McIDAS-V Status and Demonstration

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Review the Project

- Why?
  - Limitations of Mc-X data and displays
  - Heavy burden of platform dependencies
- Approach?
  - Phase in capabilities
  - Allow most legacy Mc-X commands to work
- Timeline?
  - Ideal: 4 people for 3 years
  - Reality (without up-front funding): 2 people for 6 years

Mc-V vs. Mc-X

- Platform dependencies
- Displays
- Controls
- Data types (hyperspectral, etc.)
- Plug-ins for unique needs of individual sites
- Site-defined GUIs
- Bundles

IDV – the "Reference Application"

- What is it?
  - Unidata Program Center's testbed
  - Designed to show and test everything that the IDV library can do
  - Community effort
  - Ever-changing & improving
- Why using it today?
  - Little work done yet on Mc-V specific user interface
  - Illustrates a lot of capabilities – some of which might be exploited in Mc-V

Early Work on Mc-V

- Survey of current Mc-X users
- “batch” processing to produce images and data
- Combined UI for imagery from ADDE and/or OpenDAP/OpenGIS
- Run legacy Mc-X commands and get georeferenced output into VisAD display

McIDAS Data Source

- What is it?
  - A bridge from the Mc-X display into the Mc-V world
  - A bit of C code, a lot of Java, and a bit of XML
- How is it used?
  - Keeps track of updates to the Mc-X display and moves the contents to the IDV display in a timely manner
  - Allows access to the Mc-X frame directory for defining loops
  - Enhancements and graphics may be independently applied

What it Knows and Doesn't

- Frames (including images, navigation and graphics, and color tables) produced on Mc-X can be imported into Mc-V.
- Mc-V has no other information about the frame content, such as calibration units or what a graphic represents (e.g., a map, PRE contours, etc.)
- Only the part of an image that is displayed in the Mc-X frame is transferred to Mc-V (i.e., frames not areas).
- All IDV/VisAD display functionality can be applied (pan, zoom, animate, rotate, color tables).

Let's Have a Look . . .

McIDAS-X Dynamic Import

- Image pixels
- Navigation
- Graphics
- Color Tables

McIDAS-X Static Import

- Individual frames
- Animated sequences

Multi-panel Displays

Independent

- Graphics
- Color tables
- Animation controls

Optionally linked

- Zoom and pan
- Projection

Combining Datasets

- Optional reprojection
- Independent display controls
- Independent on/off toggles

“F Key” Functionality

- Multi-view display
- Bundles
- Toolbar items

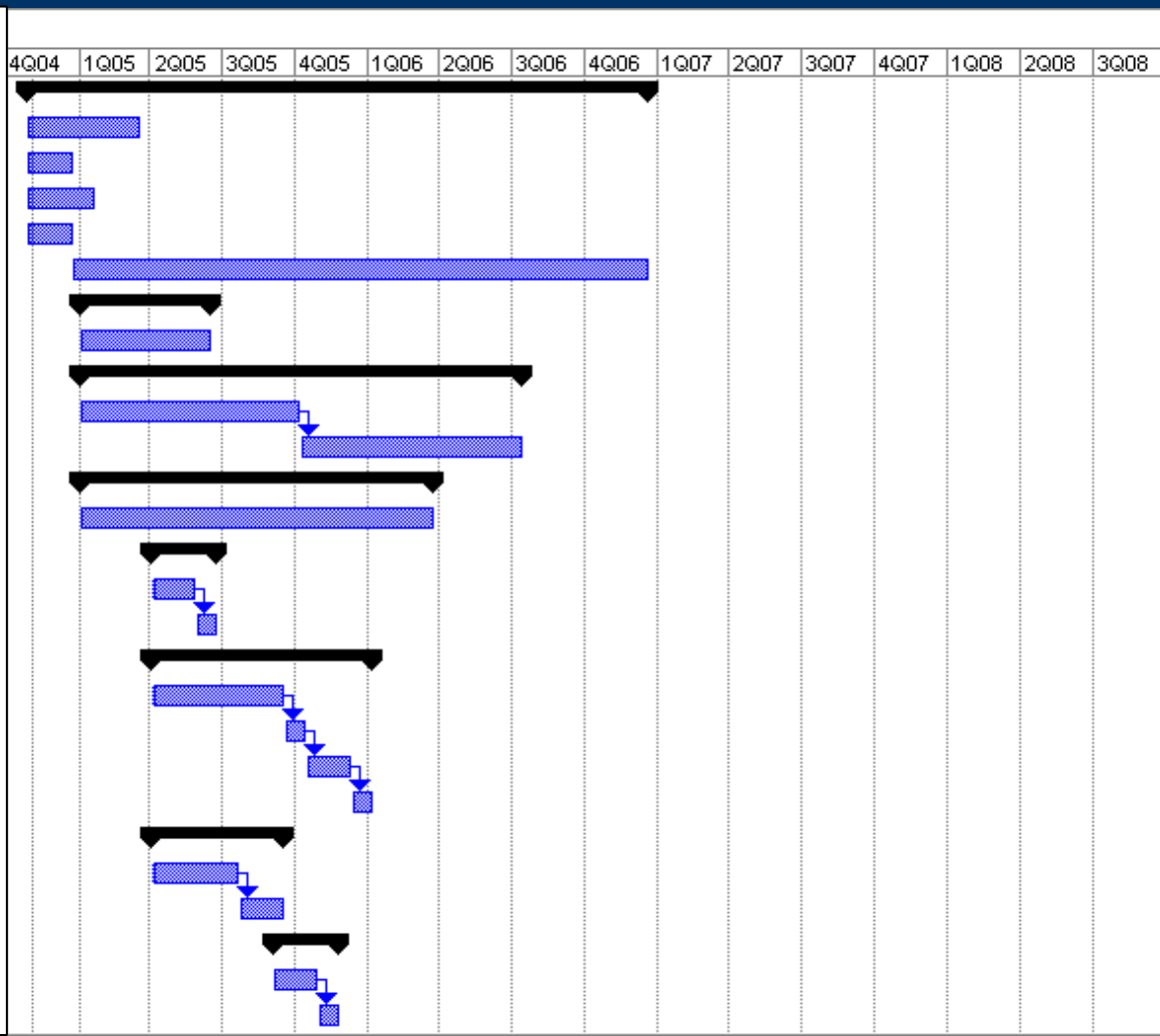
Conceptual Differences

- Frames
  - VisAD deals with “time” as just another dimension
- Bundles
  - IDV's way of quickly getting a desired display
  - Can be used with scripted, cron-d, or UI
- Scripting
  - Jython (Python for Java) chosen because it's easy to learn and use
  - Most Mc-X scripts nowadays are used to simply create a specialized display

Mc-V Timeline – Part One

(please ignore the absolute dates...)

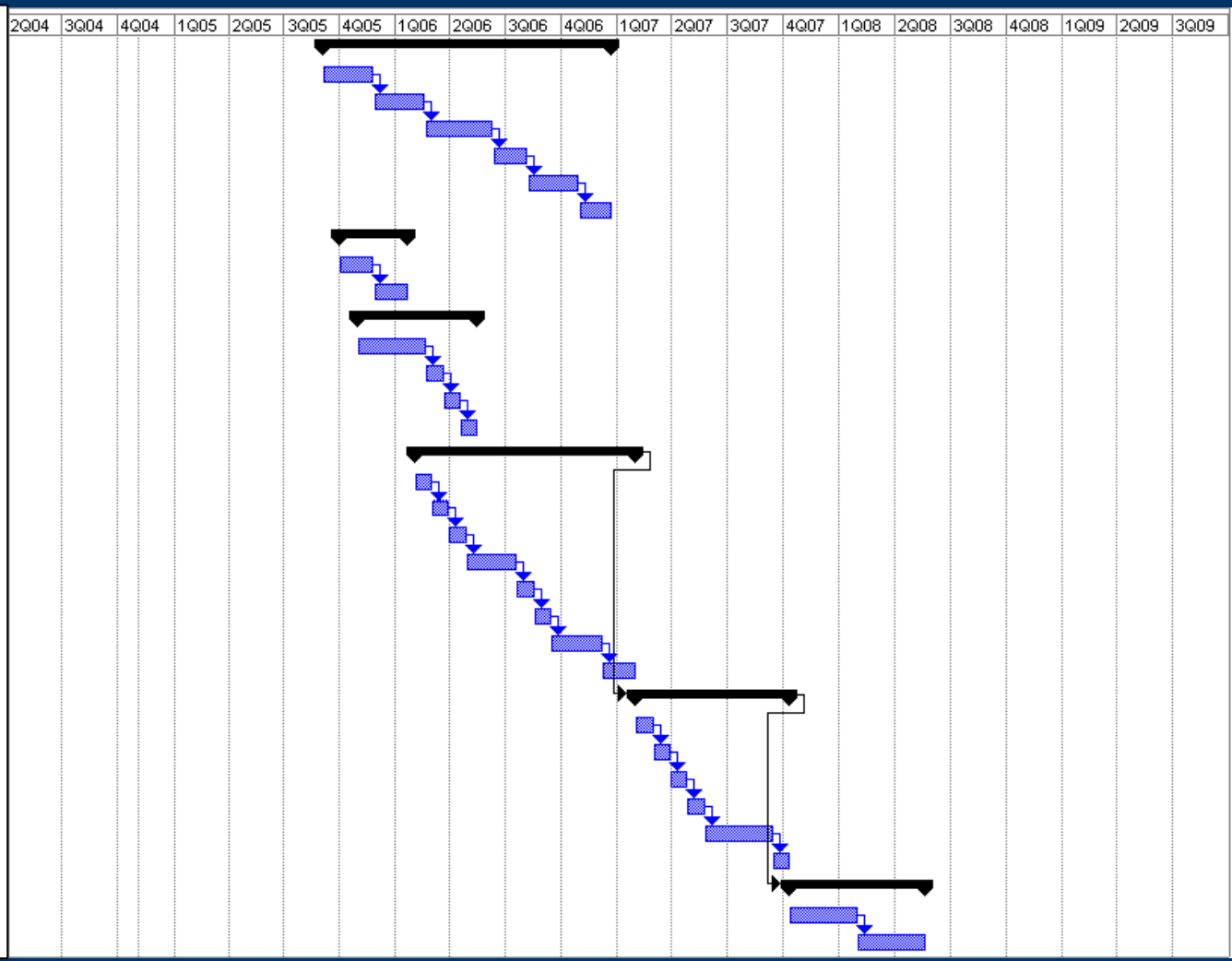
ID		Task Name	Duration
1		**User Interface**	**28 mons**
2		Mc-X Frame to Mc-V	20 wks
3		Image data chooser	8 wks
4		Command line scripts	12 wks
5		Text search and edit	8 wks
6		Dynamic GUI	104 wks
7		**Frame manipulation**	**6 mons**
8		Mc-X to Mc-V concepts	24 wks
9		**Navigation**	**20 mons**
10		Plot orbital tracks	40 wks
11		Calculate subpoint, etc.	40 wks
12		**ADDE Servers in Java**	**16 mons**
13		Local Severs	64 wks
14		**Cursor function**	**3 mons**
15		Types and colors	8 wks
16		Position	4 wks
17		**Point**	**10 mons**
18		Isentropic coords	24 wks
19		Pressure coords	4 wks
20		Histogram	8 wks
21		Color coded plots	4 wks
22		**Grids**	**6 mons**
23		Manipulate and stats	16 wks
24		Color coded plots	8 wks
25		**Query static database**	**3 mons**
26		STNLIST	8 wks
27		CCODE	4 wks



Part Two

(please ignore the absolute dates)

ID	Task Name	Duration
28	**Images**	**17 mons**
29	Local dataset	12 wks
30	AXFORM/ADUMP	12 wks
31	Filters	16 wks
32	Lagrangian	8 wks
33	LEO/GEO	12 wks
34	Data probes	8 wks
35	**Weather text**	**4 mons**
36	WXTLIST	8 wks
37	UALIST	8 wks
38	**Data output to files**	**7 mons**
39	Image	16 wks
40	Grid	4 wks
41	Point	4 wks
42	Text	4 wks
43	**Specific apps**	**13 mons**
44	PLAX	4 wks
45	BAR	4 wks
46	IMGPLOT	4 wks
47	PCMW	12 wks
48	Interactive EB	4 wks
49	FRNTDISP	4 wks
50	Meteorogram	12 wks
51	VWDISP/ADVDISP	8 wks
52	**Utilities**	**9 mons**
53	CHILL	4 wks
54	HEAT	4 wks
55	DATELIST	4 wks
56	Convert Units	4 wks
57	Scheduler (auto update)	16 wks
58	Accounting	4 wks
59	**Loop Management**	**8 mons**
60	DEFLOOP, MOVIE	16 wks
61	Briefing frames	16 wks



Mc-V Budget

- $1.3M total
- $145K received in an overhead grant from SSEC Directors to test the feasibility
- Still seeking the rest for:
  - Programmer training
  - Program design and implementation
  - Testing
  - Documentation
  - Integration and distribution process