

**National Interest Analysis [2019] ATNIA 15
with attachment on consultation**

**Convention establishing the Square Kilometre Array Observatory
(Rome, 12 March 2019)
[2019] ATNIF 26**

NATIONAL INTEREST ANALYSIS: CATEGORY 1 TREATY

SUMMARY PAGE

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Nature and timing of proposed treaty action

1. The proposed treaty action is Australia's ratification of the *Convention establishing the Square Kilometre Array Observatory*, opened for signature on 12 March 2019 ('the Convention'). The Convention provides for the establishment of the Square Kilometre Array (SKA) Observatory (SKAO) as an international organisation with legal personality. On 12 March 2019, the Convention was signed by representatives from Australia, South Africa, the United Kingdom (UK), China, the Netherlands, Portugal and Italy. Other countries are expected to become parties to the Convention in the future.
2. The Convention will enter into force thirty days after five countries – including the three host countries: Australia, South Africa, and the UK – have ratified the Convention and deposited their instruments of ratification (Article 19(2)). Australia proposes to deposit its instrument of ratification as soon as practicable following consideration by the Joint Standing Committee on Treaties (JSCOT) and once all implementing measures are in place.

Overview and national interest summary

3. The SKA project is an international partnership to build and operate the world's premier, next generation radio astronomy observatory, which will be built in two phases – SKA1 (the current project) and SKA2 (a future project concept). The Convention provides that the SKAO will be a two-site observatory co-hosted by Australia and South Africa, with the Observatory headquarters to be located in the UK. Under the two-site observatory model the Australian and South African telescopes will observe the universe at different radio frequencies. Australia will host the SKAO's low-frequency telescope (SKA1-Low), which will detect radio frequencies of 50 MHz to 350 MHz, and consist of over 130 000 antennas. South Africa will host the SKAO's mid-frequency telescope (SKA1-Mid), which will detect radio frequencies of 350 MHz to 14 GHz, and consist of more than 200 dishes.
4. Australia's membership of the SKAO – particularly its status as a co-host and site of SKA1-Low – would bring significant scientific, economic, technological and human capital benefits. The SKAO will be the most powerful collection of radio telescopes in the world, permitting Australian scientists to access an international observatory to undertake ground-breaking research in astronomy and fundamental physics and providing an avenue for leveraging Australia's world-leading profile in radio astronomy research.
5. Pursuant to Article 19(2) of the Convention, it will be subject to ratification, acceptance or approval by signatory states (including Australia) in accordance with their domestic requirements.

6. The Convention will provide a framework for SKA Member countries (Members) to cooperatively undertake transformative scientific research, collaborating to explore fundamental questions in radio astronomy and physics. The anticipated membership of the SKAO includes Australia, the UK and South Africa as co-hosts, together with more than 10 countries from across Europe, Asia and North America that are engaging with the project.
7. The project is currently in the pre-construction phase, which is expected to be completed in mid-2020, and is being undertaken by the SKA Organisation, a company incorporated in the UK. The entry into force of the Convention will mark the point at which the SKAO comes into existence as an international organisation. Following this point there will be a transition from the SKA Organisation to the SKAO. The construction phase of the project will follow the establishment of the SKAO.

Reason for Australia to take the proposed treaty action

8. Australia's ratification of the Convention is a strategic opportunity for Australia to co-host a landmark piece of international science infrastructure, leveraging both Australia's status as a world leader in radio astronomy and its possession of an outstanding radio-quiet site. The SKAO is a multilateral collaboration that will build the world's premier, next-generation radio astronomy telescopes. It will be one of very few science facilities of global significance. Ratification of the Convention will further reinforce Australia's commitment to international cooperation in scientific and technological fields. The SKA would be a prominent feature of Australia's research infrastructure and a key asset in projecting the image of Australia as a technologically advanced nation.
9. Pursuant to Article 5(3) of the Convention, Australia will jointly with South Africa host SKA-1. For Australia, the benefits of hosting SKA1-Low include the development of new knowledge and intellectual property into commercial outcomes, and capacity building in emerging fields of significance such as big data (i.e. the generation and use of datasets whose size is beyond the ability of typically used tools to capture, store, manage, and analyse). Furthermore, the establishment of a world-leading observatory in Australia will grow human capacity and capital in the sciences and the broader workforce, particularly in fields related to data science and analytics.

Obligations

Establishment and status of the SKA Observatory

10. Article 2 provides for the establishment of the SKAO as an international organisation with legal personality. As a party to the Convention, Australia shall be a Member of the SKAO (Article 6(1)). States and international organisations may be admitted as Members of the SKAO (Article 6(1)) on the unanimous vote of the Council, and on such terms as it determines (Article 6(2)). Pursuant to Article 7, SKAO's organs will include the SKAO Council and a Director-General, assisted by staff.
11. Article 8 establishes the SKAO Council as the governing body of SKAO. Under Article 8(1), each Member shall appoint up to two representatives to the Council. One of these representatives must be authorised to act and vote on each Member's behalf.
12. Pursuant to Article 8(2), the Council shall be responsible for the overall strategic and scientific direction of the SKAO, its good governance, and the attainment of its purposes. The Council's

functions also include approving the policies, rules and regulations of the SKAO – including with regard to scientific, technical, financial and administrative matters – among other measures necessary for the functioning of the SKAO (Article 8(3)).

Privileges and Immunities

13. By virtue of Article 4, all Members are obliged to grant privileges and immunities to the SKAO, its staff, representatives and experts, for the purpose of facilitating the official activities (as defined in Article 1(j) of the Convention) of the SKAO, the delivery of its primary objective (as defined in Article 3(1)), and the mechanism for determining further objectives (as defined in Article 3(2)). These are elaborated upon in a treaty-level *Protocol on Privileges and Immunities of the Square Kilometre Array Observatory* (Annex A of the Convention). The privileges and immunities include, among other things, immunity of the SKAO, its Director-General, staff and their families, and of representatives from legal process with respect to official activities, with some exceptions (Annex A, Articles 2, 7(1)(a) and 8(1)(a)); inviolability of SKAO premises and archives (Annex A, Article 3), and official papers and documents of the Director-General, staff and their families, representatives and experts (Annex A, Articles 7(1)(d), 8(1)(b) and 9(1)); privileges for the Director-General, staff and their families with respect to immigration and public service (Annex A, Articles 7(b) and (c)); and exemptions for the SKAO, its Director-General, staff and their families from some direct and indirect taxation (Annex A, Articles 4, 5, 7(e)-(g)). Article 11(2) of Annex A also places a positive duty on the SKAO to waive any relevant immunity in cases where retaining such immunity would impede the course of justice and it can be waived without prejudicing the interests of the SKAO.

SKA Observatory membership and hosting

14. Article 5(3) states that Australia shall co-host SKA1, with the details of this hosting arrangement to be described in a technical document requiring the unanimous support of the SKAO Council (Council). Article 8(8) provides that the choice of Host Country may be amended, subject to Article 15, upon a unanimous vote of the Council.

SKA Observatory policies

15. Article 11 states that the SKAO shall have an Intellectual Property Policy. The SKAO's Intellectual Property Policy is at an advanced stage of drafting. It is envisioned that the document will be finalised in the second half of 2019.
16. Article 12 states that the SKAO shall have a Procurement Policy that will be implemented based on principles of Fair Work Return, transparency and competitiveness, and as approved by the Council by unanimous vote.
17. Article 13(1) states that the SKAO shall conduct its operations in accordance with an Operations Policy, as approved by the Council by unanimous vote.
18. Article 13(2) states that the SKAO shall have an Access Policy. Under this policy, the principle will apply that Members' and Associate Members' access to time on SKA telescopes and other SKA resources shall be proportional to their share in the project, unless decided otherwise by a unanimous vote of the Council (Article 13(3)).

Financial obligations

19. Article 10 obliges Members and Associate Members to make financial contributions according to agreed-upon funding schedules. The procedures for approval of funding schedules and project budgets are elaborated upon in a treaty-level *Financial Protocol of the Square Kilometre Array Observatory* (Annex B of the Convention). Funding schedules may be amended with the unanimous approval of all Members, in accordance with the Financial Protocol.
20. Article 17 states that the Council may decide, by a unanimous vote, to terminate the Convention. Termination of the Convention may occur at any time, but shall not take effect until the SKAO's obligations to the Host Countries have been fulfilled, including those obligations relating to the decommissioning of the SKA. Upon termination, assets shall be liquidated and distributed among Members pro rata to the contributions they have made as Members (Article 17(1)). Similarly, liabilities incurred by the SKAO shall be borne by Members pro rata to the financial contributions they have made as Members, effective the date of the decision to terminate. Should the obligations or liabilities incurred by the SKAO exceed total available funds, the Council shall, by unanimous decision, seek to increase each Member's contribution (Article 17(2)).

Dispute settlement and failure to fulfil obligations

21. Article 14 states that any dispute arising among Members or between the SKAO and Member(s) regarding the interpretation/application of the Convention that cannot be settled by negotiation shall – at the request of any of the parties – be referred to the Permanent Court of Arbitration, unless the parties to the dispute have agreed to another mode of settlement.
22. Article 18 states that the failure of a Member to fulfil their obligations arising out of the Convention – including the payment of financial contributions – shall be rectified by the Council. If the Member does not respond to the Council's request, the Council voting rights of that Member shall be automatically suspended. Article 18 also provides that other Members of the Council may decide to take further action as they consider appropriate, which may include a unanimous decision from other Council Members that a SKAO membership will cease.

Implementation

23. SKA1-Low will be constructed on sites located within the existing Murchison Radio-astronomy Observatory (MRO) Lease and Boolardy Pastoral Lease areas, which are currently leased and managed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). CSIRO will maintain its obligations under the MRO and Boolardy Pastoral Leases until these leases are consolidated under a single new lease (New Lease) to facilitate development and construction of SKA1-Low as part of the SKAO. CSIRO will hold the New Lease and manage the site for SKA1-Low on behalf of the Commonwealth. CSIRO will provide a sub-license to the SKAO that will allow them to construct and operate SKA1-Low on the New Lease. SKA1-Low will be spread across an area spanning 65km and will consist of more than 130,000 antennas. The SKA1-Low site is located in remote Western Australia around 800km north-east of Perth.
24. The model for on-the-ground implementation and operation of the Observatory is currently under development. During the pre-construction and construction phases of the project, the Department of Industry, Innovation and Science (DIIS) will continue to operate the Australian SKA Office (ASKAO), which is responsible for Australia's policy, planning and engagement

role in the SKA project. Following construction of the SKAO, it is anticipated that DIIS would maintain policy oversight of Australia's engagement with the SKAO in Australia.

25. Australia's obligations under the proposed Convention can be implemented without amending or creating new primary legislation. The conferral of domestic legal personality on the Square Kilometre Array Observatory and the privileges and immunities agreed by Member countries in the proposed Convention will be prescribed in regulations pursuant to the *International Organisation (Privileges and Immunities) Act 1963* (Cth). Further, item 418.043 of Schedule 1AA of the *Financial Framework (Supplementary Powers) Regulations 1997* provides legislative authority for the expenditure of funds in relation to SKA activities, including the Commonwealth's financial contributions under the Convention.

Costs

26. Article 10(2) states that Members and Associate Members shall make financial contributions in accordance with Funding Schedules that have been approved by the Council in accordance with the Financial Protocol of the SKAO. The Convention does not specify the hosting terms for the three Host Countries, which will be determined in detail through the decisions of the future Council and in hosting agreements between the SKAO and Host Countries. Note that the prescribed hosting terms will affect final costs. The currently estimated costs to Australia of co-hosting the SKAO are:
 - a. An indicative contribution of 14 per cent of the SKA Phase 1 capital and operations budgets, noting that these budgets have not yet been finalised;
 - b. Making the SKA site available for a minimum of 50 years, and providing management arrangements for it; and
 - c. Contributing certain Host Country infrastructure elements to the project, including some at Australia's expense.
27. Article 10(4) states that Members and Associate Members shall have shares in the SKA Project that are proportional to their total contributions.
28. A draft Indigenous Land Use Agreement (ILUA) has been negotiated with the Wajarri Yamaji people, the registered native title holders of the SKA1-Low site, which consists of both financial benefits and non-financial benefits packages.
29. As per Annex A Protocol on Privileges and Immunities of the SKA Observatory, the Convention exempts the SKAO, in the context of its official activities, from: direct taxation, with the exception of any charges for specific services rendered (Annex A, Article 4); value added tax on goods and services (Annex A, Article 5(1)); customs or excise duties and taxes on importation of goods (Article 5(2)). The Director-General and Staff of the SKAO discharging their functions in a Member State will enjoy exemptions from: domestic income tax on their salaries and emoluments (but not pensions and annuities) (Annex A, Article 7(1)(e)); and duties on the import and export of their furniture and personal effects, subject to some restrictions (Annex A, Article 7(1)(g)). Member States are not obliged to extend these privileges and immunities to their own nationals or permanent residents (Annex A, Article 7(2)). The proposed start date for the tax concessions is 1 July 2019. The tax concessions have an estimated cost of \$1 million over the forward estimates period.
30. Until the transition to the SKAO takes place in approximately 2020, Australia contributes approximately 17 per cent of the SKA Organisation's annual budget. This contribution is not an

obligation under the Convention, but is a cost Australia already bears as a member of the SKA Organisation.

Future treaty action

31. Pursuant to Article 15, any Member may propose an amendment to the Convention and its Protocols by providing the proposed amendment to the Director-General for circulation to all Members. After at least three months, the Chairperson shall convene a meeting of the Council to consider whether to adopt and recommend the amendment to Members. The Convention and its Protocols may then be amended upon recommendation by the SKAO Council. Any such amendments would be subject to Australia's treaty making procedures. Amendments enter into force for all Members 30 days after all Members have accepted them in accordance with their domestic requirements, and the last notification of acceptance of the proposed amendment has been received by the depositary.
32. Pursuant to Article 3, Australia will conclude a separate less-than-treaty status arrangement with the SKAO concerning Australia's hosting of SKA1-Low.

Withdrawal or denunciation

33. Article 16(1) provides that Members may withdraw at any time after ten years have elapsed from the date the proposed Convention enters into force.
34. Members may withdraw by giving written notice to the depositary on the condition that they have fulfilled their obligations, unless the Council decides to waive such obligations. Withdrawal shall become effective 12 months after the notice was received, unless the Council permits an earlier withdrawal.
35. A withdrawing Member shall remain liable for all direct and contingent obligations to the SKAO until the withdrawal becomes effective (Article 16(2)). A withdrawing Member shall have no claim on the assets of the SKAO or on the amount of financial contributions already made. A withdrawing Member shall not incur any new liability resulting from operations of the SKAO effected after the date on which the withdrawal notice is received by the depositary (Article 16(3)).
36. Article 17 provides that the Council may decide by a unanimous vote to terminate the Convention at any time. Termination shall not take effect until the SKAO's obligations to the Host Countries have been fulfilled, including those obligations relating to the decommissioning of the SKA. Upon termination, assets shall be liquidated and distributed among Members pro rata to the contributions they have made as Members (Article 17(1)). Liabilities incurred by the SKAO shall be borne by Members pro rata to the financial contributions they have made as Members, effective the date of the decision to terminate. Should the obligations or liabilities incurred by the SKAO exceed total available funds, the Council shall, by unanimous decision, seek to increase each Member's contribution (Article 17(2)).

Contact details

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ATTACHMENT ON CONSULTATION

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CONSULTATION

Australia-New Zealand SKA Coordination Committee (ANZSCC)

37. The Australia-New Zealand SKA Coordination Committee (ANZSCC) is a committee established by the Australian Government, New Zealand Government and the Government of Western Australia, for the purpose of enabling cooperation and coordination at officials' level on matters related to the Square Kilometre Array (SKA) project. The ANZSCC has been consulted in detail on the treaty action.
38. The ANZSCC meets twice a year with a membership that represents: the Australian Government (Department of Industry, Innovation and Science); the New Zealand Government (Ministry of Business, Innovation and Employment, NZ); the Western Australian Government (Department of Jobs, Tourism, Science and Innovation); the Commonwealth Scientific and Industrial Research Organisation (CSIRO); the International Centre for Radio Astronomy Research (ICRAR), Astronomy Australia Limited. The university sector is also represented, with members from the Australian National University, the University of Western Australia, and Curtin University.
39. There are several committees that report to the ANZSCC, which represent several additional key stakeholder groups that meet regularly. The Science Advisory Committee represents the science community; the Australian SKA Industry Cluster represents industry; and the Regional Stakeholders Group represents regional stakeholders, including Indigenous stakeholders.
40. The ANZSCC provides input to Australia's representatives on the SKA Organisation Board (the Board) and the Council Preparatory Taskforce (CPTF), both of which are responsible for undertaking planning of the SKA project in the lead-up to construction. Both the Board and the CPTF represent a significant avenue for international consultation.

State/Territory Consultation

41. Australian State and Territory Governments were informed of negotiations through the Commonwealth-State-Territory Standing Committee on Treaties (SCOT). No requests for further information or comments on the Convention were received from State and Territory Governments.

Consultation with Traditional Owners

42. The Wajarri Yamaji people are the registered native title holders of the SKA1-Low site. The negotiation of an Indigenous Land Use Agreement has involved extensive engagement with the Traditional Owners, in addition to the SKA's program of engagement with Indigenous and regional stakeholders.

Stakeholder Consultation

43. The Department of Industry, Innovation, and Science undertakes an ongoing program of consultations with scientific and regional stakeholders associated with the SKA project, individually and through established frameworks such as the ANZSCC. Specific stakeholders include CSIRO, the university sector, the Australian astronomy community, and regional and Indigenous stakeholders. These groups were consulted on the development of the Australian SKA business case, which has underpinned the development of the National Interest Analysis; and were informed of the treaty action through the ongoing program of consultation and engagement.