McIDAS-V: Why it's Based on VisAD and IDV

by

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Presentation at the 2007 McIDAS Users' Group Meeting
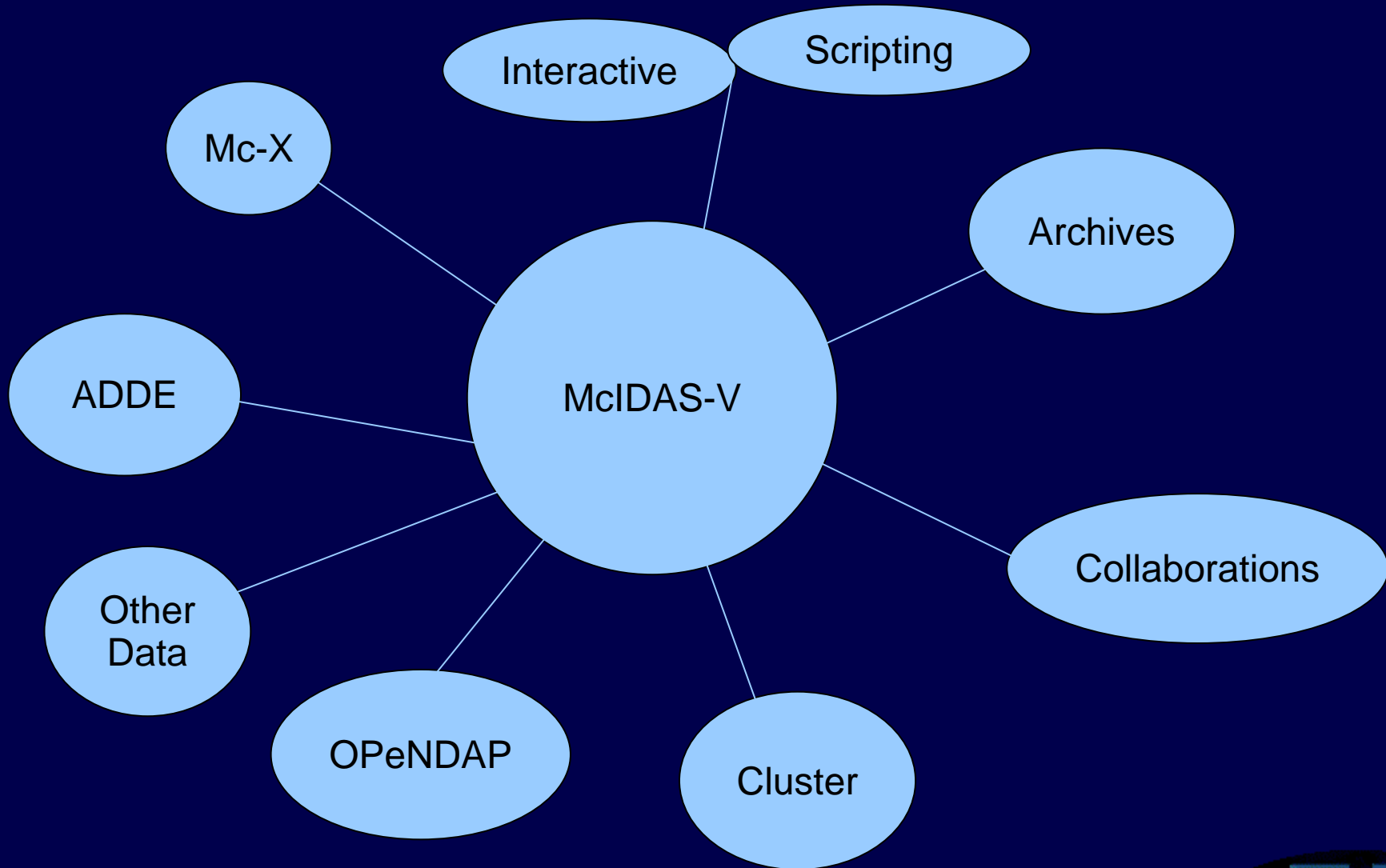October, 2007

Background

- Why a "new" McIDAS?
    - Data volume and types
    - 3+D visualizations
    - Data integration
    - Building block
- What was considered
    - Update current version
    - Build on commercial package (IDL, Matlab, ??)
    - Build on freely available libraries
- 3 Years and counting

The Vision of McIDAS-V

What are VisAD and IDV?

- Open source libraries developed to
  - Define a common, unified model of data
  - Provide basic display capabilities
  - A robust sample application (IDV)
- Constantly evolving
- Community input

What is VisAD?

- An open-source, pure Java library that:
    - Defines a common data model
    - Provides mechanisms for interacting with the data
    - A rich library for manipulations (matrix, numerical, etc)
    - Many file adapters
- Mature after 7 years of development
- Still being tweaked for performance

What is the IDV?

- Ongoing development by Unidata

- A library developed on top of VisAD and other open-source packages to support interactive data selection and visualization

- A "reference" application to test everything in the library

- An extensible framework for developing rich applications (such as McIDAS-V)

- Plug-in facility

The Assumptions

- Java will continue to evolve toward more efficient runtime environments

- Java3D or JOGL will also

- Community is vitally interested in seeing this development
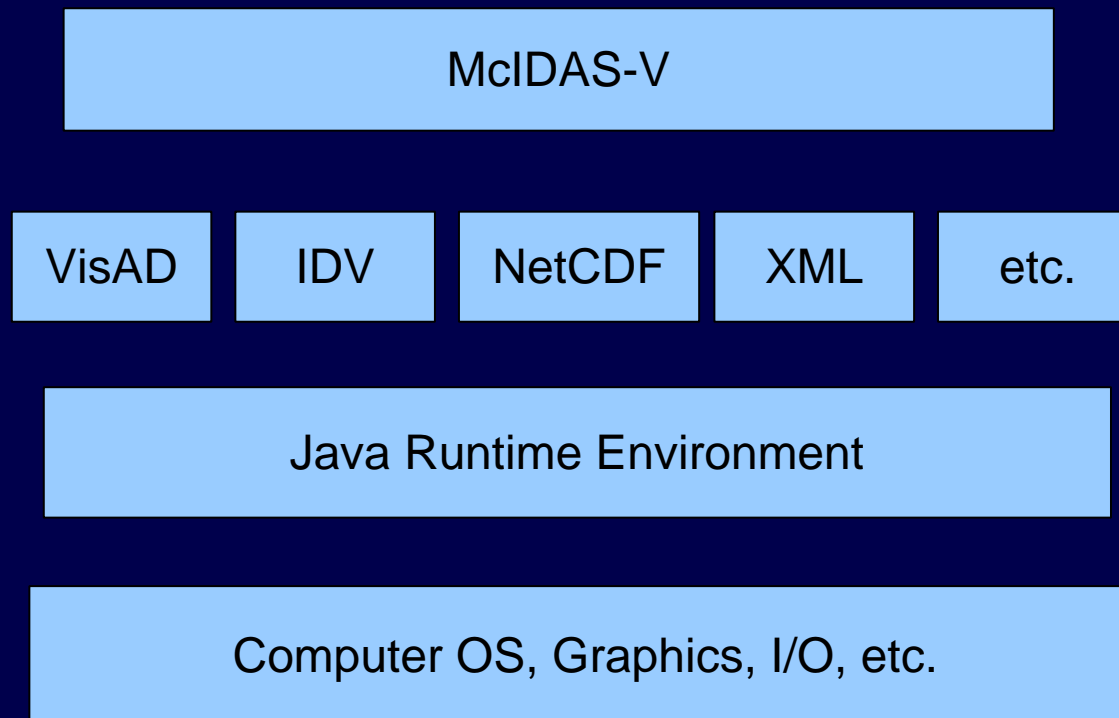
- There is enough funding to do it

The Challenges (aka "Reality")

- More use of Macintosh machines when Java3D is not keeping up

- Hyperspectral visualization and analysis needs are NOW!

- Ever-evolving data formats

- Funding is coming in slowly

How it all fits together

McIDAS-V

VisAD	IDV	NetCDF	XML	etc.

Java Runtime Environment

Computer OS, Graphics, I/O, etc.

Why you need this!

- Enables easy integration of data from a variety of sources
- Flexible displays – challenge to make new ones
- Easy scripting
- Aimed toward both research and operations
- Supported by SSEC
  - Documentation
  - Testing and verification
  - Specialized code creation
- Open source