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
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