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# EVLA Data Post-processing

## Overview

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# Goals



- 
- Fulfill project requirements
    - post-processing requirements (Butler, Myers)
  - Meet delivery schedule
    - management plan (McMullin, Greisen)
  - Functionality, Robustness, Usability
    - integrated development & testing plan
  - Efficient use of resources
    - maximize co-development with ALMA
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# AIPS



- 
- extensively developed & well-tested
  - will be used in commissioning
    - avoid commissioning both telescope & software!
  - plan: continued support + targeted development
    - support current VLA users
    - develop new functionality (e.g. auto-flagging, RFI)
    - support as much of EVLA processing as is practical



# aips++/casa



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- primary support for full EVLA processing
  - maximize co-development with ALMA
    - most core functions are in common
    - share development team & management
  - merge EVLA and ALMA development plans
    - EVLA focus on “Delta” problems
  - EVLA testing during development cycles
    - ALMA tests already use VLA data!
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# Usability & Interface



- Interface
  - current focus on CLI and scripting for functionality
  - necessary special purpose “GUI”s (e.g. viewer) only
- General GUI development
  - defer to new Framework development(s)
  - scheduled for 2007
- Usability is key for EVLA user acceptance
  - rely on scientist input (e.g. NAUG)



# Problems



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- Difficult EVLA problems
    - wide-band wide-field full polarization imaging
    - high dynamic range high-fidelity imaging
    - also: RFI, pipelines
  - Data rates
    - 2008 spec 25 MB/s max (cf. VLA 0.1 MB/s)
    - WIDAR can produce much higher rates!
    - data volumes also (TB datasets)



# Algorithms



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- Algorithms group
    - led by Bhatnagar & Myers (formerly Cornwell)
    - includes AIPS & aips++/casa developers, students
    - NRAO-wide staff participation (e.g. NAWG)
  - Progress
    - w-projection, pointing corrections (TC, SB, KG);
    - autoflagging, RFI (EG, BC); pol. beam (TC,SG,KG);
    - RFI (TC,RP,SB,KG); MS-clean (TC,SB,KG,EG)
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# Risks & Issues



- 
- difficult problems (e.g. wide-band MFS)
  - schedule (tight given current resources)
  - data rates & size → cluster computing?
  - user interface (“green hole”)
  - aips++ support for VLA? or EVLA only in 2007?
  - pipelines: afford development & ops support?
  - new frameworks (ACS? general? developer?)
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# Appendix: Groups



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- NAUG = NRAO Aips++ User Group
    - aips++/casa programmers and scientific staff
    - currently ~1 FTE of testers (AOC & CV)
    - pre-testing for ALMA and EVLA
    - use cases and development guidance
  - NAWG = NRAO Algorithms Working Group
    - started Nov 2005, scientific staff NRAO wide
    - regular forum to discuss algorithm issues
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