# McIDAS History and Future

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# McIDAS

## Man computer Interactive Data Access System

45th anniversary in September 2018, current versions:

- McIDAS-X
  - AIX then X Window System
- McIDAS-V
  - Visualization using VisAD
- Is there another version?

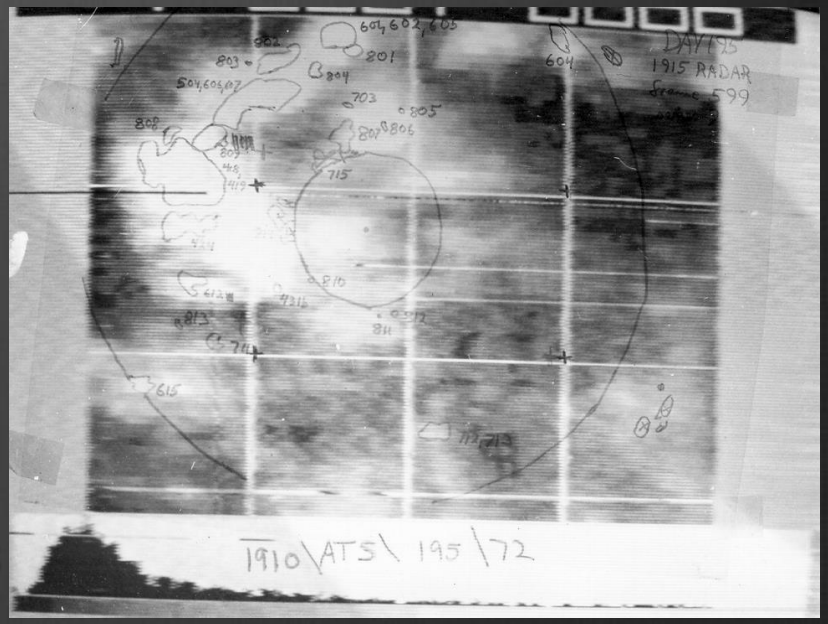
# McIDAS

## aka “Mac”

8 weeks old

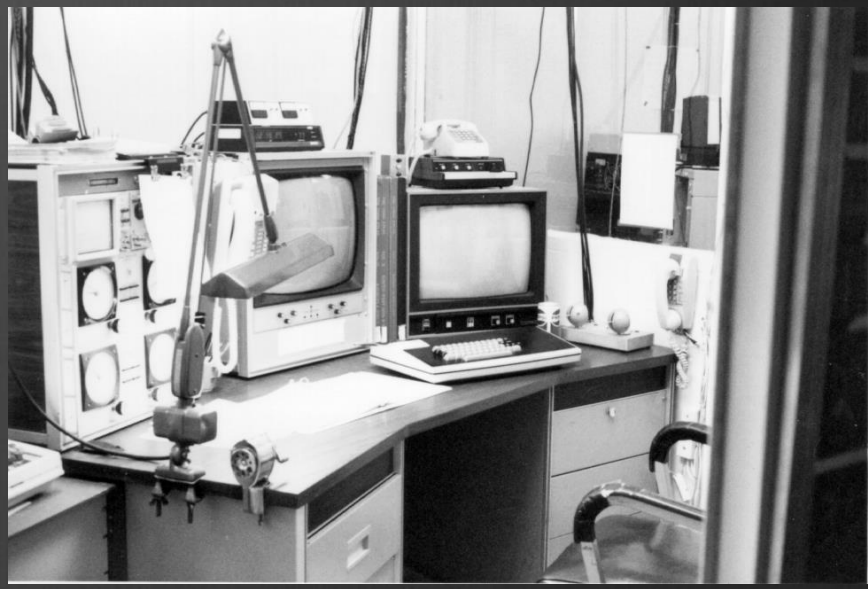
# McIDAS History

- 1960s: Prof. Vern Suomi was striving to exploit the geostationary satellites for time domain information
- McIDAS was initially developed with the goal to mass produce the cloud drift winds
- For the last 45 years, McIDAS has evolved through 5 generations of hardware/software as an internationally renowned system



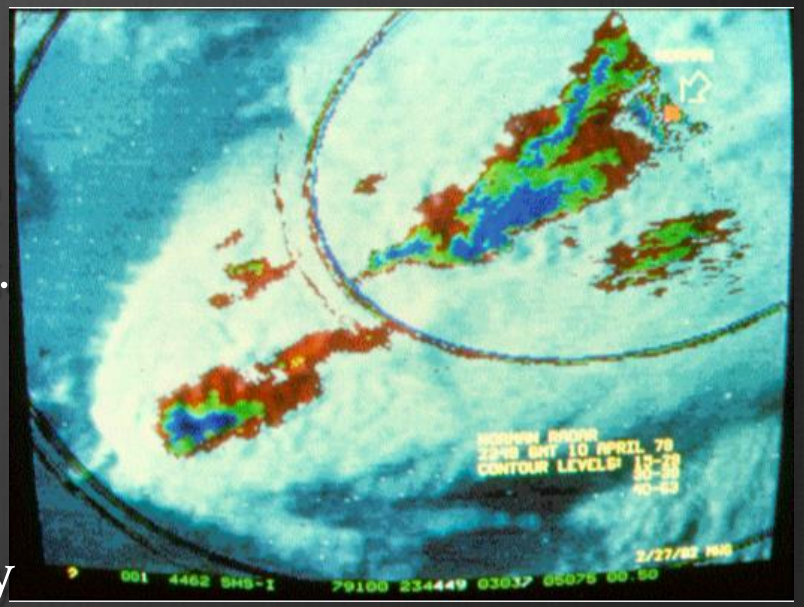
# McIDAS Significant Milestones

- 12 October 1973: McIDAS was first used in a research project by Dave Martin
- 1977: McIDAS installed at WTVT in Tampa, FL; active site until 2013!
- 1978: Cloud-drift winds were manually generated from five geostationary satellites for a year as part of the First GARP Global Experiment (FGGE)



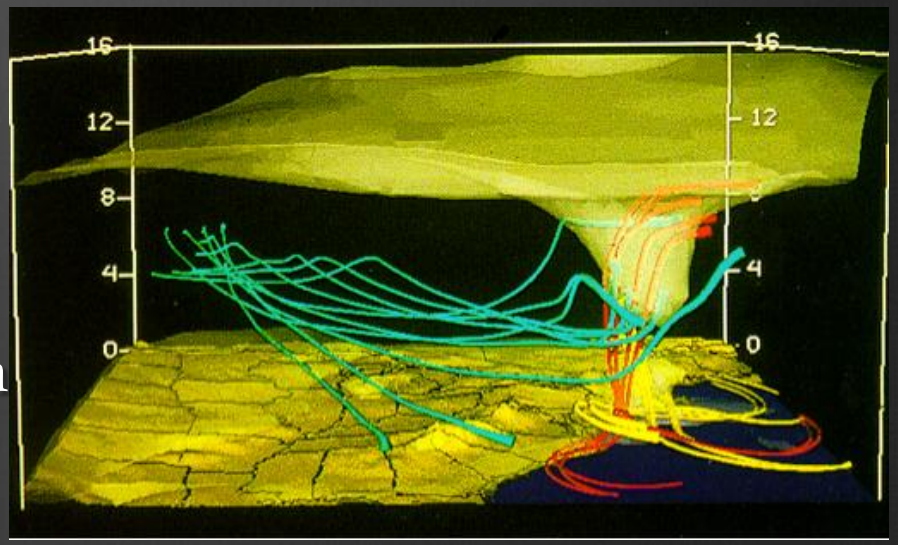
# McIDAS Significant Milestones

- 1979: Congressional delegation visited SSEC to learn about advances in severe storm forecasting in wake of tornadoes in Wichita Falls, TX
- 1982: McIDAS installed at NSSFC to aid in severe weather forecasting.
  - Mesoscale Discussions began in 1986, partly in response to the availability of timely analyses
- 1982: Port to mainframe; funded by People's Republic of China



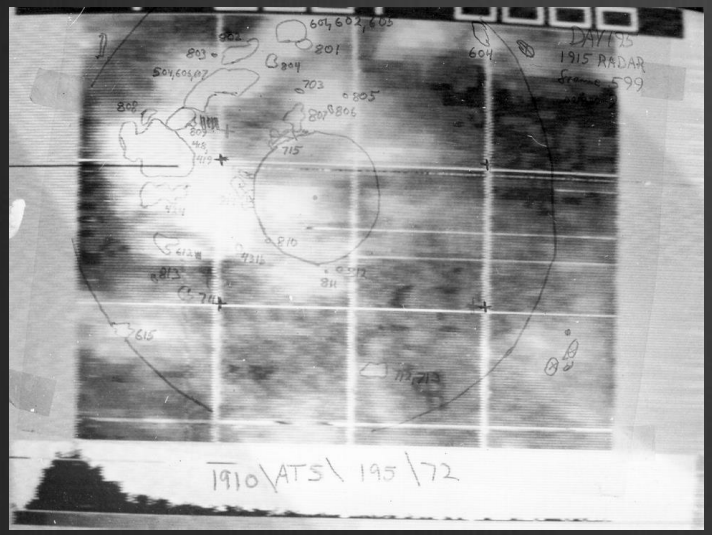
# McIDAS Significant Milestones

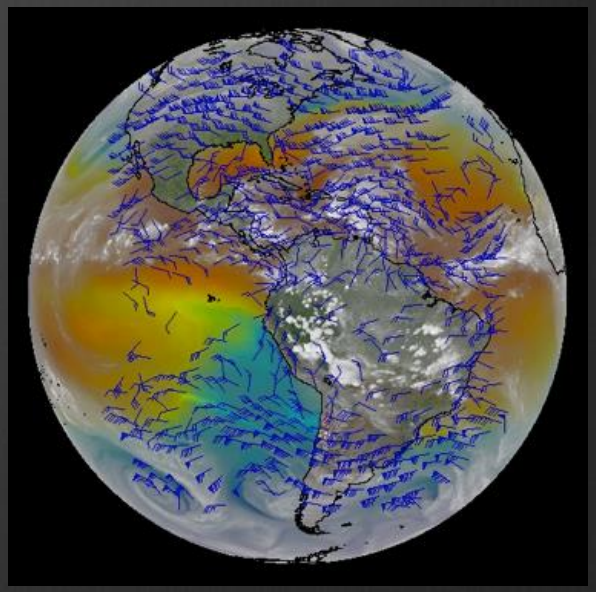
- 1982: Interactive Flash Flood Analyzer (IFFA) based on McIDAS installed at NOAA
- 1989: McIDAS Users' Group formed
- mid-1980s: McIDAS installed at Cape Canaveral and Johnson Space Center in support of the space shuttle
- late-1980s: Installed at NHC



# McIDAS
# Significant Milestones

- 1992: McIDAS-X, Unix-based system
- 1994: CIRA RAMSDIS – GOES satellite data into NWS
- mid-1990s: Abstract Data Distribution Environment (ADDE)

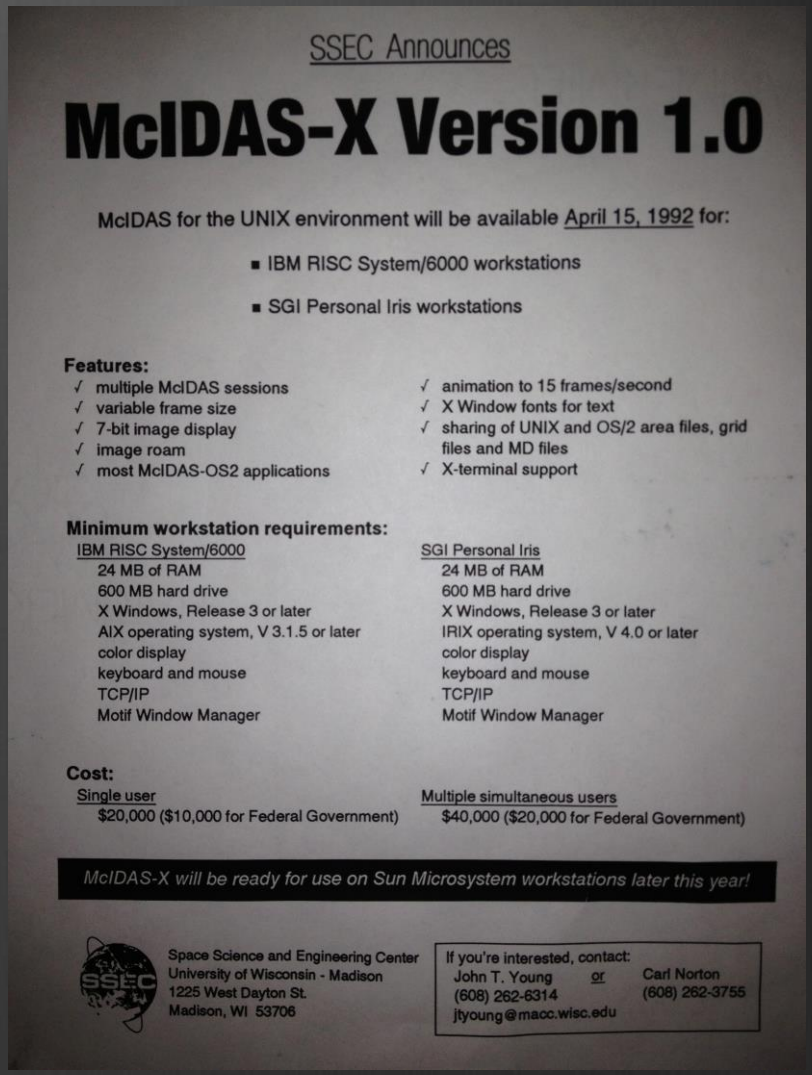


# McIDAS-X
# Current Chapter

# McIDAS-X Introduction

- Ported code from mainframe and DOS- and OS/2-based computers to IBM AIX workstations
- Released April 1992
- A distributed system as opposed to previous mainframe



SSEC Announces

**McIDAS-X Version 1.0**

McIDAS for the UNIX environment will be available April 15, 1992 for:

- IBM RISC System/6000 workstations
- SGI Personal Iris workstations

**Features:**

- ✓ multiple McIDAS sessions
- ✓ variable frame size
- ✓ 7-bit image display
- ✓ image roam
- ✓ most McIDAS-OS2 applications
- ✓ animation to 15 frames/second
- ✓ X Window fonts for text
- ✓ sharing of UNIX and OS/2 area files, grid files and MD files
- ✓ X-terminal support

**Minimum workstation requirements:**

IBM RISC System/6000
- 24 MB of RAM
- 600 MB hard drive
- X Windows, Release 3 or later
- AIX operating system, V 3.1.5 or later
- color display
- keyboard and mouse
- TCP/IP
- Motif Window Manager

SGI Personal Iris
- 24 MB of RAM
- 600 MB hard drive
- X Windows, Release 3 or later
- IRIX operating system, V 4.0 or later
- color display
- keyboard and mouse
- TCP/IP
- Motif Window Manager

**Cost:**

Single user
$20,000 ($10,000 for Federal Government)

Multiple simultaneous users
$40,000 ($20,000 for Federal Government)

*McIDAS-X will be ready for use on Sun Microsystem workstations later this year!*

Space Science and Engineering Center
University of Wisconsin - Madison
1225 West Dayton St.
Madison, WI 53706

If you're interested, contact:
John T. Young (608) 262-6314 jtyoung@macc.wisc.edu
or
Carl Norton (608) 262-3755

# McIDAS-X
# Keys to Success

- Port to Unix
- ADDE (Abstract Data Distribution Environment)
- McIDAS-X Reglue

Resulted in the longevity of McIDAS-X

Reliability, Stability

Solid infrastructure


McIDAS
V

# McIDAS-V Motivation in 2006

- McIDAS-X software (currently written in Fortran 77 and C) has a 40-year heritage resulting in limited extensibility potential
- New visualization concepts cannot be incorporated
- Forthcoming environmental satellite data cannot be utilized efficiently (GOES-R & JPSS operational systems)

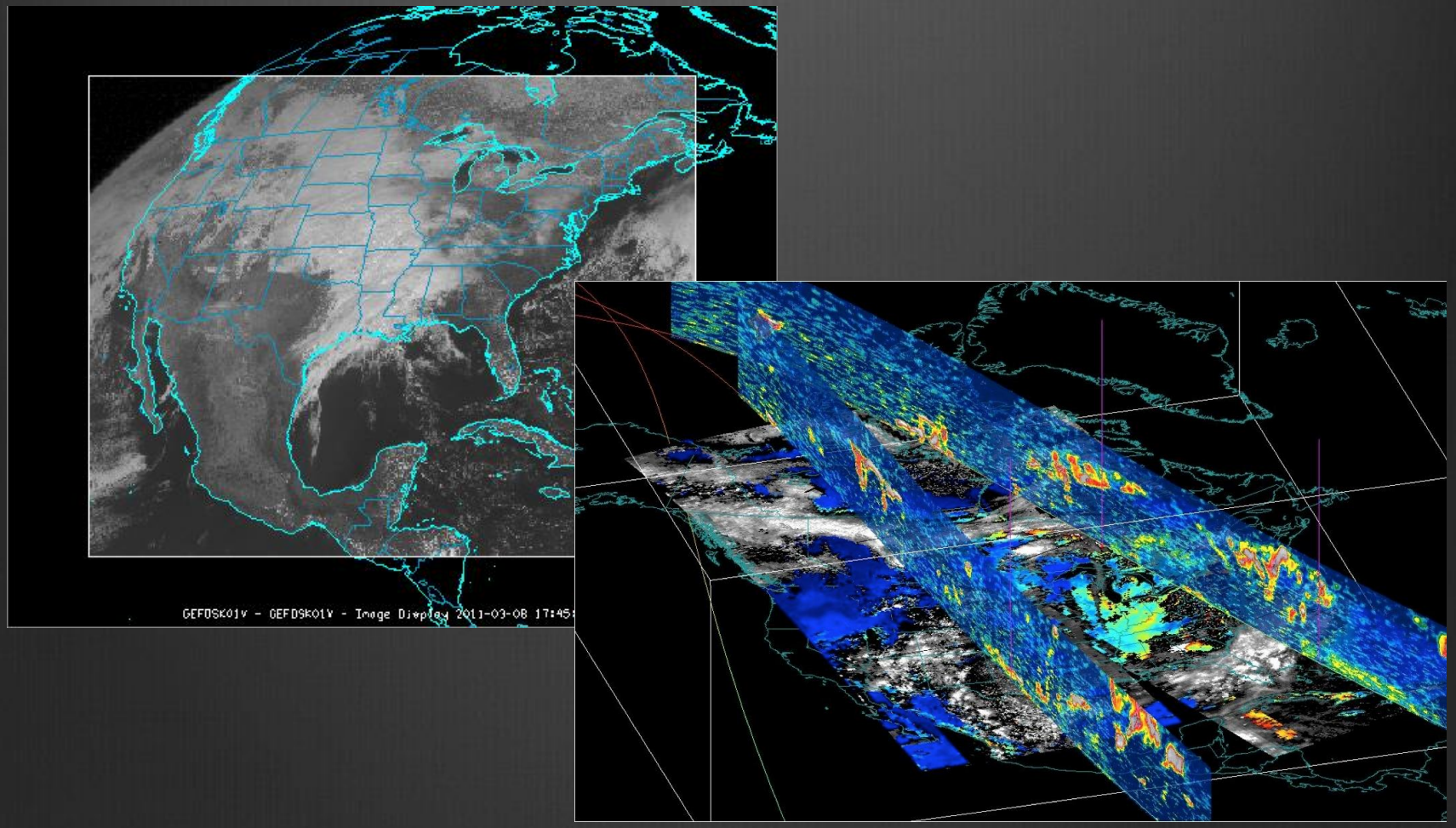
# McIDAS-V Goals

- McIDAS-V shall be a powerful and versatile software system for environmental data processing, analysis and visualization
- McIDAS-V shall support existing and evolving needs of scientific research and algorithm/applications development for new programs, such as NPOESS and GOES-R as well as for retrospective data, such as that from GOES and POES
- McIDAS-V shall support data fusion and algorithm interoperability from existing and future sources
- The McIDAS team shall continue to fully support the MUG and McIDAS-X functionality as users transition to McIDAS-V
- McIDAS-V shall support operational users by providing tools and interfaces that enable a natural transition path for research results into operations
- McIDAS-V shall be used to educate students in remote sensing and physical sciences, and students must be integrally involved in its development, evolution and use

# McIDAS-V Innovative

- Develop new capability in visualization and data analysis: Move beyond 2D to 3D

# McIDAS-V
# Innovative



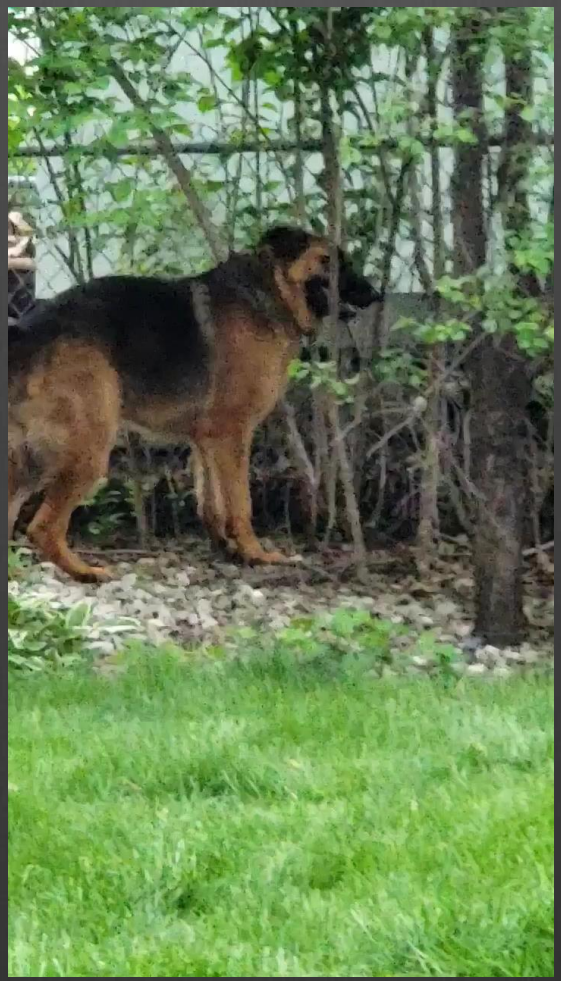
# McIDAS-V Milestones

- 2003: Whittaker and Santek present a McIDAS-V plan to the SSEC Directors
- 2006: Investigations of a "new approach" to data analysis and visualization
- 2007: Collaboration with Unidata to advance VisAD and IDV as the basis of McIDAS-V
- 2008: McIDAS-V becomes an "alpha"
- January 2009: beta 1
- January 2010: beta 5
- September 2010: V1.0

# McIDAS-X and McIDAS-V Software Status

## 2007 MUG Meeting

# Mac
# May 2018: 9 months



# McIDAS-X Future

- More support and compatibility with Python
  - Fewer Fortran and C programmers
  - Important for new ADDE servers to incorporate many more data types
  - Keep current with changes in Python and migrations to languages of the future
- Keep an eye future graphics (visualization) packages
  - X Window Systems is 30-year old technology
  - McIDAS-X dependency is isolated

# McIDAS-V Future

- Stay true to mission and goals
- Continue to investigate unique functionality for visualizing and fusing data
- Improve interface to data
- Stay relevant with changing technology
  - Cloud computing
  - Interoperability with other software and systems