

Science Milestone Summary (Version: 2003sep12b)

Legend: Level 1: 1 Level 2: X Level 3: O (Original dates in gray)

Page	Milestone #	WBS #	Milestone Name	Due Date	Level	Status	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	9800	9.380.9800	Plan for compact and intermediate configurations submitted	2002-Nov-27	2	Done	X										
2	98051	9.380.98051	Draft of calibration requirements document	2002-Dec-31	3	Done	O										
3	9805	9.380.9805	Review of calibration requirements with science examples complete	2003-Feb-28	2	Done		X									
4	98121	9.380.98121	ATM software library available	2003-Mar-20	3	Done	O										
5	98201	9.380.98201	Draft of bandpass calibration plan	2003-Mar-30	3	Done	O										
6	98207	9.380.98207	Draft of antenna global pointing model determination plan	2003-Mar-30	3	Done	O										
7	98208	9.380.98208	Draft of reference pointing and focus calibration plans	2003-Mar-30	3	Done	O										
8	98351	9.380.98351	Draft of WVR technical aspects document	2003-Mar-30	3	Done	O										
9	98206	9.380.98206	Draft of antenna location determination plan	2003-Mar-31	3	Done	O										
10	98152	9.380.98152	First revised configuration (pad position) plan submitted	2003-Apr-09	3	Done	O	O									
11	98202	9.380.98202	Draft of phase calibration plan	2003-Apr-15	3	Done	O	O									
12	98122	9.380.98122	Draft specifications for calibration devices	2003-Apr-30	3	Done	O										
13	98151	9.380.98151	Investigation of Logic of Antenna Motion	2003-Jun-09	3	Done	O	O									
14	98203	9.380.98203	Draft of amplitude calibration plan	2003-Jun-09	3	Done	O	O									
15	98204	9.380.98204	Review of SSR plan for phase calibration techniques	2003-Jun-09	3	Done	O	O									
16	98218	9.380.98218	Revised polarization calibration plan	2003-Jun-09	3	Done	O										
17	98352	9.380.98352	Report on feasibility and usefulness of WVRs on ATF interferometer	2003-Jun-09	3	Done	O										
18	98205	9.380.98205	Draft of delay calibration plan	2003-Jun-16	3	Done	O	O									
19	9812	9.380.9812	Document on how calibration reqs flow down to instrumental specs	2003-Jun-30	2	Done		X									
20	9815	9.380.9815	Plan for Y+ configuration submitted	2003-Jun-30	2	Done		X									
21	98702	9.380.98702	Description of current site characterization instrumentation.	2003-Jun-30	3	Done	O										
22	98209	9.380.98209	Draft of polarization calibration plan	2003-Jul-08	3	Done	O	O									
23	98211	9.380.98211	Revised bandpass calibration plan	2003-Jul-08	3	Done	O	O									
24	98212	9.380.98212	Revised phase calibration plan	2003-Jul-08	3	Done	O	O									
25	98213	9.380.98213	Revised amplitude calibration plan	2003-Jul-08	3	Done	O	O									
26	98215	9.380.98215	Revised delay calibration plan	2003-Jul-08	3	Done	O	O									
27	98216	9.380.98216	Revised antenna global pointing model determination plan	2003-Jul-08	3	Done	O	O									
28	98217	9.380.98217	Revised reference pointing and focus calibration plan	2003-Jul-08	3	Done	O	O									
29	98708	9.380.98708	Report on RFI environment at Chajnantor	2003-Jul-31	3	Done	O	O									
30	98219	9.380.98219	Complete draft report on calibration strategy ready for review	2003-Aug-07	3	Done	O										
31	98220	9.380.98220	Test plan for amplitude calibration devices on ATF	2003-Sep-30	3		O										
32	98703	9.380.98703	Radio sonde data analysis written.	2003-Sep-30	3	Delay	O										
33	98705	9.380.98705	Report on phase correction analysis	2003-Sep-30	3	Delay	O										
34	98707	9.380.98707	Report on accuracy of mesoscale atmosphere models	2003-Sep-30	3	Delay	O										
35	98221	9.380.98221	Draft of Design Reference Mission	2003-Oct-15	3		O										
36	9820	9.380.9820	Calibration strategy submitted	2003-Oct-31	2	Delay		X	X								
37	9822	9.380.9822	Design Reference Mission Submitted for approval	2003-Dec-31	3		O										
38	98210	9.380.98210	Draft of operation model for calibration	2003-Dec-31	3	Delay	O	O									
39	98214	9.380.98214	Revised antenna location determination plan	2003-Dec-31	3	Delay	O	O									
40	98451	9.380.98451	Science verification plan for commissioning drafted	2003-Dec-31	3		O										
41	98706	9.380.98706	Report on height of turbulent layer	2003-Dec-31	3		O										
42	98704	9.380.98704	Report on analysis of high precision hygrometer measurements.	2004-Jan-31	3	Delay	O	O									
43	98301	9.380.98301	Draft plan for Early Science configurations	2004-Feb-29	3		O										
44	98353	9.380.98353	Draft WVR software implementation plan	2004-Mar-30	3		O										
45	98432	9.380.98432	Plan for interferometry tests on ATF complete	2004-Mar-31	3		O										
46	9825	9.380.9825	Science aspects of operations plan complete	2004-Jun-30	2	Delay		X	X								
47	9830	9.380.9830	Plan for early science configurations complete	2004-Jun-30	2			X	X								
48	98401	9.380.98401	Prototype antenna motion tests complete	2004-Jun-30	3		O										
49	98402	9.380.98402	Report on prototype antenna pointing in varying wind conditions	2004-Jun-30	3		O										
50	98452	9.380.98452	Science verification draft for commissioning revised	2004-Jun-30	3		O										
51	9835	9.380.9835	Report WVR strategy / implementation / operations	2004-Sep-30	2			X									
52	9840	9.380.9840	Review of tests of calibration strategies on prototype interferometer complete	2004-Dec-31	2			X									
53	98431	9.380.98431	Tests of dynamic scheduling on interferometer at ATF.	2005-Jan-31	3			O									
54	9843	9.380.9843	Review of tests of calibration strategies on ATF interferometer	2005-May-30	2				X								

Science Milestone Summary (Version: 2003sep12b)

Legend: Level 1: 1 Level 2: X Level 3: O (Original dates in gray)											
2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
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Page	Milestone #	WBS #	Milestone Name	Due Date	Level	Status
55	9845	9.380.9845	Science verification plan for commissioning submitted	2005-Jun-30	2	
56	9870	9.380.9870	Definition of site characterization instrumentation for ALMA operations	2006-Jan-31	2	
57	98501	9.380.98501	Science verification of ALMA early science array Bands 3, 6, & 7 begins	2007-Apr-30	3	
58	9850	9.380.9850	Science verification of ALMA early science array Bands 3, 6, & 7 complete	2007-Jul-31	2	
59	8045	9.380.8045	Start Early Science Operations	2007-Sep-30	1	
60	98551	9.380.98551	Science verification of ALMA Band 9 begins	2008-Jun-30	3	
61	9855	9.380.9855	Science verification of ALMA Band 9 complete	2008-Sep-30	2	
62	9860	9.380.9860	Science verification of ALMA imaging quality	2009-Dec-31	2	
63	9865	9.380.9865	Final Science verification complete array	2011-Dec-31	2	
64	8055	9.380.8055	Start of full Science Operations	2012-Mar-31	1	

ALMA Milestone Definition Sheet

Completed

WBS: 9.380.9800

Milestone 9800 Plan for compact and intermediate configurations submitted

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 9800 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 2 (1, 2, or 3)

Scheduled Completion 2002-Nov-27 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group) **Completed:** Yes

Responsible Individual J. Conway (Name) **Partner:** Both **Actual Date:** 2002-Nov-27

Page 1

Milestone Definition:

(right click in Milestone Definition box to edit text)

Plan for compact and intermediate configurations submitted. Plan B submitted 1 October 2002 to JAO. Revision C, taking into account improved Digital Elevation Model of site, submitted 27 Nov 2002. Revision D, taking into account errors in pad positioning, to be submitted. Completed Draft delivered 27nov2002. Final, approved version is pending review, interaction with other IPTs

Note: After submission, specs for antenna spacing were modified; a revised version was submitted in January 2003 to ALMAEDM.

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2002-Nov-27	2002-Nov-22	2002nov22a	Initial date estimate was 2002-Oct-15
2002-Nov-27	2003-Mar-21	2003mar21a	Completed; changes in specifications incorporated in later version
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98051

Milestone 98051 Draft of calibration requirements document

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page

2

Milestone Definition:

Draft of requirements document ready for reviews. This is a modification of chapter 3 of the project book, complete with science examples for drivers.

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Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2002-Dec-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.9805

Milestone 9805 Review of calibration requirements with science examples complete

Level 1 WBS # 9 *(Science)*

ALMA Work Package # 380 *(Science)*

ALMA Milestone # 9805 *(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)*

Milestone Level 2 *(1, 2, or 3)*

Scheduled Completion 2003-Feb-28 *(Enter using dd-mmm-yyyy format)*

Responsible Group Science IPT *(Organization, IPT, or Group)* **Completed:** Yes

Responsible Individual Bryan Butler *(Name)* **Partner:** Both **Actual Date:** 2003-Feb-28

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Review of calibration requirements with science examples complete.
 This includes: phase, amplitude, bandpass, polarization, antenna location, illumination offset, pointing, focus, delay, opacity, and decorrelation correction.

Document submitted to ALMAEDM.

Critical Predecessors

Milestone # <small>(See Milestones page)</small>	Lead/Lag <small>(weeks)</small>	Comments	Predecessor Description (if available)
1 98051	3		Draft of calibration requirements document
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Revision History

Scheduled Date <small>(dd-mmm-yyyy)</small>	Date Changed	Plan Version	Comments
11 2003-Feb-15	2002-Nov-22	2002nov22a	Initial date estimate
12 2003-Feb-28	2003-Feb-14	2002feb18a	Corrected date as submitted by IPT
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98121

Milestone 98121 ATM software library available

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**
 Responsible Individual (Name) **Partner:** **Actual Date:**

Page

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Milestone Definition:

ATM (atmospheric absorption, emission, scattering model) software library, written in C, to be made available to the ALMA project for use.

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Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Mar-20	2003-Mar-21	2003mar21a	Completed, document submitted to Science IPT
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98201

Milestone 98201 Draft of bandpass calibration plan

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

Page 5

Milestone Definition:

First draft of the bandpass calibration plan, including study of astronomical sources, 'bandpass normalization' (using autocorrelations to do BP cal), and necessity of separate device to do calibration.

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Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Mar-30	2003-May-23	2003may23a	email report of completion from A Wootten 2003may20
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98207

Milestone 98207 Draft of antenna global pointing model determination plan

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 98207 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 3 (1, 2, or 3)

Scheduled Completion 2003-Mar-30 (Enter using dd-mmm-yyyy format)

Responsible Group Science (Organization, IPT, or Group) **Completed:** Yes

Responsible Individual Jeff Mangum (Name) **Partner:** **Actual Date:** 2003-Mar-30

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Milestone Definition:

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Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Mar-30	2003-May-23	2003may23a	email report of completion from A Wootten 2003may20
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98208

Milestone 98208 Draft of reference pointing and focus calibration plans

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

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Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Mar-30	2003-May-23	2003may23a	email report of completion from A Wootten 2003may20
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98351

Milestone 98351 Draft of WVR technical aspects document

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

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Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Mar-30	2003-May-23	2003may23a	email report of completion from A Wootten 2003may20
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98206

Milestone 98206 Draft of antenna location determination plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

Draft of antenna location determination/calibration plan, including consideration of using phase vs. delay, the geometric model (tides, antenna motions, etc...), frequency of solutions, bootstrapping new antenna pads, etc...

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Mar-31	2003-May-23	2003may23a	email report of completion from A Wootten 2003may20
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98152

Milestone 98152	First revised configuration (pad position) plan submitted		
Level 1 WBS #	9	(Science)	
ALMA Work Package #	380	(Science)	
ALMA Milestone #	98152	(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)	
Milestone Level	3	(1, 2, or 3)	
Scheduled Completion	2003-Apr-09	(Enter using dd-mmm-yyyy format)	
Responsible Group	Science	(Organization, IPT, or Group)	Completed: Yes
Responsible Individual	Conway	(Name)	Partner: <input type="text"/> Actual Date: 2003-Apr-09
Milestone Definition:	First revised configuration (pad position) plan delivered, including considerations from site pad position survey, road and power/fiber conduit design plan, and imaging re-optimization given these considerations.		
(right click in Milestone Definition box to edit text)			

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98221			Draft of Design Reference Mission
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Apr-09	2003-May-20	2003may23a	email report of completion from A Wootten
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98202

Milestone 98202 Draft of phase calibration plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page 11

Milestone Definition:

Draft of phase calibration plan, including fast-switching, WVR, etc...

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Apr-15	2003-May-23	2003may23a	email report of completion from A Wootten 2003may20
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98122

Milestone 98122 Draft specifications for calibration devices

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page

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Milestone Definition:

Draft document containing list of calibration devices which are external to the antenna, plus the WVR (which is on the antenna) and their specifications.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Apr-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Apr-30	2003-May-20	2003may23a	email report of completion from A Wootten
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98151

Milestone 98151 Investigation of Logic of Antenna Motion

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page 13

Milestone Definition:

Logic of antenna motion investigated, including not only Y+, but intermediate configurations, incorporating constraints from scheduling and stringency. The logic of antenna motion will be confronted with site characterization data to refine it.

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98221			Draft of Design Reference Mission
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-May-31	2003-May-23	2003may23a	email report of delay from A Wootten
13	2003-Jun-09	2003-Aug-04	2003aug04a	Done end of ALMA Week
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98203

Milestone 98203 Draft of amplitude calibration plan

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

Page 14

Milestone Definition:

Draft of amplitude calibration plan, including single dish amplitude calibration. Issues such as separate loads or calibration devices, absolute astronomical calibrators, decorrelation, and total power stability will be addressed.

(right click in Milestone Definition box to edit text)

Done, presented ALMA Week <http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-May-31	2003-May-23	2003may23a	email report of delay from A Wootten 2003may20
2003-Jun-09	2003-Aug-04	2003aug04a	Done, presented ALMA Week
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98204

Milestone 98204 Review of SSR plan for phase calibration techniques

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page 15

Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-May-31	2003-May-23	2003may23a	email report of delay from A Wootten 2003may20
13	2003-Jun-09	2003-Aug-04	2003aug04a	Done, presented ALMA Week
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98218

Milestone 98218 Revised polarization calibration plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date: Page 16

Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98209			Draft of polarization calibration plan
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-31	2003-May-20	2003may23a	email report of Delay from A Wootten
13	2003-Jun-09	2003-Aug-04	2003aug04a	"Done ALMA Week"
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98352

Milestone 98352 Report on feasibility and usefulness of WVRs on ATF interferometer

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page

17

Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jun-09	2003-Aug-14	2003aug14a	email report of completion (presented in ALMA Week) A Wootten 2003-Aug-01
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98205

Milestone 98205	Draft of delay calibration plan		
Level 1 WBS #	9	<i>(Science)</i>	
ALMA Work Package #	380	<i>(Science)</i>	
ALMA Milestone #	98205	<i>(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)</i>	
Milestone Level	3	<i>(1, 2, or 3)</i>	
Scheduled Completion	2003-Jun-16	<i>(Enter using dd-mmm-yyyy format)</i>	
Responsible Group	Science	<i>(Organization, IPT, or Group)</i>	Completed: Yes
Responsible Individual	Stephane Guilloteau, Aurore Bacman	<i>(Name)</i>	Partner: Partner: Actual Date: 2003-Jun-16
Milestone Definition:	Done; in ALMAEDMhttp://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100550/d20030616214326/No/t100550.htm		
<i>(right click in Milestone Definition box to edit text)</i>			

Critical Predecessors

Milestone # <small>(See Milestones page)</small>	Lead/Lag <small>(weeks)</small>	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date <small>(dd-mmm-yyyy)</small>	Date Changed	Plan Version	Comments
2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Apr-30	2003-May-23	2003may23a	email report of delay from A Wooten 2003may20
2003-Jun-16	2003-Aug-04	2003aug04a	Done
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.9812

Milestone 9812 Document on how calibration reqs flow down to instrumental specs

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**
 Responsible Individual (Name) **Partner:** **Actual Date:**

Page 19

Milestone Definition:

(right click in Milestone Definition box to edit text)

Review of how calibration requirements trickle down to instrumental specifications, including special calibration devices (loads for amplitude calibration, possible photonic transmitter in subreflector, but NOT the WVR or devices which are external to the antenna like FTS, Wx station, etc...).

Reported completed by A Wootten 2003-Jun-30 Document posted to ALMAEDM

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98121	12		ATM software library available
2	98122	8		Draft specifications for calibration devices
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Jan-24	2003jan24b	Adopted at AOC meetings 2003 Jan 22-24
12				
13	2003-Jun-30	2003-Jul-07	2003Jul07a	A Wootten reported milestone completed, with document posted to ALMAEDM
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.9815

Milestone 9815 Plan for Y+ configuration submitted

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

Page 20

Milestone Definition:

Plan for all configurations, including Y+ configuration submitted.
 Submit after iteration with Site IPT

verbal update 2003-Jun-03 A Wootten: Might slip; ~20 of outer pad locations have fractured rock which may require further geological testing.

Reported completed by A Wootten 2003-Jun-30 Document posted to ALMAEDM

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Jun-30	2002-Nov-22	2002nov22a	Initial date estimate was 2003-Jun-15
2003-Jun-30	2003-Feb-14	2003feb18a	Corrected date as submitted by IPT
2003-Jun-30	2003-Jul-07	2003Jul07a	A Wootten reported milestone completed, with document posted to ALMAEDM
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98702

Milestone 98702 Description of current site characterization instrumentation.

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using **dd-mmm-yyyy** format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

Page 21

Milestone Definition:

Description of current and past instruments, data, analysis, including description of data location and format.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Apr-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Jun-30	2003-May-20	2003may23a	email report of Delay from A Wootten
2003-Jun-30	2003-Aug-04	2003jul31a	Done; see project book
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98209

Milestone 98209 Draft of polarization calibration plan

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using **dd-mmm-yyyy** format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Draft of polarization calibration plan, including required feed polarizations (linear [same or different PA?], circular, mixed?), and special device needs and descriptions (e.g., photonic transmitter in the subreflector, quarter-wave plates, etc..., as function of wavelength).

Outline in cal plan
<http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Jun-30	2003-May-23	2003may23a	email report of delay from A Wootten 2003may20
2003-Jul-08	2003-Aug-04	2003aug04a	Reported complete
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98211

Milestone 98211 Revised bandpass calibration plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page

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Milestone Definition:

Revised bandpass calibration plan 2003-Jun-30 3 Draft on ALMAEDM
<http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98201			Draft of bandpass calibration plan
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-08	2003-Aug-04	2003aug04a	Reported complete by A Wootten 2003aug01
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98212

Milestone 98212 Revised phase calibration plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page 24

Milestone Definition:

Draft on ALMAEDM
<http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98202			Draft of phase calibration plan
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-08	2003-Aug-04	2003aug04a	Reported complete by A Wootten 2003aug01
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98213

Milestone 98213 Revised amplitude calibration plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page

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Milestone Definition:

Draft on ALMAEDM
<http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98203			Draft of amplitude calibration plan
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-08	2003-Aug-04	2003aug04a	Reported complete by A Wootten 2003aug01
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98215

Milestone 98215 Revised delay calibration plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page 26

Milestone Definition:

Revised delay calibration plan 2003-Jun-30 3 Draft on ALMAEDM
<http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98206			Draft of antenna location determination plan
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-08	2003-Aug-04	2003aug04a	Reported complete by A Wootten 2003aug01
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98216

Milestone 98216 Revised antenna global pointing model determination plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

Page 27

Milestone Definition:

Draft on ALMAEDM
<http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98207			Draft of antenna global pointing model determination plan
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-08	2003-Aug-04	2003aug04a	Reported complete by A Wootten 2003aug01
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98217

Milestone 98217 Revised reference pointing and focus calibration plan

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 98217 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 3 (1, 2, or 3)

Scheduled Completion 2003-Jul-08 (Enter using dd-mmm-yyyy format)

Responsible Group Science (Organization, IPT, or Group) **Completed:** Yes

Responsible Individual Jeff Mangum, Robert Lucas, Pepe Ce (Name) **Partner:** **Actual Date:** 2003-Jul-08

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Milestone Definition:

Draft on ALMAEDM
<http://almaedm.tuc.nrao.edu/forums/alma/dispatch.cgi/almaprojmeetings/docProfile/100662/d20030708142053/No>

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98208			Draft of reference pointing and focus calibration plans
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-08	2003-Aug-04	2003aug04a	Reported complete by A Wootten 2003aug01
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98708

Milestone 98708 Report on RFI environment at Chajnantor

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

Report on RFI environment at Chajnantor

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12	2003-Jul-31	2003-Aug-04	2003aug04a	Done. Published in memo series
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ALMA Milestone Definition Sheet

Completed

WBS: 9.380.98219

Milestone 98219 Complete draft report on calibration strategy ready for review

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

Page

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1 98211			Revised bandpass calibration plan
2 98212			Revised phase calibration plan
3 98213			Revised amplitude calibration plan
4 98214			Revised antenna location determination plan
5 98215			Revised delay calibration plan
6 98216			Revised antenna global pointing model determination plan
7 98217			Revised reference pointing and focus calibration plan
8 98218			Revised polarization calibration plan
9			
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11 2003-Jul-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12 2003-Aug-07	2003-Aug-14	2003aug14a	Revised date, as per email A Wooten 2003-Aug-01
13 2003-Aug-07	2003-Sep-03	2003sep02a	Completed (Chap 3 of project book revision)
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ALMA Milestone Definition Sheet

WBS: 9.380.98220

Milestone 98220 Test plan for amplitude calibration devices on ATF

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

Milestone Definition:

Update 2003-Sep-03: Awaiting specification of devices from Front End group. Delay by 1 month (uncertain status). Resolve at next Calibration group telecon on Sep 16.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1 98213			Revised amplitude calibration plan
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11 2003-Sep-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98703

Milestone 98703 Radio sonde data analysis written.

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Radio sonde data analysis, including description of equipment, sonde campaigns, analysis, results summary, and conclusions about atmospheric structure above the site. Also includes recommendations for future needs (e.g., more campaigns?). Should be published as a ALMA Memo and/or an article in a scientific Journal.

Update 2003-Aug-18 biweekly report: "Delay until 2003-Aug-31. A draft is written and awaits finalization between Butler, Radford and Otarola."

Update: 2003-Sep-03: End of Sept; draft is completed.

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Jul-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Aug-31	2003-Aug-04	2003aug04a	A Wootten email 2003-aug-01: "Under way but I'll check on the status."
2003-Sep-30	2003-Sep-03	2003sep02a	Revised date (Status unclear, but nearly finished)
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ALMA Milestone Definition Sheet

WBS: 9.380.98705

Milestone 98705 Report on phase correction analysis

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Report on phase correction analysis using interferometer and radiometer data. Concludes and extends work of Guillermo Delgado. Two ALMA Memos will be produced, one that focuses on calibration effects (draft was written by Guillermo Delgado) and another that includes an updated and expanded study of phase correction

Update (Correction) Biweekly report 2003-Aug-26: "Delay until 2003-Sep-30"

Other comments: Report on phase correction analysis using interferometer and radiometer data. Concludes and extends work of Guillermo Delgado. The team is reprocessing the 183 GHz radiometer data. There has also been a lot more work than foreseen on the analysis of the wind power spectrum, which has further delayed the memo. With the ongoing recruitment of a new PostDoc to work on phase correction issues, the Cambridge portion of the team hopes perhaps to pick this up again in the near future, subject to agreement of course with the team in Chile.

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Jul-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Sep-30	2003-Aug-26	2003aug26a	Update from biweekly report
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ALMA Milestone Definition Sheet

WBS: 9.380.98707

Milestone 98707 Report on accuracy of mesoscale atmosphere models

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

Page 34

Milestone Definition:

Report on accuracy of mesoscale atmosphere models and applicability to dynamic scheduling.
Wait for results presented by A. Erasmus (under contract with ESO).

(right click in Milestone Definition box to edit text)

Update, 2003-Aug-18 biweekly report: "Delay until 2003-Sep-30 ERASMUS Report on accuracy of mesoscale atmosphere models and applicability to dynamic scheduling. Marc Sarazin was in charge of the Erasmus report. However, Erasmus uses our old 183 GHz data in this report, and we should see if the reprocessed data give different results."

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Jul-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Sep-30	2003-Aug-26	2003aug26a	Biweekly update 2003 Aug 18
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ALMA Milestone Definition Sheet

WBS: 9.380.98221

Milestone 98221 Draft of Design Reference Mission

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Oct-15	2003-Sep-03	2003sep02a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9820

Milestone 9820 Calibration strategy submitted

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

Page 36

Milestone Definition:

Submit after iteration with Antenna, FE, BE, Systems, Computing

Update 2003-Sep-02 Biweekly report: "Calibration Plan will not meet the 30 September deadline owing to departure of key personnel (Guilloteau, Butler, Bacmann); 31 October should be new Level 2 milestone date."

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1 9435	17	Needed by computing well ahead of CDR2.	Critical Design Review 2 (CDR2)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11 2003-Sep-30	2002-Nov-22	2002nov22a	Initial date estimate was 2003-Sep-15
12 2003-Sep-30	2003-Feb-14	2002feb18a	Corrected date as submitted by IPT
13 2003-Oct-31	2003-Sep-02	2003sep02a	Revised date submitted with biweekly report.
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ALMA Milestone Definition Sheet

WBS: 9.380.9822

Milestone 9822	Design Reference Mission Submitted for approval		
Level 1 WBS #	9	(Science)	
ALMA Work Package #	380	(Science)	
ALMA Milestone #	9822	(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)	
Milestone Level	3	(1, 2, or 3)	
Scheduled Completion	2003-Dec-31	(Enter using dd-mmm-yyyy format)	
Responsible Group	Science	(Organization, IPT, or Group)	Completed: <input type="checkbox"/> No
Responsible Individual	Wootten, van Dishoeck	(Name)	Partner: <input type="checkbox"/> Actual Date: <input type="checkbox"/>

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone #	Lead/Lag	Comments	Predecessor Description (if available)
(See Milestones page)	(weeks)		
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Revision History

Scheduled Date	Date	Plan	Comments
(dd-mmm-yyyy)	Changed	Version	
2003-Dec-31	2003-Sep-03	2003sep02a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98210

Milestone 98210 Draft of operation model for calibration

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using **dd-mmm-yyyy** format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Draft of operational model for calibration, including ideas on sequence of moves and calibrations, dynamic scheduling, and number of antennas needed in 'calibration subarrays' (e.g., when determining antenna location for a newly moved antenna, how many antennas in total are needed?).

Update 2003-Sep-03: Remove Guilloteau, van Dishoeck; add Emerson. Status unclear, but this draft must involve Operations group.

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2003-Jun-30	2003-May-23	2003may23a	email report of delay from A Wootten 2003may20
2003-Dec-31	2003-Sep-03	2003sep02a	
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ALMA Milestone Definition Sheet

WBS: 9.380.98214

Milestone 98214 Revised antenna location determination plan

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

Update 2003-Sep-03: Revision of draft (98206). Requires input from operations group.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1 98205		(done)	Draft of delay calibration plan
2 98210	0	parallel with 98210	Draft of operation model for calibration
3 98206		(done)	Draft of antenna location determination plan
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11 2003-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12 2003-Dec-31	2003-Sep-03	2003sep02a	Revised date, added linkages
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ALMA Milestone Definition Sheet

WBS: 9.380.98451

Milestone 98451 Science verification plan for commissioning drafted

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

Science verification plan drafted

Update 2003-Sep-03: Delayed. Add 6 months; not needed before then.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Dec-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98706

Milestone 98706 Report on height of turbulent layer

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

Milestone Definition:

Report on height of turbulent layer using interferometer and radiometer data. Compare with radiosonde data. Will be published as an ALMA Memo.

(right click in Milestone Definition box to edit text)

Update 2003-Sep-03: Status unclear; no change for now.

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Dec-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98704

Milestone 98704 Report on analysis of high precision hygrometer measurements.

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

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Milestone Definition:

Report on analysis of high precision hygrometer measurements.

Update 2003-Aug-18 biweekl report: "Delay until 2004-Jan-31 Instrumental problems have prevented meaningful analysis of that data. (One does not know when it's functioning properly, even though there's supposed to be a flag indicating so...).

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2003-Jul-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
2004-Jan-31	2003-Aug-26	2003aug26a	Biweekly report update
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ALMA Milestone Definition Sheet

WBS: 9.380.98301

Milestone 98301	Draft plan for Early Science configurations		
Level 1 WBS #	9	(Science)	
ALMA Work Package #	380	(Science)	
ALMA Milestone #	98301	(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)	
Milestone Level	3	(1, 2, or 3)	
Scheduled Completion	2004-Feb-29	(Enter using dd-mmm-yyyy format)	
Responsible Group	Science IPT	(Organization, IPT, or Group)	Completed: <input type="checkbox"/> No
Responsible Individual	J. Conway	(Name)	Partner: <input type="checkbox"/> Actual Date: <input type="checkbox"/>

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Milestone Definition:

Draft plan for Early Science configurations

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2004-Feb-29	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT

ALMA Milestone Definition Sheet

WBS: 9.380.98353

Milestone 98353 Draft WVR software implementation plan

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

Includes capabilities as tau-meter.

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2004-Mar-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98432

Milestone 98432 Plan for interferometry tests on ATF complete

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

Update 2003-Sep-03: What kinds of tests should be performed on ATF to tell us what we need to know (e.g., testing WVR, testing calibration, correlator modes, etc.) Linked to 9650 in System.

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	9650	13		Prototype Integration & Verification Plan (Q4 2003 through Q4 2004) approved for Lab & ATF
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2004-Mar-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9825

Milestone 9825 Science aspects of operations plan complete

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 9825 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 2 (1, 2, or 3)

Scheduled Completion 2004-Jun-30 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group) **Completed:** No

Responsible Individual Guilloteau, van Dishoeck, Wootten, D (Name) **Partner:** Both **Actual Date:**

Milestone Definition:
 Science aspects of operations plan complete, including core functions of Regional Support Centers
 Time allocation policies from Management IPT / ALMA Board

(right click in Milestone Definition box to edit text)

Update 2003-Sep-03: Add 6 months. Depends on agreed operations draft and calibration strategy. Also depends on 98214

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98214	17		Revised antenna location determination plan
2	98210	26		Draft of operation model for calibration
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2003-Dec-31	2002-Nov-22	2002nov22a	Initial date estimate was 2003-Dec-15
12	2003-Dec-31	2003-Feb-14	2002feb18a	Corrected date as submitted by IPT
13	2004-Jun-30	2003-Sep-03	2003sep02a	Revised date, based on other dependencies
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ALMA Milestone Definition Sheet

WBS: 9.380.9830

Milestone 9830 Plan for early science configurations complete

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

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Milestone Definition:

Plan for Early Science configurations complete.

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2004-Jun-30	2002-Nov-22	2002nov22a	Initial date estimate was 2004-Jun-15
12	2004-Jun-30	2003-Feb-14	2002feb18a	Corrected date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98401

Milestone 98401	Prototype antenna motion tests complete		
Level 1 WBS #	9	<i>(Science)</i>	
ALMA Work Package #	380	<i>(Science)</i>	
ALMA Milestone #	98401	<i>(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)</i>	
Milestone Level	3	<i>(1, 2, or 3)</i>	
Scheduled Completion	2004-Jun-30	<i>(Enter using dd-mmm-yyyy format)</i>	
Responsible Group	Science	<i>(Organization, IPT, or Group)</i>	Completed: No
Responsible Individual	Mark Holdaway	<i>(Name)</i>	Partner: <input type="text"/> Actual Date: <input type="text"/>
Milestone Definition:	Comparison of results of beam switching and fast scanning on prototype antennas, including tests of OTF motion and antenna position readout. <i>(right click in Milestone Definition box to edit text)</i>		

Critical Predecessors

	Milestone # <small>(See Milestones page)</small>	Lead/Lag <small>(weeks)</small>	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date <small>(dd-mmm-yyyy)</small>	Date Changed	Plan Version	Comments
11	2004-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
12				
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ALMA Milestone Definition Sheet

WBS: 9.380.98402

Milestone 98402 Report on prototype antenna pointing in varying wind conditions

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2004-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98452

Milestone 98452	Science verification draft for commissioning revised		
Level 1 WBS #	9	<i>(Science)</i>	
ALMA Work Package #	380	<i>(Science)</i>	
ALMA Milestone #	98452	<i>(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)</i>	
Milestone Level	3	<i>(1, 2, or 3)</i>	
Scheduled Completion	2004-Jun-30	<i>(Enter using dd-mmm-yyyy format)</i>	
Responsible Group	Science IPT	<i>(Organization, IPT, or Group)</i>	Completed: <input type="checkbox"/> No
Responsible Individual	Mangum, Dutrey, Guilloteau, van Dish	<i>(Name)</i>	Partner: <input type="checkbox"/> Actual Date: <input type="text"/>
Milestone Definition:	Revised plan for science verification, including separate plans for each receiver band, and plans for mosaicing verification.		
<i>(right click in Milestone Definition box to edit text)</i>			

Critical Predecessors

	Milestone # <small>(See Milestones page)</small>	Lead/Lag <small>(weeks)</small>	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date <small>(dd-mmm-yyyy)</small>	Date Changed	Plan Version	Comments
11	2004-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9835

Milestone 9835 Report WVR strategy / implementation / operations

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:

Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

(right click in Milestone Definition box to edit text)

How and when do we use the WVR; is it used as a tipper, tau accuracy, use as function of location on site.

Selected WVR device to be deployed at ATF as soon as test interferometer phase stable in early 2005 See related FE milestone mid 2004

Update 2003-Sep-03: Depends critically on delivery date for WVR, availability dates for ATF interferometer, etc.

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2004-Sep-30	2002-Nov-22	2002nov22a	Initial date estimate was 2004-Sep-15
2004-Sep-30	2003-Feb-14	2002feb18a	Revised date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9840

Milestone 9840 Review of tests of calibration strategies on prototype interferometer complete

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

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Milestone Definition:

Review of tests of calibration strategies on prototype interferometer complete with **evaluation** receivers.

Depends on first fringes + -4 months

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2004-Dec-31	2002-Nov-22	2002nov22a	Initial date estimate was 2004-Dec-15
2004-Dec-31	2003-Feb-14	2002feb18a	Revised date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98431

Milestone 98431 Tests of dynamic scheduling on interferometer at ATF.

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1	98221			Draft of Design Reference Mission
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2005-Jan-31	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9843

Milestone 9843 Review of tests of calibration strategies on ATF interferometer

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 9843 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 2 (1, 2, or 3)

Scheduled Completion 2005-May-30 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group) **Completed:** No

Responsible Individual B. Butler(?) (Name) **Partner:** **Actual Date:**

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Milestone Definition:

Review of tests of calibration strategies on interferometer at ATF complete with ALMA **prototype** receiver, including how the results of these tests affect plans for ALMA mosaicing and submillimeter imaging.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
1 9840			Review of tests of calibration strategies on prototype interferometer complete
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11 2005-May-30	2002-Nov-22	2002nov22a	Initial date estimate 2004-Dec-15
12 2005-May-30	2003-Feb-14	2002feb18a	Revised date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9845

Milestone 9845 Science verification plan for commissioning submitted

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 9845 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 2 (1, 2, or 3)

Scheduled Completion 2005-Jun-30 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group) **Completed:** No

Responsible Individual Guilloteau, van Dishoeck, Wootten (Name) **Partner:** **Actual Date:**

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Milestone Definition:
Science verification plan submitted

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2005-Jun-30	2002-Nov-22	2002nov22a	Initial date estimate was 2004-Jun-15
2005-Jun-30	2003-Feb-14	2002feb18a	Corrected date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9870

Milestone 9870 Definition of site characterization instrumentation for ALMA operations

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

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Milestone Definition:

Definition of site characterization instrumentation for ALMA operations in consultation with Calibration group.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2006-Jan-31	2003-Jan-24	2003jan24b	Adopted at AOC meetings 2003 Jan 22-24 (Initial date was 2011-Dec-31?)
2006-Jan-31	2003-Feb-14	2002feb18a	Revised date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.98501

Milestone 98501 Science verification of ALMA early science array Bands 3, 6, & 7 begins

Level 1 WBS # 9 (Science)
 ALMA Work Package # 380 (Science)
 ALMA Milestone # 98501 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level 3 (1, 2, or 3)
 Scheduled Completion 2007-Apr-30 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group) Completed: No
 Responsible Individual Guilloteau, van Dishoeck, Wootten (Name) Partner: Actual Date:

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Milestone Definition:

Science verification of ALMA early science array with Bands 3, 6 and 7 begins. Assumes Band 3 and Band 6 and 7 commissioned!

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2007-Apr-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9850

Milestone 9850	Science verification of ALMA early science array Bands 3, 6, & 7 complete		
Level 1 WBS #	9	(Science)	
ALMA Work Package #	380	(Science)	
ALMA Milestone #	9850	(Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)	
Milestone Level	2	(1, 2, or 3)	
Scheduled Completion	2007-Jul-31	(Enter using dd-mmm-yyyy format)	
Responsible Group	Science IPT	(Organization, IPT, or Group)	Completed: No
Responsible Individual	Guilloteau, van Dishoeck, Wootten	(Name)	Partner: <input type="text"/> Actual Date: <input type="text"/>
Milestone Definition:	Science verification of ALMA early science array with Bands 3, 6 and 7 complete Assumes Band 3 and at least one other Band commissioned!		
(right click in Milestone Definition box to edit text)			

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2007-Jul-31	2002-Nov-22	2002nov22a	Initial date estimate was 2007-Jul-15
12	2007-Jul-31	2003-Feb-14	2002feb18a	Corrected date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.8045

Milestone 8045 Start Early Science Operations

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

8 Antennas suggested
Level 1 Milestone

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2007-Sep-30	2002-Nov-22	2002nov22a	As specified in the ALMA Project Plan
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ALMA Milestone Definition Sheet

WBS: 9.380.98551

Milestone 98551 Science verification of ALMA Band 9 begins

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 98551 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 3 (1, 2, or 3)

Scheduled Completion 2008-Jun-30 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group) **Completed:** No

Responsible Individual Guilloteau, van Dishoeck, Wootten (Name) **Partner:** **Actual Date:**

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60

Milestone Definition:

verification of any bands not included in early science array begins.

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2008-Jun-30	2003-Feb-14	2003feb18a	Initial date estimate as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9855

Milestone 9855 Science verification of ALMA Band 9 complete

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 9855 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 2 (1, 2, or 3)

Scheduled Completion 2008-Sep-30 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group)

Completed: No

Responsible Individual Guilloteau, van Dishoeck, Wootten (Name)

Partner:

Actual Date:

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Milestone Definition:

verification of any bands not included in early science array

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2008-Sep-30	2002-Nov-22	2002nov22a	Initial date estimate was 2008-Sep-15
2008-Sep-30	2003-Feb-14	2002feb18a	Revised date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9860

Milestone 9860 Science verification of ALMA imaging quality

Level 1 WBS # 9 (Science)

ALMA Work Package # 380 (Science)

ALMA Milestone # 9860 (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level 2 (1, 2, or 3)

Scheduled Completion 2009-Dec-31 (Enter using dd-mmm-yyyy format)

Responsible Group Science IPT (Organization, IPT, or Group) **Completed:** No

Responsible Individual F. Gueth, M. Holdaway, J. Pardo, S. M (Name) **Partner:** **Actual Date:**

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Milestone Definition:

Requires 32 Antennas, 32 FE, 2 quadrants correlator, computing; + 4 weeks

(right click in Milestone Definition box to edit text)

Critical Predecessors

Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
2009-Dec-31	2002-Nov-22	2002nov22a	Initial date estimate was 2009-Sep-15
2009-Dec-31	2003-Feb-14	2002feb18a	Revised date as submitted by IPT
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ALMA Milestone Definition Sheet

WBS: 9.380.9865

Milestone 9865 Final Science verification complete array

Level 1 WBS # (Science)

ALMA Work Package # (Science)

ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)

Milestone Level (1, 2, or 3)

Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) **Completed:**

Responsible Individual (Name) **Partner:** **Actual Date:**

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Milestone Definition:

Test & verification of specific modes, arrays (ACA?), 64 antennas,...

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2011-Dec-31	2003-Jan-24	2003jan24b	Adopted at AOC meetings 2003 Jan 22-24
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ALMA Milestone Definition Sheet

WBS: 9.380.8055

Milestone 8055 Start of full Science Operations

Level 1 WBS # (Science)
 ALMA Work Package # (Science)
 ALMA Milestone # (Level 1 and 2 Assigned by Project Office; Level 3 assigned by IPT)
 Milestone Level (1, 2, or 3)
 Scheduled Completion (Enter using dd-mmm-yyyy format)

Responsible Group (Organization, IPT, or Group) Completed:
 Responsible Individual (Name) Partner: Actual Date:

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Milestone Definition:

Level 1 Milestone

(right click in Milestone Definition box to edit text)

Critical Predecessors

	Milestone # (See Milestones page)	Lead/Lag (weeks)	Comments	Predecessor Description (if available)
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Revision History

	Scheduled Date (dd-mmm-yyyy)	Date Changed	Plan Version	Comments
11	2012-Mar-31	2002-Nov-22	2002nov22a	As specified in the ALMA Project Plan
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