NRAO Quarterly Status Update 1 FY 2013
October 1 - December 31, 2012
02/12/2013

blue (early), green (on track), yellow (behind), red (critically behind)

Q1 Performance Assessment

POP Milestone	TASK NAME	QUARTERLY DEADLINE	COST	SCHEDULE	TECHNICAL
	NRAO All Funding				
	Observatory Science Operations				
	Scientific User Services				
	Helpdesk/User Forums				
4	Upgrade to ensure transfer of tickets and knowledgebase articles from Kayako v3.0 into Kayako v4.0 complete	12/31/2012			
	User Documentation				
6	Update of 'casaguides' for 6th CASA Release	12/31/2012			
	Data Processing				
10	Automated calibration of standard VLA observations completed	12/31/2012			
	Science Software Development (CASA)				
15	CASA upgrade 4.0: migration of Python Binding infrastructure, support for ALMA and EVLA Low Frequency Polarization, focus on system performance and parallelization	12/31/2012			
	ObsPrep Software				
18	OPT release will include capabilities, resource set-ups, and documentation ready for VLA Full Science Operations	12/31/2012			
	Software Research & Development				
24	Resolve the outstanding numerical issues in the combined MS-MFS and Wide-band A-Projection algorithm	12/31/2012			
	Data Management (See CIS)				
	Observatory Telescope Operations				
	ALMA Construction				
27	Complete AAER	12/31/2012			
28	Complete AOS power and fiber optic connections to antenna stations	12/31/2012			
29	Deliver nutator unit 1	12/31/2012			
31	Complete OPT acceptances	12/31/2012			
32	Deliver Band 10 WCAs to OSF	12/31/2012			
34	Deliver FE test set	12/31/2012			
35	Deliver FEHV unit 1 to OSF	12/31/2012			
37	Deliver BE AA Test Stand	12/31/2012			
	EVLA Construction				
38	All hardware delivered and under NM Ops purview	12/31/2012			
39	All construction equipment and space transferred to NM Ops	12/31/2012			
40	Risk Plan closed out	12/31/2012			
46	Final cryogenic system installed on antennas	12/31/2012			
47	Final X-Band receiver installed on antennas	12/31/2012			
48	Final Ku-Band receiver installed on antennas	12/31/2012			
49	Computing hardware purchased	12/31/2012			
	VLA Commissioning and Support				
50	Support semester 2012B Early Science observing	12/31/2012			
51	Complete commissioning of capabilities offered for 2013A	12/31/2012			
53	Define and document capabilities for semester 2013B CfP	12/31/2012			
	VLBA Infrastructure Modifications/Upgrade Projects				
64	Narrow-bandwidth modes verified	12/31/2012			
	GBT Modifications/Upgrades Projects				
	Digital Servo Replacement				
68	Control kernel delivered into integration test lab	12/31/2012			
	20m Telescope Modification/Upgrade Projects				
	RadioSkyNet				
77	L-Band receiver installed on 20m	12/31/2012			
78	Telescope refurbishment complete	12/31/2012			
	Observatory Development Programs				
	Central Development Laboratory				
	Low Noise Amplifiers				
80	Test 68-90 GHz LNA using cryo3 devices	12/31/2012			
	Millimeter/Sub-Millimeter Detectors				
86	Measure 375-500 GHz balanced mixer	12/31/2012			

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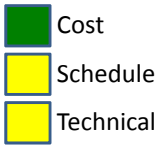
	Optics and Electromagnetic Components				
90	Test 33-50 GHz turnstile junction OMT	12/31/2012			
	Phased Array Feeds				
94	Fiber installations complete	12/31/2012			
	PAPER/HERA				
107	Ship first 25 elements of upgrade	12/31/2012			
	ALMA Development				
	Band 5 Local Oscillator				
114	"Kick-off" meeting	12/31/2012			
115	Band 5 pre-production LO built & test complete	12/31/2012			
116	Frequency doublers procurement and test complete	12/31/2012			
117	Integration and test with Band 5 cold cartridge complete	12/31/2012			
	2nd Generation Receiver for ALMA Band 6				
121	"Kick-off" meeting	12/31/2012			
	Design Study for Production of Band 2 Cartridges				
127	"Kick-off" meeting	12/31/2012			
128	Draft specifications & ICD	12/31/2012			
129	MMIC LNA delivered to ARO	12/31/2012			
130	MIC LNA delivered to ARO	12/31/2012			
132	Modifications to 12m receiver inserts complete	6/28/2013			
	Ultra-Wideband Quantum Limited Amplifiers				
147	"Kick-off" meeting	12/31/2012			
	Unleashing Large Dataset Science				
151	"Kick-off" meeting	12/31/2012			
	VLA Development				
	VLA Low-Frequency Receivers				
165	First observations using 16 receivers with low-band	12/31/2012			
	GBT Development				
	VEGAS Development				
176	Wideband spectrometer mode successfully tested on GBT	12/31/2012			
	ARGUS (GBT 4x4 Comet Camera)				
179	Focal plane and cryostat Critical Design Review	12/31/2012			
	GBT MUSTANG1.5				
181	Cryogenic parts delivered	12/31/2012			
182	Initial cool down	12/31/2012			
	Observatory Administrative Services				
	Administration				
	Business Services				
191	All business units aligned with the WBS in JD Edwards	12/31/2012			
	MIS				
195	Implementation to Chart of Accounts complete	9/30/2013			
	CAP				
197	Export Compliance Program implemented across NRAO	12/31/2012			
	Human Resources				
	Compensation				
198	An assessment of NRAO's management structure complete.	12/31/2012			
	Benefits				
201	Implementation of the revised HSA/HDHP Plan complete	12/31/2012			
	Employee Relations				
202	Complete an assessment of NRAO's Ombudsman Program	12/31/2012			
	CIS				
	CCE				
204	Power and carbon footprint review for Computing resources.	12/31/2012			
	Data Management				
208	Implementation of ALMA Science Archive access from the NAASC Web Portal	12/31/2012			
211	Web-based user interface for CASA pipeline tasks	12/31/2012			
213	Installation of a secure 10Gigabit/s Internet link for the GB site	12/31/2012			

Quarterly Status Update (QSU) #1 FY 2013
October – December 2012

NSF Review – February 13, 2013

Atacama Large Millimeter/submillimeter Array
Expanded Very Large Array
Robert C. Byrd Green Bank Telescope
Very Long Baseline Array

POP MILESTONE #: 10
Observatory Time Allocation: Data Processing
Title: Automated calibration of standard VLA observations completed



COST: There is no change to the cost of the VLA pipeline.	TECHNICAL: Some technical issues were found when running CASA in an automated mode on the post-processing cluster. Work-arounds are being developed, but concentration on fixing this problem, along with higher priority heuristic development, delayed the implementation of the QA metrics during Q1.
SCHEDULE: Preliminary QA metrics were not implemented until January 21, three weeks behind original schedule. All other items associated with this milestone are complete.	RISK & MITIGATION: The risk associated with the delay in implementing the QA metrics during Q1 is low. They will be in place before the start of the D-configuration, January 25, 2013.

COST: No impact.

SCHEDULE: This milestone comprises a number of components, all of which need to be complete in time for the pipeline to run on D-configuration scheduling blocks. Documentation for users was posted to tell them how to set up their SBs in order for the pipeline to run successfully. A mechanism for archiving pipeline-derived products was finalized. The VLA pipeline scripts have been integrated with other pipeline infrastructure software to control triggering of the pipeline upon completion of an observation, and the re-ingestion of pipeline derived products. A cluster scheduler was deployed. The only missing component originally scheduled for Q1 was the implementation of preliminary quality assurance (QA) metrics, which were finally implemented in the January 21, 2013, version of the pipeline.

TECHNICAL: The delay in the implementation of the QA metrics was caused by the need to focus on some technical issues relating to the automated running of CASA on the cluster nodes, and on heuristic development for S-Band in the presence of strong amplifier compression when observing close to the geostationary satellite belt.

RISK & MITIGATION: The remaining risk associated with the VLA pipeline is low. The pipeline will be ready to process continuum observations at the start of the D-configuration.

POP MILESTONE #: 18

Observatory Time Allocation: ObsPrep Software

Title: OPT release will include capabilities, resource set-ups, and documentation ready for VLA Full Science Operations

Cost
Schedule
Technical

COST: The cost of the OPT development remains unchanged by this delay.	TECHNICAL: There have been technical issues with the implementation of Doppler setting in the spectral line user interface. The new delivery date is January 25.
SCHEDULE: Deployment of the full OPT functionality is delayed by three weeks. The delay is caused by the loss of a key user interface developer, and a delay in getting this position approved for re-hire.	RISK & MITIGATION: Potential risk: no scheduling blocks able to be submitted and the array sits idle. Mitigation: staged release of OPT, first with access to continuum and wideband spectroscopy set-ups, spectral line interface coming later.

COST: No impact.

SCHEDULE: Deployment of the full OPT functionality is delayed by three weeks. The delay is caused by the loss of a user interface developer, and a delay in getting this position approved for re-hire.

TECHNICAL: There have been technical issues with the implementation of Doppler setting in the spectral line user interface. The new delivery date is January 25.

RISK & MITIGATION: The risk of not delivering the OPT at all before the beginning of D-configuration is severe: no scheduling blocks submitted and the array sitting idle. To avoid this, we first notified users that as of December 21, they are able to set up their scans in their SBs, but have to use "dummy" resources. We then released a version of the OPT on January 8 that can support all standard continuum set-ups, as well as 3-bit set-ups needed for redshifted CO searches. As soon as the spectral line interface is ready, users will be notified that they can make SBs for spectroscopy.

POP MILESTONE #: 28
ALMA Construction
Title: Complete AOS power and fiber optic connections to antenna stations

Cost
Schedule
Technical

COST: • BCRs are in process to cover the cost to complete activities for the AOS Utilities work • Procurement process to issue the work for the extended array power disconnectors will start in Q2	TECHNICAL: • No issues
SCHEDULE: • Completion of the AOS Utilities Installation has moved to the end of Q3 2013 • This has no critical implication on the ALMA schedule	RISK & MITIGATION: • No risk to the ALMA schedule or ALMA Science; no mitigation is necessary

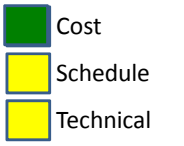
COST: BCRs are still in process to cover the cost to complete activities for the AOS Utilities work.

SCHEDULE: The Contractor is delayed in finishing the work, but is on track to finish at the end of Q2 FY13. Procurement process to issue work on the Extended Array power disconnectors will proceed in Q2 FY13. There is no critical implication on the ALMA schedule and no risk for the Cycle 1 science program.

TECHNICAL: No issues.

RISK & MITIGATION: Not required.

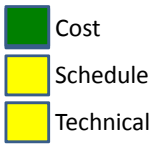
POP MILESTONE #: 29
ALMA Construction
Title: Deliver nutator unit 1



COST: • Cost for Nutator delivery is on track	TECHNICAL: • Nutator Unit #1 Factory Acceptance testing conducted in Taiwan established satisfactory performance • Technical Performance is noted here as "behind" because of need to confirm actual physical and power/communication interface with an ALMA Antenna
SCHEDULE: • Delays in delivery of recoated subreflectors result in delay of Unit #1 FAT until mid-December • Unit #1 arrived at OSF on 08 Jan • Unit #1 Site Acceptance Testing to begin on 21 Jan	RISK & MITIGATION: • As noted, there is a minor Technical risk that Unit #1 could experience an Antenna Interface Issues • To minimize the risk schedule delays, ASIAA and NAAIPT Lead Engineers will be on-site along with NRAO Control System Engineer

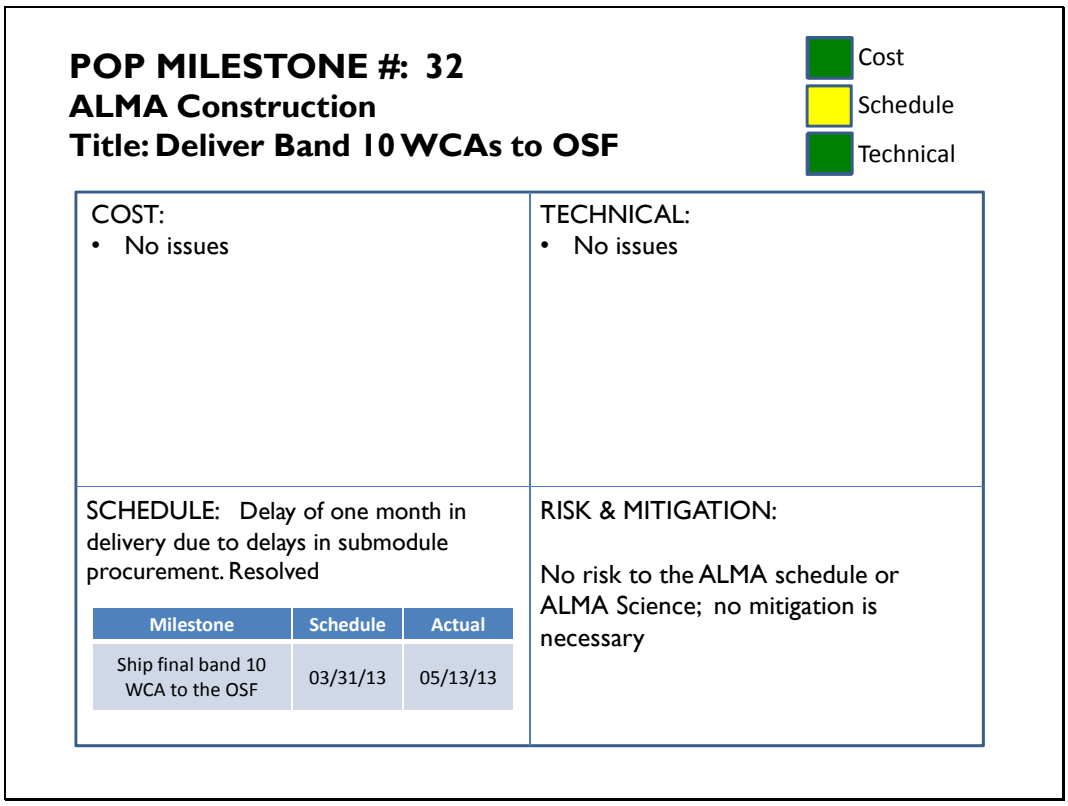
RISK & MITIGATION: To minimize the risk of interface issues causing schedule delays, ASIAA and NAAIPT Lead Engineers will be on-site along with NRAO Control System Engineer to assist the Taiwanese Engineering Team (CoTech/RST).

POP MILESTONE #: 31
ALMA Construction
Title: Complete OPT acceptances



COST: • Cost for OPT acceptances is on track	TECHNICAL: • Given past performances, there is a minor possibility that one of the three remaining OPT Units will not perform satisfactorily
SCHEDULE: • Acceptance Testing of Units #4 & #5 delayed by Pointing Acceptance Tests of DV25 • FAT of Unit #6 delayed by NRAO availability until early January • Site Acceptance of Unit #4 nearing completion	RISK & MITIGATION: • On-site NA AIPT engineering support extended until end of February to conduct site acceptance testing

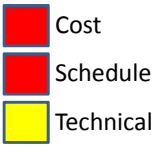
SCHEDULE: Acceptance Testing of Units #4 & #5 delayed by Pointing Acceptance Tests of DV25 because it was determined that the version of ALMA Antenna Control Software being used by NA AIPT at the Vertex SEF does not allow execution of simultaneous pointing Scheduling Blocks; therefore completion of DV25 Pointing Acceptance was given scheduling preference.



SCHEDULE: The delivery of Band 10 WCAs was delayed one month due to delay in submodule procurement. Issue is now resolved.

RISK & MITIGATION: Not required. The cold cartridge deliveries (with which the WCAs are used) from NAOJ will not be complete until 2014.

POP MILESTONE #: 35
ALMA Construction
Title: Deliver FEHV unit 1 to OSF



COST: • Cost to produce FEHV units exceeds allocated budget • No decision has been made to allocate additional required budget until the NA ALMA Cost-to-Complete exercise is finalized	TECHNICAL: • Major design issues have been resolved • Design is mature to make a first unit • Design is frozen until budget issues are resolved
SCHEDULE: • Once decision is made to finalize design and start production, 12 months will elapse to fabricate the four units	RISK & MITIGATION: • JAO has an alternate FE exchange equipment that has been in use for many years • The new FEHV would increase efficiency and safety of the operation, but is not stopping the operation

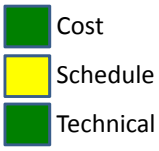
COST: Cost to produce four FEHV units exceeds allocated budget. No decision has been made to allocate additional required budget pending the NA Cost-to-Complete exercise.

SCHEDULE: Once decision is made to finalize design and start production, 12 months will elapse to fabricate the four units; this would go into FY2014.

TECHNICAL: Major design issues have been resolved and the design is mature to make a first unit. A Delta-CCR is required to start fabrication of a fisrt test unit that will be a proof of concept and free the fabrication of the additional units. Design is currently frozen until budget issues are resolved.

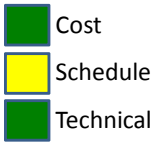
RISK & MITIGATION: JAO has an alternate FE exchange equipment that has been in use for many years. The new FEHV would increase efficiency and safety of the operation, but is not stopping the operation

POP MILESTONE #: 46
EVLA Construction
Title: Final cryogenic system installed on antennas



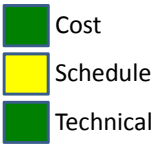
COST:	TECHNICAL:
The total M&S budget of $266.3k was realized per construction project schedule.	There are no technical risks associated with this task.
SCHEDULE: Installation of the final cryo system was delayed due to a personnel issue in the Cryo Group resulting in its effectively being down 1 FTE during Q1.	RISK & MITIGATION: The risk due to the delay is minimal. The final cryo system is being installed in early January, 2013, and all antennas will be fully EVLA compliant for the start of the D-configuration (1/25/2013).

POP MILESTONE #: 47
EVLA Construction
Title: Final X-Band receiver installed on antennas



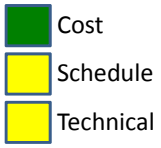
COST:	TECHNICAL:
The total M&S budget of $376.1k was realized per construction project schedule.	There are no technical risks associated with this task.
SCHEDULE: Installation of the final X-Band receiver was delayed due to the loss of a Front End technician during the RIF of July 2012, and the loss of a key Front End engineer early in Q1, along with a delay in getting approval to re-hire.	RISK & MITIGATION: The risk due to the delay is minimal. The final X-Band is being installed in early January, 2013, and all antennas will be fully EVLA compliant for the start of the D-configuration (1/25/2013).

POP MILESTONE #: 48
EVLA Construction
Title: Final Ku-Band receiver installed on antennas



COST: The total M&S budget of $481.4k was realized per construction project schedule.	TECHNICAL: There are no technical risks associated with this task.
SCHEDULE: Installation of the final Ku-Band receiver was delayed due to the loss of a Front End technician during the RIF of July 2012, and the loss of a key Front End engineer early in Q1, along with a delay in getting approval to re-hire.	RISK & MITIGATION: The risk due to the delay is minimal. The final Ku-Band is being installed in early January, 2013, and all antennas will be fully EVLA compliant for the start of the D-configuration (1/25/2013).

POP MILESTONE #: 51
VLA Commissioning and Support
Title: Complete commissioning of capabilities offered for 2013A



COST: The one capability for which commissioning is not yet complete is the phased-VLA for VLBI. There is no change to the cost of VLA operations due to the delay.	TECHNICAL: Technical issues were found with the VLBA digital down-convertor (DDC), preventing commissioning of the end-to-end phased-VLA+VLBA mode. Focused, rapid media return testing solved the DDC issues and the final details are now being worked out to make the phased-VLA+VLBA mode ready for users.
SCHEDULE: All promised 2 & 8 GHz bandwidth modes and sub-array modes of the VLA were commissioned on schedule. The phased-VLA+VLBA observing mode commissioning will be completed before 2 February, the date of the first observation using this mode.	RISK & MITIGATION: The risk associated with delayed commissioning of the phased-VLA+VLBA observing mode during Q1 is low. It will be commissioned by 2 February 2013, the start of the first science observations.

COST: No Impact.

SCHEDULE: This milestone included commissioning in four major areas: 1) 2 GHz BW (8-bit samplers) expanded correlator mode observations; 2) 8 GHz bandwidth (3-bit samplers) 'continuum' mode observations; 3) sub-array observations; and 4) phased VLA observations with the VLBA. Items 1, 2 & 3 were commissioned on schedule. Item 4, observing with the phased-VLA, was shown to work with the VLA-only by the end of Q1 but the full end-to-end commissioning with the VLBA was not completed. The first phased VLA observations are scheduled to occur on 2 February, 2013 and four projects have been approved for the phased-VLA+VLBA. It is expected that the phased-VLA+VLBA will be ready to support these science observations before 2 February.

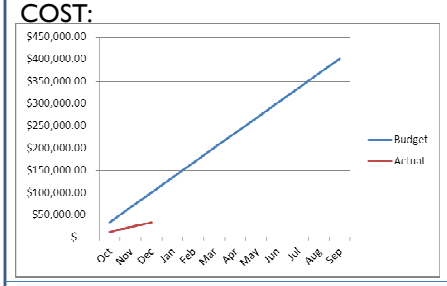
TECHNICAL: This delay was due to issues with the digital down convertor (DDC) on the VLBA that is required to support phased-VLA+VLBA observations. With limited FTEs available to troubleshoot the issues with the DDC and the fact that the 3 and 8-bit sampler commissioning was considered higher priority, the development of this final capability was delayed. The DDC has now been commissioned and the final stages of commissioning and science verification of the end-to-end system are underway.

RISK & MITIGATION: The remaining risk associated with the phased-VLA is low. The system will be ready for the first phased-VLA+VLBA observations by 2 February. In the event that the observations fail, they can be re-scheduled.

POP MILESTONE #: 68
GBT Projects: Digital Servo Replacement
Title: Control kernel delivered into integration test lab

Cost
Schedule
Technical

COST:	TECHNICAL:

	• Control Kernel Development
	  • Recovering from RIF of key staff
	  • "Paring back" to baseline functions
	  • Basic kernel functions reestablished
	  • Updating ICD to reflect changes

SCHEDULE: Q1 FY2013 Schedule: Deliver Elevation Control Kernel into test environment (~30% comp.)	RISK: Main risk is availability of resources, which is dependent on other higher priority projects and GBT operations.

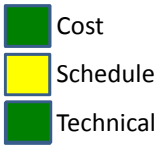
COST: Costs are running behind budget due to lack of resources allocated to the project in Q1-FY2013.

SCHEDULE: The Q1-FY2013 deliverable of an Elevation Axis Control Kernel in the integration environment has been delayed due to resource availability. As noted in POP: "*This is now being run as a background project and as such will have some variability in milestones as staff allocations vary for the project.*".

TECHNICAL: A complete evaluation of work-to-date on the kernel by the replacement development team has determined there are areas where capability exceeds baseline requirements – these are being removed and the ICD reviewed for required adjustments.

RISK & MITIGATION: Resource availability

POP MILESTONE #: 77 and 78
20m Telescope Projects: Radio SkyNet
Title: L-Band receiver installed on 20m Telescope refurbishment complete



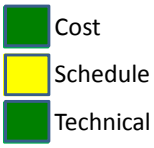
COST:
• No impact with revised scope
	TECHNICAL:
	• L-Band receiver
	  • Most modifications completed for use on 20m telescope
	  • M&C details remain

SCHEDULE: • Telescope refurbishment completed • L-Band receiver removed from scope	RISK: • No use of L-Band receiver MITIGATION: • Users will utilize X-Band receiver

SCHEDULE: The refurbishment was completed on schedule, but work was stopped on L-Band receiver reconfiguration due to insufficient funds to compete the work.

RISK & MITIGATION: L-Band observations will not be able to be conducted. Student observations will use the X-Band receiver installed on the telescope.

POP MILESTONE #: 94
CDL: Phased Array Feeds
Title: Fiber installations complete



COST:

No cost issues.

TECHNICAL:

No technical issues.

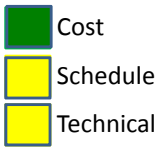
SCHEDULE:

Milestone	Schedule	Actual
Fiber installation complete	12/31/12	01/31/13

RISK & MITIGATION:

Task is nearly complete. Only one fiber connection (from receiver room to GBT prime focus) remains to be installed. Risk of incompletion by 1/31/13 is minimal.

POP MILESTONE #: 117
ALMA Development: Band 5 Local Oscillator
Title: Integration & test with Band 5 cold cartridge complete



COST:

No cost issues.

TECHNICAL:

Excess noise and harmonics indicated by testing with cold cartridge, currently investigating technical solutions.

SCHEDULE:

Milestone	Schedule	Actual
Integration & Testing with Cold Cartridge Complete	11/30/12	01/31/13
Band 5 LO CDMR	01/15/13	03/15/13

RISK & MITIGATION:

Risk	Mitigation
Continued noise and harmonic issues	Build 2nd band 5 test LO for parallel debugging
Staff resources taken by ALMA-J (Band 10) production issues	Request extension in Band 10 SOW to relieve schedule pressure

COST: No cost issues. Total expenditures through 11/30/12 = $43K. Budget through 11/30/12 = $82K. Total Project Budget (through 06/30/14) = $2,842K.

SCHEDULE: Qualification testing with cold cartridge at GARD delayed by technical issues. CDMR and start of full production consequently delayed.

TECHNICAL: GARD is testing pre-production LO with their Band 5 mixer. Excess noise beyond specification seen, also evidence of harmonic pumping of SIS mixer. Already tried increasing power to multiplier input and adding isolator between WCA and multiplier. Current suspect is second harmonic output of WCA.

RISK & MITIGATION: (1) Continued noise issues would further delay CDMR and onset of full production. To mitigate, a second pre-production LO is being built for debugging noise problems at NRAO and at SRON in parallel with mixer testing at GARD. (2) Current Band 10 SOW requires LO group to complete Band 10 production by 3/31/13. Since ALMA project will not actually require all Band 10 WCAs complete until at least 12/31/13, we are requesting extension from NAOJ for this work, allowing us to concentrate more staff resource now on moving Band 5 into production.

POP MILESTONE #: 132
ALMA Development: Design Study for Production of Band 2 Cartridges
Title: Modifications to 12m receiver inserts complete

Cost
Schedule
Technical

COST:	TECHNICAL:
No cost issues.	No technical issues.
SCHEDULE:	RISK & MITIGATION:

Milestone	Schedule	Actual
Modifications to 12m receiver insert	06/28/13	12/15/12

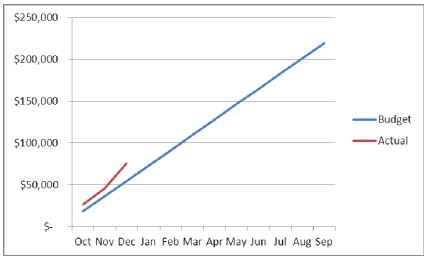
No risk items.

SCHEDULE: ARO (Arizona Radio Observatory) completed these modifications early since they have schedule pressures on the Kitt Peak 12m telescope, where this receiver will be tested.

POP MILESTONE #: 176
GBT Development:VEGAS Development
Title:Wideband spectrometer mode successfully tested

Cost
Schedule
Technical

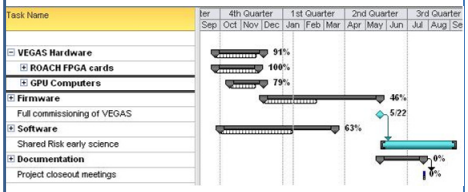
NRAO COST:



TECHNICAL:

- Environment
  - Addressing minor "teething pains" of adding ROACH-2 cards
- Software
  - Data acquisition interrupts
  - Occasional missed start-up

SCHEDULE:



RISK:

Key Project Risk :

1. Delay in delivery of remaining modes (UC-B)
2. Missed window for GC observation

Mitigation:

1. Consultation with UC-B on plan for balance of deliverables
2. Additional effort applied to issue resolution

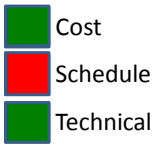
COST: The costs are running higher than budget for Q1FY13 mainly due to the ROACH-2 integration issues. Once the Galactic center observations are complete, the work transfers back to UC-B (mode development) and NRAO costs are projected to drop back to budget.

SCHEDULE: The Project Team schedule, which finished ~one year before the grant is behind, but the schedule in the NSF grant is currently being met. Delivery of the final modes remains a schedule risk however.

TECHNICAL: The integration team is engaged in tuning system timings for the full compliment of ROACH 2 cards. Issues around scan starts and glitches in data collection are being researched and addressed in advance of the Galactic center observation

RISK & MITIGATION: With the delivery of all the ROACH-2, the Key Project Risk is delivery of the remaining VEGAS modes by UC-B. A much lower, near-term risk is completing the Galactic center observations. As noted in TECHNICAL, the last remaining obstacles are being addressed by temporary adjustments of NRAO and UC-B staff allocations so work on the remaining observing modes may resume.

POP MILESTONE: #195
Administration: MIS
Title: Implementation of Chart of Accounts



COST:	TECHNICAL:
No cost impact in 2013. We will consider using internal audit firm under contract to AUI.	None
SCHEDULE: The delay in hiring the AUI Controller and NRAO Senior Budget Analyst has delayed work on this matter. The AUI Controller is considering priorities as she becomes familiar with the organization, and will decide if the chart of accounts is to be modified.	RISK & MITIGATION: Current chart of accounts is working. WBS fields being integrated into existing chart functionality. Reconsider for 2014 POP.

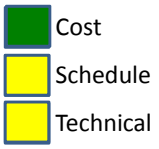
COST: No Impact. Work would be done by existing staff.

SCHEDULE: The delay in hiring the AUI Controller and NRAO Senior Budget Analyst has delayed work on this matter. The AUI Controller is considering priorities as she becomes familiar with the organization, and will decide if the chart of accounts is to be modified.

TECHNICAL: No Impact.

RISK & MITIGATION: Current chart of accounts is working. Reconsider for 2014 POP.

POP MILESTONE #: 208
CIS: Data Management
Title: Implementation of ALMA Science Archive access from the NAASC Web Portal



COST: No cost impact (this is an ESO deliverable)	TECHNICAL: Compatibility issues with browser/Java versions identified in final user acceptance testing
SCHEDULE: Full release has been delayed until January for more robust implementation	RISK & MITIGATION: Workaround release of the few ALMA Cycle 0 projects is in place on the NAASC Science Portal

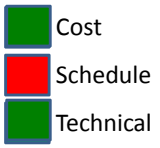
COST: No Impact.

TECHNICAL: Browser/Java compatibility issues with Request Handler and Archive Query tools

SCHEDULE: Delayed until January 2013

RISK & MITIGATION: Cycle 0 public data has been released in the same way as Science Verification Data

POP MILESTONE #: 213
CIS: Data Management
Title: Installation of a secure 10Gigabit/s Internet link for the GB site



COST: No impact. In fact financial costs is less to send disks than to operate a 10 Gb/s link.	TECHNICAL: No technical issues
SCHEDULE: On Hold pending WV State and Frontier Communications Fiber construction. The delay can be in the order of several months.	RISK & MITIGATION: In spite of the big delay the risk is low. GBT pulsar data are sent by disk, which is the present method and the mitigation for not having the high bandwidth link. Future access to new GB instruments (VEGAS) will benefit from this bandwidth.

COST: Cost of running link ($5k/month) is avoided.

TECHNICAL: No Impact.

SCHEDULE: With WV State.

RISK & MITIGATION: The risk that BTOP Stimulus funds for WV State will expire.

QSU #1 FY 2013 Exceptions

October – December 2012

Atacama Large Millimeter/submillimeter Array
Karl G. Jansky Very Large Array
Robert C. Byrd Green Bank Telescope
Very Long Baseline Array

Exception Title: ALMA Phasing Project

- Key personnel identified and committed
- Implementation cost estimate in work, ECD 1 April
- Critical Design Review in Charlottesville, May 22-23

FY13 Revenues	Original POP Budget	Revised Budget	Received		Status - % Received			Status - % Received
New NSF CSA-1 Funding	$41,000.0	$41,000.0	$10,250.0		25.0%			Favorable
FY12 Carryover	$2,800.0	$560.8	$560.8		100.0%			Unfavorable
USNO DiffX Correlator	$100.0	$100.0	$100.0		100.0%			Favorable
USNO VLBA Support Contract	$1,000.0	$1,000.0	$977.0		97.7%			Favorable
Max Plank Support	$200.0	$200.0	$200.0		100.0%			Favorable
Shao VLBA Support	$100.0	$100.0			0.0%			Watch
CASS/ICRAR	$125.0	$125.0			0.0%			Watch
Common Cost Recovery	$225.0	$375.0	$218.3		58.2%			Favorable
GB Visitor Fees	$200.0	$200.0	$11.3		5.7%			Unfavorable
Other Revenue	$0.0	$500.0						Watch
Prior Year Commitments	$1,089.4	$1,089.4	$1,089.4		100.0%			Favorable
Total Revenues Supporting CSA-1 Ops	**$46,839.4**	**$45,250.1**	**$12,317.3**		27.2%			

FY13 Expenditures	Original POP Budget	Revised Budget	Expenditures	Expenditures + Commitments	% Spent (expenditures)	% Expended & Commited	FY12 Expended Dec 2011	Status - % Expended
Dir Office	$1,510.3	$1,325.8	$355.1	$355.1	26.8%	26.8%	$325.5	Watch
Project Management Office	$420.6	$382.9	$79.6	$79.6	20.8%	20.8%		Favorable
Spectrum Management	$69.4	$68.4	$26.0	$26.0	38.0%	38.0%	$13.7	Unfavorable
New Initiatives	$660.8	$608.3	$134.8	$134.8	22.2%	22.2%	$199.8	Favorable
CDL-NTC	$2,815.2	$2,444.9	$680.6	$719.1	27.8%	29.4%	$537.4	Watch
Business Services	$3,605.1	$3,407.2	$925.6	$938.8	27.2%	27.6%	$913.9	Watch
COM	$320.8	$316.8	$65.4	$66.9	20.6%	21.1%	$63.2	Favorable
Environ, Safety & Security	$462.5	$462.5	$88.6	$88.6	19.2%	19.2%	$92.6	Underspent
Human Resources	$1,070.4	$1,022.3	$279.9	$279.9	27.4%	27.4%	$265.0	Watch
MIS	$755.8	$748.8	$185.4	$266.1	24.8%	35.5%	$165.4	Watch
Procurement	$608.4	$602.4	$146.9	$146.9	24.4%	24.4%	$187.7	Favorable
EPO	$1,059.5	$1,042.5	$169.8	$224.3	16.3%	21.5%	$185.4	Favorable
SSR - OSO	$2,428.6	$2,314.7	$381.9	$797.4	16.5%	34.5%	$444.3	Underspent
SSR - SAA	$1,365.2	$1,315.2	$263.5	$281.2	20.0%	21.4%	$254.0	Underspent
CIS	$1,717.6	$1,715.6	$519.5	$531.4	30.3%	31.0%	$641.0	Unfavorable
Data Management	$185.4	$185.4	$56.2	$56.2	30.3%	30.3%		Unfavorable
Green Bank Telescope Ops	$9,002.5	$8,896.7	$2,179.1	$2,447.2	24.5%	27.5%	$2,495.7	Watch
GBT Structural Inspections	$47.0	$0.0	$0.0	$0.0	0.0%	0.0%	$0.0	Favorable
New Mexico Operations - CSA Supported	$18,834.3	$18,586.1	$4,557.9	$4,714.9	24.5%	25.4%	$4,782.7	Watch
New Mexico Operations - Other Support	$1,525.0	$1,525.0	$299.1	$299.1	19.6%	19.6%	$0.0	Favorable
AUI Fee	$1,540.1	$1,540.1	$385.0	$385.0	25.0%	25.0%	$346.8	Favorable
Fringe Benefits*	$15.0	$15.0	$366.5	$366.5			$328.6	Unfavorable
Cost Pool Recovery	($3,590.5)	($3,590.5)	($682.4)	($682.4)	19.0%	19.0%	($1,104.1)	Unfavorable
Critical Infrastructure	$410.3	$313.9						
Total CSA-1 Expenditures to Date	**$46,839.4**	**$45,250.1**	**$11,464.0**	**$12,522.7**	**25.3%**	**27.7%**	**$11,138.5**	Watch

EVLA FY13 Budget/Expenditures	Original POP Budget	Revised Budget	Expenditures	Expenditures + Commitments	% Spent (expenditures)	% Expended & Commited	FY12 Expended Dec 2011	Status - % Expended
EVLA	$1,263.9	$1,371.7	$702.8	$1,346.3	51.2%	98.2%	$11,703.0	

ALMA Ops FY13 Budget/Expenditures	Original Budget	Revised Budget	Expenditures	Expenditures + Commitments	% Spent (expenditures)	% Expended & Commited	FY12 Expended Dec 2011	Status - % Expended
CSA-2 ALMA Ops Planned Spending	$35,954.0	$35,434.0	$6,767.7	$11,276.4	19.1%	31.8%	$2,026.5	Underspent
CSA-2 Carryover Reserved for Future Years	$6,372.0	$6,657.0						

Director's Office is ahead of linear spending due to more FTE hours expended than originally budgeted. Spectrum Management is ahead of projections due to more hours being charged in ETK to in November than originally budgeted and November/December Geneva travel. Business Services is ahead of projections due to payment of insurances in the first quarter and prepaid expenses from FY12. HR is ahead of projections due to expenses for People Admin software. MIS is ahead of linear spending due to prepaid expenses from FY12. CIS is ahead of projections due to prepaid expenses rolling over to FY13. Data Management is ahead due to a higher number of FTEs moving to Data Mgmt than originally budgeted. Budget adjustments will be made shortly in conjunction with Data Management and CIS's reorganization. Green Bank and New Mexico Ops are ahead due to the recent budget reductions. Fringe Benefits is ahead due to increased medical claims and Cost Pool Recovery is behind due to increased CSA-1 spending and lower than expected ALMA spending.

*Fringe Benefits expenses listed in this table are just the CSA-1 portion of total Observatory benefits expense.

Explanation of Status % Expended:

Favorable	% actual spending within 0% to -5% as compared to percentage of year by working days elapsed.
Watch	% actual spending falls between 0.1% to less than 5% as compared to percentage of year by working days elapsed.
Unfavorable	% actual spending is greater than 5% than percentage of year by working days elapsed.
Underspent	% actual spending is greater than -5% compared to percentage of year by working days elapsed.