such as medical, space science
 - Architecture, packaging, scalability important across the board
- Concentrating on Archival Information Package and ignoring Submittal or Dissemination Information Package is dangerous
 - SIP is negotiated – need to determine its contents
- What's the difference between archiving and product data exchange?
 - Added dimension of time
- Voice is an important data type

Goals of this workshop

- Immediate: identify challenges, research, and implementation issues in digital preservation of information
 - Emphasis on design and manufacturing
- Next step: develop roadmap identifying areas of investigation and experimental testbeds for archival of design and manufacturing information

Who we are

- Mix of industry, government, academia
- Mix of focuses
 - Engineering
 - Manufacturing
 - Library science
 - Government applications

Agenda

- Invited speakers
 - Bob Chadduck, National Archives
 - Henry Gladney, HMG Consulting
- Panels
 - Manufacturing Engineering Informatics
 - Digital Archiving Models, Languages, and Standards
- Two breakout groups

Administrivia

- Breaks, lunch, restrooms
- Location of breakouts
- Emergency exit
- Access to buildings on campus
- Group dinner