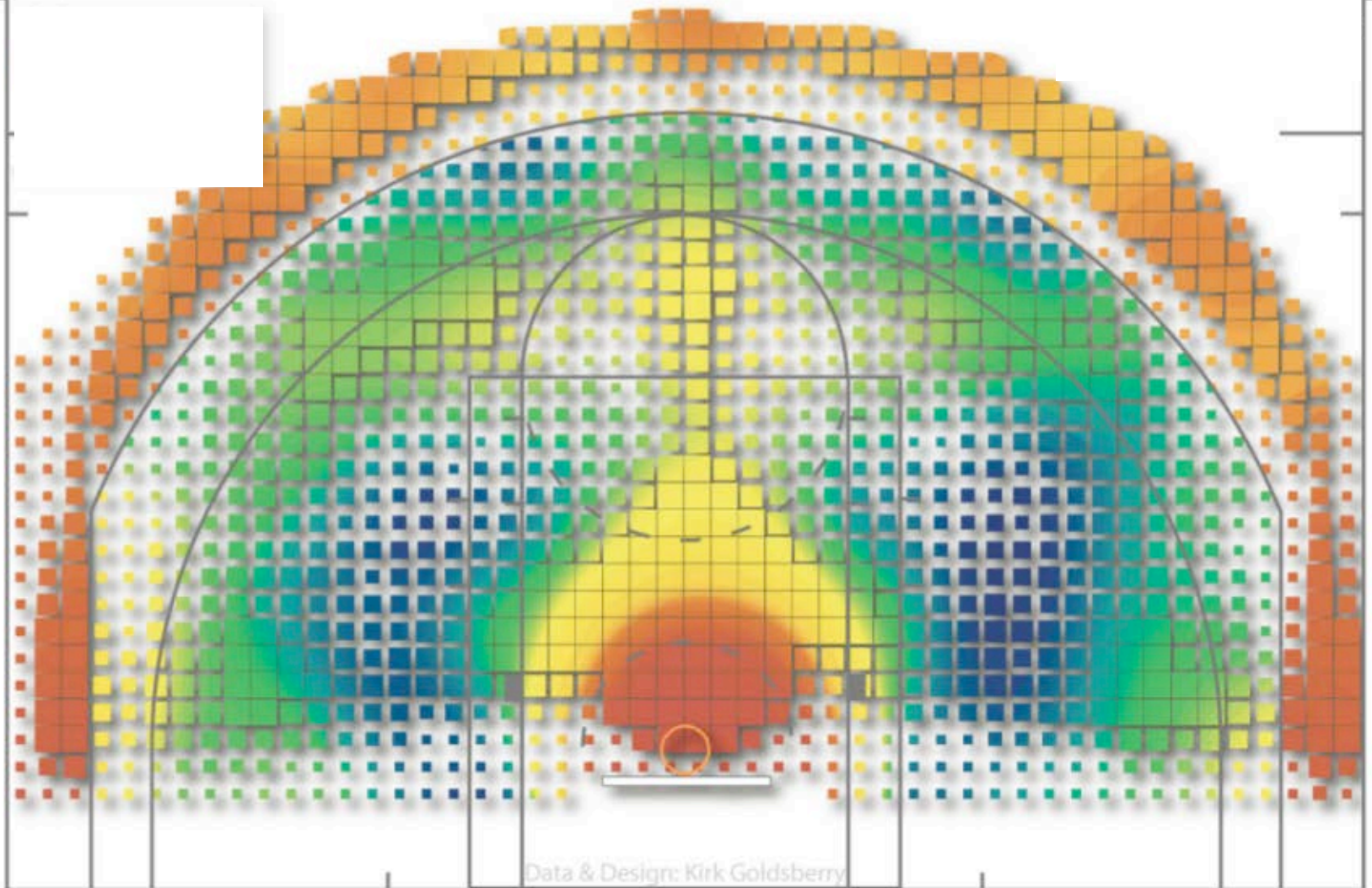


ARM Radar Status

Kevin Widener & Nitin Bharadwaj
ASR Science Team Meeting
March 13, 2012

Interesting RHI Data?



Agenda

- Status Update/New Sites – Widener (15 minutes)
- Scan Strategy – Bharadwaj (5 minutes)
- KAZR-ARSCCL – Johnson (10 minutes)
- ARM Data QC Radar Activities – Theisen (10 minutes)
- SACR Moment Processing – Mead (10 minutes)
- RWP/KAZR Calibration – Tridon (10 minutes)
- CSAPR & NEXRAD Advection Velocities - Protat (15 minutes)
- Analysis & Radar Measurement Model Interaction – Collis (15 minutes)



KAZR

- Picked up where MMCR left off
- All sites are running fine.
- New KAZR Instrument Handbook on-line
 - New transmissions scheme with two frequencies
 - Currently operating in two modes vs. 4 for MMCR
- Ex-Nauru MMCR upgraded and now part of AMF2



WACR

Awaiting frequency authorization
from Indian government

Awaiting replacement chiller

Modulator failure

SWACR



- Operational for StormVEx
- Calibration tests at PNNL
- Further testing at ProSensing before mods
- Now at ProSensing to be converted to Marine WACR (MWACR)
 - Zenith-mode operation during MAGIC
 - Will operate from ANL procured/developed stabilized platform
 - Upgrade will include SACR-like receiver
 - Will incorporate ship motion sensor in data stream
 - Return to pedestal after MAGIC
 - Procuring heavy duty pedestal for future shipboard deployments

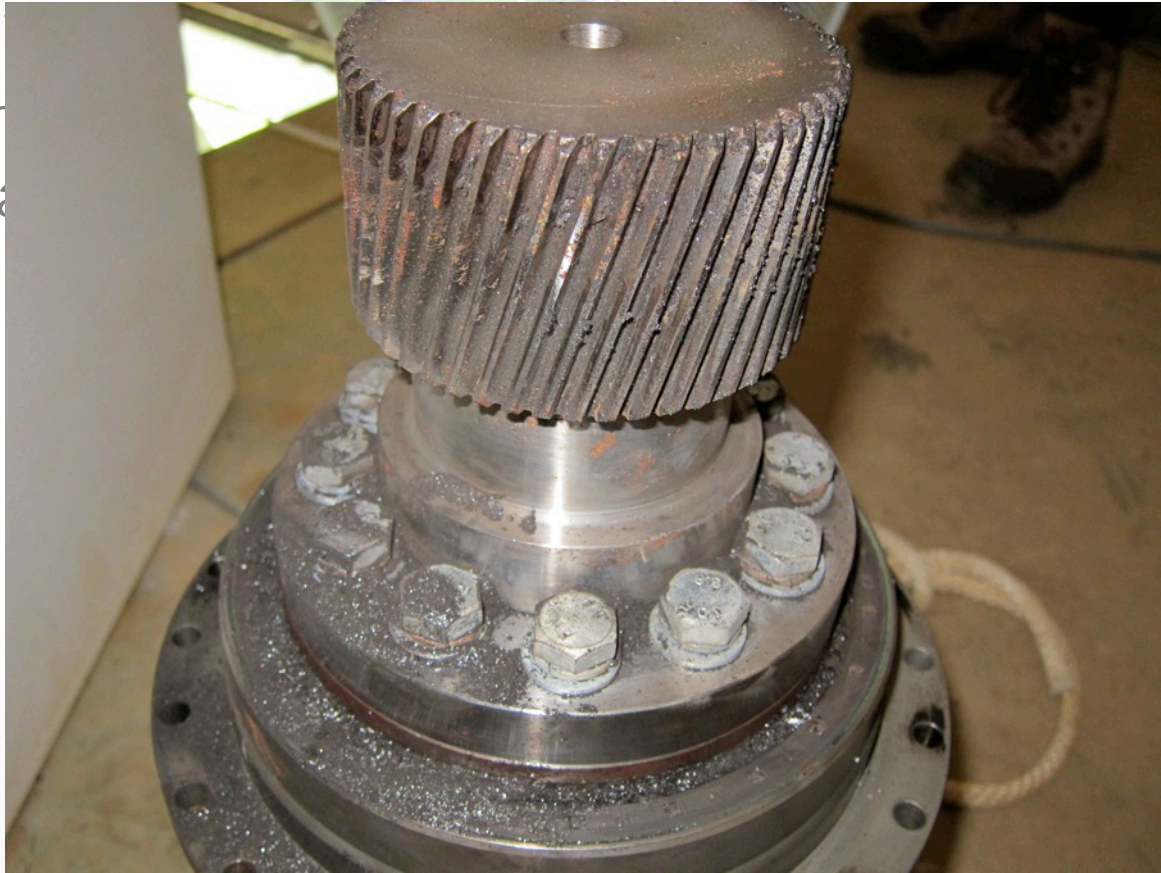
X/Ka/W-SACR

- X-band
◦ CPI
◦ ITAF
- Pedestal
◦ Pro
- Ka-band
◦ Cur
◦ Pro
◦ If it



Manus C-SAPR

- Pedes
- Design
mecha
- Upgra



or

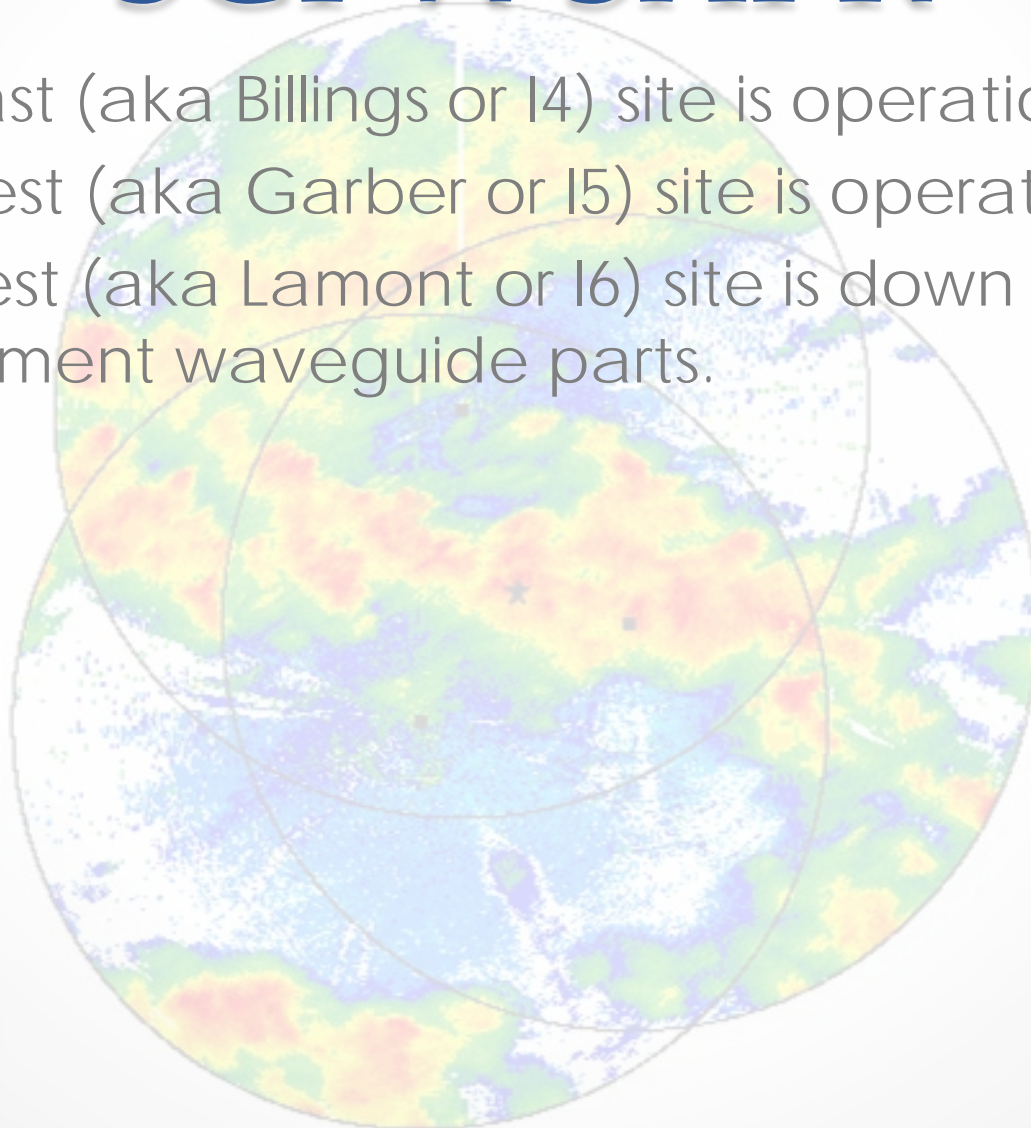
SGP C-SAPR

- Waveguide/rotary joint alignment issues
- Causes dehydrator to lose pressure



SGP X-SAPR

- Southeast (aka Billings or I4) site is operational
- Southwest (aka Garber or I5) site is operational
- Northwest (aka Lamont or I6) site is down awaiting replacement waveguide parts.



Barrow X-SAPR

- Currently operational.
- Replaced radar control processor last month.
- Issue may be with intermittent RS232-USB devices.



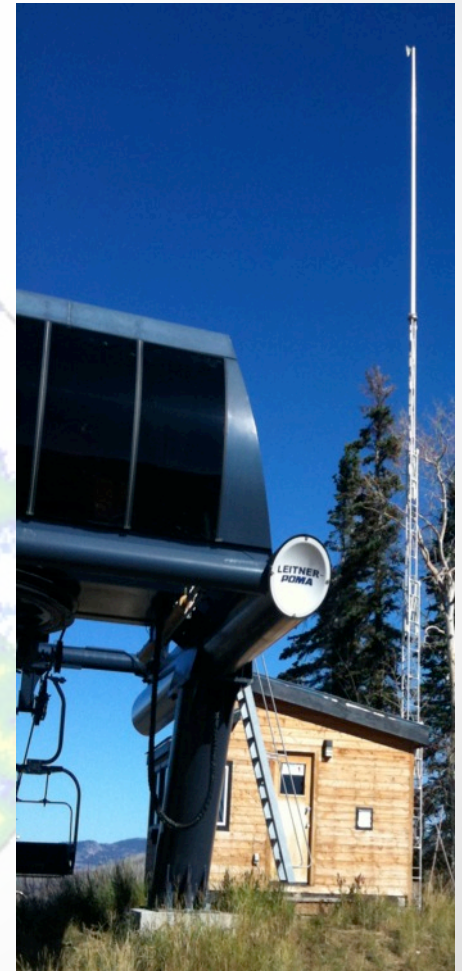
ARM Radar Data Flow

Radar	Site	9/10	10/10	11/10	12/10	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	1/12	2/12	
KAZR	SGP					26	28	31	31	31	30	30	30	31	31	30	31	31	29	
	Barrow									21	30	31	26	30	31	30	31	31	29	
	Darwin							31	30	31	30	27	31	29	31	30	31	31	29	
	Manus							22	30	31	30	27	31	29	31	30	31	31	29	
	Gan														27	30	31	31	8	
Ka-SACR	SGP								2	31	18	16	12	11	0	9	24	17	14	
	Barrow														31	22	22	9	0	
	Manus																			
	Darwin																			
	Gan														8	4	0	0	0	
	AMF1	Not installed - being used as development system @ ProSensing																		
W-SACR	SGP								6	11	14	0	8	7	0	9	24	21	9	
	Barrow														31	22	2	0	0	
	AMF1	Not installed - being used as development system @ ProSensing																		
X-SACR	Manus																			
	Darwin																			
	Gan														6	0	0	0	0	
C-SAPR	SGP							7	28	27	16	31	16	27	31	10	0	0	19	
	Manus												19	30	6	25	10	0	0	
X-SAPR	SGP SE								12	31	29	21	11	23	31	28	18	23	9	
	SGP SW								11	31	27	23	22	30	31	29	20	28	6	
	SGP NW								11	28	27	14	28	25	31	27	23	3	14	
	Barrow										6	8	7	8	23	19	25	1		
WACR	India																			
	Azores	8	31	30	31	6														
SWACR	StormVEx			4	31	31	28	31	25											

Courtesy of the ARM Archive

Calibration

- SACR Corner Reflectors
 - SGP
 - Barrow (temporary siting)
 - Manus (one out of two installed temporarily)
 - Darwin (one out of two installed temporarily)
 - Oliktok – should be easy
 - Graciosa, Azores – may be hard
 - AMFs – must be a priority during siting!
- KAZR/WACR
 - Compare with SACR where available
 - Not available during MAGIC
- X-SAPR/C-SAPR
 - Signal injection
 - Solar calibration



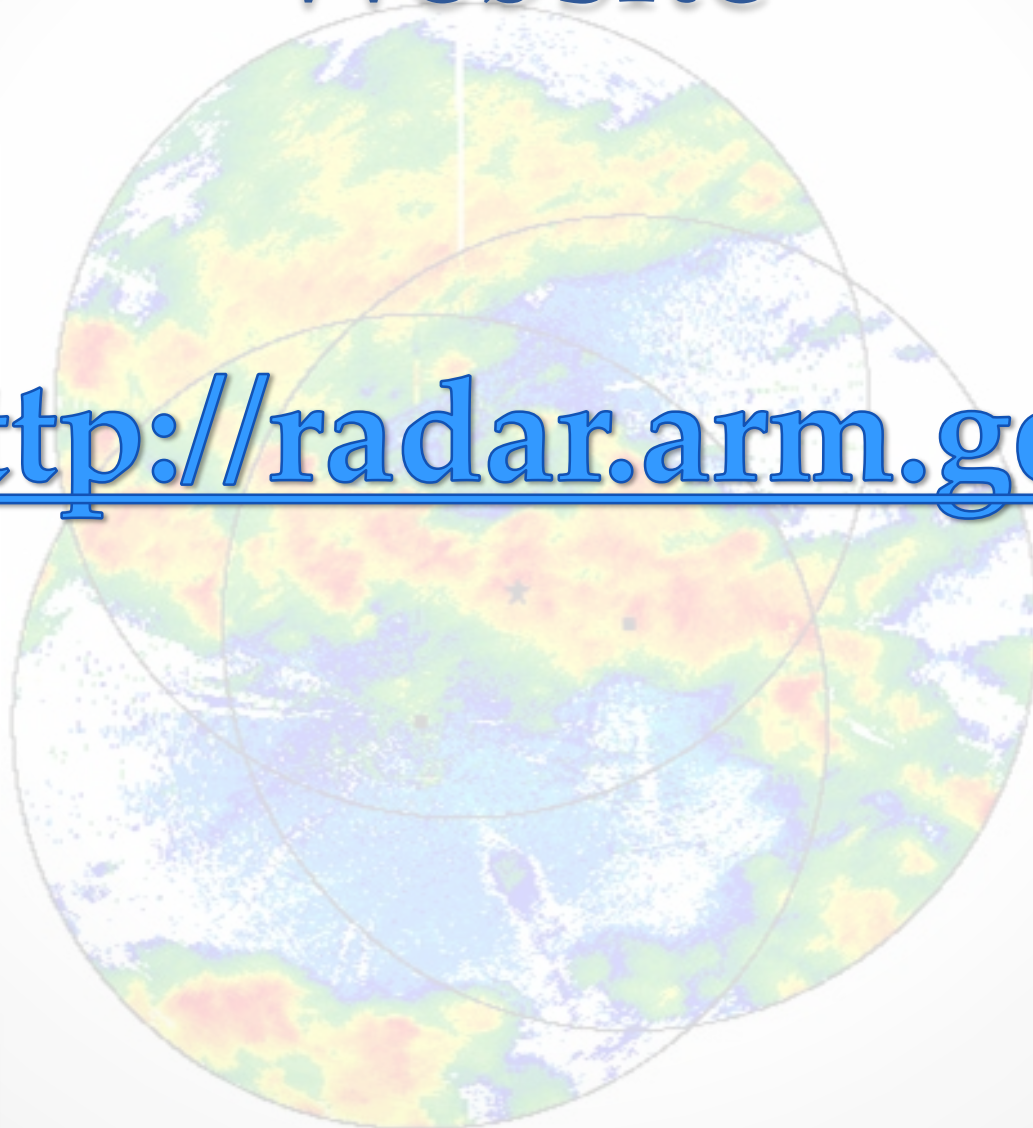
Another Idea

- Small UAV with known RCS
- Might be able to try this at Oliktok
- Possibly provide absolute calibration for ALL ARM radars!



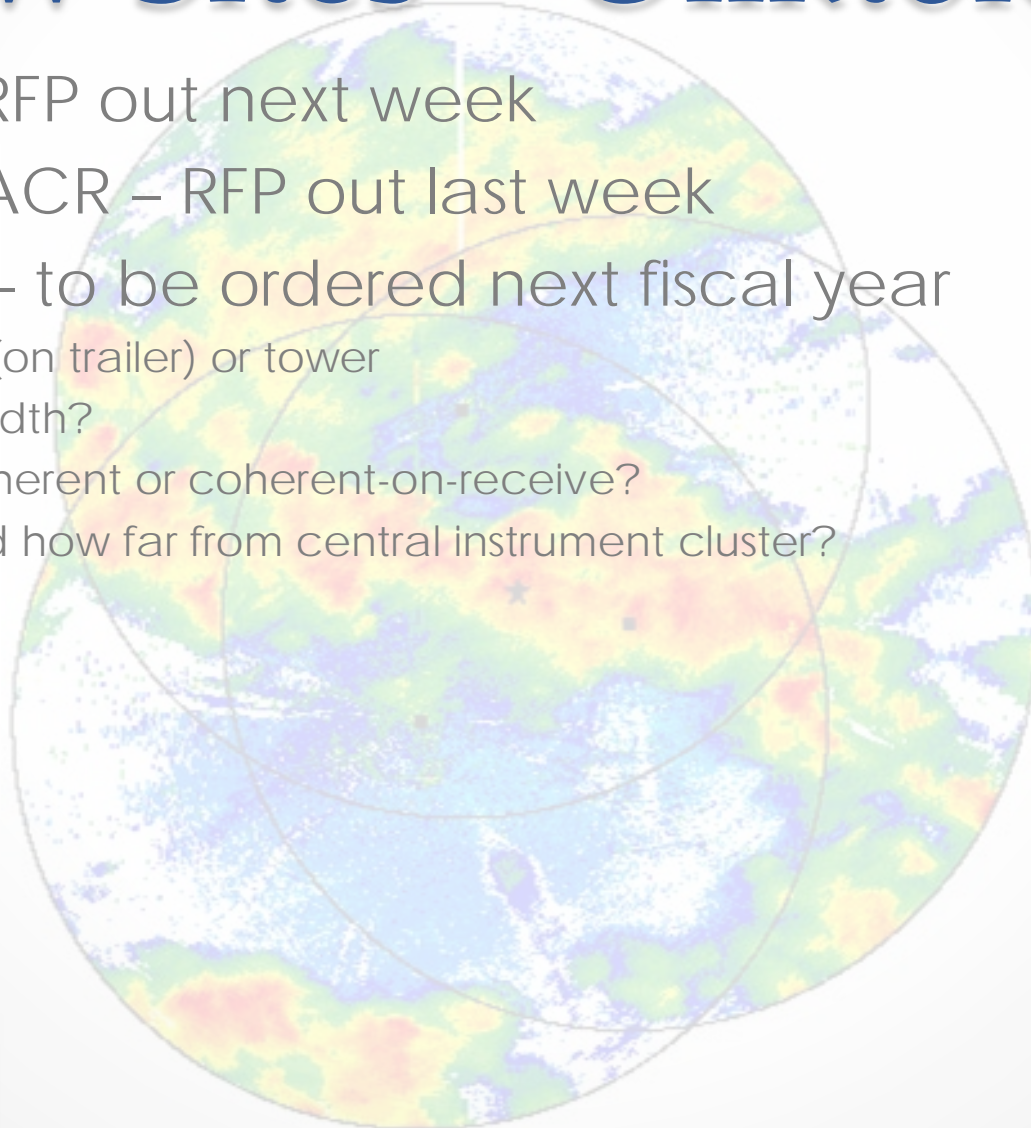
Website

<http://radar.arm.gov>



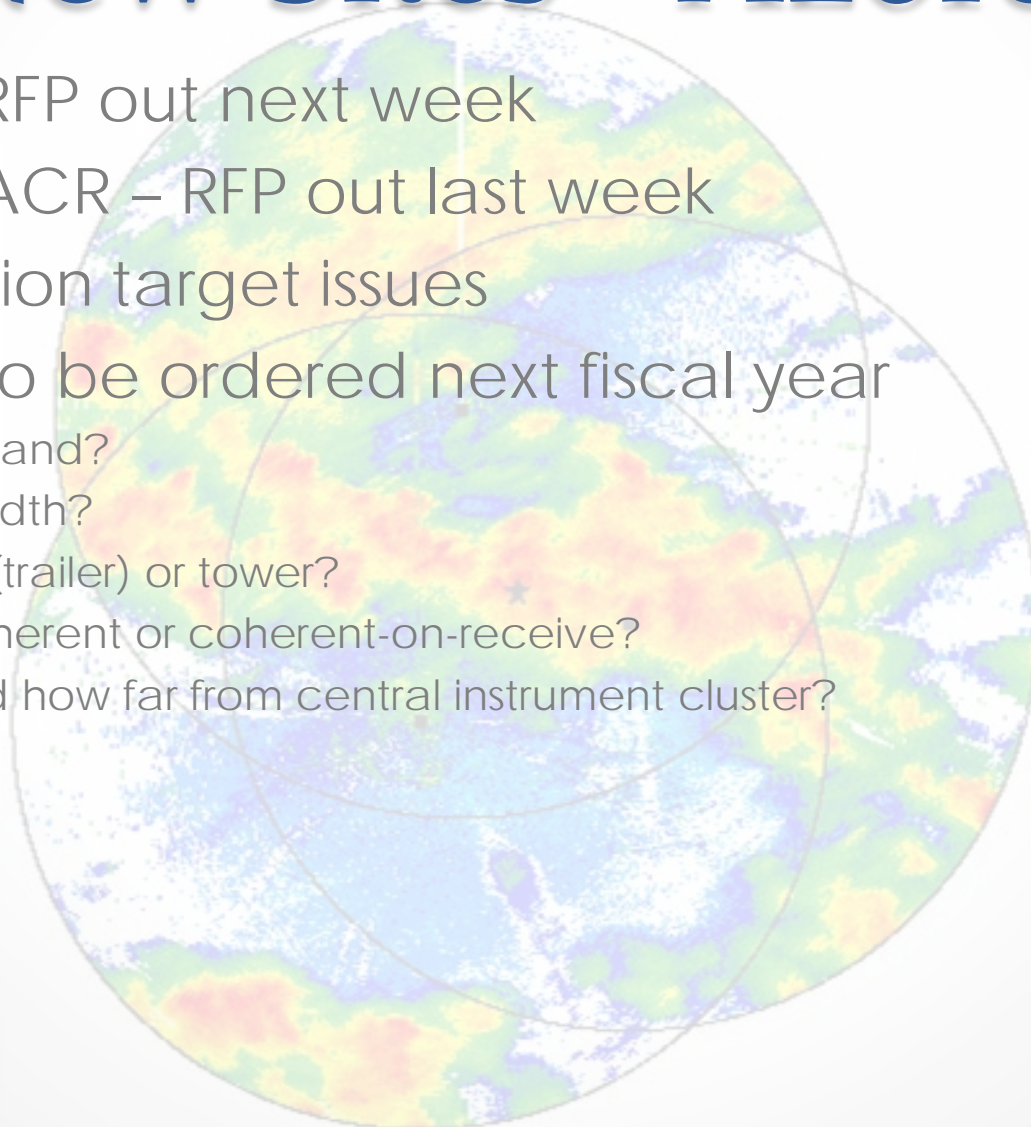
New Sites – Oliktok Pt.

- KAZR – RFP out next week
- Ka/W-SACR – RFP out last week
- X-SAPR – to be ordered next fiscal year
 - Mobile (on trailer) or tower
 - Beamwidth?
 - Fully coherent or coherent-on-receive?
 - Located how far from central instrument cluster?



New Sites - Azores

- KAZR – RFP out next week
- Ka/W-SACR – RFP out last week
- Calibration target issues
- SAPR – to be ordered next fiscal year
 - X or C band?
 - Beamwidth?
 - Mobile (trailer) or tower?
 - Fully coherent or coherent-on-receive?
 - Located how far from central instrument cluster?



Grasiosa Profile

