



**Australian Government**

**Department of Defence**

Defence Science and Technology Group

THE COMMONWEALTH OF AUSTRALIA represented by

THE DEFENCE SCIENCE AND TECHNOLOGY GROUP  
OF THE DEPARTMENT OF DEFENCE (ABN 68 706 814 312)

and

AUSTRALIAN NATIONAL UNIVERSITY

(ABN 52 234 063 906)

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## RESEARCH AGREEMENT

Towards development of a deployable cold atom interferometer based:  
gravimeter; gravity gradiometer; and magnetic field gradiometer

A Schedule Agreement under the  
DEFENCE SCIENCE PARTNERING DEED

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## DATE

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This Agreement is made on the day the last Party signs it.

## PARTIES

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This Agreement is made between

COMMONWEALTH OF AUSTRALIA represented by the Defence Science and Technology Group of the Department of Defence (ABN 68 706 814 312) (**the Commonwealth**); and

AUSTRALIAN NATIONAL UNIVERSITY (ABN 52 234 063 906), an institution pursuant to the *Australian National University Act 1991* (Cth) of The Australian National University, ACT 0200, AUSTRALIA (**the University**).

## BACKGROUND

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This Agreement is made in the following context:

- A. The Commonwealth and the Australian National University have entered into a Defence Science Partnering Deed on 24<sup>th</sup> July 2014 (**the Partnering Deed**).
- B. It is envisaged under the terms of the Partnering Deed that separate Schedule Agreements will be entered into between the Commonwealth and the University (or a Related Body Corporate of the University) with respect to specific activities to be undertaken under the Partnering Deed.
- C. The Parties have agreed that:
  - (i) the University will carry out the Research Project and perform all its other obligations under this Agreement; and
  - (ii) in return, and subject to the conditions specified in this Agreement, the Commonwealth will pay to the University the Agreement Sum.

## CONDITIONS OF AGREEMENT

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The Parties agree as follows:

### 1 Definitions and Interpretation

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1.1 In this Agreement, unless a contrary intention appears:

<b>Agreement</b>	means this agreement including the Annexure and any other attachments to this agreement;
<b>Agreement Sum</b>	as the context requires, means all or part of the sum determined in accordance with Item 4 of the Annexure;
<b>Agreement Term</b>	means the period between the Commencement Date and the Completion Date;
<b>Annexure</b>	means the annexure to this Agreement;
<b>Background IP</b>	means any IP, other than Third Party IP, embodied in, attached to, or otherwise necessarily related to the functioning, or operation of Background Material;
<b>Background Material</b>	means any Material made available by a Party in connection with this Agreement, including any copies or

	<p>derivations of such Material, whether:</p> <p>(a) existing prior to the execution of this Agreement; or</p> <p>(b) acquired or created after the execution of this Agreement, other than as a result of the performance of this Agreement,</p> <p>and includes, in the case of Background Material provided by the Commonwealth, the things set out in table 6.2 of Item 6 of the Annexure;</p>
<b>Budget</b>	means the budget (if any) set out in Item 5 of the Annexure;
<b>Capital Item</b>	means any item of tangible property purchased by the University using the Agreement Sum and identified as a Capital Item in the Budget;
<b>Commencement Date</b>	means the date both Parties sign this Agreement, or if it is signed on separate days, the date on which the last Party to sign this Agreement does so;
<b>Commercialisation</b>	has the same meaning as in the Partnering Deed;
<b>Commonwealth Purposes</b>	has the same meaning as in the Partnering Deed;
<b>Commonwealth Resources</b>	means the resources of the Commonwealth described in clause 5 (and for the avoidance of doubt, includes the Background Material provided by the Commonwealth);
<b>Completion Date</b>	means the date specified as the Completion Date in Item 1 of the Annexure;
<b>Confidential Information</b>	<p>means information of a Party that:</p> <p>(a) is by its nature confidential;</p> <p>(b) is referred to in clause 21; or</p> <p>(c) the receiving Party knows or ought to know is confidential,</p> <p>but does not include information that:</p> <p>(d) is, or becomes, public knowledge otherwise than by breach of this Agreement or any other confidentiality obligation;</p> <p>(e) is already known to the receiving Party prior to receipt from the disclosing Party; or</p> <p>(f) is developed or acquired by the receiving Party independent of this Agreement without having had access to the information of the disclosing Party and free of any other confidentiality obligation;</p>
<b>Controlled Content Register (or CC Register)</b>	means the register created in accordance with clause 22;
<b>Financial Year</b>	means a period of twelve (12) calendar months ending on 30 June;

<b>Foreground IP</b>	means any IP created under, or otherwise in connection with the performance of this Agreement;
<b>Foreground Material</b>	means any Material brought into existence (or required to be brought into existence) as part of, or for the purposes of performing this Agreement, including any copies or derivations of such Material;
<b>Intellectual Property (or IP)</b>	has the same meaning as in the Partnering Deed;
<b>Liaison Officer</b>	means a person appointed under clause 3;
<b>Material</b>	has the same meaning as in the Partnering Deed;
<b>Parties</b>	means the parties to this Agreement;
<b>Partnering Deed</b>	means the deed referred to in Background paragraph A above;
<b>Partnership Executive Committee</b>	means the committee established under clause 4 of the Partnering Deed;
<b>Partnership Manager</b>	has the same meaning as in the Partnering Deed;
<b>Personnel</b>	means officers, employees, subcontractors, agents or professional advisers;
<b>Related Body Corporate</b>	has the same meaning as in the Partnering Deed;
<b>Research Project</b>	means the research project described in Item 2 of the Annexure;
<b>Schedule Agreement</b>	has the same meaning as in the Partnering Deed;
<b>Schedule Agreement Template</b>	has the same meaning as in the Partnering Deed;
<b>Specified Personnel</b>	means the Personnel specified in Item 8 of the Annexure;
<b>Third Party IP</b>	means IP that is owned by a party other than the Commonwealth or the University;
<b>University</b>	means the University named as a Party to this Agreement, or where applicable, the University's Related Body Corporate which has entered this Agreement; and
<b>Use</b>	means, with respect to IP, to exercise any or all rights subsisting in Intellectual Property, including to license or sub-license those rights.

- 1.2 Any term used in this Agreement which is defined or interpreted in the Partnering Deed will have the same meaning in this Agreement except:
- (a) where the term is given a different definition in this Agreement, the definition in this Agreement will apply; or
  - (b) where the context otherwise requires.
- 1.3 Subject to clause 1.2, if a requirement in the following list conflicts with any other requirement in the list, then the requirement referred to earlier in the list will take precedence to the extent of any conflict:
- (a) a special condition set out in Item 16 of the Annexure;
  - (b) a clause in the Partnering Deed;
  - (c) a clause in this Agreement;
  - (d) an Item in an Annexure (other than the special conditions referred to in clause 1.3(a));
  - (e) a document or part of a document, if any, incorporated by reference (other than the Partnering Deed).

## **2 Commencement and Duration of Agreement**

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- 2.1 This Agreement commences on the Commencement Date and will continue in force until the Completion Date, unless terminated earlier in accordance with this Agreement.

## **3 Project Oversight – Liaison Officers**

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- 3.1 The Parties will each appoint one Liaison Officer and may at any time replace their appointee by notifying the other Party in writing. The initial Liaison Officers will be those people specified at Item 3 in the Annexure. A Liaison Officer may, from time to time, authorise another person to act on their behalf.
- 3.2 Each Party's Liaison Officer will be responsible for administering this Agreement on behalf of the relevant Party, having regard to the Objectives set out in clause 3 of the Partnering Deed.

## **4 Commonwealth to Pay the Agreement Sum**

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- 4.1 Subject to clause 4.4, the Commonwealth will pay the Agreement Sum to the University at the times and in the manner set out in Item 4 of the Annexure.
- 4.2 Subject to clause 25.3, the Agreement Sum is the maximum amount that the Commonwealth is required to pay to the University under this Agreement.
- 4.3 Any claim for payment made by the University under clause 4.1 must comply with the Department of Defence Invoice Scanning and Imaging System guidelines as amended from time to time, which are available online at <<http://www.defence.gov.au/isis/gettingpaid.htm>>.
- 4.4 The Commonwealth may, by notice, withhold payment of any amount of the Agreement Sum where it reasonably believes that the University has not complied with this Agreement.
- 4.5 A notice under clause 4.4 will contain the reasons for any payment being withheld and the steps the University can take to address those reasons.

4.6 The Commonwealth will pay the withheld amount once the University has satisfactorily addressed the reasons contained in the notice under clause 4.4.

## **5 Commonwealth to Provide Resources**

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5.1 The Commonwealth will provide the University with the Commonwealth Resources specified in table 6.1 and table 6.2 of Item 6 of the Annexure to assist the University to carry out the Research Project.

5.2 The Commonwealth may, at its discretion, provide additional Commonwealth Resources to the University to assist the University to carry out the Research Project.

5.3 Ownership of Commonwealth Resources does not pass to the University, unless otherwise dealt with under this Agreement.

5.4 Subject to clause 14.5, the Commonwealth does not warrant:

- (a) the suitability of the Commonwealth Resources for any purpose; nor
- (b) the accuracy, precision, or life expectancy of the Commonwealth Resources.

5.5 The University must:

- (a) use Commonwealth Resources only for the Research Project, in accordance with this Agreement;
- (b) use any item described in table 6.1 or 6.2 in Item 6 of the Annexure only in accordance with the conditions for use for that item, as indicated in the relevant table in Item 6 of the Annexure;
- (c) use any item provided under clause 5.2 only in accordance with the conditions of use for that item, as imposed by the Commonwealth at the time the item is provided;
- (d) ensure that Commonwealth Resources that comprise Materials are used only by persons who are properly trained and competent in the use of those resources;
- (e) ensure that Commonwealth Resources that comprise Materials are used and stored:
  - (i) safely; and
  - (ii) in a manner that will not contaminate, or harm the environment;
- (f) ensure that Commonwealth Resources that comprise Materials are stored securely to prevent their loss, and unauthorised access, when not in use;
- (g) not provide access to, or transfer possession of, Commonwealth Resources to any third party without the prior written consent of the Commonwealth;
- (h) not modify or reverse engineer any aspect of the Commonwealth Resources, other than to the extent permitted by this Agreement; and
- (i) not dispose of the Commonwealth Resources other than in accordance with this Agreement.

- 5.6 The University must comply and ensure that the University's Personnel comply with any security requirements notified by the Commonwealth that may apply to the Commonwealth Resources.
- 5.7 Clause 5.8 applies to Commonwealth Resources that comprise Materials, other than those Commonwealth Resources that are incorporated into Foreground Material under this Agreement, or which are subject to other arrangements, as may be agreed in writing between the Parties.
- 5.8 At the earlier of:
- (a) the Completion Date;
  - (b) the date upon which the University ceases to require the Commonwealth's Resources for the Research Project;
  - (c) the date upon which this Agreement is terminated; or
  - (d) a date agreed between the Parties,
- the University must:
- (e) deal with the Commonwealth Resources in accordance with the Commonwealth's reasonable written instructions; or
  - (f) if no written instructions have been given – return the Commonwealth Resources to the Commonwealth in a manner that:
    - (i) is safe;
    - (ii) will not cause contamination, or harm to the environment; and
    - (iii) will prevent its loss or unauthorised access.
- 5.9 The Parties acknowledge that the Commonwealth may provide certain Commonwealth owned equipment to the University for the Research Project under a separate Schedule Agreement under the Partnering Deed.

## **6 University to Carry Out the Research Project**

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- 6.1 The University must carry out the Research Project in accordance with this Agreement, in particular as set out in Item 2 of the Annexure:
- (a) to a high professional standard;
  - (b) in accordance with all applicable laws;
  - (c) in accordance with the reasonable directions of the Commonwealth;
  - (d) to the Commonwealth's reasonable satisfaction, having regard to the Objectives set out in clause 3 of the Partnering Deed and the requirements referred to in this clause 6.1; and
  - (e) so as to complete any tasks set out in Item 2 of the Annexure or to deliver any deliverables set out in Item 2 of the Annexure by the due date for any such tasks or deliverables;
- 6.2 The University will deliver all deliverables to the Commonwealth's Liaison Officer, unless that officer directs the University in writing to deliver them elsewhere.
- 6.3 The University must provide all Personnel, facilities, services and resources (other than Commonwealth Resources) necessary for the effective conduct of the Research Project.



## **7 University to Follow Budget and Keep Financial Records**

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- 7.1 The University must expend the Agreement Sum in accordance with the Budget set out in Item 5 of the Annexure (including the budget items).
- 7.2 The University must, at no additional cost:
- (a) keep, and require its subcontractors to keep, financial records in accordance with applicable Australian accounting standards, in sufficient detail to enable the amounts payable by the Commonwealth under this Agreement to be determined and the University's performance of this Agreement to be audited; and
  - (b) retain and require its subcontractors to retain for a period of no less than seven years after the Completion Date books and records relating to the Research Project.

## **8 University to Report on Receipts and Expenditure**

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- 8.1 Without limiting the Commonwealth's rights under this Agreement or at law, the Commonwealth may require statements of receipt and expenditure in respect of:
- (a) the entire Agreement Term; and
  - (b) if the Agreement Term exceeds 12 months – each Financial Year in the Agreement Term.
- 8.2 A statement required under clause 8.1 must be provided to the Commonwealth:
- (a) if required under clause 8.1(a) – within sixty (60) days of the end of the Agreement Term; and
  - (b) if required under clause 8.1(b) – within sixty (60) days of the end of the Financial Year to which the statement relates.
- 8.3 The statements required under clause 8.1 must:
- (a) specify all Agreement Sum moneys received in the relevant period;
  - (b) for each budget item set out in Item 5 of the Annexure, specify all Agreement Sum moneys expended or committed for expenditure in the relevant period; and
  - (c) include such other matters that the Commonwealth reasonably requires (provided the Commonwealth notifies the University of that requirement in writing).
- 8.4 The University must ensure that each statement required under clause 8.1 is provided with a declaration by an appropriate senior officeholder of the University, such as the chief financial officer, that:
- (a) the statement of receipts and expenditure is correct;
  - (b) the Agreement Sum moneys have been expended in accordance with the Agreement; and
  - (c) proper accounting standards and controls have been exercised in respect of the Agreement Sum moneys.
- 8.5 The University will send any statement required under clause 8.1 to the Commonwealth address specified in Item 15 of the Annexure.

## **9 Treatment of Capital Items**

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- 9.1 The University must at all times during the Agreement Term:
- (a) use Capital Items only for the purpose of the Research Project;
  - (b) not encumber or dispose of any Capital Items other than as agreed with the Commonwealth;
  - (c) hold Capital Items securely and safeguard them against theft, loss, damage or unauthorised use;
  - (d) ensure that Capital Items are maintained in good working order;
  - (e) maintain appropriate insurances in respect of Capital Items;
  - (f) if required by law, maintain registration of, and licences for, the Capital Items;
  - (g) comply with all reasonable requests from the Commonwealth concerning Capital Items, including any request to register the Commonwealth's interest in a Capital Item; and
  - (h) maintain a register of all Capital Items which records:
    - (i) the date of purchase;
    - (ii) Capital Item description including serial number;
    - (iii) Capital Item location; and
    - (iv) the purchase price of the Capital Item.
- 9.2 Subject to any contrary written agreement between the Parties, the University must be the legal and beneficial owner of the Capital Items at all times during the Agreement Term.
- 9.3 Subject to any contrary written agreement between the Parties, at the earlier of:
- (a) the Completion Date;
  - (b) the date upon which the University ceases to require a Capital Item for the Research Project;
  - (c) the date upon which this Agreement is terminated; or
  - (d) a date agreed between the Parties,
- the University must:
- (e) transfer ownership of the Capital Items (or the relevant Capital Item if clause 9.3(b) ) or 9.3(d) applies) to the Commonwealth or its nominee; and
  - (f) safely deliver the Capital Items (or the relevant Capital Item if clause 9.3(b) ) or 9.3(d) applies) to the Commonwealth.

## **10 Subcontractors**

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- 10.1 The subcontractors approved by the Commonwealth for the purposes of this Agreement are set out in Item 7 of the Annexure.
- 10.2 The University must ensure that the subcontractors listed in Item 7 of the Annexure comply with any conditions set out in that Item.

## **11 University's Personnel (Including Specified Personnel)**

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- 11.1 The University must ensure that the Specified Personnel perform the roles and tasks for which they are nominated, as set out in Item 8 of the Annexure.
- 11.2 If any Specified Personnel is unable to perform the roles and tasks for which that Specified Personnel is nominated in Item 8 of the Annexure, the University must notify the Commonwealth immediately and must, if requested by the Commonwealth and after consultation with the Commonwealth, provide replacement Personnel acceptable to the Commonwealth at no additional cost and at the earliest opportunity. The Commonwealth will not unreasonably withhold its consent to the nomination of replacement Personnel.
- 11.3 The Commonwealth may, at any time and at its discretion (not to be exercised unreasonably), require the University to remove Personnel (including Specified Personnel) from carrying out work on the Research Project. The University must arrange for the removal of such Personnel from the Research Project and to replace them at the earliest opportunity with Personnel acceptable to the Commonwealth at no additional cost. The Commonwealth must not unreasonably withhold its consent to proposed replacement Personnel.
- 11.4 If the University is unable to provide replacement Personnel (including Specified Personnel) with suitable skills or in a sufficient time to enable the University to complete the Research Project in accordance with the research program set out in Item 2 of the Annexure, the Parties' Liaison Officers will meet at a time agreed between the Liaison Officers to determine, in good faith, if any aspect of this Agreement (for example – scope of the Research Project, timeframe for delivery of reports or other deliverables related to the Research Project, use of Specified Personnel, or use of subcontractors) needs to be varied to accommodate the inability or delay in replacing the Personnel.
- 11.5 If the Parties are unable to agree to vary this Agreement under clause 11.4, the Commonwealth may terminate this Agreement under clause 28.

## **12 Student Participation**

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- 12.1 The University must not permit a student studying at the University to participate in the Research Project unless:
- (a) either:
    - (i) the student is listed in Item 9 of the Annexure; or
    - (ii) the Commonwealth has consented to the student's participation in the Research Project; and
  - (b) the student, the Commonwealth and the University execute a separate written agreement, in the form of the Student Participation and IP Deed Schedule Agreement Template, governing the terms of the student's participation in the Research Project.
- 12.2 The University must ensure that (in relation to the Research Project) the student referred to in clause 12.1 only performs the tasks for which that student has been nominated, as set out in Item 9 of the Annexure, or as agreed to by the Commonwealth.
- 12.3 This clause 12 does not apply to any student of the University participating in the Research Project in a minor, or inconsequential manner.

- 12.4 The University is fully responsible for its students participating in the Research Project, including for their proper supervision, remuneration (if any), health and safety.

### **13 Access for Evaluations, Audits and Investigations**

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- 13.1 The University must allow the Commonwealth such access as it reasonably requires, to all its records and accounts relating to this Agreement, including those relating to how the University is carrying out the Research Project and receiving and spending the Agreement Sum. Such access will be given at all reasonable times to the following people:
- (a) a representative of the Commonwealth;
  - (b) a representative of the Commonwealth Auditor-General;
  - (c) a representative of the Commonwealth Privacy Commissioner.
- 13.2 The University must provide such assistance to a person referred to in clause 13.1 as they may reasonably require to:
- (a) locate, access, interpret and assess the records and accounts relating to this Agreement;
  - (b) make copies of those records or accounts; and
  - (c) use those records and accounts (or copies) for any purpose:
    - (i) connected with this Agreement (including to confirm information contained in a report, evaluate the Research Project or audit expenditure of the Agreement Sum); or
    - (ii) related to the person's statutory functions.
- 13.3 The access rights in this clause 13 are subject to the University's reasonable security procedures.
- 13.4 This clause 13 does not require the University to disclose information of a third party that is by its nature the Confidential Information of that third party.
- 13.5 In this clause 13, **access** includes access to:
- (a) any premises occupied by the University where the Research Project is being carried out or where records or accounts relating to this Agreement are located; and
  - (b) the University's Personnel, including any Personnel working on the Research Project and any other employee involved in the administration of the Research Project.

### **14 Intellectual Property – Background IP**

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- 14.1 Nothing in this Agreement affects the ownership of Background IP.
- 14.2 Subject to clause 14.3 each Party licenses the other Party to Use the Background IP (other than those IP rights that are limited by Item 10 of the Annexure), with those licences being for the purposes of:
- (a) in the case of the Commonwealth – exercising its rights under clause 17.3, clause 18.1, or clause 19.1 (as applicable), but only for Commonwealth Purposes; and

- (b) in the case of the University – carrying out the Research Project and exercising its rights under clause 17.1, clause 18.3, or clause 19.3 (as applicable), but only for purposes other than Commercialisation.

- 14.3 Subject to any limitations set out in clause 14.2, the licences under clause 14.2 have world-wide effect and are non-exclusive, royalty-free and perpetual, (other than a licence to the University in relation to clause 19.3 which will be for the duration of the Research Project).
- 14.4 The Party receiving a licence under clause 14.2 must, where reasonably practicable, acknowledge the other Party as the owner of the relevant Background IP in all communications or publications referring to that Background IP.
- 14.5 Each Party warrants that, to the best of its knowledge and belief, it is entitled, or will be entitled at the relevant time, to deal with its Background IP in accordance with this clause 14.

## **15 Intellectual Property – Third Party IP**

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- 15.1 Nothing in this Agreement affects the ownership of Third Party IP.
- 15.2 Before the University can incorporate Third Party IP into Foreground Material (including through the incorporation of Background Material which incorporates Third Party IP), the University must:
  - (a) subject to clause 15.4, provide the Commonwealth with details of any restrictions, conditions or encumbrances that apply or may apply to use of the Third Party IP as part of the use of the Foreground Material by the Commonwealth in accordance with its rights under this Agreement; and
  - (b) use reasonable endeavours to obtain a free licence for the Commonwealth for the Third Party IP (other than for commercially available software) on equivalent terms as the licence granted to the Commonwealth for the University's Background IP under clause 14.
- 15.3 If the University is unable to obtain the Third Party IP licence for the Commonwealth's use under clause 15.2(b) it may only incorporate that Third Party IP into the Foreground Material if the Commonwealth agrees in writing.
- 15.4 Clause 15.2(a) does not apply to any Third Party IP (and any limitations on the use of that Third Party IP) which is contained in the Background Material provided by the Commonwealth and which is set out in table 6.2 of Item 6 of the Annexure.
- 15.5 The Commonwealth does not warrant that the Third Party IP referred to in clause 15.4 is suitable for any purpose.

## **16 Foreground IP – Application of Clauses 17-19**

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- 16.1 In this Agreement:
  - (a) clause 17 applies (and clauses 18 and 19 do not apply) – if the Research Project is identified in Item 2.2 of the Annexure as a Standard Research Project;
  - (b) clause 18 applies (and clauses 17 and 19 do not apply) – if the Research Project is identified in Item 2.2 of the Annexure as part of a Defence Strategic Project;

(c) clause 19 applies (and clauses 17 and 18 do not apply) – if the Research Project is identified in Item 2.2 of the Annexure as a National Security Classified Project.

16.2 Each Party must, if requested by the other Party and at its own cost, do all things and execute all documents necessary or convenient to give effect to clause 17, clause 18 or clause 19 (as applicable).

16.3 The Parties shall promptly notify each other of any infringement of any rights relating to Foreground IP which comes to its attention, and each Party agrees to give the other Party all assistance which the other Party may reasonably require in order to protect its interest in the Foreground IP.

## **17 Foreground IP – Standard Research Project**

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17.1 Ownership of all Foreground IP vests in the University upon creation.

17.2 The University must promptly inform the Commonwealth in writing whenever Foreground IP is created.

17.3 The University licenses the Commonwealth to Use the Foreground IP for the purposes of the Research Project and for Commonwealth Purposes, with that licence having world-wide effect and being non-exclusive, royalty-free and perpetual.

## **18 Foreground IP – Defence Strategic Project**

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18.1 Ownership of all Foreground IP vests in the Commonwealth upon creation.

18.2 The University must promptly inform the Commonwealth in writing whenever Foreground IP is created.

18.3 The Commonwealth licenses the University to Use the Foreground IP for the purposes of the Research Project and for any other purpose other than Commercialisation, with that licence having world-wide effect and being non-exclusive, royalty-free and perpetual.

## **19 Foreground IP – National Security Classified Project**

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19.1 Ownership of all Foreground IP vests in the Commonwealth upon creation.

19.2 The University must promptly inform the Commonwealth in writing whenever Foreground IP is created.

19.3 The Commonwealth licenses the University to Use the Foreground IP, but only for the purposes of the Research Project, with that licence having world-wide effect and being non-exclusive, royalty-free and for the duration of the Research Project.

## **20 Changes to National Security Classification**

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20.1 The Commonwealth may at any time, in accordance with the Australian Government Protective Security Manual, determine that a particular national security classification applies to information or equipment relevant to the Research Project.

- 20.2 If the Commonwealth makes a determination under clause 20.1, the Commonwealth must provide a written notice to the University, advising of:
- (a) the national security classification that is to apply to the information or equipment relevant to the Research Project; and
  - (b) any security conditions that are to apply.
- 20.3 After providing the University with a notice under clause 20.2, the Parties' Liaison Officers will meet within seven (7) days (or other time frame as agreed between the Liaison Officers) to:
- (a) discuss how the change in national security classification is to be implemented; and
  - (b) determine if any aspect of this Agreement (for example – scope of the Research Project, limits on publication, IP ownership, resourcing, timeframe for delivery of reports and other deliverables related to the Research Project, use of Specified Personnel, or use of subcontractors) needs to be varied to accommodate the change in national security classification.
- 20.4 If the University is unable or unwilling to comply with a security condition in accordance with clause 20.2 and if the Parties cannot agree to vary this Agreement under clause 20.3, the Commonwealth may terminate this Agreement.

## **21 Confidential Information**

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- 21.1 The Parties will treat each matter referred to in Item 11 of the Annexure as the Confidential Information of the Party whose name appears adjacent to that matter. In addition, a Party (*the Notifying Party*) may at any time notify the other Party in writing that a matter relating to the Research Project and not already referred to in Item 11 of the Annexure, is to be treated as the Notifying Party's Confidential Information.
- 21.2 Nothing in this clause 21 limits the definition of Confidential Information in this Agreement and nothing in this Agreement limits the operation of clause 9 of the Partnering Deed (as incorporated into this Agreement by clause 35.)

## **22 Controlled Content Register**

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- 22.1 If specified in Item 17 of the Annexure, the University will establish and maintain a Controlled Content Register in the form of that Item or as otherwise agreed by the Liaison Officers.
- 22.2 The CC Register is for record management purposes and does not in any way alter or limit the relevant provisions in this Agreement or the Partnering Deed.
- 22.3 The University will maintain the CC Register in accordance with the procedures:
- (a) set out in this clause 22 and
  - (b) as determined by the Liaison Officers from time to time.
- 22.4 If the Commonwealth becomes aware of a matters pertinent to the CC Register it will inform the University and the University will include those matters in the CC Register.

- 22.5 The University will provide a copy of the CC Register to the Commonwealth:
- (a) upon request of the Commonwealth; and
  - (b) within thirty (30) days of the expiry or termination of the Agreement.
- 22.6 If the Commonwealth notifies the University of any errors in the CC Register, the University must within seven (7) days:
- (a) amend the CC Register to the reasonable satisfaction of the Commonwealth; and
  - (b) provide a copy of the amended CC Register to the Commonwealth.

## **23 Dissemination of Information Arising From the Research Project**

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- 23.1 The Commonwealth encourages publication of articles of an academic scientific and technical nature intended for learned journals and the participation in academic conferences and symposiums. However, in some circumstances, dissemination of information may result in the release of Confidential Information, adversely affect national security interests, or jeopardise the Commonwealth's IP rights. Accordingly, the University must not and must ensure that its Personnel do not, disseminate information arising from the Research Project except:
- (a) to register, or enforce the University's IP related rights under this Agreement;
  - (b) if Item 12 of the Annexure specifies that the information may be disseminated and the University and its Personnel comply with the requirements of that Item; or
  - (c) if the Commonwealth agrees in writing to a request by the University to disseminate the information and the University and its Personnel comply with all conditions that the Commonwealth reasonably imposes as a condition to it agreeing to the proposed dissemination.
- 23.2 If the University makes a request to the Commonwealth under clause 23.1(c), the University will provide the Commonwealth with details of the information arising from the Research Project that is proposed to be disseminated (for example, draft articles, lecture notes, or overhead slides) together with details of how, when and to whom it is proposed to be disseminated:
- (a) if the proposed dissemination of information arising from the Research Project is to be by way of publication – at least thirty (30) days before the proposed submission date for publication; and
  - (b) If the proposed dissemination of information arising from the Research Project is to be by way of presentation – at least thirty (30) days before the proposed presentation.
- 23.3 The Commonwealth may only refuse to allow, or may only impose conditions on, a proposed dissemination under clause 23.1(c) to the extent reasonably necessary to protect:
- (a) its Confidential Information (including national security matters); or
  - (b) its Intellectual Property rights.
- 23.4 If the Commonwealth:
- (a) fails to respond to the University's request under clause 23.1(c) within thirty (30) days of receiving the request;



- (b) refuses to agree to the request; or
- (c) imposes conditions on its consent that the University considers unreasonable,

the University may (if the matter cannot be promptly resolved by the Liaison Officers) refer the matter to the Partnership Managers, or to the Partnership Executive Committee for resolution.

- 23.5 In this clause 23, to **disseminate information arising from the Research Project** means to broadcast, publish, communicate or present information arising from the Research Project, whether in print, electronic form or otherwise.

## **24 Acknowledgement and Publicity**

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- 24.1 The University must, in all publications, promotional and advertising materials, public announcements and activities by the University or on the University's behalf in relation to the Project, or any products, processes or inventions developed as a result of it, acknowledge the financial and other support the University has received from the Commonwealth, in the manner set out in Item 13 of the Annexure.
- 24.2 The University must obtain the Commonwealth's agreement before it makes any announcements, or conducts any publicity events in relation to the Project. After the University has obtained the Commonwealth's agreement under this clause, it does not need to obtain the Commonwealth's further agreement to minor and non-material changes to the agreed announcements or publicity.
- 24.3 The Commonwealth reserves the right to publicise and report on the awarding of the funding to the University. The Commonwealth may do (but is not limited to doing) this by including the University's name, the amount of the Agreement Sum given to the University, the title and a brief description of the Project in media releases, general announcements about the Agreement, annual reports or through any other means as determined by the Commonwealth.
- 24.4 The Commonwealth will use reasonable endeavours to provide the University with advance notification of any proposed publicity or reporting under clause 24.3.
- 24.5 The University acknowledges that the Commonwealth may be required to provide information in relation to this Agreement, including the Agreement Sum, the Project, or the Project Purposes, as required by the operation of any law, judicial or parliamentary body or governmental agency.

## **25 Taxes, Duties and Government Charges**

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- 25.1 Except as provided by this clause 25, all taxes, duties and government charges imposed or levied in Australia or overseas in connection with the performance of this Agreement will be borne by the University.
- 25.2 Unless GST is expressly included, the consideration to be paid or provided under any other clause of this Agreement for any supply made under or in connection with this Agreement does not include GST.
- 25.3 To the extent that any supply made under or in connection with this Agreement is a taxable supply, the GST exclusive consideration to be paid or provided for that taxable supply is increased by the amount of any GST payable in respect of that taxable supply. That amount must be paid either at the same time and in the

same manner as the GST exclusive consideration is to be paid or provided, or, if subsequently determined to be payable, at that time.

- 25.4 A Party's right to payment under clause 25.3 is subject to a valid tax invoice being delivered to the Party who is the recipient of the taxable supply.
- 25.5 To the extent that a Party is required to reimburse or indemnify the other Party for a loss, cost or expense incurred by that other Party, that loss, cost or expense does not include any amount in respect of GST for which that other Party is entitled to claim an input tax credit.
- 25.6 In this clause 25:
- (a) **GST** means GST as defined in *A New Tax System (Goods and Services Tax) Act 1999* as amended (**the GST Act**) or any replacement or other relevant legislation and regulations;
  - (b) words or expressions used in this clause which have a particular meaning in the GST law (as defined in the GST Act, and also including any applicable legislative determinations and Australian Taxation Office public rulings) have the same meaning, unless the context otherwise requires;
  - (c) if the GST law treats part of a supply as a separate supply for the purpose of determining whether GST is payable on that part of the supply or for the purpose of determining the tax period to which that part of the supply is attributable, such part of the supply is to be treated as a separate supply.

## **26 Insurance**

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- 26.1 The University must effect and maintain the insurances specified in Item 14 of the Annexure.
- 26.2 The University must, if requested, provide the Commonwealth with a copy, or a statement of particulars, of the policies or other evidence of the insurance which is satisfactory to the Commonwealth.
- 26.3 The University must ensure each subcontractor is insured against the subcontractor's corresponding liabilities.
- 26.4 Despite clause 2, this clause 26 will continue in effect while any obligations remain in connection with this Agreement.

## **27 Termination by Consent**

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- 27.1 The Parties may, at any time, terminate this Agreement on such terms as are agreed by the Parties in writing.

## **28 Termination for Fault**

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- 28.1 The Commonwealth may immediately terminate this Agreement by giving written notice to the University if any of the following occur:
- (a) the University breaches any provision of this Agreement and, in the reasonable opinion of the Commonwealth, the breach cannot be remedied;

- (b) subject to clause 28.2, the University breaches any provision of this Agreement;
- (c) subject to clause 28.2, in the reasonable opinion of the Commonwealth, the University becomes unable or unwilling to complete the Research Project;
- (d) a clause of this Agreement expressly permits the Commonwealth to terminate the Agreement in circumstances contemplated by that clause (other than clause 29);
- (e) the University becomes insolvent, bankrupt, subject to administration or is unable to meet its debts.

28.2 Prior to terminating this Agreement under clause 28.1(b) or 28.1(c), the Commonwealth will first give the University a notice requiring the University to remedy its default and will provide the University with thirty (30) days from the date of the notice to do so.

28.3 If the Commonwealth issues a notice under clause 28.1 the Commonwealth will not be liable for any payments to the University for work conducted after the effective date of termination, or for any other costs or losses arising thereafter as a result of the termination.

## **29 Termination or Reduction other than for Fault**

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29.1 In addition to its termination rights under clause 28, the Commonwealth may at any time by written notice to the University, terminate or reduce the scope of this Agreement.

29.2 If the Commonwealth issues a notice under clause 29.1 the Commonwealth will only be liable to the University for:

- (a) in the case of termination of this Agreement – payments due and owing to the University before the Commonwealth gave notice under clause 29.1;
- (b) in the case of reduction in scope of the Agreement – payment of the proportion of the Agreement Sum related to the part of the Agreement not affected by the reduction in scope, provided that the University complies with its obligations with respect to the payments; and
- (c) reasonable costs incurred by the University that are directly attributable to the termination or reduction and that the University substantiates to the Commonwealth's satisfaction,

but will not be liable to the University for:

- (d) any amount that exceeds the Agreement Sum payable under this Agreement; or
- (e) any loss of prospective profits, or loss of benefits that would have been conferred on the University if the termination or reduction had not occurred.

29.3 In clause 29.2(c), **reasonable costs** includes any liability of the University:

- (a) arising from the University entering into a legally binding, irrevocable commitment which was entered into for the purposes of this Agreement prior to the notice of termination; or
- (b) arising under relevant employment-related legislation, and

for which the payments made under clauses 29.2(a), or 29.2(b) (as applicable) are insufficient to cover the University's liability.

### **30 Consequences of Termination or Reduction in Scope**

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- 30.1 Upon termination of this Agreement, the University must:
- (a) cease to incur expenditure in respect of the Research Project and arrange for the orderly cessation of work on the Research Project;
  - (b) cease using all Commonwealth Resources;
  - (c) deal with all Commonwealth Resources that comprise Materials in accordance with clause 5.8;
  - (d) deal with the Commonwealth's Confidential Information in accordance with clause 9 of the Partnering Deed (as incorporated into this Agreement by clause 35); and
  - (e) within sixty (60) days of termination, provide a statement of receipt and expenditure that complies with clause 8.3 and clause 8.4, for all money received from the Commonwealth, if the Commonwealth requests it.
- 30.2 If this Agreement is reduced in scope under clause 29.1, the University must comply with clause 30.1 only to the extent necessary to give effect to the reduction in scope.

### **31 Treatment of Unspent or Misspent Agreement Sum**

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- 31.1 Subject to clause 31.2, the University must, upon written notice from the Commonwealth, repay the Agreement Sum (or the relevant part of it) to the Commonwealth in any of the following circumstances:
- (a) the University spends or commits the Agreement Sum (or part of the Agreement Sum) other than in accordance with this Agreement;
  - (b) the Commonwealth reasonably believes that the University is unable to spend the Agreement Sum (or part of the Agreement Sum) in accordance with this Agreement;
  - (c) the Commonwealth overpays the University, or pays the University an amount that it incorrectly claimed.
- 31.2 Before the Commonwealth can issue a notice under clause 31.1, it must give the University reasons for its decision under that clause and an opportunity for the University to respond.
- 31.3 If the Commonwealth terminates this Agreement under clause 28.1 or clause 29.1, the University must, within thirty (30) days of receipt of a written notice from the Commonwealth, repay any of the Agreement Sum to the Commonwealth which the University has not spent or committed in accordance with this Agreement as at the date it received the notice of termination.
- 31.4 Any amount to be repaid under this clause 31 may be recovered by the Commonwealth as a debt due to the Commonwealth, or deducted by the Commonwealth from subsequent payments of the Agreement Sum (if this Agreement has not been terminated).
- 31.5 Despite clause 31.1 or clause 31.3, if at the end of this Agreement or upon its earlier termination, some of the Agreement Sum has not been spent or

committed (***the Unspent Amount***), the Commonwealth may at its sole discretion give the University permission to retain the Unspent Amount for such purposes as the Commonwealth directs.

- 31.6 In this clause 31, ***commit***, in relation to a sum of money, means to enter into a legally binding, irrevocable commitment to make a payment of that sum of money in the future, or to incur a liability to make a payment under relevant employment-related legislation.

## **32 Variation of the Research Plan, Deliverables, or Budget Items**

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- 32.1 Despite clause 6 of the Partnering Deed, if the University proposes any change to:
- (a) the research plan or deliverables set out in Item 2 of the Annexure; or
  - (b) the budget items set out in Item 5 of the Annexure (provided the proposed change does not result in an increase to the Agreement Sum),
- it must notify the Commonwealth's Liaison Officer of the proposed changes in writing and must not implement any such change without the prior written consent of the Commonwealth.

## **33 Unavoidable Delay**

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- 33.1 If, by reason of an Unavoidable Delay, a Party is delayed in performing, or is unable, wholly or in part, to perform, any obligation under this Agreement (other than an obligation to make a payment), and that Party:
- (a) gives the other Party prompt notice of that Unavoidable Delay including reasonable particulars, and, in so far as known, the probable extent to which it will be unable to perform, or be delayed in performing that obligation; and
  - (b) uses reasonable endeavours to remove, or mitigate the effects of, that Unavoidable Delay as quickly as possible,
- that obligation is suspended so far as it is affected by the Unavoidable Delay during the continuance of that Unavoidable Delay and that Party will be allowed a reasonable extension of time to perform its obligations.
- 33.2 If, after thirty (30) days, an Unavoidable Delay has not ceased, the Parties must meet to discuss the situation and endeavour in good faith to achieve a mutually satisfactory resolution to the problem.
- 33.3 In this clause 33, ***Unavoidable Delay*** means, in respect of a Party, an event beyond the reasonable control of that Party and which was not reasonably foreseeable by that Party at the Commencement Date. For clarity, decisions of the Australian Government or Cabinet will be taken to be beyond the reasonable control of the Commonwealth.

## **34 Addresses for Notices**

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- 34.1 Any notice that is required to be given under this Agreement is to be sent by a Party to the other Party care of the relevant name and address provided in Item 15 of the Annexure. For clarity, claims for payment by the University under clause 4.1 are not notices and must be made in accordance with clause 4.3.

## **35 Application of Clauses from the Partnering Deed**

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**35.1** Subject to clause 35.2, the following provisions of the Partnering Deed apply as clauses of this Agreement:

- (a) clauses 1.1 and 1.2 – Definitions and Interpretation (other than any definition that has a different definition in this Agreement);
- (b) clause 2.6 – Defence Science Partnership – Term and Scope;
- (c) clause 3 – Objectives;
- (d) clause 4 – Management;
- (e) clause 6 – Variations to this Deed or Activity Agreements;
- (f) clause 8 – Treatment of Conflicts of Interest;
- (g) clause 9 – Treatment of Confidential Information;
- (h) clause 10 – Treatment of National Security Matters;
- (i) clause 13 – Personnel;
- (j) clause 14 – Work Health and Safety Obligations;
- (k) clause 15 – Environmental Protection Obligations;
- (l) clause 16 – Protection of Personal Information;
- (m) clause 17 – No Benefit or Advantage;
- (n) clause 18 – Defence Interests;
- (o) clause 20 – Resolving Disputes;
- (p) clause 22 – Restrictions on Assignment;
- (q) clause 23 – Restrictions on Subcontracting;
- (r) clause 24 – Entire Agreement;
- (s) clause 25 – Governing Law and Jurisdiction;
- (t) clause 26 – Waiver;
- (u) clause 27 – Clause Severance;
- (v) clause 28 – Survival of Clauses; and
- (w) clause 29 – Notices.

**35.2** The clauses from the Partnering Deed referred to in clause 35.1 are modified for the purposes of this Agreement as follows:

- (a) if a clause refers to “this Deed”, “this Deed and any Activity Agreement”, or “this Deed or an Activity Agreement” – by changing the reference to “this Agreement”;
- (b) if a clause contains a definition that is defined differently in this Agreement – by applying the definition from this Agreement; and
- (c) by making any other necessary modifications required to give effect to the clauses.

**35.3** If this Agreement has been entered into by a Related Body Corporate of a Party to the Partnering Deed, that Related Body Corporate:

- (a) acknowledges that it is aware of the terms of the Partnering Deed; and

- (b) agrees to be bound by clauses of the Partnering Deed referred to in clause 35.1.

## **36 Special Conditions**

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- 36.1 The special conditions set out in Item 16 of the Annexure apply to this Agreement. If there is a conflict between a special condition and another clause of this Agreement or the Partnering Deed, the special condition prevails.

## **37 Counterparts**

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- 37.1 This Agreement may be executed in counterparts. All executed counterparts constitute one document.
- 37.2 In the event that the Agreement is executed in counterparts, the date of the Agreement is the date upon which the last Party signed the Agreement.

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## The Annexure – Agreement Details

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### Item 1 Agreement Term

(refer to clauses 1.1 and 2)

The Commencement Date for this Agreement is the date both Parties signed this Agreement, or if it was signed on separate days, the date on which the last Party to sign this Agreement did so.

The Completion Date is: 1<sup>st</sup> September 2020

### Item 2 Research Project

(refer to clauses 1.1 and 6)

#### Item 2.1 Title of Research Project:

Towards development of a deployable cold atom interferometer based: gravimeter; gravity gradiometer; and magnetic field gradiometer

#### Item 2.2 Type of Research Project (for Intellectual Property Purposes)

(refer to clause 16)

The Research Project is a Standard Research Project.

#### Item 2.3 Background of Research Project:

Cold atom interferometry has a wide range of applications of interest to Defence. One of the more promising applications is their application to inertial navigation. This is because atom interferometry can make inertial measurements with exceptionally low bias drifts, albeit currently at low band widths. When fused with high bandwidth traditional inertial sensors this will provide greater continuity of navigation services in Global Navigation Satellite System (GNSS) contested environments or in environments where GNSS services are otherwise not available.

To this end Defence wishes to work with Universities to understand the practicalities of such devices in realistic operational scenarios. One avenue Defence is considering is to test field deployable prototypes and their component systems during activities such as RIMPAC 2022 and 2024.

#### Item 2.4 Aims of Research Project:

In order to make field deployable prototypes to test viability there are key technical questions which need to be addressed before proceeding. Two key questions which this research agreement will consider are:

- i. What is the best way to compensate for performance changes while the cold atom interferometer is under lateral acceleration?
  - ii. Can the traditional optical component of the magneto-optical system used for trapping and cooling atoms be replaced by a set of diffractive optics?
- i. What is the best way to compensate for performance changes while the cold atom interferometer is under lateral acceleration?**



The typical, unguided, form of atom interferometry used for measurement of vertical acceleration or gravity operates as follows. Atoms are cooled and collected in a magneto-optical trap. These cold atoms are initially dropped then split into two a superposition of two momentum states then after a fixed time they are recombined. Laser beams are used to create the different momentum states and reflect the atoms are typically referred to as Bragg beams. If there is lateral acceleration during this time, that is acceleration perpendicular to the drop, then atoms can move within or even outside of the Bragg laser beams used to form the interferometer. Such lateral movements cause reduction in the accuracy and precision of vertical acceleration and gravity measurements.

In order to counter this effect, there are a number of strategies which can be considered.

- a. Additional laser beams can be used to guide the atoms reducing lateral movement significantly
- b. The drop time can be reduced to reduce the susceptibility to lateral motion
- c. The Bragg laser beams used to create momentum state superpositions and reflect atoms can be made larger in diameter so that lateral acceleration has a smaller impact
- d. If the lateral displacement caused by lateral acceleration is not large compared with the diameter of the Bragg laser beams used to manipulate the atoms then the movement might be compensated for by making corrections based on measured lateral acceleration
- e. Lateral acceleration measurements can be used to actively change the direction and phase of the Bragg beams used for manipulating the atoms so that they stay centred in the Bragg laser beams

Which of the strategies or combination of strategies, listed above, is optimal will depend on the details of operational scenarios and the devices size weight and power requirements. Theoretical and experimental work are currently being conducted at the ANU on options a and b above. Theoretically lateral acceleration of the order of 1g might be compensated for. What is not clear at this stage is the impact the confining beams will have on the fringe contrast required to enable satisfactory precision and accuracy for vertical acceleration and gravity measurements. In particular the confining beams will not be perfectly uniform across the cloud of atoms used for interferometry and this will introduce spatially dependent phase shifts which would reduce the fringe contrast in interferometry and as a consequence limit the fringe contrast. Clearly field tests being considered such as RIMPAC 2022 and 2024 will experience significant lateral acceleration and it will be important to carry out a series of experiments to understand the trade-offs between strategies.

In order to quantify the impact of implementing the guided wave strategy the research group will carry out theoretical and experimental studies to investigate the following questions:

- a. In the absence of lateral acceleration investigating the change in fringe contrast as a function of Interrogation time.
  - b. In the absence of confinement investigate the change in fringe contrast as a function of momentum transfer.
  - c. As resources allow, investigate fringe contrast under motion for confined (guided) and unguided operation and for different interrogation times and momentum transfer.
  - d. With the improved understanding of the impact of confinement as a function of lateral acceleration provide initial recommendations on optimal strategies to mitigate the effect of motion (accelerations) on fringe contrast. Outline further research required to enable these effects to be quantified. Include in the research outline resources required to undertake the program.
- ii. **Can the traditional optical component of the magneto-optical system used for trapping and cooling atoms be replaced by a set of diffractive optics?**

In the next generation of compact devices, we are considering employing diffractive optics to generate the beams for the magneto optic trap. This is a relatively new technology that the group would like to include in designs, acquire and test. We would also like to consider combining chip based production of the interferometric source (BEC) with a grating MOT. Our group is furthermore building a compact cold-atom source based on a cone MOT for the ANU's Discovery Translation Fund. This development is part of the ANU spin-off Nomad Atomics Pty Ltd and a key technology for commercializing compact cold-atom gravimeters for resource exploration and underground fluid monitoring.

The researchers will make first steps in the research direction indicated above. This will include estimating the performance of these combined technologies in terms of production rate of cold atoms, design a compact source utilising these technologies and acquire the technology. If time permits, the researchers will perform optical tests on the grating and cone elements.

Item 2.5 Research Plan, Research Project Reports, and Other Deliverables:

The University must carry out the Research Project in accordance with the following program:

<b>Research Element</b>	<b>Description</b>	<b>Due Date for Completion</b>
RE #1 Research answer of question #1	Provide report with progress on answering key research questions: i. What is the best way to compensate for performance changes while the cold atom interferometer is under lateral acceleration. ii. Whether the traditional optical component of the magneto-optical system used for trapping and cooling atoms can be replaced by a set of diffractive optics.	20 March 2020
RE #2 Research answer of question #2	Provide report with progress on answering key research questions: i. What is the best way to compensate for performance changes while the cold atom interferometer is under lateral acceleration. ii. Whether the traditional optical component of the magneto-optical system used for trapping and cooling atoms can be replaced by a set of diffractive optics.	15 May 2020
RE #3 Research report	Provide final report with a comprehensive plan for developing a device suitable for field trials at RIMPAC 2022 and 2024.	3 August 2020

The University must provide to the Commonwealth each of the following deliverables and reports by the applicable due date:

<b>Report or other Deliverable Title</b>	<b>Description</b>	<b>Delivery Format and Location</b>	<b>Due date</b>
<i>Progress report 1</i>	Contains progress on each of the	Written report, word	20 March 2020

	two research questions raised in item 2.4. Also lists quotes and costs of equipment purchased. Any issues with progress to be raised as early as possible.	document or PDF by email.	
<i>Progress report 2</i>	Contains progress on each of the two research questions raised in item 2.4. Also lists quotes and costs of equipment purchased. Any issues with progress to be raised as early as possible.	Written report, word document or PDF by email.	15 May 2020
<i>Final report</i>	Answers to research questions raised in item 2.4. Also, a comprehensive plan for developing a device suitable for field trials at RIMPAC 2022 and 2024.	Written report, word document or PDF by email.	3 August 2020

### Item 3 Liaison Officers

(refer to clauses 1.1, 3.1, 20, 22 and 32)

#### Item 3.1 Commonwealth's Liaison Officer

Name:

s47F - Public Interest Conditional Exemptions - Personal Privacy

Title:

Telephone:

Address:

Mail:

Email:

#### Item 3.2 University's Liaison Officer

Name: Professor John Close

Title: Professor and Head of the Department of Quantum Science, RSPE, ANU

Telephone:

s47F - Public Interest Conditional Exemptions - Personal Privacy

Address: Department of Quantum Science, The Research School of Physics and Engineering, Science Road, ANU

Email: John.Close@anu.edu.au

### Item 4 Agreement Sum

s47G - Public Interest Conditional Exemptions - Business

## s47G - Public Interest Conditional Exemptions - Business



### **Item 5      Budget**

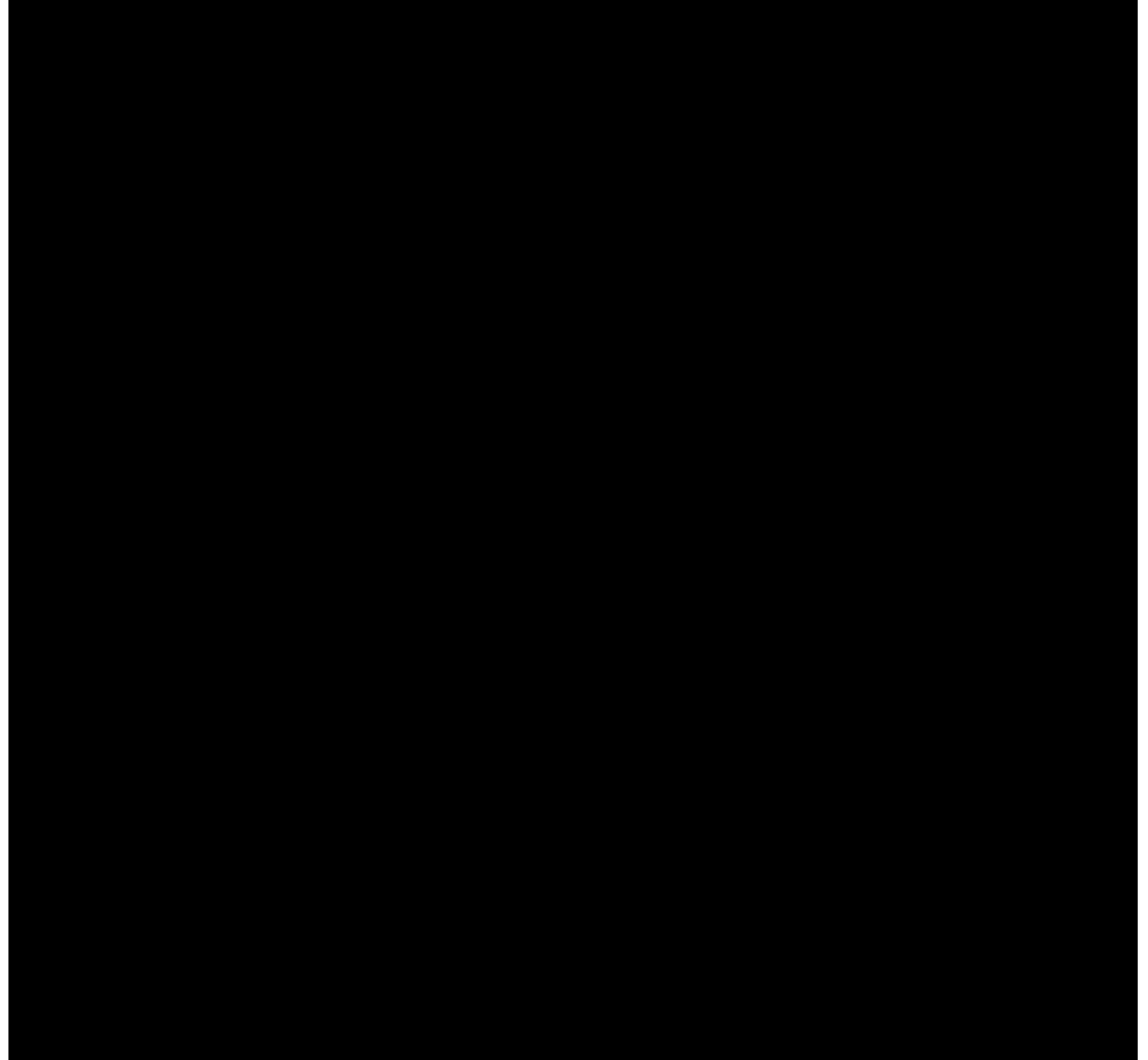
(refer to clauses 7 and 8)

The Budget for the Research Project is set out in the table below. The Research Rate (from Schedule 2 of the Partnering Deed) used is: 2

## s47G - Public Interest Conditional Exemptions - Business



## s47G - Public Interest Conditional Exemptions - Business




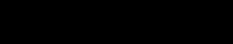
The amounts listed in the table above include all applicable on-costs and multipliers.

### Item 6 Commonwealth Resources

(refer to clauses 1.1, 5 and 15.4)

Table 6.1 Commonwealth Resources (other than Background Material provided by the Commonwealth):

The Commonwealth will provide the following resources (other than Background Material) to the University, subject to the terms of this Agreement:

Table 6.1 – Commonwealth Resources (other than Background Material)			
No	Resource	Delivery date and Location (for Commonwealth Resources that comprise Material)	Comment / Conditions for Use
1		During the research period at the University	About 0.2 FTE
2		During the research period at the	About 0.7 FTE

	University	
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Table 6.2 Background Material Provided by the Commonwealth:

The Commonwealth will provide the following Background Material to the University, subject to the terms of this Agreement:

Table 6.2 – Background Material Provided by the Commonwealth			
No	Title of Background Material	Description of Background Material and Format of Background Material (eg document, email, CD)	Owner (if not Commonwealth) and restrictions on use (if any) (See clause 15.4 – if Third Party IP is being provided, list any known restrictions on its use here)
1	NIL		

**Item 7 Subcontractors**

(refer to clause 10)

Subcontractor name and ABN	Task/Role	Comments
NIL		
<b>Conditions for Subcontractors</b>		
The Commonwealth's consent to the subcontractor/s is subject to the following conditions: Not Applicable		

**Item 8 Specified Personnel**

(refer to clause 11)

Specified Personnel			
Name	Position at University	Task/Role	Comments
Prof. John Close	Head of Department of Quantum Science and head of Atom Laser and Quantum Sensor group	Team management and guidance	In-kind
<span style="background-color: black; color: red; font-size: small;">b47F - Public Interest Conditional Exempt</span>	Post doc in Atom Laser and Quantum Sensor group	Fibre laser hardware and high power optics development for experiments	22 weeks
<span style="background-color: black; color: red; font-size: small;">b47F - Public Interest Conditional Exempt</span>	Research Fellow in Atom Laser and Quantum Sensor group	Atom optics theory contribution	
<span style="background-color: black; color: red; font-size: small;">b47F - Public Interest Conditional Exempt</span>	Research Fellow in Atom Laser and Quantum Sensor group	Atom optics theory contribution	12 weeks
<span style="background-color: black; color: red; font-size: small;">b47F - Public Interest Conditional Exempt</span>	Research Fellow in Atom Laser and Quantum Sensor group	Atom optics theory contribution	

**Item 9 Student Participation**

(refer to clause 12)

Participating Students		
Student's name	Task/Role	Comments
DST funded PhD student	Collaborate with researchers on theory and experiment	to be determined

**Item 10 Background IP – Intellectual Property Rights Restrictions**

(refer to clause 14)

Item 10.1 Commonwealth's Intellectual Property rights that are not included in the licence under clause 14.2:

Not used.

Item 10.2 Other restrictions on use of the Commonwealth's Background IP under clause 14.2:

Not used.

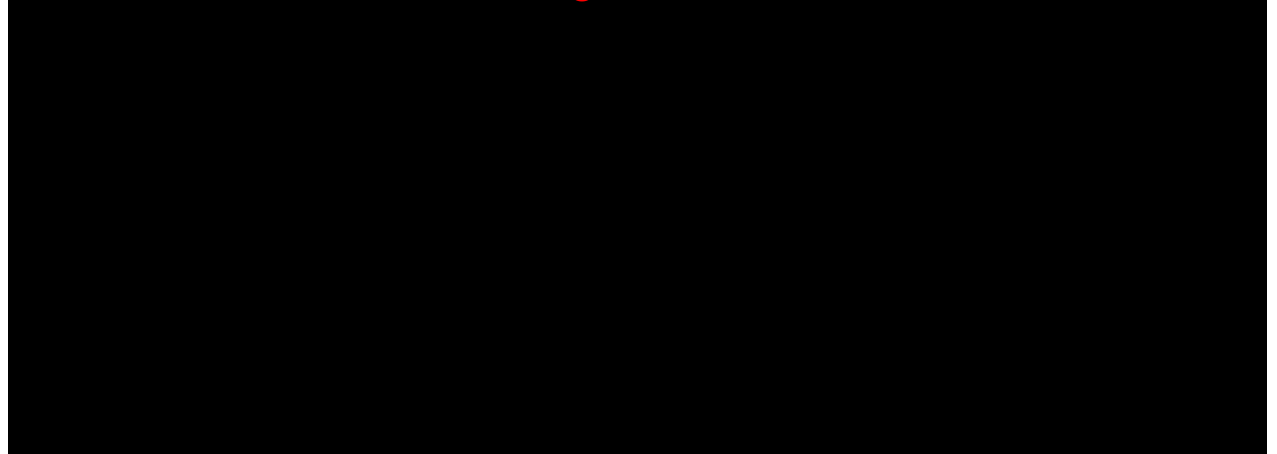
Item 10.3 University's Intellectual Property rights that are not included in the licence under clause 14.2:

Not used.

Item 10.4 Other restrictions on use of the University's Background IP under clause 14.2:

Not used.

**s45 - Documents containing material obtained in confidence**



**Item 12 Dissemination of Information**

(Refer to clause 23)

No information arising from the Research Project may be disseminated without the Commonwealth's prior consent.

### Item 13 Acknowledgement and Publicity

(refer to clause 24)

Acknowledgement of the Commonwealth's assistance is to be in the following form or as otherwise agreed by the Commonwealth:

In general and for any publication with University authorship, the funding support is to be acknowledged by the University with the following, "This research is supported by the Commonwealth of Australia as represented by the Defence Science and Technology Group of the Department of Defence" or words to similar effect.

For any publication that is co-authored by DST Group personnel, the acknowledgement shall include their affiliation as per standard research publication practice. Where a publication does not include a co-author, then that personnel and that personnel's affiliation should be in the acknowledgements as a collaborator.

### Item 14 Insurance

(refer to clause 26)

The insurances required to be maintained by the University are set out in the table below.

Type of Insurance	Amount
Public Liability insurance	not less than 10 million dollars (\$10,000,000.00) per event.
Workers' Compensation	in accordance with applicable legislation.
Professional Indemnity Insurance	not less than five million dollars (\$5,000,000.00) per event.

### Item 15 Notices

(Refer to clause 34 and clause 29 of the Partnering Deed)

(Invoices are dealt with under clause 4.3, not this Item.)

For the Commonwealth:

Name: s47F - Public Interest Conditional Exemptions - Personal Privacy  
Title: [REDACTED]  
Address: [REDACTED]  
Email: [REDACTED]  
Telephone: [REDACTED]

For the University:

Name: s47F - Public Interest Conditional Exemptions - P  
Title: Assistant Manager, Jaeger Research Hub  
Address: Jaeger 8 Building, ANU, Acton ACT 2601  
Email: [rspe.rm@anu.edu.au](mailto:rspe.rm@anu.edu.au)  
Telephone: +61(2)61256589



**Item 16 Special Conditions**

(refer to clause 36)

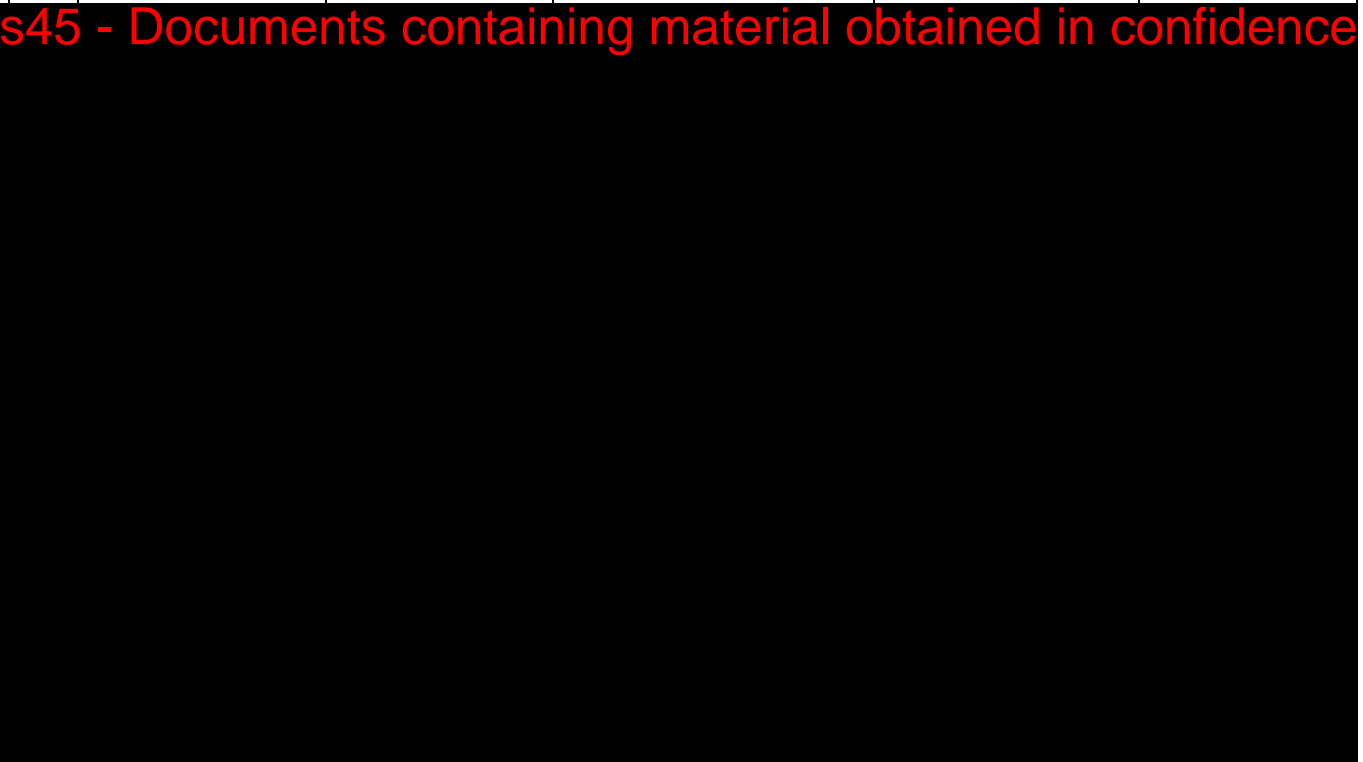
Not used.

**Item 17 Controlled Content Register**

(refer to clause 22)

Background IP					
No	Owner	Title of Background IP	Description of Background IP	Form of Background IP (eg document, email, CD)	Licence and Restrictions

s45 - Documents containing material obtained in confidence



The University will maintain a Controlled Content Register in the following format:

Background IP					
No	Owner	Title of Background IP	Description of Background IP	Form of Background IP (eg document, email, CD)	Licence and Restrictions
Foreground IP					
No	Owner	Title of Foreground IP	Description of Foreground IP	Form of Foreground IP (eg document, email, CD)	Licence and Restrictions
1					

2					
<b>Third Party IP</b>					
No	Owner	Title of Third Party IP	Description of Third Party IP	Form of Third Party IP (eg document, email, CD)	Licence and Restrictions
1					
2					
<b>Commercial in Confidence Information</b>					
No	Description	Why confidential	Party for whom the information is confidential	Date supplied	Date entered in register
1					
2					
<b>Security Classified Information</b>					
No	Description	Security Classification	Supplying Party	Date supplied	Date entered in register
1					
2					
<b>Export Controlled Items</b>					
No	Description	Country	Law	Restriction	Date entered in register
1					
2					

**SIGNED BY THE PARTIES AS AN AGREEMENT**

SIGNED for and on behalf of the  
**Commonwealth of Australia, as  
represented by the Defence Science  
and Technology Group of the  
Department of Defence (ABN 68 706  
814 312)**

on 19-MAR-20  
*insert date the agreement is signed*

by its duly authorised representative:

s47F - Public Interest Conditional Exemptions - Personal Privacy  
\_\_\_\_\_  
*Name of DST Group representative (print)*

Chief Cyber and Electronic Warfare Division  
*Position held by DST Group representative (print)*

In the presence of:

s47F - Public Interest Conditional Exemptions - Personal Privacy  
\_\_\_\_\_  
*Name of witness (print)*

s47F - Public Interest Conditional Exemptions - Personal Privacy  
\_\_\_\_\_  
*Signature of DST Group representative*

s47F - Public Interest Conditional Exemptions - Personal Privacy  
\_\_\_\_\_  
*Signature of witness*

SIGNED for and on behalf of the  
**Australian National University  
(ABN 52 234 063 906)**

on \_\_\_\_\_  
*insert date the agreement is signed*

by its duly authorised representative:

\_\_\_\_\_  
*Name of representative (print)*

\_\_\_\_\_  
*Position held by representative (print)*

In the presence of:

\_\_\_\_\_  
*Name of witness (print)*

\_\_\_\_\_  
*Signature of representative*

\_\_\_\_\_  
*Signature of witness*

**SIGNED BY THE PARTIES AS AN AGREEMENT**

---

SIGNED for and on behalf of the  
**Commonwealth of Australia, as  
represented by the Defence Science  
and Technology Group of the  
Department of Defence (ABN 68 706  
814 312)**

on \_\_\_\_\_  
*insert date the agreement is signed*

by its duly authorised representative:

b47F - Public Interest Conditional Exemptions  
\_\_\_\_\_  
*Name of DST Group representative (print)*

Chief Cyber and Electronic Warfare Division  
*Position held by DST Group representative (print)*

In the presence of:

\_\_\_\_\_  
*Name of witness (print)*

\_\_\_\_\_  
*Signature of DST Group representative*

\_\_\_\_\_  
*Signature of witness*

SIGNED for and on behalf of the  
**Australian National University  
(ABN 52 234 063 906)**

on 19 March 2020  
*insert date the agreement is signed*

by its duly authorised representative:

Prof Tim Senden  
*Name of representative (print)*

Director, Research School of Physics  
*Position held by representative (print)*

In the presence of:

b47F - Public Interest Conditional Exemptions  
\_\_\_\_\_  
*Name of witness (print)*

b47F - Public Interest Conditional Exemptions  
\_\_\_\_\_  
*Signature of representative*

b47F - Public Interest Conditional Exemptions - Personal Privacy  
\_\_\_\_\_  
*Signature of witness*