



Australian Government

**Department of Innovation
Industry, Science and Research**

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ABN: 74 599 608 295

Mr Mark McAuley
Chief Operating Officer
Astronomy Australia Ltd
PO Box 2100
HAWTHORN VIC 3122

Dear Mr McAuley

Ref No: ES06/10223

Deed of Variation - NCRIS Funding Agreement - Astronomy Australia Ltd

I am writing to complete the exchange of documentation relating to the execution by counterparts of a Deed of Variation between the Commonwealth of Australia, through the Department of Innovation, Industry, Science and Research (DIISR) and Astronomy Australia Limited (AAL), for the NCRIS Capability known as 'Radio and Optical Astronomy',

Thank you for sending us your electronically scanned copy of the Deed of Variation, as executed by Dr Martin Cole, Chair, AAL and Professor Warrick Couch, Director, AAL on 21 May 2009. We understand that you have kept a copy of this document for AAL's records and are posting the original signed Deed to us by Express Post.

Please find enclosed the original copy of the same Deed, executed on behalf of the Commonwealth by Ms Anne-Marie Lansdown, General Manager, Research Infrastructure Branch, DIISR on 22 May 2009. We have kept a copy of this signed document for our Departmental records.

As agreed previously, these two signed counterparts together constitute the executed Deed of Variation between the Commonwealth and AAL.

If you have any further questions in regard to the Deed of Variation, please do not hesitate to contact me by telephone on 02 6213 6152, or by email at andrew.stevenson@innovation.gov.au.

Yours sincerely

Andrew Stevenson
Assistant Manager
National Collaborative Research Infrastructure Strategy

22 May 2009

Department of Innovation, Industry,
Science and Research

Deed of Variation

Commonwealth of Australia (**Commonwealth**)

Astronomy Australia Limited (**Contractor**)

Details

Date

22nd / May / 2009
day month year

Parties

Name The Commonwealth of Australia as represented by the Department of Innovation, Industry, Science and Research

ABN 74 599 608 295

Short form name **Commonwealth**

Address details Ms Anne-Marie Lansdown,
General Manager, Research Infrastructure Branch
GPO Box 9839, Canberra, ACT 2601
Industry House Level 6, 10 Binara Street, Canberra City, ACT 2600
Fax 02 6213 7953

Name Astronomy Australia Ltd

ABN 19 124 973 584

Short form name **Contractor**

Address details Dr Martin Cole
Chair, Astronomy Australia Limited,
PO Box 2100, Hawthorn, Victoria 3122.
Fax: 03 9214 4396

Background

- A On 20 June 2007, the Commonwealth and the Contractor entered into a funding agreement regarding funding for Implementing an Investment Plan for the National Collaborative Research Infrastructure Strategy (NCRIS) Research Capability known as 'Radio and Optical Astronomy'.
- B The funding agreement provides for a schedule of payments to be made to the Contractor subject to certain requirements being met. A variation of the funding agreement is required to modify the schedule of payments and the related conditions for payment.
- C The Commonwealth and the Contractor have agreed to vary the terms of the Contract in accordance with this Deed.

Table of Contents

Details	2
Agreed terms	4
1. Defined terms and interpretation	4
2. Variation to Contract	4
3. Affirmation of Contract	4
4. Costs and GST	4
5. Miscellaneous	4
Signing page	5
Schedule 1 – Variation to Contract	6

Agreed terms

1. Defined terms and interpretation

1.1 Defined terms

In this Deed, unless the contrary intention appears:

- (a) a word or expression defined or referred to in the Contract has the meaning given to it in the Contract;
- (b) **Contract** means the contract described in paragraph A of the Background;
- (c) **Deed** means this deed, including all annexures and schedules to it; and
- (d) **Effective Date** means the date of execution of this variation.

2. Variation to Contract

On and with effect from the Effective Date, the Contract is varied as set out in Schedule 1 to this Deed.

3. Affirmation of Contract

- (a) The parties affirm in all other respects the covenants and conditions in the Contract as varied by this Deed.
- (b) The Contract, as varied by this Deed, comprises the entire agreement between the parties.
- (c) The parties acknowledge and agree that the Contract as varied by this Deed is and continues to be in full force and effect.

4. Costs and GST

- (a) Each party must meet or pay its own costs and expenses in respect of the preparation, negotiation, execution and completion of this Deed.
- (b) If GST is payable on any supply made under or in connection with this Deed, the recipient of the supply must pay to the supplier an additional amount equal to the GST payable on the supply provided that the supplier has given the recipient a tax invoice for the supply.
- (c) The Contractor must pay any stamp duties and registration or other fees (including fines, penalties and interest relating to such duties and fees) which are payable or are assessed by a relevant government body or other person to be payable in relation to this document or any transaction contemplated by it.

5. Miscellaneous

5.1 Counterparts

This Deed may be executed in counterparts. All executed counterparts constitute one document.

5.2 Governing law and jurisdiction

This Deed is governed by the law of the Australian Capital Territory and each party irrevocably submits to the non-exclusive jurisdiction of the courts of the Australian Capital Territory.

Signing page

EXECUTED as a deed.

Signed for and on behalf of the
**Commonwealth of Australia as
represented by the Department of
Innovation, Industry, Science and
Research** by its duly authorised delegate in
the presence of

Andrew Stevenson
Signature of witness

ANDREW STEVENSON
Name of witness (print)

← A.M. Lan ←
Signature of delegate

AM LANSDOWN
Name of delegate (print)

AM Research Infrastructure
Position of delegate (print) Branch.

Executed by Astronomy Australia Ltd in
accordance with Section 127 of the
Corporations Act 2001 in the presence of

Signature of director

Name of director (print)

← _____ ←
Signature of director/company secretary

Name of director/company secretary

Schedule 1 – Variation to Contract

1.1 Table 1 of Schedule 1 is varied

Table 1 of Schedule 1 is varied by replacing it with the following table:

	2006-07	2007-08	2008-09	2009-10	2010-11	TOTAL
NCRIS	9.236	6.805	10.795	12.757	5.407	45.000
Non-NCRIS Cash	1.258	1.060	1.066	1.073	1.080	5.537
In-kind	3.216	1.189	4.205	0.152	0.000	8.762
Cash	10.494	7.865	11.861	13.830	6.487	50.537
In-kind	3.216	1.189	4.205	0.152	0.000	8.762
Total	13.71	9.054	16.466	13.582	6.487	59.299

1.2 Table 2 of Schedule 1 is varied

Table 2 of Schedule 1 is varied by replacing it with the following table:

		2006-07	2007-08	2008-09	2009-10	2010-11	TOTAL
AAL members	Cash	0.032	0.160	0.166	0.173	0.180	0.712
ANU	In-kind	0.000	0.127	0.000	0.000	0.000	0.127
ARC	Cash	0.000	0.900	0.900	0.900	0.900	3.600
ARC	In-kind	2.142	0.937	0.000	0.000	0.000	3.079
GSKA MNRF	Cash	1.225	0.000	0.000	0.000	0.000	1.225
GSKA MNRF	In-kind	1.074	0.000	0.000	0.000	0.000	1.074
UNSW	In-kind	0.000	0.125	0.125	0.000	0.000	0.250
WA Govt	In-kind	0.000	0.000	4.080	0.000	0.000	4.080
Curtin University of Technology	In-kind	0.000	0.000	0.000	0.152	0.000	0.152
Cash		1.258	1.060	1.066	1.073	1.080	5.537
In-kind		3.216	1.189	4.205	0.152	0	8.762
Total		4.473	2.249	5.271	1.225	1.080	14.299

1.3 Item H of Schedule 1 is varied

Item H of Schedule 1 is varied by replacing it with the following:

H. Subcontractors (clause 7)

The following subcontractors are approved to undertake work on the Project on the terms and conditions set out:

Name of Subcontractor	Condition of Approval
<ul style="list-style-type: none"> Commonwealth Scientific and Industrial Research Organisation (CSIRO) (ABN 41 687 119 230) Anglo-Australian Telescope Board (ABN 71 871 323 905) 	A written subcontract must be entered into which requires the subcontractor to execute all relevant activities specified in the Project Plan and binds the subcontractor to the conditions of this agreement, more particularly: Clause 6 [Acknowledgement and Publicity]; Clause 2.3, 2.4 and 2.5 [Project];

<ul style="list-style-type: none"> • The University of Melbourne (ABN 84 002 705 224) • The University of New South Wales (ABN 57 195 873 179) • The Australian National University (ABN 52 234 063 906) • Curtin University of Technology (ABN 99 143 842 569) 	Clause 3.2c and 3.3 [Funding]; Clause 9 [Assets]; Clause 10 [Insurance]; Clause 11 [Liaison and Monitoring]; Clause 14 [Project Material]; Clause 15 [Disclosure of Information]; Clause 16 [Protection of Personal Information]; Clause 17 [Records]; Clause 18 [Access to Premises and Records]; Clause 20 [Conflict of Interest]; Clause 21 [Negation of Employment, Partnership and Agency]; Clause 27 [Termination with Costs]; Clause 28 [Termination for Default]; and Clause 29 [Compliance with Laws and Our Policies].
Other Agreement	Nature of Agreement
<ul style="list-style-type: none"> • Giant Magellan Telescope (“GMT”) Consortium 	AAL will be a member/affiliate of the GMT International Consortium

The Australian Research Council (ARC) is the Australian signatory to the international consortium operating the Gemini Observatory. Under this agreement, AAL will make payments to the National Science Foundation in the USA for membership of the Gemini Observatory.

1.4 Schedule 2, Item AA is varied

Schedule 2, Item AA is varied by replacing it with the following:

AA. Funding (clause 3)

AA.1 The total Funding for the Project is \$49,500,000 inclusive of GST payable by the following instalments:

Amount	Payable
\$10,159,600	On the appointment by the AAL Board of the Chief Operating Officer of AAL as determined by the Programme Delegate
\$7,485,500	On provision of Progress Report 1 by the date specified in item L2 of schedule 1, showing satisfactory performance against the Interim Implementation Plan and the execution of a binding subcontract with CSIRO, as determined by the Programme Delegate in her sole opinion.
\$11,874,500	On provision of Progress Report 2 by the date specified in item L2 of schedule 1, showing satisfactory performance against the agreed Annual Business Plan 1 as determined by the Programme Delegate in her sole opinion.
\$14,032,700	On provision of Progress Report 3 by the date specified in item L2 of schedule 1, showing satisfactory performance against the agreed Annual Business Plan 2 as determined by the Programme Delegate in her sole opinion.
\$5,947,700	On provision of Progress Report 4 by the date specified in item L2 of schedule 1, showing satisfactory performance against the agreed Annual Business Plan 3 as determined by the Programme Delegate in her sole opinion.

AA.2 The Funding includes GST of \$4,500,000.

AA.2 Subject to acceptance by Us in our sole opinion that the relevant Progress Reports represent satisfactory performance in the conduct of the Project, the date for payment is 30 days after delivery of a correctly rendered invoice to Us and after delivery of the Project or part of the Project to which the payment relates.

1.5 Table 1 in Section 1.4 of Attachment A is varied

Table 1 of Section 1.4 of Attachment A is varied by replacing it with the following Table:

Table 1: Participating organisations and their roles and responsibilities

Organisation	Role and responsibilities
Astronomy Australia Limited (AAL)	<ul style="list-style-type: none"> • Recipient of NCRIS funding through the Funding Agreement; • Responsibility for overall governance, management and implementation of the project and reporting to DEST; • Responsibility for managing distribution of NCRIS funding through subcontracting arrangements; • Responsibility for liaising with the astronomical community, and creating scientific advisory committees as necessary; • Engagement with, and possible membership of, the international GMT consortium; • Responsibility for other requirements in the Funding Agreement and Project Plan; • The initial members of AAL are listed in Table 2; • Further details on the governance role of AAL can be found at Section 4 of the Project Plan.
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsibility for implementing the Australian Square Kilometre Array Pathfinder (ASKAP) consistent with this Project Plan and the subcontract with AAL; • Responsible for negotiating with potential international partners in the ASKAP project; • Responsible for managing the GSKA MNRF as required by the MNRF funding agreement with DEST.
The University of Melbourne	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsibility for implementing the Australian component of phase 2 of the Mileura International Radio Array - Murchison Widefield Array (MWA) consistent with this Project Plan and the subcontract with AAL.
Curtin University of Technology	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsibility for finalising the project plan for the MWA project; • Providing in-kind resources to the MWA project.
Australian National University (& Australian GMT Project Office)	<ul style="list-style-type: none"> • Responsibility for coordinating with AAL joint Australian membership of the GMT project; • NCRIS funding recipient (for the Australian GMT Project Office) through a subcontractual arrangement with AAL; • Providing in-kind resources to the GMT project.
University of New South Wales (& Australian PILOT Science Office)	<ul style="list-style-type: none"> • Providing in-kind resources to the PILOT project (PILOT Science Office); • Responsibility for coordinating with AAL in relation to international partnership arrangements for PILOT;

	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsible for the PILOT component of the Project consistent with this Project Plan and the subcontract with AAL.
Government of Western Australia	<ul style="list-style-type: none"> • Providing in-kind resources to the ASKAP project for enabling infrastructure.
Anglo-Australian Observatory (& Australian Gemini Office)	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangements with AAL in relation to AAO components of the Project and the Australian Gemini Office; • Responsibility for implementing the AAO components of the Project consistent with this Project Plan and the subcontract with AAL.
Australian Research Council	<ul style="list-style-type: none"> • Funding provider through agreements with AAL or other funding arrangements as noted below.

1.6 Table 3 in Section 1.5 of Attachment A is varied

Table 3 of Section 1.5 of Attachment A is varied by replacing it with the following Table:

Table 3: Summary of funding arrangements by funding source

Funding source	Total funding 2006-2011 (\$ million)	Funding arrangement	Project element
Australian Government			
<ul style="list-style-type: none"> • NCRIS programme 	45.000	Funds paid to AAL which will manage the funds and arrange for their distribution as specified in the Funding Agreement	<ul style="list-style-type: none"> • AAO • Gemini • ASKAP / MWA • PILOT • GMT • AAL Operations
<ul style="list-style-type: none"> • Major National Research Facilities Programme (Gemini/Square Kilometre Array MNRF) 	2.300	Comprising: <ul style="list-style-type: none"> • \$1.075 million in-kind contribution under the existing MNRF Funding Agreement administered by CSIRO; • \$1.225 million funds to be transferred to AAL from the MNRF 	<ul style="list-style-type: none"> • Gemini
<ul style="list-style-type: none"> • Australian Research Council (LIEF scheme) 	3.600	Funds paid to AAL and managed in accordance with a contract between the ARC and AAL.	Australian membership of the Gemini International Partnership
<ul style="list-style-type: none"> • Australian Research Council (LIEF scheme) 	3.079	In-kind contribution through an existing arrangement with the Gemini Office.	Australian membership of the Gemini International Partnership
Other contributions			
<ul style="list-style-type: none"> • Western Australian Government 	4.080	In-kind contribution	ASKAP (MRO infrastructure)

• Australian National University	0.127	In-kind contribution to be managed within ANU in accordance with a memorandum of understanding with AAL	Giant Magellan Telescope
• Curtin University of Technology	0.152	In-kind contribution to be managed within Curtin University of Technology in accordance with a sub-contract with AAL	MWA
• University of New South Wales	0.250	In-kind contribution to be managed within UNSW in consultation with AAL	PILOT
• Astronomy Australia Ltd members	0.712	Membership fees to be paid by AAL members to AAL for its operational purposes as required by the AAL Constitution.	AAL operations
TOTAL	59.299		

1.7 Table 4 in Section 1.5 of Attachment A is varied

Table 4 of Section 1.5 of Attachment A is varied by replacing it with the following Table:

Table 4: Summary of funding arrangements by project

Project element	Operational organisations	Total resources 2007-2011 (\$ million) ^(a)	Funding sources
AAO – refurbishment and AAT instrument	Anglo-Australian Observatory (AAO)	10.020	NCRIS
Gemini membership and ‘Aspen’ instrument package ^(b)	Gemini Observatory Australian Gemini Office ^(c) CSIRO	19.854	NCRIS MNRF ARC
ASKAP / MWA	CSIRO ^(d) University of Melbourne Curtin University of Technology	23.432 ^(e)	NCRIS WA Government Curtin University of Technology
PILOT	PILOT Science Office UNSW	1.250	NCRIS UNSW
GMT	GMT Board/Project Office (Carnegie Observatory) Australian GMT Office ^(f)	1.505	NCRIS ANU
Governance	Astronomy Australia Ltd	1.881	NCRIS AAL member fees
Strategic Options		1.356	NCRIS
	TOTAL (a)	59.299	

Notes: Only operational organisations that will contract directly with AAL via the NCRIS programme are listed. Subcontractors to those organisations are omitted. A more detailed breakdown of resource flows is provided in section 5 of the Project Plan.

(a) Includes cash and in-kind resources.

- (b) Includes \$4.940 million for the Aspen instrumentation program. Some or all of this funding might become available for 'strategic options'.
- (c) A small amount of the total resources will be provided to the Australian Gemini Office (currently based at ANU and then to be based at the AAO from 2008) to manage Australian user support and time allocation processes.
- (d) The WA Government funding of \$4.080 million is provided for Murchison Radio Observatory infrastructure and is not available to the CSIRO.
- (e) The amount shown here consists of NCRIS Funding for ASKAP and MWA, Curtin University of Technology In-kind support for MWA, and WA Government funding for the Murchison Radio Observatory. The ASKAP is valued at \$101.3 million, comprising \$34.955 million from CSIRO, \$51.7 million appropriated to CSIRO in the 2007-08 Federal Budget, and \$14.6 million in NCRIS funding.
- (f) A small amount of the total resources will be provided to the Australian GMT Office (based at ANU) to assist Australian institutions and businesses to bid for work packages on the GMT Design and Development Phase (DDP).

1.8 Section 2.3 of Attachment A is varied

Section 2.3 of Attachment A is varied by replacing it with the following:

2.3 The Australian Square Kilometre Array Pathfinder (ASKAP) radio telescope

The Project will include provision of a grant to support the construction of the Australian Square Kilometre Array Pathfinder (ASKAP) radio telescope. The ASKAP will be a technology testbed for the proposed Square Kilometre Array (SKA). ASKAP is valued at \$101.3 million, comprising \$34.955 million from CSIRO, \$51.7 million appropriated to CSIRO in the 2007-08 Federal Budget, and \$14.6 million in NCRIS funding. Ownership of ASKAP will reside with CSIRO.

CSIRO will, through a subcontract with AAL, utilise the project Funds to develop ASKAP in accordance with the international SKA Reference Design. CSIRO will report to AAL on the application of the NCRIS Funds, within the broader context of the overall progress of ASKAP.

ASKAP will build on existing instrument projects, namely the Mileura International Radio Array – large N small d Array (MIRANdA) being funded and built by CSIRO, and the MIRA – Murchison Widefield Array (MIRAMWA).

ASKAP will be constructed at the Murchison Radio Observatory (MRO) at Boolardy Station, Western Australia. It is envisaged that AAL will participate in the advisory structures established in relation to ASKAP. CSIRO will deal as appropriate with potential international partners regarding their involvement in ASKAP. The decision on whether additional partners are to be admitted to the project will be made by CSIRO, who will keep AAL informed on the status of international membership.

During 2009/10 and 2010/11, after phase 1 of MIRAMWA is complete, the Murchison Widefield Array (MWA) instrument will be extended and integrated as part of ASKAP using NCRIS funds paid through AAL to the University of Melbourne as the lead agency in the Australian MWA consortium. Ownership of the new MWA instrument will reside with the University of Melbourne.

In-kind contributions

The Western Australian Government will provide an in-kind contribution costed at \$4.080 million to further develop the infrastructure provided through the MRO to meet the requirements of the Project.

It is also a requirement of the Project that the MRO is maintained as an appropriate radio-quiet zone.

Curtin University of Technology will provide an in-kind contribution valued at \$0.152 million to support a project manager to finalise the project plan for the MWA project.

As an adjunct to the Project, though not covered by this Funding Agreement, the development of phase 1 of MIRAMWA will continue, in large part, through the existing arrangements provided for by the US National Science Foundation grant.

Funding source	Funding arrangement	2006-07	2007-08	2008-09	2009-10	2010-11	Total
NCRIS	Funds paid to AAL – which will enter into agreement with CSIRO.	4.923	0.309	4.443	4.172	0.754	14.600
NCRIS	Funds paid to AAL – which will enter into agreement with the University of Melbourne.	0	0	0	2.400	2.100	4.500
NCRIS	Funds paid to AAL – which will enter into agreement with Curtin University of Technology	0	0	0	0.100	0	0.100
Curtin University of Technology	In-kind resources provided and managed through internal processes	0	0	0	0.152	0	0.152
WA Government	In-kind resources provided and managed through internal processes	0	0	4.080	0	0	4.080
Total		4.923	0.309	8.523	6.824	2.854	23.432

Department of Innovation, Industry,
Science and Research

Deed of Variation

Commonwealth of Australia (**Commonwealth**)

Astronomy Australia Limited (**Contractor**)

Details

Date

_____/_____/_____
day month year

Parties

Name The Commonwealth of Australia as represented by the Department of Innovation, Industry, Science and Research

ABN 74 599 608 295

Short form name **Commonwealth**

Address details Ms Anne-Marie Lansdown,
General Manager, Research Infrastructure Branch
GPO Box 9839, Canberra, ACT 2601
Industry House Level 6, 10 Binara Street, Canberra City, ACT 2600
Fax 02 6213 7953

Name Astronomy Australia Ltd

ABN 19 124 973 584

Short form name **Contractor**

Address details Dr Martin Cole
Chair, Astronomy Australia Limited,
PO Box 2100, Hawthorn, Victoria 3122.
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Background

- A On 20 June 2007, the Commonwealth and the Contractor entered into a funding agreement regarding funding for Implementing an Investment Plan for the National Collaborative Research Infrastructure Strategy (NCRIS) Research Capability known as 'Radio and Optical Astronomy'.
- B The funding agreement provides for a schedule of payments to be made to the Contractor subject to certain requirements being met. A variation of the funding agreement is required to modify the schedule of payments and the related conditions for payment.
- C The Commonwealth and the Contractor have agreed to vary the terms of the Contract in accordance with this Deed.

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- (a) The parties affirm in all other respects the covenants and conditions in the Contract as varied by this Deed.
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5. Miscellaneous

5.1 Counterparts

This Deed may be executed in counterparts. All executed counterparts constitute one document.

5.2 Governing law and jurisdiction

This Deed is governed by the law of the Australian Capital Territory and each party irrevocably submits to the non-exclusive jurisdiction of the courts of the Australian Capital Territory.

Signing page

EXECUTED as a deed.

Signed for and on behalf of the Commonwealth of Australia as represented by the Department of Innovation, Industry, Science and Research by its duly authorised delegate in the presence of

Signature of witness

← _____ ←
Signature of delegate

Name of witness (print)


Name of delegate (print)

Position of delegate (print)

Executed by Astronomy Australia Ltd in accordance with Section 127 of the Corporations Act 2001 in the presence of



Signature of director

←  ←

Signature of director/company secretary

Dr. Martin Cole
Name of director (print)

Prof WARRICK Couch
Name of director/company secretary

Schedule 1 – Variation to Contract

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GSKA MNRF	In-kind	1.074	0.000	0.000	0.000	0.000	1.074
UNSW	In-kind	0.000	0.125	0.125	0.000	0.000	0.250
WA Govt	In-kind	0.000	0.000	4.080	0.000	0.000	4.080
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Name of Subcontractor	Condition of Approval
<ul style="list-style-type: none"> Commonwealth Scientific and Industrial Research Organisation (CSIRO) (ABN 41 687 119 230) Anglo-Australian Telescope Board (ABN 71 871 323 905) 	A written subcontract must be entered into which requires the subcontractor to execute all relevant activities specified in the Project Plan and binds the subcontractor to the conditions of this agreement, more particularly: Clause 6 [Acknowledgement and Publicity]; Clause 2.3, 2.4 and 2.5 [Project];

<ul style="list-style-type: none"> • The University of Melbourne (ABN 84 002 705 224) • The University of New South Wales (ABN 57 195 873 179) • The Australian National University (ABN 52 234 063 906) • Curtin University of Technology (ABN 99 143 842 569) 	Clause 3.2c and 3.3 [Funding]; Clause 9 [Assets]; Clause 10 [Insurance]; Clause 11 [Liaison and Monitoring]; Clause 14 [Project Material]; Clause 15 [Disclosure of Information]; Clause 16 [Protection of Personal Information]; Clause 17 [Records]; Clause 18 [Access to Premises and Records]; Clause 20 [Conflict of Interest]; Clause 21 [Negation of Employment, Partnership and Agency]; Clause 27 [Termination with Costs]; Clause 28 [Termination for Default]; and Clause 29 [Compliance with Laws and Our Policies].
Other Agreement	Nature of Agreement
<ul style="list-style-type: none"> • Giant Magellan Telescope ("GMT") Consortium 	AAL will be a member/affiliate of the GMT International Consortium

The Australian Research Council (ARC) is the Australian signatory to the international consortium operating the Gemini Observatory. Under this agreement, AAL will make payments to the National Science Foundation in the USA for membership of the Gemini Observatory.

1.4 Schedule 2, Item AA is varied

Schedule 2, Item AA is varied by replacing it with the following:

AA. Funding (clause 3)

AA.1 The total Funding for the Project is \$49,500,000 inclusive of GST payable by the following instalments:

Amount	Payable
\$10,159,600	On the appointment by the AAL Board of the Chief Operating Officer of AAL as determined by the Programme Delegate
\$7,485,500	On provision of Progress Report 1 by the date specified in item L2 of schedule 1, showing satisfactory performance against the Interim Implementation Plan and the execution of a binding subcontract with CSIRO, as determined by the Programme Delegate in her sole opinion.
\$11,874,500	On provision of Progress Report 2 by the date specified in item L2 of schedule 1, showing satisfactory performance against the agreed Annual Business Plan 1 as determined by the Programme Delegate in her sole opinion.
\$14,032,700	On provision of Progress Report 3 by the date specified in item L2 of schedule 1, showing satisfactory performance against the agreed Annual Business Plan 2 as determined by the Programme Delegate in her sole opinion.
\$5,947,700	On provision of Progress Report 4 by the date specified in item L2 of schedule 1, showing satisfactory performance against the agreed Annual Business Plan 3 as determined by the Programme Delegate in her sole opinion.

AA.2 The Funding includes GST of \$4,500,000.

AA.2 Subject to acceptance by Us in our sole opinion that the relevant Progress Reports represent satisfactory performance in the conduct of the Project, the date for payment is 30 days after delivery of a correctly rendered invoice to Us and after delivery of the Project or part of the Project to which the payment relates.

1.5 Table 1 in Section 1.4 of Attachment A is varied

Table 1 of Section 1.4 of Attachment A is varied by replacing it with the following Table:

Table 1: Participating organisations and their roles and responsibilities

Organisation	Role and responsibilities
Astronomy Australia Limited (AAL)	<ul style="list-style-type: none"> • Recipient of NCRIS funding through the Funding Agreement; • Responsibility for overall governance, management and implementation of the project and reporting to DEST; • Responsibility for managing distribution of NCRIS funding through subcontracting arrangements; • Responsibility for liaising with the astronomical community, and creating scientific advisory committees as necessary; • Engagement with, and possible membership of, the international GMT consortium; • Responsibility for other requirements in the Funding Agreement and Project Plan; • The initial members of AAL are listed in Table 2; • Further details on the governance role of AAL can be found at Section 4 of the Project Plan.
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsibility for implementing the Australian Square Kilometre Array Pathfinder (ASKAP) consistent with this Project Plan and the subcontract with AAL; • Responsible for negotiating with potential international partners in the ASKAP project; • Responsible for managing the GSKA MNRF as required by the MNRF funding agreement with DEST.
The University of Melbourne	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsibility for implementing the Australian component of phase 2 of the Mileura International Radio Array - Murchison Widefield Array (MWA) consistent with this Project Plan and the subcontract with AAL.
Curtin University of Technology	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsibility for finalising the project plan for the MWA project; • Providing in-kind resources to the MWA project.
Australian National University (& Australian GMT Project Office)	<ul style="list-style-type: none"> • Responsibility for coordinating with AAL joint Australian membership of the GMT project; • NCRIS funding recipient (for the Australian GMT Project Office) through a subcontractual arrangement with AAL; • Providing in-kind resources to the GMT project.
University of New South	<ul style="list-style-type: none"> • Providing in-kind resources to the PILOT project (PILOT

Wales (& Australian PILOT Science Office)	<p>Science Office);</p> <ul style="list-style-type: none"> • Responsibility for coordinating with AAL in relation to international partnership arrangements for PILOT; • NCRIS funding recipient through a subcontractual arrangement with AAL; • Responsible for the PILOT component of the Project consistent with this Project Plan and the subcontract with AAL.
Government of Western Australia	<ul style="list-style-type: none"> • Providing in-kind resources to the ASKAP project for enabling infrastructure.
Anglo-Australian Observatory (& Australian Gemini Office)	<ul style="list-style-type: none"> • NCRIS funding recipient through a subcontractual arrangements with AAL in relation to AAO components of the Project and the Australian Gemini Office; • Responsibility for implementing the AAO components of the Project consistent with this Project Plan and the subcontract with AAL.
Australian Research Council	<ul style="list-style-type: none"> • Funding provider through agreements with AAL or other funding arrangements as noted below.

1.6 Table 3 in Section 1.5 of Attachment A is varied

Table 3 of Section 1.5 of Attachment A is varied by replacing it with the following Table:

Table 3: Summary of funding arrangements by funding source

Funding source	Total funding 2006-2011 (\$ million)	Funding arrangement	Project element
Australian Government			
<ul style="list-style-type: none"> • NCRIS programme 	45.000	Funds paid to AAL which will manage the funds and arrange for their distribution as specified in the Funding Agreement	<ul style="list-style-type: none"> • AAO • Gemini • ASKAP / MWA • PILOT • GMT • AAL Operations
<ul style="list-style-type: none"> • Major National Research Facilities Programme (Gemini/Square Kilometre Array MNRF) 	2.300	<p>Comprising:</p> <ul style="list-style-type: none"> • \$1.075 million in-kind contribution under the existing MNRF Funding Agreement administered by CSIRO; • \$1.225 million funds to be transferred to AAL from the MNRF 	<ul style="list-style-type: none"> • Gemini
<ul style="list-style-type: none"> • Australian Research Council (LIEF scheme) 	3.600	Funds paid to AAL and managed in accordance with a contract between the ARC and AAL.	Australian membership of the Gemini International Partnership
<ul style="list-style-type: none"> • Australian Research Council 	3.079	In-kind contribution through an existing arrangement with the	Australian membership of the Gemini

(LIEF scheme)		Gemini Office.	International Partnership
Other contributions			
• Western Australian Government	4.080	In-kind contribution	ASKAP (MRO infrastructure)
• Australian National University	0.127	In-kind contribution to be managed within ANU in accordance with a memorandum of understanding with AAL	Giant Magellan Telescope
• Curtin University of Technology	0.152	In-kind contribution to be managed within Curtin University of Technology in accordance with a sub-contract with AAL	MWA
• University of New South Wales	0.250	In-kind contribution to be managed within UNSW in consultation with AAL	PILOT
• Astronomy Australia Ltd members	0.712	Membership fees to be paid by AAL members to AAL for its operational purposes as required by the AAL Constitution.	AAL operations
TOTAL	59.299		

1.7 Table 4 in Section 1.5 of Attachment A is varied

Table 4 of Section 1.5 of Attachment A is varied by replacing it with the following Table:

Table 4: Summary of funding arrangements by project

Project element	Operational organisations	Total resources 2007-2011 (\$ million) ^(a)	Funding sources
AAO – refurbishment and AAT instrument	Anglo-Australian Observatory (AAO)	10.020	NCRIS
Gemini membership and ‘Aspen’ instrument package ^(b)	Gemini Observatory Australian Gemini Office ^(c) CSIRO	19.854	NCRIS MNRF ARC
ASKAP / MWA	CSIRO ^(d) University of Melbourne Curtin University of Technology	23.432 ^(e)	NCRIS WA Government Curtin University of Technology
PILOT	PILOT Science Office UNSW	1.250	NCRIS UNSW
GMT	GMT Board/Project Office (Carnegie Observatory) Australian GMT Office ^(f)	1.505	NCRIS ANU
Governance	Astronomy Australia Ltd	1.881	NCRIS AAL member fees
Strategic Options		1.356	NCRIS
	TOTAL (a)	59.299	

Notes: Only operational organisations that will contract directly with AAL via the NCRIS programme are listed. Subcontractors to those organisations are omitted. A more detailed breakdown of resource flows is provided in section 5 of the Project Plan.

- (a) Includes cash and in-kind resources.
- (b) Includes \$4.940 million for the Aspen instrumentation program. Some or all of this funding might become available for 'strategic options'.
- (c) A small amount of the total resources will be provided to the Australian Gemini Office (currently based at ANU and then to be based at the AAO from 2008) to manage Australian user support and time allocation processes.
- (d) The WA Government funding of \$4.080 million is provided for Murchison Radio Observatory infrastructure and is not available to the CSIRO.
- (e) The amount shown here consists of NCRIS Funding for ASKAP and MWA, Curtin University of Technology In-kind support for MWA, and WA Government funding for the Murchison Radio Observatory. The ASKAP is valued at \$101.3 million, comprising \$34.955 million from CSIRO, \$51.7 million appropriated to CSIRO in the 2007-08 Federal Budget, and \$14.6 million in NCRIS funding.
- (f) A small amount of the total resources will be provided to the Australian GMT Office (based at ANU) to assist Australian institutions and businesses to bid for work packages on the GMT Design and Development Phase (DDP).

1.8 Section 2.3 of Attachment A is varied

Section 2.3 of Attachment A is varied by replacing it with the following:

2.3 The Australian Square Kilometre Array Pathfinder (ASKAP) radio telescope

The Project will include provision of a grant to support the construction of the Australian Square Kilometre Array Pathfinder (ASKAP) radio telescope. The ASKAP will be a technology testbed for the proposed Square Kilometre Array (SKA). ASKAP is valued at \$101.3 million, comprising \$34.955 million from CSIRO, \$51.7 million appropriated to CSIRO in the 2007-08 Federal Budget, and \$14.6 million in NCRIS funding. Ownership of ASKAP will reside with CSIRO.

CSIRO will, through a subcontract with AAL, utilise the project Funds to develop ASKAP in accordance with the international SKA Reference Design. CSIRO will report to AAL on the application of the NCRIS Funds, within the broader context of the overall progress of ASKAP.

ASKAP will build on existing instrument projects, namely the Mileura International Radio Array – large N small d Array (MIRANdA) being funded and built by CSIRO, and the MIRA – Murchison Widefield Array (MIRAMWA).

ASKAP will be constructed at the Murchison Radio Observatory (MRO) at Boolardy Station, Western Australia. It is envisaged that AAL will participate in the advisory structures established in relation to ASKAP. CSIRO will deal as appropriate with potential international partners regarding their involvement in ASKAP. The decision on whether additional partners are to be admitted to the project will be made by CSIRO, who will keep AAL informed on the status of international membership.

During 2009/10 and 2010/11, after phase 1 of MIRAMWA is complete, the Murchison Widefield Array (MWA) instrument will be extended and integrated as part of ASKAP using NCRIS funds paid through AAL to the University of Melbourne as the lead agency in the Australian MWA consortium. Ownership of the new MWA instrument will reside with the University of Melbourne.

In-kind contributions

The Western Australian Government will provide an in-kind contribution costed at \$4.080 million to further develop the infrastructure provided through the MRO to meet the requirements of the Project.

It is also a requirement of the Project that the MRO is maintained as an appropriate radio-quiet zone.

Curtin University of Technology will provide an in-kind contribution valued at \$0.152 million to support a project manager to finalise the project plan for the MWA project.

As an adjunct to the Project, though not covered by this Funding Agreement, the development of phase 1 of MIRAMWA will continue, in large part, through the existing arrangements provided for by the US National Science Foundation grant.

Funding source	Funding arrangement	2006-07	2007-08	2008-09	2009-10	2010-11	Total
NCRIS	Funds paid to AAL – which will enter into agreement with CSIRO.	4.923	0.309	4.443	4.172	0.754	14.600
NCRIS	Funds paid to AAL – which will enter into agreement with the University of Melbourne.	0	0	0	2.400	2.100	4.500
NCRIS	Funds paid to AAL – which will enter into agreement with Curtin University of Technology	0	0	0	0.100	0	0.100
Curtin University of Technology	In-kind resources provided and managed through internal processes	0	0	0	0.152	0	0.152
WA Government	In-kind resources provided and managed through internal processes	0	0	4.080	0	0	4.080
Total		4.923	0.309	8.523	6.824	2.854	23.432