

Development Upgrades of the Atacama Large

Millimeter/submillimeter Array (ALMA)

**Project Proposal Template**

***Delete all yellow high-lighted text from your proposal.***

|  |  |  |
| --- | --- | --- |
| **Prepared by** | **Organization** | **Date** |
| W. Randolph | ALMA Dev. Program | 05 April 2013 |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Approvals (Name and Signature)** | **Organization** | **Date** |
| A. Wootten | NAASC |  |
| P. Jewell | NA ALMA Operations |  |

|  |  |  |
| --- | --- | --- |
| **Released by (Name and Signature)** | **Organization** | **Date** |
| W. Randolph | ALMA Dev. Program |  |

**Change Record**

|  |  |  |
| --- | --- | --- |
| **Version** | **Date** | **Reason** |
| 0.0 | 01 May 2013 | Initial Release |
| 0.2 | 07 August 2015 | Revisions by A. Crossley |
| 0.3 | 12 September 2016 | Revisions by W. Randolph |

***Delete this entire page from your submitted Project Proposal.***



Development Upgrades of the Atacama Large

Millimeter/submillimeter Array (ALMA)

Project Proposal

*Insert* **Title** *here*

**Principal Investigator: Insert Name Here**

Institution: Insert Name Here

Address: Insert Address Here

PI Contact Information:

Telephone Number Insert Here (xxx) xxx - xxxx

Email Address Insert Here xxx@yyy.zzz

**Abstract**

*Present a two page (or less) description of the work scope and objectives of the proposed Project.*

Contents

[1.0 Co-Investigator(s) and Collaborating Institution(s) 1](#_Toc461541148)

[2.0 Subcontractors 1](#_Toc461541149)

[3.0 Science Case 1](#_Toc461541150)

[4.0 Project Scope 1](#_Toc461541151)

[5.0 Project Deliverables 1](#_Toc461541152)

[5.1 Hardware 1](#_Toc461541153)

[5.2 Software 1](#_Toc461541154)

[5.3 Services 1](#_Toc461541155)

[5.4 Documents 2](#_Toc461541156)

[6.0 Interfaces to ALMA 2](#_Toc461541157)

[7.0 Period of Performance 2](#_Toc461541158)

[8.0 Staffing 2](#_Toc461541159)

[8.1 Offerer’s Staffing 2](#_Toc461541160)

[8.2 External Staffing (if applicable) 3](#_Toc461541161)

[9.0 Cost Breakdown 3](#_Toc461541162)

[9.1 Offerer’s Cost 3](#_Toc461541163)

[9.2 Collaborating Institution / Subcontractor Cost 4](#_Toc461541164)

[9.3 Total Project Cost 4](#_Toc461541165)

[9.4 Cost Distribution (Cash Flow) 4](#_Toc461541166)

[9.5 Total Project Value 5](#_Toc461541167)

[10.0 Project Schedule 5](#_Toc461541168)

[11.0 Project Management 6](#_Toc461541169)

[11.1 Systems/Configuration Control 6](#_Toc461541170)

[11.1.1 Systems Requirement and Specification Control 6](#_Toc461541171)

[11.1.2 Documentation Control 6](#_Toc461541172)

[11.1.3 Product & Quality Assurance Control 6](#_Toc461541173)

[11.2 Performance to Schedule 6](#_Toc461541174)

[11.3 Performance to Budget 6](#_Toc461541175)

[11.4 Measures of Success 6](#_Toc461541176)

[11.5 Risk Management 6](#_Toc461541177)

[11.6 Communication Plan and Progress Reporting 7](#_Toc461541178)

[12.0 Implementation Plan and Site Location Impact Statement *(if applicable)* 7](#_Toc461541179)

[12.1 Implementation Schedule 7](#_Toc461541180)

[12.2 Site Location Impact Statement 8](#_Toc461541181)

[13.0 Project Closeout 8](#_Toc461541182)

[14.0 Commitment 8](#_Toc461541183)

# Co-Investigator(s) and Collaborating Institution(s)

*Complete Table 1.0, below. Insert/delete rows as needed.*

**Table 1.0:** Co-Investigator(s) and Collaborating Institution(s).

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Institution** | **Email** | **Telephone** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# **Subcontractors**

*N.B. Obtain Company and/or Institution authorization to be proposed as a subcontractor prior to completion and sign-off of this Proposal.*

**2.1 Company/Institution:**

**Address:**

**Subcontracted parts and/or services:**

# Science Case

*Present the scientific rationale for the proposed Project and the significance for ALMA.*

1. Project Scope

*Insert an explanation of the scope/scale and planned method of the Project. Describe Project objectives, assumptions, working theories, and approaches that will be used, and state hypothesis (if applicable).*

1. Project Deliverables

*Describe the products that will be delivered at the conclusion of the proposed Project.*

## Hardware

## Software

## Services

## Documents

* Monthly “4-Square” Progress Reports
* Specifications
* Hardware design documentation
* Software/firmware design documentation
* Interface Control Documents (ICDs)
* Technical manuals and procedures
* Quality Assurance procedures
* Safety procedures
* Closeout Report

1. Interfaces to ALMA

*Note the ALMA hardware and/or software control interfaces that may be affected if the proposed design or control scheme is implemented. ALMA Systems Engineering support is available upon request.*

1. Period of Performance

*Define the anticipated period of performance (****nominally twenty-four months****).*

1. Staffing

*Estimate the level of effort (unit of measure =* ***F****ull* ***T****ime* ***E****quivalent) to be deployed. Include Collaborating Institutions/Subcontractors until completion of the proposed Project, as well as the corresponding total cost to be incurred. Identify essential (key) personnel required to ensure success. If two, or more, persons of equivalent labor grade are capable of performing any given task, leave the corresponding Key Personnel cell blank and note the FTE level of effort only.*

* 1. Offerer’s Staffing

*Complete Table 2.0, below. Insert/delete rows as needed.*

**Table 2.0:** Labor Estimate.

|  |  |  |  |
| --- | --- | --- | --- |
| **Job Title** | **Key Personnel** | **FTE** | **Duration (Months)** |
| Principle Investigator |  |  |  |
| Scientific Lead |  |  |  |
| Engineering Lead |  |  |  |
| Research Engineer |  |  |  |
| Senior Engineer |  |  |  |
| Engineer 1 |  |  |  |
| Engineer 2 |  |  |  |
| Technician 1 |  |  |  |
| Technician 2 |  |  |  |
| Machinist |  |  |  |
| Other |  |  |  |
| ***TOTALS*** | | **0.00** | **0.00** |

* 1. External Staffing (if applicable)

*Complete Table 3.0, below. Insert/delete rows as needed.*

**Table 3.0:** External Staffing and Contact Information.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Name** | **Institution** | **Email** | **Telephone** |
| Co-Investigator |  |  |  |  |
| Vendor Point of Contact |  |  |  |  |
| Customer Point of Contact |  |  |  |  |

1. Cost Breakdown

*The total Award Pool for the Cycle 5 Call for Project Proposals is $11M.*

* 1. Offerer’s Cost

*Complete Table 4.0, below. Work Breakdown Structure (WBS) Number should correspond to Level 1 tasks/activities in the Project Schedule. Insert rows as needed.*

**Table 4.0:** Offerer’s Cost Breakdown.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WBS No.** | **Task Description** | **Labor ($)** | **Materials & Services ($)** | **Travel ($)** |
| 1.0 |  |  |  |  |
| 2.0 |  |  |  |  |
| 3.0 |  |  |  |  |
| n.0 |  |  |  |  |
| ***SubTotals ($)*** | | **0.00** | **0.00** | **0.00** |
| ***TOTAL OFFERER’S COST ($)*** | | | | **0.00** |

* 1. Collaborating Institution / Subcontractor Cost

*Complete Table 5.0, below. Insert rows as needed. Note the value of any In-Kind Contributions.*

**Table 5.0:** Collaborating Institution/Subcontractor Cost & In-Kind Contribution.

|  |  |  |
| --- | --- | --- |
| **Collaborating Institution / Subcontractor** | **USD ($)** | **In-Kind Contribution**  **Value in USD ($)** |
|  |  |  |
| ***TOTAL COST ($)*** | **0.00** |  |
| ***TOTAL VALUE of IN-KIND CONTRIBUTIONS ($)*** | | **0.00** |

* 1. Total Project Cost

*Complete Table 6.0, below.*

**Table 6.0:** Total Project Cost.

|  |  |
| --- | --- |
| **Project Cost Elements** | **USD ($)** |
| Total Offerer’s Cost (Table 4.0) |  |
| Collaborating Institution / Contractor Total Cost (Table 5.0) |  |
| Project Contingency (requires a supporting Risk Mitigation Plan, Table 9.0) |  |
| ***TOTAL PROJECT COST ($)*** | **0.00** |

* 1. Cost Distribution (Cash Flow)

***Due to budgetary constraints, no more than one half (50%) of Project expenditures should be planned in FY2018.*** *Insert additional columns as needed.*

**Table 7.0:** Project Cost Distribution*.*

|  |  |  |
| --- | --- | --- |
| **FY2018 Cost ($)** | **FY2019 Cost ($)** | **TOTAL COST ($)** |
| **0.00** | **0.00** | **0.00** |

* 1. Total Project Value

*Complete Table 8.0, below.*

**Table 8.0:** Total Project Value.

|  |  |
| --- | --- |
| **Project Elements** | **USD ($)** |
| Total Offerer’s Cost (Table 4.0) |  |
| Collaborating Institution / Contractor Total In-Kind Contributions (Table 5.0) |  |
| ***TOTAL PROJECT VALUE ($)*** | **0.00** |

1. Project Schedule

|  |
| --- |
| ***Insert MS Project Gantt Chart Here***  ***Increase Area as Required.*** |

**Figure 1.0:** Project Schedule.

1. Project Management

## Systems/Configuration Control

### Systems Requirement and Specification Control

*Define your approach. Development engineering and design activities shall be conducted in accord with established ALMA Systems Engineering policies, practices and procedures.*

### Documentation Control

*Define your approach. All shared documents shall be dated and bear a revision level number.*

### Product & Quality Assurance Control

*Define your approach. Development engineering and design activities shall be conducted in accord with established ALMA PA/QA policies, practices and procedures. A unique Product Assurance Plan is unnecessary.*

## **Performance to Schedule**

*Define your approach. The Principal Investigator has primary responsibility for schedule development and performance to schedule. The NA ALMA Development Program office will provide support to the PI in establishment of a revision-controlled Project schedule and monthly preparation of performance to schedule status. In the event of a schedule variance, the PI and the NA ALMA Development Program Manager will assess the impact and develop the appropriate recovery action(s).*

## **Performance to Budget**

*Define your approach. The Principal Investigator has primary responsibility for intra-project budget allocation and cost performance. The NA ALMA Development Program office will provide support to the PI in establishment of cost accounts, budget load, and the preparation of a revision-controlled, monthly Budget Status Report. In the event of a cost variance, the PI and the NA ALMA Development Program Manager will assess the impact and develop the appropriate recovery action(s).*

## Measures of Success

*Describe the measures of success (performance metrics and outcomes) for this Project. Describe the process that will be used to address task prioritization, evaluate results, and to manage Change Control.*

## Risk Management

*Define your approach. Identify the primary areas of uncertainty (risk) foreseen at the outset of the Project. Estimate the probability of occurrence and associated cost impact of each identified risk. Also, briefly note the means by which each primary risk may be mitigated or retired altogether. Add/delete rows as needed.*

**Table 9.0:** Project Risk Assessment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Primary Risk(s)** | **Prob. (%)** | **Impact ($)** | **Mitigation** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| ***TOTAL PROJECT CONTINGENCY ($)*** | | | **0.00** |  |

## Communication Plan and Progress Reporting

*Define your approach. At a minimum, a monthly, “4-Square” Progress Report shall be prepared by the Principal Investigator in accordance with NRAO Program Management practices and procedures. Informal reviews will be conducted by the NA ALMA Development Program Manager upon the completion of Level 1 milestones.*

1. Implementation Plan and Site Location Impact Statement *(if applicable)*

*Describe how the Project deliverables will be provided to the end-user and how on-site Implementation, Verification and Commissioning will be achieved. Ensure that nonrecurring (implementation) and recurring costs are accounted for in the Project cost estimate.*

## **12.1 Implementation Schedule**

|  |
| --- |
| ***Insert MS Project Gantt Chart Here***  ***Increase Area as Required.*** |

**Figure 2.0:** Implementation Schedule.

## **12.2 Site Location Impact Statement**

*Describe any new facilities, significant modifications to existing facilities, or use of JAO/NRAO facilities that are required. Also indicate when these facilities and/or modification are required.*

# Project Closeout

*Define your approach. Upon conclusion of this Project, the NA ALMA Development Program Office will coordinate the orderly closeout of activities; or, the transition of activities to implementation. At a minimum, this shall include the following:*

* *verification of compliance with established procurement policies and procedures;*
* *verification of Purchase Order final payments;*
* *verification of compliance with established labor charging practices;*
* *verification of labor charging accuracy;*
* *cost and schedule variance analysis;*
* *resolution of any inventory and/or property control issues;*
* *inactivation of cost accounts;*
* *preparation of a Final Report;*
* *preparation of an Outcome Report; and*
* *archiving of Project records.*

1. Commitment

Having read all documents listed in and annexed to the Cycle 5 Call for Project Proposals, and having assessed the situation and the nature and difficulties of the proposed services, the undersigned hereby offers the “***insert Project Title here***” in accordance with the provisions of the present Call for Project Proposals and, if awarded the Agreement, undertakes to carry out the work required according to best trade practices, within the prescribed time limits, and at the price set out in this Proposal.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Institution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Appendix A - Reference Documents**

**Appendix B – Curriculum Vitae of Key Personnel**