

Radar Data and Analysis Software Tools

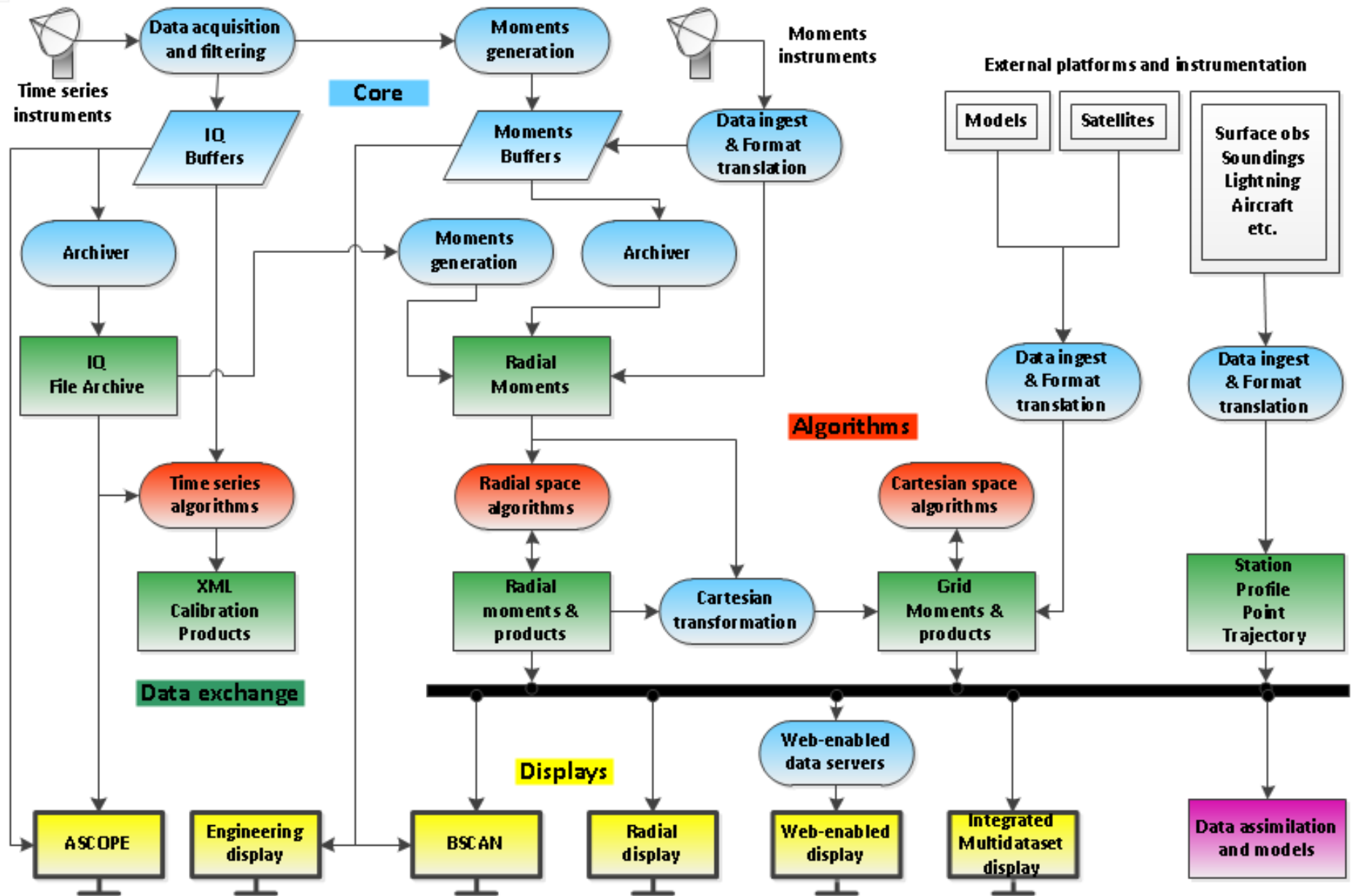
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**NSF Community Workshop on Radar
Technologies**



Radar Data Flow



Wide Community Response to Radar Software Snapshot

Google Docs interface showing a spreadsheet titled "Radar Software Nov 2012 snapshot". The spreadsheet lists various radar software tools and their details.

name of software	very brief description (< 100 words)	input files type and format	output files type and format	contact person and organization	open source (yes or no)	software is/will be publicly available (no restrictions)?	available now as turnkey software? (yes or no)	if yes, website with software and documentation	barriers to turnkey status	in active sw development in the last 3 months? (yes or no)
Py-ART: the Python-ARM Radar Toolkit	Python based (as the top level, lots of C, C++) radar toolkit for the: Reading, Correcting, Mapping, and retrieving geophysical parameters from scanning radars.	Tested with CFRadial, UF, Sigmnet, Lassen, MDV. Ingest based on TRMM RSL. Extensible to other types	CFRadial, NetCDF grids	Scott Collis, Argonne National Laboratory. DoE ARM.	yes	yes (will be)	no	yes (restricted until approved.. can demo) https://github.com/ARDOE/pyart	Complete install process, file details with DoE, documentation	Yes
iRadar	A Mac OS X radar control interface that interacts with a radar. It has AScope for raw I/Q, 3D Live view & Offline view for moment moment data, and hardware monitoring.	In-house protocol for the communication. NetCDF format for offline moment data files. Plan on using the software framework for all the radars within ARRC.	PNG snapshots NSSL formats (*.for & *.aft) using FORTRAN binary write statement	Boon Leng Cheong, ARRC, OU	no	TBD	yes		Mac OS X drag-and-drop	yes
Fast_Interp	FORTRAN-90 code for spherical to Cartesian coordinate conversion for airborne radar.	xltrs3 translator output in "HRD format" from DORADE (sweep files)	NSSL formats (*.for & *.aft) using FORTRAN binary write statement	David Jorgensen, NSSL, NORMAN	available upon request	yes	yes	documentation available upon request	available on HP-UX, linux, and MacOS-X platforms	yes
Windsyn	FORTRAN-90 code for multiple 3_D Cartesian grids into a pseudo-dual-Doppler wind field	NSSL formats (*.for & *.aft). Also capable of performing ground-based radar + airborne synthesis plus "quad-Doppler"	NSSL formats (*.hdr + *.dpw) FORTRAN binary write	David Jorgensen, NSSL, NORMAN	available upon request	yes	yes	documentation available upon request	available on HP-UX, linux, and MacOS-X platforms	yes
		Navigation: type: aircraft insitu, format: CANDIS (Filters to convert from	Type: gridded three dimensional wind velocity : the vertical							


Broad categories

- Format conversion
- Quality control
- Radial to Cartesian transformation
- Radar control
- Perusal/Visualization
- Data Integration using multiple sensors/models
- Multi-Doppler wind synthesis
- Variety of other products (e.g. hydrometeor id, precipitation estimation, data assimilation)

What is missing?

Reduce Hurdles for New Users-- Annual Summer Training Workshop



The image shows a grand, multi-story library interior. The upper levels feature ornate architectural details, including statues in niches and arched windows. The lower level is a large, semi-circular reading room with rows of long wooden tables, each equipped with a lamp. The room is filled with books and study materials. A central aisle leads to a raised platform at the far end. The overall atmosphere is one of historical grandeur and scholarly pursuit.

Archive of “Test bed Data Sets”
QCed and Instrument Simulator
data for testing and comparing
software



Goal: Where are the gaps? What are the community priorities?

What is missing? What functionality (from input to output) in radar software would you like to use in the next 3 years that is currently either not easy to use or not available?

Part 1: Data capture

1. Consider the question individually for 3 min
2. At the signal, form groups of 5-6 people
3. Go around the group once, 1 minute per person, listen to everyone without comment/interruption
4. Work as a group to clearly express your responses in bullet form on giant Post-it notes, there will be a 2 min warning to finalize your group's materials and post on the wall

Part 2: Gallery Walk

1. Take time to circulate around all posters and review the ideas and seek to identify
 - priorities for your personal research
 - priorities for the community
2. Pick up 4 stickers of each color (blue, red)
3. “Vote” for your priorities by placing stickers on the individual items.
 - Blue for your personal research
 - Red for the community as a whole

After this meeting, the results will be tabulated and available for further comment and finalized in January as part of a report to NSF.

