AIPS++ DEVELOPMENT PLAN: Release 1.7

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1 Purpose

The purpose of this document is to define the development plan for AIPS++ release v1.7, currently scheduled for June, 2002.

2 Release priorities

The highest priority for the project in development cycle v1.7 is to continue the process of scientific integration. This includes:

1. Scientific completeness: Demonstrated end-to-end reduction capabilities for targeted instruments in all scientifically important observing and reduction modes.

2. Usability by the astronomical community: Quality of the user interface, applications presentation and user documentation.

3. Robustness, correctness and accuracy: Prove the correctness and robustness of existing capabilities and ensure comparable performance to other disk-based packages.

4. Continued deployment to an expanded user base: Continue to increase the scientific user base for AIPS++.

Maintaining a sound infrastructure in the project is important however, and infrastructure work has been scheduled for this cycle carefully; primarily in areas which are vital for the long-term vitality of the project, or which are in the critical path for application development.

3 Introduction

Development targets are listed in hierarchical form in a work breakdown structure, given below, which defines all targets in the v1.7 plan. The top-level targets are divided between scientific completeness, usability improvements and module development, in line with the release objectives listed above. The high-level targets are divided into sub-targets to achieve an average low-level target granularity of no longer than a few weeks. The completion criteria are included for each target in the target DESCRIPTION field. The resources and assigned developer(s) are listed in the ASSIGNED field. The REQUIREMENTS and DESIGN fields are included to allow links to be added to requirements and design review information, during the development cycle, if appropriate or required for any given target. The list of available consortium developers is given below; note that individual developers may be available to the project for very different allocations of time, as enumerated in detail in the v1.7 plan below.

Abbr.	Developer	Affiliation
AL	Allan Leigh	ATNF
AS	Anuj Sarma	NCSA
AK	Athol Kemball	NRAO
BG	Bob Garwood	NRAO
DG	Daniel Goscha	NCSA
DK	David King	NRAO
DM	Dave Mehringer	NCSA
DrS	Darrell Schiebel	NRAO
GvD	Ger van Diepen	ASTRON
GM	George Moellenbrock	NRAO
JB	Jim Braatz	NRAO
JN	Jan Noordam	ASTRON
JM	Joe McMullin	NRAO
JU	Jeff Uphoff	NRAO
KG	Kumar Golap	NRAO
MM	Malte Marquarding	ATNF
MW	Mark Wieringa	ATNF
ND1	New developer 1	NRAO
ND2	New developer 2	NRAO
NK	Neil Killeen	ATNF
PT	Peter Teuben	BIMA
RM	Ralph Marson	NRAO
RP	Ray Plante	NCSA
SB	Sanjay Bhatnagar	NRAO
TC	Tim Cornwell	NRAO
WB	Wim Brouw	ATNF
WY	Wes Young	NRAO

4 Targets for v1.7

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NAME: Release v1.7 (June 2002)
ID:   1.7

DESCRIPTION: AIPS++ release v1.7 (includes all targets 1.7.* below)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED: PM, 2001-12-24 to 2002-05-27
          22 weeks less 2 weeks vacation = 20 weeks
                   less 6 weeks defects/user support (30%) = 14 weeks
          @ 100% = 14 wk
          @  75% = 11 wk
          @  50% =  7 wk
          @  25% =  4 wk

Available personnel:

          ASTRON:
                GvD,  50%,  7 wk, Ger van Diepen
                 JN,   5%,  1 wk, Jan Noordam

          ATNF:
                AL,   75%, 11 wk, Allan Leigh
                MM,  100%, 14 wk, Malte Marquarding
                MW,   40%,  6 wk, Mark Wieringa
                NK,   75%, 11 wk, Neil Killeen
                WB,   50%,  7 wk, Wim Brouw

          BIMA/NCSA:
                AS,   70%, 10 wk, Anuj Sarma
                DG,   75%, 11 wk, Daniel Goscha
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      DM,   50%,  7 wk, Dave Mehringer
      PT,   35%,  5 wk, Peter Teuben
      RP,   50%,  7 wk, Ray Plante

JBO:
      RN,    5%,  1 wk, Roger Noble

NRAO:
       AK, 100%, 14 wk, Athol Kemball
       BG,  75%, 11 wk, Bob Garwood
       DK, 100%, 14 wk, David King
      DrS, 100%, 14 wk, Darrell Schiebel
       GM,  75%, 11 wk, George Moellenbrock
       JU,  25%,  4 wk, Jeff Uphoff
       JB,  75%, 11 wk, Jim Braatz
       JM,  85%, 12 wk, Joe McMullin
       KG,  75%, 11 wk, Kumar Golap
       SB,  60%,  8 wk, Sanjay Bhatnagar
       TC,  35%,  5 wk, Tim Cornwell
       WY, 100%, 14 wk, Wes Young
      ND1,  40%,  6 wk, New developer #1
      ND2,  40%,  6 wk, New developer #2
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NAME: ATCA scientific completeness
ID: 1.7.1

DESCRIPTION: Scientific completeness of end-to-end ATCA data reduction, including: i) resolve Q/U sign for linearly-polarized data (1.7.1.1); ii) capability to average G Jones solutions (1.7.11.4); iii) ATCA filler enhancements (1.7.1.2); iv) ATCA test scripts (1.7.1.3); v) generic connected-element calibration improvements (1.7.6); vi) generic data flagging improvements (1.7.9); vii) generic calibration table utility improvements (1.7.11); viii) generic spectral line calibration and imaging improvements (1.7.12).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Resolve Q/U sign for linearly polarized data
ID: 1.7.1.1

DESCRIPTION: Ensure compatibility in Stokes (Q,U) sign between AIPS++ and MIRIAD for X,Y data.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MW, 1 wk

NAME: ATCA filler enhancements
ID: 1.7.1.2

DESCRIPTION: ATCA filler enhancements, including: i) remove channels (instead of flag) when birdie=true.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MW, 0.5 wk

NAME: ATCA test scripts

ID: 1.7.1.3

DESCRIPTION: ATCA end to end test scripts, including: i) the following observing modes: a) cm continuum (including mosaicing); b) cm line reduction; ii) scripts should inter-compare results with MIRIAD and return pass/fail.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MW, 2 wk

NAME: VLA scientific completeness
ID: 1.7.2

DESCRIPTION: Scientific completeness of end to end VLA reduction in common observing modes, including: i) expand vlafiller to add a priori VLA gain curves to the MS (1.7.2.1); ii) VLA test scripts (1.7.2.2); iii) default SCAN_ID handling in vlafiller (1.7.2.3); iv) generic connected-element calibration improvements (1.7.6); v) generic data flagging improvements (1.7.9); vi) generic calibration table utility improvements (1.7.11); vii) generic spectral line calibration and imaging improvements (1.7.12); viii) full heterogeneous spectral window support (1.7.14).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: VLA filler a priori gain curves
ID: 1.7.2.1

DESCRIPTION: Fill a priori VLA gain curves in the MS, including: i) generic gain curve support in MS (1.7.13); ii) propagate VLA gain curves through the filler to the MS GAIN sub-table (1.7.2.1.1)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Propagate gain curves through VLA filler
ID: 1.7.2.1.1

DESCRIPTION: Adjust the vla filler to propagate gain curves to the MS GAIN sub-table.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: VLA test scripts
ID: 1.7.2.2

DESCRIPTION: i) test scripts and data for end to end reduction of additional standard observing modes, beyond those already implemented; ii) scripts should inter-compare results with those obtained using AIPS.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: Default SCAN_ID handling in VLA filler
ID: 1.7.2.3

DESCRIPTION: Provide default SCAN_ID handling in VLA filler

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: RM, 1 wk

NAME: BIMA scientific completeness
ID: 1.7.3

DESCRIPTION: Scientific completeness for BIMA end to end reduction in common observing modes, including: i) planet-based flux density calibration (1.7.3.1); ii) BIMA line-length correction (1.7.3.2); iii) MS time-averaging tool (1.7.3.3); iv) BIMA Getting Results chapter (1.7.3.4); v) BIMA test scripts (1.7.3.5); vi) generic connected-element calibration improvements (1.7.6); vii) generic data flagging improvements (1.7.9); viii) generic calibration table utility improvements (1.7.11); ix) generic spectral line calibration and imaging improvements (1.7.12); x) full heterogeneous spectral window support (1.7.14).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Planet-based flux density calibration
ID: 1.7.3.1

DESCRIPTION: Support planet-based flux density calibration, including: i) representation of planet flux-density models; ii) verify correct transform to MODEL_DATA column.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DG, 4 wk

NAME: BIMA line-length correction
ID: 1.7.3.2

DESCRIPTION: i) add line-length corrections to a BIMA-specific MS sub-table; ii) convert to a calibration table to apply.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DM, 2 wk

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NAME: MS time averaging tool
ID:   1.7.3.3

DESCRIPTION: Tool to average an MS in time, including support for BIMA
polarization switching.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DG, 7 wk

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NAME: BIMA GR chapter
ID:   1.7.3.4

DESCRIPTION: Migrate BIMA user-level documentation to a Getting
Results chapter.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AS, 2 wk

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NAME: BIMA test scripts
ID:   1.7.3.5

DESCRIPTION: Test scripts for end to end reduction of remaining BIMA
observing modes (incl polarization)
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REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DM, 1 wk, AS, 1 wk

NAME: GBT scientific completeness
ID: 1.7.4

DESCRIPTION: Scientific completeness of GBT reduction in common observing modes: i) GBT filler enhancements (1.7.4.1); ii) IARDS completion (1.7.4.2); iii) GBT position-switched calibration (1.7.4.3); iv) GBT frequency-switched calibration (1.7.4.4); v) GBT imaging improvements (1.7.4.5)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: GBT filler enhancements
ID: 1.7.4.1

DESCRIPTION: i) Tcal and frequency information filled properly for DCR data (1.7.4.1.1); ii) revised Van Vleck corrections in filler (1.7.4.1.2); iii) support multi-bank modes in spectrometer (1.7.4.1.3); iv) on-line capability enabled (1.7.4.1.4); v) implement alternate weighting schemes (1.7.4.1.5); vi) support cross-correlation modes in spectrometer (1.7.4.1.6); vii) support holography (1.7.4.1.7); viii) fill receiver information in GAIN sub-table

(1.7.4.1.8); ix) prepare filler for transition to GBT operations (1.7.4.1.9); x) SD MS audit (1.7.4.1.10).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED: BG, 9 wk

NAME: GBT Interim Astronomical Real-time Display System (IARDS) completion
ID: 1.7.4.2

DESCRIPTION: i) display spectrometer data (1.7.4.2.1); ii) display spectral processor data (1.7.4.2.2); iii) display DCR data (1.7.4.2.3); iv) update after end of each scan (1.7.4.2.4); v) user adjustment of display rate (1.7.4.2.5); vi) display multiple scans in sequence without intervention (1.7.4.2.6); vii) display track data (1.7.4.2.7); viii) display on/off data (1.7.4.2.8); ix) ignore unsupported modes within an observing session (1.7.4.2.9); x) display uncalibrated data correctly (1.7.4.2.10); xi) display calibrated data correctly (1.7.4.2.11); xii) can toggle between calibrated and uncalibrated data (1.7.4.2.12); xiii) displays appropriate header information (1.7.4.2.13); xiv) displays one spectrum per spectral window (1.7.4.2.14).; xv) all auxilliary calibration displays enabled (1.7.4.2.15).

REQUIREMENTS:

DESIGN:

AGGREGATE:

ASSIGNED: JB, 4 wk

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NAME: GBT position-switched calibration
ID:   1.7.4.3

DESCRIPTION: i) generic single-dish calibration improvements (1.7.8)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

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NAME: GBT frequency-switched calibration
ID:   1.7.4.4

DESCRIPTION: i) generic single-dish calibration improvements (1.7.8)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

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NAME: GBT imaging improvments
ID:   1.7.4.5

DESCRIPTION: i) add the latest empirical modelled, theoretical and
possibly numerical GBT primary beam models to imager; ii)
automatically GBT and VLA data by a least-squares fit to overlapping
points.

REQUIREMENTS:
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DESIGN:

AGGREGATE: N

ASSIGNED: TC, 1 wk

NAME: IRAM scientific completeness
ID: 1.7.5

DESCRIPTION: i) complete ALMA-TI filler (1.7.5.1); ii) polynomial phase correction (1.7.5.2); iii) polynomial bandpass correction (1.7.5.3); iv) phase transfer from 3mm to 1mm (1.7.5.4); v) millimeter amplitude calibration (1.7.5.5); vi) generic connected-element calibration improvements (1.7.6); vii) generic data flagging improvements (1.7.9); viii) generic calibration table utility improvements (1.7.11); ix) generic spectral line calibration and imaging improvements (1.7.12); x) full heterogeneous spectral window support (1.7.14).

REQUIREMENTS:

DESIGN:

AGGREGATE:

ASSIGNED: KG, 6 wk, AK, 4 wk

NAME: Generic connected-element calibration improvements
ID: 1.7.6

DESCRIPTION: Enhancements to the generic calibration capabilities for scientific completeness, including: i) GJones incremental calibration (1.7.6.1); ii) enhanced calibration interpolation modes (1.7.6.2); iii) scan-based solution intervals (1.7.6.3); iv) make MJones available in calibrater interface (1.7.6.4); v) calibrater solver robustness improvements (1.7.6.5); vi) ionosphere corrections

(1.7.6.6); vii) opacity correction (1.7.6.7);

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: GJones incremental calibration
ID: 1.7.6.1

DESCRIPTION: Support incremental calibration for GJones matrices

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: Enhanced calibration interpolation modes
ID: 1.7.6.2

DESCRIPTION: Support enhanced calibration interpolation modes,
including: i) nearest; ii) linear interpolation (weighted and
unweighted); iii) polynomial interpolation.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: Scan-based solution intervals
ID: 1.7.6.3

DESCRIPTION: Support solution intervals aligned in various ways: a) fixed reference to UT 0; b) irregularly spaced for maximum data coverage; c) scan-based; i) VisIter changes to support solution interval placement, including arbitrary iteration order.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: MJones available in calibrater interface
ID: 1.7.6.4

DESCRIPTION: Make the MJones solve and apply methods available in the calibrater interface, including: i) support type=M in calibrater.setsolve(); ii) support type=M in calibrater.setapply(); iii) read and write MJones calibration tables in SolvableMJones.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: ND2, 2 wk

NAME: calibrater solver robustness improvements
ID: 1.7.6.5

DESCRIPTION: Including: i) automatic rejection of solutions below a specified SNR; ii) rejection of time intervals with insufficient data; iii) proper handling of incomplete polarizations; iv) verify correct functioning of phase-only solver.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 0.5 wk

NAME: Ionosphere corrections
ID: 1.7.6.6

DESCRIPTION: Enhancements to generic low-frequency calibration scientific completeness (< 2 GHz), including: i) FJones PIM integration.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: Opacity corrections
ID: 1.7.6.7

DESCRIPTION: Enhancements to generic high-frequency calibration scientific completeness (2 GHz < f < 43 GHz), including: i) correction for a specified zenith opacity (1.7.6.7.1); ii) solver for opacity corrections (1.7.6.7.2); iii) solver for elevation-dependent GJones (1.7.6.7.3).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED: GM, 2 wk

NAME: Generic VLBI scientific completeness
ID: 1.7.7

DESCRIPTION: Including: i) FITS-IDI filler improvements (1.7.7.1); ii) gain curve and temperature GJones correction (1.7.7.2); iii) full integration of fringe-fitter (1.7.7.3);

REQUIREMENTS:

DESIGN:

AGGREGATE:

ASSIGNED: ND1, 4 wk

NAME: Generic single-dish calibration and imaging improvements
ID: 1.7.8

DESCRIPTION: Including: i) solvers for SD (phase I) (1.7.8.1); ii) solvers for SD (phase II) (1.7.8.2); iii) write single-dish calibration to a calibration table (1.7.8.3); iv) finalize generic STATE table heuristics (1.7.8.4); v) spectral-line OTF calibration and analysis (1.7.8.5); vi) continuum OTF calibration and analysis (1.7.8.6); vii) spectral-line fitting routines (GMEAS) (1.7.8.7);

viii) cache/deprecate superfluous MS calibration columns (1.7.8.8); ix) enhance aver task for improved weighting schemes (1.7.8.9); x) polarization processing (1.7.8.10); xi) generic SDFITS improvements (1.7.8.11); xii) position-switched calibration (1.7.8.12); xiv) frequency-switched calibration (1.7.8.13).

REQUIREMENTS:

DESIGN:

AGGREGATE:

ASSIGNED: JM, 6 wk, JB, 2 wk

NAME: Solvers for SD (phase I)
ID: 1.7.8.1

DESCRIPTION: Provide first-pass solvers for phase I SD (on-off)

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: Spectral-line fitting routines (GMEAS)
ID: 1.7.8.7

DESCRIPTION: Implement GMEAS in AIPS++

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: BG, 1 wk

NAME: Generic SDFITS improvements
ID: 1.7.8.11

DESCRIPTION: i) SDFITS to MS enhancements; ii) resolve SDFITS conventions with CLASS; iii) support vector Tsys as written at ATCA.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: BG, 1 wk

NAME: Generic data flagging improvements
ID: 1.7.9

DESCRIPTION: Enhancements to generic data flagging for scientific completeness, including: i) flag transfer from one MS to another (1.7.9.1); ii) flag undo capabilities (1.7.9.2); iii) flag polarization templates (1.7.9.3); iv) flagging from data averages in time and frequency (1.7.9.4);

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Flag transfer from one MS to another
ID: 1.7.9.1

DESCRIPTION: Allow flags to be transferred from one MS to another.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: Flag undo capabilities
ID: 1.7.9.2

DESCRIPTION: Implement FLAG_CATEGORY fully to allow flag undo.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: Flag polarization templates
ID: 1.7.9.3

DESCRIPTION: Flag all slave polarizations when template is flagged

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: Flagging from data averages in time and frequency
ID: 1.7.9.4

DESCRIPTION: i) msplot ch 0; ii) flagger channel averaging selection.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: Generic single-dish and interferometer combination
ID: 1.7.10

DESCRIPTION: i) imager.feather() improvements (1.7.10.1); ii) uv-data combination improvements (1.7.10.2); iii) joint deconvolution of single-dish and interferometer data (1.7.10.3)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: imager.feather() improvements
ID: 1.7.10.1

DESCRIPTION: i) estimate first cut at relative scaling from the known nominal beams; ii) add the capability for additional scaling numbers.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: TC, 2 wk

NAME: uv-data combination improvements
ID: 1.7.10.2

DESCRIPTION: Enhancements to generic uv-data combination scientific completeness, including: i) MS concatenation improvements (1.7.10.2.1); ii) multiple-MS support in calibrater and imager (1.7.10.2.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: MS concatenation improvements
ID: 1.7.10.2.1

DESCRIPTION: Improvements to msconcat to: i) support variable-shaped spectral windows; ii) support all optional MS sub-tables.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MW, 2 wk

NAME: Multiple MS support in calibrater and imager
ID: 1.7.10.2.2

DESCRIPTION: Allow imager and calibrater to take multiple Measurement Sets as input.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: Joint deconvolution of single-dish and interferometer data
ID: 1.7.10.3

DESCRIPTION: Joint deconvolution of single-dish and interferometer data.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: TC, 2 wk

NAME: Generic calibration table utility improvements
ID: 1.7.11

DESCRIPTION: Enhancements to the scientific completeness of generic calibration table manipulation utilities, including: i) caltable tool (1.7.11.1); ii) re-referencing (1.7.11.2); iii) cal smoothing (1.7.11.3); iv) cal averaging, both vector and scalar (1.7.11.4); v) gainpolyfitter integration (1.7.11.5); v) gain normalization (1.7.11.6).

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DM, 3 wk

NAME: Generic spectral line calibration and imaging improvements
ID: 1.7.12

DESCRIPTION: i) uv-plane continuum subtraction (1.7.12.1); ii) ms plot spectra (1.7.12.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: uv-plane continuum subtraction
ID: 1.7.12.1

DESCRIPTION: Subtract a continuum model estimate in the uv-plane

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: ND2, 2 wk

NAME: msplot spectra
ID: 1.7.12.2

DESCRIPTION: i) enhance msplot to deal with spectra.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DK, 1 wk

NAME: Generic gain curve support in MS
ID: 1.7.13

DESCRIPTION: i) draft a change-proposal for GAIN sub-table (1.7.13.1); ii) implement MSGain MS access classes (1.7.13.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Generic gain curve support in MS
ID: 1.7.13.1

DESCRIPTION: i) draft a change-proposal for GAIN sub-table

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 0.5 wk

NAME: MSGain access classes
ID: 1.7.13.2

DESCRIPTION: i) implement MSGain MS access classes.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: ND1, 1 wk

NAME: Full heterogeneous spectral window support
ID: 1.7.14

DESCRIPTION: Complete support for heterogeneous spectral windows,
including: i) heterogeneous window support in all AIPS++ tools.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: KG, 1 wk

************************** USABILITY BELOW ***************************

NAME: Generic AIPS++ performance improvements
ID: 1.7.A

DESCRIPTION: i) implement AIPS++ performance benchmarks (1.7.A.1); ii) AIPS++ performance optimization (1.7.A.2); iii) MS compression support (1.7.A.3).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Implement AIPS++ performance benchmarks
ID: 1.7.A.1

DESCRIPTION: i) implement benchmarks for the following imaging and calibration operations: a) self-calibration for G, D and B Jones; b) form a PSF and dirty image and deconvolve using Clark CLEAN; ii) the benchmarks comprise an AIPS++ script (1.7.A.1.1) and associated AIPS (1.7.A.1.2) and MIRIAD scripts (1.7.A.1.3) for the same operation; iii) the benchmarks depend on the following variables: a) no. of visibility points; b) image size (in pixels); c) mosaic, wide-field and single-field imaging modes; iv) the benchmarks need to be able to be run automatically and routinely.

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Performance benchmark AIPS++ scripts
ID: 1.7.A.1.1

DESCRIPTION: i) implement AIPS++ benchmark scripts for the following imaging and calibration operations: a) self-calibration for G, D and B Jones; b) form a PSF and dirty image and deconvolve using Clark CLEAN; ii) the benchmarks depend on the following variables: a) no. of visibility points; b) image size (in pixels); c) mosaic, wide-field and single-field imaging modes; iv) the benchmarks need to be able to be run automatically and routinely.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: KG, 1 wk

NAME: Performance benchmark AIPS scripts
ID: 1.7.A.1.2

DESCRIPTION: i) implement AIPS benchmark scripts for the following imaging and calibration operations: a) self-calibration for G, D and B Jones; b) form a PSF and dirty image and deconvolve using Clark CLEAN; ii) the benchmarks depend on the following variables: a) no. of visibility points; b) image size (in pixels); c) mosaic, wide-field and single-field imaging modes; iv) the benchmarks need to be able to be run automatically and routinely.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: KG, 0.5 wk

NAME: Performance benchmark MIRIAD scripts
ID: 1.7.A.1.3

DESCRIPTION: i) implement MIRIAD benchmark scripts for the following imaging and calibration operations: a) self-calibration for G, D and B Jones; b) form a PSF and dirty image and deconvolve using Clark CLEAN; ii) the benchmarks depend on the following variables: a) no. of visibility points; b) image size (in pixels); c) mosaic, wide-field and single-field imaging modes; iv) the benchmarks need to be able to be run automatically and routinely.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AS, 1 wk

NAME: AIPS++ performance optimization
ID: 1.7.A.2

DESCRIPTION: i) measure execution profiles for the AIPS++ performance benchmarks (1.7.A.2.1); ii) implement the required optimizations to achieve comparable performace to AIPS and MIRIAD, including implement known performance optimizations: a) frequency-independent gridding (1.7.A.2.2); b) imager.setjy() optimization (1.7.A.2.3); c) I/O optimization (1.7.A.2.4); d) memory use optimization (1.7.A.2.5)

REQUIREMENTS: To optimize AIPS++ performance in standard calibration and imaging operations.

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Measure performance benchmark profiles
ID: 1.7.A.2.1

DESCRIPTION: Measure execution profiles for the AIPS++ performance benchmarks, and identify optimization possibilities, including: i) Quantify or pgprof call graph profiling (1.7.A.2.1.1); ii) PABLO I/O profiling (1.7.A.2.1.2)

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Quantify benchmark profiling
ID: 1.7.A.2.1.1

DESCRIPTION: Measure execution profiles for the AIPS++ performance benchmarks using Quantify or pgprof call graph profiling.

DESIGN:

AGGREGATE: N

ASSIGNED: SB, 2 wk

NAME: PABLO benchmark profiling
ID: 1.7.A.2.1.2

DESCRIPTION: Measure and analyze execution profiles for the AIPS++
performance benchmarks using PABLO I/O profiling.

DESIGN:

AGGREGATE: N

ASSIGNED: RP, 1 wk

NAME: Frequency independent gridding optimization
ID: 1.7.A.2.2

DESCRIPTION: Offer the option of frequency-independent uv-data gridding.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: SB, 2 wk

NAME: imager.setjy() optimization
ID: 1.7.A.2.3

DESCRIPTION: Bypass the image-plane effects in imager.setjy() if
they are null.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: SB, 1 wk

NAME: I/O optimization
ID: 1.7.A.2.4

DESCRIPTION: Implement I/O optimizations identified in profiling, including known opimization cases: i) mosaic data access optimization (ATCA/BIMA); ii) spectral-line data access optimization (BIMA); iii) optimizations need to be of general applicability.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: RP, 1 wk

NAME: Memory use optimization
ID: 1.7.A.2.5

DESCRIPTION: i) make memory defaults server/host specific in aipsrc; ii) make all memory choices visible at the user level; iii) sensible dynamic defaults.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: SB, 3 wk

NAME: MeasurementSet compression
ID: 1.7.A.3

DESCRIPTION: i) support optional compression of MODEL_DATA, CORRECTED_DATA and IMAGING_WEIGHT columns for spectral-line datat (VisSet::addColumns()), selected from the imager and calibrater tool constructors (1.7.A.3.1); ii) support optional compression of the DATA column by MSFitsInput (1.7.A.3.2); iii) support optional compression of the DATA column by the VLA filler (1.7.A.3.3), WSRT filler (1.7.A.3.4), BIMA filler (1.7.A.3.5), FITS-IDI filler (1.7.A.3.6), ms to archive tool (1.7.A.3.7), ATCA filler (1.7.A.3.8)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Optional compression of MODEL_DATA, CORRECTED_DATA and IMAGING_WEIGHT
ID: 1.7.A.3.1

DESCRIPTION: i) support optional compression of MODEL_DATA, CORRECTED_DATA and IMAGING_WEIGHT columns for spectral-line datat (VisSet::addColumns()), selected from the imager and calibrater tool constructors (1.7.A.3.1)

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: Optional compression of data in MSFitsInput
ID: 1.7.A.3.2

DESCRIPTION: i) support optional compression of the DATA,
SIGMA_SPECTRUM and WEIGHT_SPECTRUM columns by the UVFITS filler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 0.5 wk

NAME: Optional compression of data in VLA filler
ID: 1.7.A.3.3

DESCRIPTION: i) support optional compression of the DATA,
SIGMA_SPECTRUM and WEIGHT_SPECTRUM columns by the VLA filler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 0.5 wk

NAME: Optional compression of data in WSRT filler
ID: 1.7.A.3.4

DESCRIPTION: i) support optional compression of the DATA, SIGMA_SPECTRUM and WEIGHT_SPECTRUM columns by the ATCA filler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GvD, 0.5 wk

NAME: Optional compression of data in BIMA filler
ID: 1.7.A.3.5

DESCRIPTION: i) support optional compression of the DATA,
SIGMA_SPECTRUM and WEIGHT_SPECTRUM columns by the ATCA filler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: RP, 0.5 wk

NAME: Optional compression of data in FITS-IDI filler
ID: 1.7.A.3.6

DESCRIPTION: i) support optional compression of the DATA column by the
FITS-IDI filler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: ND1, 1 wk

NAME: Optional compression of data in ms from archive
ID: 1.7.A.3.7

DESCRIPTION: i) support optional compression of the DATA,
SIGMA_SPECTRUM and WEIGHT_SPECTRUM columns by the WSRT filler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GvD, 0.5 wk

NAME: Optional compression of data in ATCA filler
ID: 1.7.A.3.8

DESCRIPTION: i) support optional compression of the DATA,
SIGMA_SPECTRUM and WEIGHT_SPECTRUM columns by the ATCA filler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MW, 0.5 wk

NAME: Correctness testing
ID: 1.7.B

DESCRIPTION: Including: i) analytic errors in simulator (1.7.B.1); ii) calibrater.fluxscale() return variables for computed flux densities (1.7.B.2); iii) replace imager tests with imagerpositiontest() (1.7.B.3);

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Analytic errors in simulator
ID: 1.7.B.1

DESCRIPTION: Complete analytic error models in simulator.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: RP, 1 wk

NAME: Return variables for computed flux densities
ID: 1.7.B.2

DESCRIPTION: Adjust calibrater.fluxscale() to return computed flux densities as return variables to Glish.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: KG, 0.5 wk

NAME: Replace imagertest() with imagerpositiontest()
ID: 1.7.B.3

DESCRIPTION: Replace imager tests with imagerpositiontest()

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: KG, 1 wk

NAME: Generic calibration usability
ID: 1.7.C

DESCRIPTION: i) uv selection using MSSelection (1.7.C.1); ii) map.selfcal() function (1.7.C.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: uv selection using MSSelection
ID: 1.7.C.1

DESCRIPTION: i) complete uv selection implementation using MSSelection (1.7.C.1.1); ii) unify selection interfaces across all tools (1.7.C.1.2); iii) improved baseline selection mechanism (1.7.C.1.3); iv) use of gopher/widgets in all selection interfaces (1.7.C.1.4); v) unify synthesis data selection defaults (1.7.C.1.5).

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: map.selfcal() function
ID: 1.7.C.2

DESCRIPTION: Complete map.selfcal() function.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

NAME: User interface usability improvements
ID: 1.7.D

DESCRIPTION: i) re-edit of Getting Started (1.7.D.1); ii) GUI speed improvements (1.7.D.2); iii) expansion of Recipes section (1.7.D.3); iv) editing of outstanding GR chapters (1.7.D.4); v) multi-process logging improvements (1.7.D.5);

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Re-edit of Getting Started
ID: 1.7.D.1

DESCRIPTION: Re-edit of Getting Started

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: RP, 1 wk

NAME: GUI speed improvements
ID: 1.7.D.2

DESCRIPTION: Improve GUI speed, including: i) bind GlishTk to the interpreter as a dynamically loadable module (1.7.D.2.1); ii) manual threading/process synchronization at the sub-sequence level to minimize blocking (1.7.D.2.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Bind GtK to the interpreter
ID: 1.7.D.2.1

DESCRIPTION: Bind GlishTk to the interpreter as a dynamically loadable module.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DrS, 2 wk

NAME: Glish sub-sequence threading
ID: 1.7.D.2.2

DESCRIPTION: Including: i) run dynamically bound GtK as a thread; ii) implement manual threading/process synchronization at the sub-sequence level to minimize blocking between the GtK thread and the Glish interpreter.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DrS, 5.5 wk

NAME: Expansion of Recipes section
ID: 1.7.D.3

DESCRIPTION: Expand recipes section

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GM, 1 wk

NAME: Editing of outstanding GR chapers
ID: 1.7.D.4

DESCRIPTION: Editing of outstanding GR chapters, including: i) dish;
ii) generic single-dish imaging.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 1 wk

NAME: Multi-process logging improvements
ID: 1.7.D.5

DESCRIPTION: Provide more robust support for multi-process logging.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GvD, 2 wk

NAME: BIMA calibration and imaging usability
ID: 1.7.E

DESCRIPTION: i) gainpolyfitter enhancements (1.7.E.1); ii) millimeter BIMA calibrator table (1.7.E.2); iii) support masking in MiriadImage (1.7.E.3).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: gainpolyfitter enhancements
ID: 1.7.E.1

DESCRIPTION: Including: i) arbitrary grouping of input gains for fitting; ii) support for fitting as a function of time or frequency (G, D, or B); iii) saving fits parametrically; iv) write a re-sampled gain table based on fits; v) interactive or batch fitting; vi) interactive or batch plotting.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: RP, 2 wk

NAME: BIMA millimeter calibrator table

ID: 1.7.E.2

DESCRIPTION: Add a calibrator catalog containing BIMA calibrators to the global data respository and verify use with ComponentModels in forming a componentlist.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AS, 2 wk

NAME: Support masking in MiriadImage
ID: 1.7.E.3

DESCRIPTION: Complete support for masking in MiriadImage

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: PT, 1 wk

NAME: Visualization usability improvements
ID: 1.7.F

DESCRIPTION: i) viewer enhancement in speed (1.7.F.1); ii) pvslice application (1.7.F.2); iii) uv-visualization in viewer and msplot using DL components (1.7.F.3); iv) viewer blinking of conformant images (1.7.F.4); v) viewer annotation capabilities (1.7.F.5); vi) graphical display of viewer transfer function and min-max setting widget (1.7.F.6).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Viewer speed enhancement
ID: 1.7.F.1

DESCRIPTION: i) profile viewer speed; ii) make first-order optimizations.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JU, 4 wk

NAME: pvslice application
ID: 1.7.F.2

DESCRIPTION: Develop a pvslice application, including: i) optimization of ImageRegrid (1.7.F.2.1); ii) non-cardinal axes coordinate support (1.7.F.2.2); iii) non-cardinal slicing support in Lattices (1.7.F.2.3); iv) high-level pvslice application (1.7.F.2.4)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Optimization of ImageRegrid
ID: 1.7.F.2.1

DESCRIPTION: Optimization of ImageRegrid

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 2 wk

NAME: Non-cardinal axes coordinate support
ID: 1.7.F.2.2

DESCRIPTION: Support non-cardinal axes in coordinate

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 2 wk

NAME: Non-cardinal axes support in Lattices
ID: 1.7.F.2.3

DESCRIPTION: Non-cardinal slicing support in Lattices

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GvD, 3 wk

NAME: High-level pvslice application in viewer
ID: 1.7.F.2.4

DESCRIPTION: Provide the high-level pvslice viewer application

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MM, 3 wk

NAME: uv visualization in msplot and viewer using DL components
ID: 1.7.F.3

DESCRIPTION: Support full uv-visualization in the viewer and msplot using DL components, including: i) complete MSAsRaster (1.7.F.3.1); ii) add interactive editing (1.7.F.3.2); iii) complete MSAsXY (1.7.F.3.3); iv) deploy uv DD in msplot and viewer (1.7.F.3.4)

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED:

NAME: Complete MSAsRaster
ID: 1.7.F.3.1

DESCRIPTION: Including: i) full incorporation of MSSelection (1.7.F.3.1.1); ii) handling of invalid MeasurementSets (1.7.F.3.1.2); iii) data slider improvements (1.7.F.3.1.3); iv) elimination of antennas not present in the data (1.7.F.3.1.4); v) FLOAT_DATA support (1.7.F.3.1.5); vi) use World Coordinates in axis labelling and position information (1.7.F.3.1.6).

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DK, 3 wk

NAME: Add interactive editing
ID: 1.7.F.3.2

DESCRIPTION: Including: i) enhancements to MWCTool (1.7.F.3.2.1); ii) flagging buttons in the Adjust menu (1.7.F.3.2.2); iii) DParameter enhancements to support (ii) (1.7.F.3.2.3); iv) flag support in MSAsRaster (1.7.F.3.2.4).

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DK, 3 wk

NAME: Complete MSAsXY
ID: 1.7.F.3.3

DESCRIPTION: Complete MSAsXY

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DK, 4 wk

NAME: Deploy uvDD in msplot and viewer
ID: 1.7.F.3.4

DESCRIPTION: Deploy uvDD in msplot and viewer

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DK, 3 wk

NAME: viewer blinking of conformant images
ID: 1.7.F.4

DESCRIPTION: Support viewer blinking of conformant images

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MM, 1 wk

NAME: viewer annotation capabilities
ID: 1.7.F.5

DESCRIPTION: i) make DisplayShapes a base class in DDD (AOCso01474) (1.7.F.5.1); ii) re-implement rectangle DDD (1.7.F.5.2); iii) finish ellipse DDD (1.7.F.5.3); iv) re-implement viewer display tools as DDD (e.g. regions and positions) (1.7.F.5.4); v) provide a front-end in the viewer to the DDD to allow basic annotation of viewer displays (1.7.F.5.5).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED: AL, 9 wk

NAME: Viewer transfer fn and min-max setting
ID: 1.7.F.6

DESCRIPTION: Graphical display of viewer transfer function and min-max setting widget.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AL, 2 wk

NAME: GBT usability improvements
ID: 1.7.G

DESCRIPTION: i) complete unijr (1.7.G.1); ii) user-friendly error-checking in unijr (1.7.G.2); iii) GBT observers documentation (1.7.G.3).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Complete unijr
ID: 1.7.G.1

DESCRIPTION: i) complete unijr

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JB, 3 wk

NAME: User-friendly error-checking in unijr
ID: 1.7.G.2

DESCRIPTION: i) user-friendly error-checking in unijr

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JB, 1 wk

NAME: GBT observers documentation
ID: 1.7.G.3

DESCRIPTION: GBT observers documentation

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JB, 1 wk

NAME: Parkes MB usability improvements
ID: 1.7.H

DESCRIPTION: Parkes multi-beam usability improvements, including:
i) implement an updatable DisplayData to integrate the standard
AIPS++ viewer into MultibeamView (1.7.H.1)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Integrate viewer into MultibeamView
ID: 1.7.H.1

DESCRIPTION: Implement an updatable DisplayData to integrate the standard AIPS++ viewer into MultibeamView (1.7.H.1)

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MM, 2 wk

NAME: ACSIS usability improvements
ID: 1.7.J

DESCRIPTION: ACSIS usability improvements, including: i) assist ACSIS development of ssh support in the Glish communications layer (1.7.J.1)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Assist ssh support in Glish communications layer
ID: 1.7.J.1

DESCRIPTION: Assist the ACSIS project in development of ssh support in the Glish communications layer (1.7.J.1).

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DrS, 2 wk

NAME: Generic single-dish usability improvements
ID: 1.7.K

DESCRIPTION: Including: i) use imageprofilefitter in dish (1.7.K.1);
ii) support one abscissa per ordinate in imageprofilesupport (1.7.K.2);
iii) support abscissa ranges in imageprofilefitter (1.7.K.3).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Use imageprofilefitter in dish
ID: 1.7.K.1

DESCRIPTION: Use imageprofilefitter in dish.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JM, 1 wk

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NAME: imageprofilesupport: one abscissa per ordinate
ID:   1.7.K.2

DESCRIPTION: Support one abscissa per ordinate in imageprofilesupport
(1.7.K.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 1 wk

--------------------------------------------------------------------------

NAME: imageprofilefitter: support abscissa ranges
ID:   1.7.K.3

DESCRIPTION: i) imageprofilefitter: support abscissa ranges; ii) zoom
capabilities.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 1 wk

--------------------------------------------------------------------------
                 ***** STREAMLINED REDUCTION ****
--------------------------------------------------------------------------

NAME: Generic streamlined reduction
ID:   1.7.AA

DESCRIPTION: i) framework for a custom synthesis GUI; ii) expansion of
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existing wizards (imagerwizard; mosaicwizard)

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 1 wk

**** MODULE DEVELOPMENT *****

NAME: Image analysis module development
ID: 1.7.IM

DESCRIPTION: i) imagefitter: simplify interface so less clicking is required (1.7.IM.1); ii) rotation curve velocity fitter (1.7.IM.2); iii) integrate existing 3-D source finder and fitter in image tool (1.7.IM.3); iv) finish Coordinates review (1.7.IM.4).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: imagefitter: simplify GUI interface
ID: 1.7.IM.1

DESCRIPTION: i) imagefitter: simplify GUI interface to minimize user mouse clicks required.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 1 wk

NAME: Rotation curve velocity fitter
ID: 1.7.IM.2

DESCRIPTION: Develop an application to fit galaxy rotation curves from spectral line data.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: PT, 4 wk

NAME: 3-D source finder and fitter in image tool
ID: 1.7.IM.3

DESCRIPTION: i) complete integration of 3-D finder and fitter written by D. Perley.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 2 wk

NAME: Finish Coordinates review
ID: 1.7.IM.4

DESCRIPTION: Complete Coordinates review including any outstanding FITSUtil review steps.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 0.5 wk, BG, 0.5 wk

NAME: Image visualization module development
ID: 1.7.IV

DESCRIPTION: i) WorldCanvas coordinate system (1.7.IV.1); ii) unify caching and PADD display datas (1.7.IV.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: WorldCanvas coordinate system
ID: 1.7.IV.1

DESCRIPTION: Complete implementation of the coordinate system on the WorldCanvas.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MM, 5 wk

NAME: Unify PADD and caching DD
ID: 1.7.IV.2

DESCRIPTION: i) unify old and new DisplayData's; ii) adjust DisplayDatas for the WorldCanvas coordinate system changes.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: MM, 3 wk

NAME: Basic library
ID: 1.7.BL

DESCRIPTION: i) deploy new Functionals classes (1.7.BL.1); ii) develop CodeWizard rules for greater automation of code copping (1.7.BL.2); iii) provide a Functional Glish interface (1.7.BL.3); iv) parallactic angle tool (1.7.BL.4); v) improved Glish interface to Fitting classes (1.7.BL.5); vi) provide Glish interface to ColumnsIndex capabilities in table tool (1.7.BL.6).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Deploy new Functionals classes
ID: 1.7.BL.1

DESCRIPTION: Fully deploy new Functionals classes

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WB, 1 wk

NAME: More automated code review tools
ID: 1.7.BL.2

DESCRIPTION: i) Develop CodeWizard rules for greater automation of code copping;

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WB, 1 wk

NAME: Glish Functional interface
ID: 1.7.BL.3

DESCRIPTION: Provide a Glish interface to Functionals.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WB, 2 wk

NAME: Parallactic angle tool
ID: 1.7.BL.4

DESCRIPTION: Develop an optimized parallactic angle tool.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WB, 1 wk

NAME: Improved Glish interface to Fitting classes
ID: 1.7.BL.5

DESCRIPTION: Improve the Glish interface to the Fitting classes.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WB, 2 wk

NAME: Table tool interface to ColumnsIndex
ID: 1.7.BL.6

DESCRIPTION: Provide a Glish interface to the ColumnsIndex capability in the table tool.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: GvD, 1 wk

NAME: Parallelization
ID: 1.7.PR

DESCRIPTION: Parallelization development in AIPS++, including: i) finalize pimager integration (1.7.PR.1); ii) key science processing (1.7.PR.2); iii) generic AIPS++ performance improvements (1.7.A).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Finalize pimager integration
ID: 1.7.PR.1

DESCRIPTION: Complete pimager integration

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 0.5 wk, KG, 1 wk

NAME: Key science processing
ID: 1.7.PR.2

DESCRIPTION: Key science processing, including: i) M33 dataset (1.7.PR.2.1); ii) galactic center data set (1.7.PR.2.2).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: M33 key science processing
ID: 1.7.PR.2.1

DESCRIPTION: Key science processing of the M33 dataset.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AS, 2 wk

NAME: Galactic center key science processing
ID: 1.7.PR.2.2

DESCRIPTION: Key science processing of the galactic center data set.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AS, 2 wk

NAME: Glish
ID: 1.7.GL

DESCRIPTION: Glish development, including: i) complete fail on return documentation in the Glish Users Manual (1.7.GL.1)

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Document Glish fail on return
ID: 1.7.GL.1

DESCRIPTION: Complete fail on return documentation in the Glish Users Manual.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DrS, 0.5 wk

NAME: Operations
ID: 1.7.OP

DESCRIPTION: i) evaluation and migration to gcc 3.* (1.7.OP.1); ii) complete port to Solaris NTV (1.7.OP.2); iii) build maintenance (1.7.OP.3); iv) release preparation v1.7 (1.7.OP.4); v) meetings and tutorials in v1.7 cycle (1.7.OP.5); vi) newsletters (two) (1.7.OP.6); vii) user group coordination (1.7.OP.7); viii) patches 1.6.1, 1.6.2 and 1.6.3 (1.7.OP.8); ix) brochure for v1.7 (1.7.OP.9); x) poster for v1.7 (1.7.OP.10); xi) all e-mail exploders under mailman control (1.7.OP.11); xii) complete developer's release for Linux (1.7.OP.12); xiii) system administrators guide to AIPS++ installation and maintenance (includes script) (1.7.OP.13); xiv) partial data repository update (1.7.OP.14); xv) distribution of built documentation using cvsup (1.7.OP.15);

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: Evaluation and migration to gcc 3.*
ID: 1.7.OP.1

DESCRIPTION: i) prepare change proposal for migration to gcc 3.*; ii) test gcc 3.* on all consortium architectures; iii) document changes in a note; iv) make changes in the code distribution; iv) set date for change of project compiler.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WY, 1 wk, DM, 1 wk

NAME: Complete port to Solaris NTV
ID: 1.7.OP.2

DESCRIPTION: Complete port to Solaris NTV, including: i) identify all code changes required for Sun CC 6.2 support; ii) submit change proposal for all proposed modifications; iii) check in agreed changes and complete Sun CC port.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WY, 2 wk

NAME: Build maintenance
ID: 1.7.OP.3

DESCRIPTION: Maintain build health for all systems at the AOC, including: i) Linux; ii) Sun CC; iii) Sun GNU; iv) SGI CC.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

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ASSIGNED: WY, 3 wk

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NAME: Release preparation for v1.7
ID:   1.7.OP.4

DESCRIPTION: Prepare release v1.7

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WY, 3 wk, JM, 1 wk

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NAME: Meetings and tutorials in v1.7 cycle
ID:   1.7.OP.5

DESCRIPTION: Arrange meetings and tutorials in v1.7 cycle.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JM, 1 wk

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NAME: Newsletters in v1.7 cycle
ID:   1.7.OP.6

DESCRIPTION: Edit two newsletters in the v1.7 cycle
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REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: ND2, 2 wk

NAME: NRAO user group coordination
ID: 1.7.OP.7

DESCRIPTION: Coordinate AIPS++ NAUG.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JM, 1 wk

NAME: v1.6 patches
ID: 1.7.OP.8

DESCRIPTION: Build and dsitribute patches 1.6.1, 1.6.2 and 1.6.3.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WY, 2 wk, JM, 0.5 wk

NAME: Brochure for v 1.7
ID: 1.7.OP.9

DESCRIPTION: Produce and print a brochure for v1.7

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: ND2, 1 wk

NAME: Produce and print a poster for v1.7
ID: 1.7.OP.10

DESCRIPTION: Produce and print a poster for v1.7

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: ND2, 1 wk

NAME: Place all AIPS++ mail exploders under mailman control
ID: 1.7.OP.11

DESCRIPTION: Place all AIPS++ exploders under mailman control

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WY, 1 wk

NAME: Complete developer's release for Linux
ID: 1.7.OP.12

DESCRIPTION: Complete the packaging of the developer's release
for Linux.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DrS, 2 wk

NAME: System administrators guide to AIPS++ installation / maintenance
ID: 1.7.OP.13

DESCRIPTION: Including: i) add material to the system manual useful to
system administrators administering an AIPS++ binary installation,
including user data access, library revision requirements and related
information; ii) provide any scripts useful for administering an
AIPS++ binary installation.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WY, 1 wk

NAME: Partial data repository update
ID: 1.7.OP.14

DESCRIPTION: Including: i) sub-divide the global data system (GDS) into core and optional components; ii) the core components are those parts of the GDS required to run the main AIPS++ package; iii) allow partial data repository update of optional components.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: DrS, 2 wk

NAME: Distribution of built documentation using cvsup
ID: 1.7.OP.15

DESCRIPTION: Provide a mechanism to automatically update a local documentation tree using cvsup to retrieve a master built version at the project center.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: WY, 1 wk

NAME: Management
ID: 1.7.MN

DESCRIPTION: Project management time assignments, including: i) general project management, including NRAO (1.7.MN.1); ii) ATCA site management (1.7.MN.2); iii) ASTRON site management (1.7.MN.3); iv) BIMA site management (1.7.MN.4); v) JBO site management (1.7.MN.5).

REQUIREMENTS:

DESIGN:

AGGREGATE: Y

ASSIGNED:

NAME: General project management, including NRAO
ID: 1.7.MN.1

DESCRIPTION: General project management, including NRAO.

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: AK, 4 wk, JM, 2 wk

NAME: ATCA site management
ID: 1.7.MN.2

DESCRIPTION: ATCA site management

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: NK, 1 wk

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NAME: ASTRON site management
ID:   1.7.MN.3

DESCRIPTION: ASTRON site management

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: JN, 1 wk

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NAME: BIMA site management
ID:   1.7.MN.4

DESCRIPTION: BIMA site management

REQUIREMENTS:

DESIGN:

AGGREGATE: N

ASSIGNED: RP, 1 wk

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NAME: JBO site management
ID:   1.7.MN.5

DESCRIPTION: JBO site management

REQUIREMENTS:
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DESIGN:

AGGREGATE: N

ASSIGNED: RN, 1 wk

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