

Project Endorsement Form

1. PROJECT TITLE

Full title	NEKTON INDIAN OCEAN MISSION 2018-2021
Acronym	
Website	www.nektonmission.org
Keywords (up to 10, describing the project research)	Indian Ocean, Scientific Research, Capacity Development, Public Engagement, Ocean Literacy, Ocean Policy
New initiative or continuing programme?	Continuing programme to research the state of the ocean. New Initiative focused on the Indian Ocean.

2. APPLICANTS

Lead applicant / Project Leader / key research contact person:

First name	Oliver
Last name	Steeds
Affiliation	Nekton Oxford Deep Ocean Research Institute
Postal address	Begbroke Science Park, University of Oxford, Woodstock Road, Oxford, OX5 1PF, United Kingdom
Country	UK
Telephone	+44 1865 309685
Email address	oliver@nektonmission.org
Institutional or personal website	www.nektonmission.org

Other key participants / research team leaders: (repeat as needed)

First name	Professor Alex
Last name	Rogers
Role in the project	Science Director
Affiliation	University of Oxford
Country	UK
Email address	alex.rogers@zoo.ox.ac.uk
Institutional or personal website	http://www.zoo.ox.ac.uk

N.B.: Please note that all these names and contact details will be added to the IIOE-2 membership database.

3. ABSTRACT– Brief description of the project: (1/4 page maximum)

This will be placed on the IIOE-2 Website after endorsement.

The Nekton Indian Ocean Mission is a major global scientific collaboration that aims to create a step change in our knowledge of the Indian Ocean and catalyse its sustainable governance.

The Mission consists of six research cruises in six distinct regions of the Indian Ocean from West (Mozambique Channel and Seychelles), to Central (Chagos and Maldives) and East (Andaman and Sumatra). The Mission combines four major activities – scientific research, capacity development, advancement of policy and public engagement - to deliver the

IIOE-2 Joint Project Office (JPO)

Perth Australia Node
IOC Perth Programme Office
c/o Commonwealth Bureau of Meteorology
3rd Floor, 1 Ord Street
West Perth, Western Australia, 6005, Australia.
Phone: +61-8-92262899
Email: nick.d'adamo@bom.gov.au

<http://www.iioe-2.incois.gov.in>

Hyderabad India Node
Indian National Centre for Ocean Information Services (INCOIS)
Pragathi Nagar
Hyderabad, Telangana 500 090, India.
Phone: +91-40-2388 6142
Email: rajan.s@incois.gov.in

greatest coordinated impact.

The Mission will conclude with a State of the Indian Ocean Summit in November 2021.

The objectives are:

- **Scientific Research:** To create a step change in our knowledge and understanding of the Indian Ocean with the first baseline of its deep-sea marine life and impacts of human activity.
- **Capacity Development:** To develop a legacy of human capacity in marine science, conservation and ocean management across the Indian Ocean.
- **Catalyse Policy:** To enable the designation of newly protected areas of the Indian Ocean and improved Indian Ocean management.
- **Public Engagement & Education:** To inspire local and global audiences with greater ocean awareness giving decision makers a greater public mandate to act.

The Mission will be delivered with the Nekton Alliance –local, regional and international partners combining marine science, technology, conservation, education and media and collaborating with a shared and common purpose to explore and accelerate the sustainable governance of the Indian Ocean.

4. LINKS TO IIOE-2 SCIENCE PLAN: (1/2 page maximum)

How do you anticipate your project to contribute to the IIOE-2 strategy and science delivery, with reference to which (either one or more) of the six IIOE-2 Science Plan themes that your project responds (The IIOE2 Science Plan and the Implementation Strategy Document are available at http://iioe-2.incois.gov.in/IIOE-2/pdfviewer_pub.jsp?docname=IIOE-2-DOC_AD_2.pdf and http://iioe-2.incois.gov.in/IIOE-2/pdfviewer_pub.jsp?docname=IIOE-2-DOC_AD_3.pdf respectively). Please state the specific issues and questions addressed by your project in the context of the IIOE-2 Science Plan themes and key issues.

The Mission contributes and is aligned to the IIOE-2 Science Plan and wider strategy:

- **WG-1: Science Research:** Science Aims 1 (Human benefits and Impacts) and 6 (Unique geological, physical, biogeochemical and ecological features). Many of the Mission's other data collection activities, notably ocean mapping, CTD data and water chemistry data will contribute to Aims 2,3,4 and we aim to work with IIOE-2 to further integrate and align scientific research objectives.
- **WG-2: Data and Information Management:** Nekton has a policy of open-access publication of all data through OCTOPUS, deployment of standardized protocols and framework for all multi-disciplinary research and data analysis (Nekton Protocol), accelerated timeframe for analysis and publications (Grants, Taxonomic Acceleration Workshops). OCTOPUS stands for Ocean Tool for Public Understanding and Science and is an open-access platform for marine data of all types and will include tools for data analysis. It will be launched in October.
- **WG-3: Capacity Development:** Grants, involvement of local and regional scientists and ocean managers across all aspects of the Mission including Mission planning, Taxonomic workshops, data analysis and publication, Policy Workshops, State of the Indian Ocean Summit, Indian Ocean Ambassador Programme (see below), and exchange programmes with Nekton Oxford Deep Ocean Research Institute and the University of Oxford.
- **WG-5 & WG-6: Outreach & Communication and Translating Science for Society** (see Nektonmission.org and achievements from Nekton Mission I). Nekton will deliver a comprehensive and coordinated communications

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initiative with Indian Ocean Ambassadors at the heart who receive outreach training and resources to become leading Ambassadors for their ocean region including public engagement through the media, schools and government. Tier 1 global news media and local/regional media organizations invited to participate and report on the Mission, production of film content (including 360 VR, documentaries), live updated Mission website, participation in local, regional and international events and a comprehensive new educational initiative with freely distributed resources linked to curricula across the Indian Ocean Region.

5. INTERNATIONAL COLLABORATION(S):

Is the project part of a related multi-national activity? **YES**

If No, would you welcome international collaboration in your project? **YES/NO**

6. REGION(S) OF STUDY

Provide a description of 'where' the research is to be conducted (for field based activities) and/or the region or regions to which the research pertains (you are encouraged to consider providing either the coordinates of the area of studies or the coordinates of the planned cruise tracks, as well as a figure as an addendum to your proposal).

The Mission will undertake scientific research supported by integrated capacity development, ocean governance and public engagement and education initiatives across key locations spanning the central Indian Ocean from the west to the east. Emphasis will be on understanding the distribution of biodiversity from the surface to 3000m depth and its environmental drivers. Six main locations – two in each region of the Indian Ocean – have been identified to undertake collaborative research. The proposed operational dates have been selected for projected optimal weather patterns and could be subject to change depending on partner requirements and availability of ship assets.

Location	Port – mob/demob	Suggested Date / Year	Operational days (incl. mob/demob)	Estimate distance (Nm)
Chagos	Male	Oct to Dec 2018	45	926
Maldives	Male	Oct to Dec 2018	45	473
Seychelles	Victoria	March to May 2019	45	622
Mozambique Channel	Victoria	April to May 2019	45	1710
Andaman & Nicobar	Phuket	May to July 2020	45	1229
Sumatra	Phuket	May to July 2020	45	1756

6. TIMETABLE OF THE PROJECT

Start date: Public Launch May 2018, First Mission:
October 2018

End date: State of the Indian Ocean Conference,
November, 2021

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7. LINKAGES WITH OTHER PROJECTS / PROGRAMMES / INITIATIVES

Is the project part of a related national or multi-national activity?

If yes, provide the related activity title and website for reference, if available:

The Nekton Indian Ocean Mission 2018 to 2021 is time-limited and geographically-bound in operation with specific, contained and measurable outcomes. The Mission represents a continuation of Nekton's global aim to undertake scientific research across the global ocean to accelerate sustainable ocean governance. Nekton's first Mission, the XL Catlin Deep Ocean Survey (2016-2018) piloted a new multi-disciplinary standardised framework for marine research that will be launched at Our Ocean, Malta in October 2017 and will be deployed during the Mission. The Protocol has been authored by 15 leading marine, enables comparative analysis of ocean data, accelerates productivity of field research and analysis, delivers actionable data to catalyse ocean governance and is published with best-practice technical guidelines. Further details of the Protocol and Nekton's Achievements from Mission 1 will be distributed to the Steering Committee of the IIOE-2 and will be published on the Nekton website from September 2017.

Is your project part of, or affiliated to, another SCOR, IOC or IGOOS activity or project?

If "yes", please indicate which activity or project:

No, Nekton has not yet approached any of these programmes for affiliation.

8. DATA MANAGEMENT AND SHARING

1. Will new data be collected as part of this project? **Y**

All data will be published and open-sourced on OCTOPUS (The Ocean Tool for Public Understanding and Science) <https://octopus.zoo.ox.ac.uk/dev/> (Beta test version).

OCTOPUS dynamically harvests, harmonises and manages open data on the state of the oceans globally. Its applications inform how the oceans are changing over time to support scientific study, policy and decision-making for improved management. The design and development began in March 2016 with funding from the Oxford Martin School. OCTOPUS hosts 59 thematic layers currently containing more than 97 billion data points related to ocean biodiversity (e.g. species occurrence records, habitat suitability, ecosystems, etc.), administration (e.g. Exclusive Economic Zones, Marine Protected Areas, Regional Fisheries Bodies, etc.), oceanography (e.g. water temperature, salinity, currents, etc.), human impact (e.g. ship traffic density, coral bleaching, ocean acidification, etc.) and ecosystem services (e.g. fish catches, natural hazard mitigation, etc.). OCTOPUS will be used to study the geographic distribution of biodiversity, ecosystem services and risks to the environment in support of the negotiations on a new implementing agreement for UNCLOS to protect biodiversity on the high seas.

OCTOPUS will be launched publicly in early 2018, and developed for end-users across science, politics, and the general public. New tools and applications include a series of new actionable datasets to inform policy on ocean managements

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along with new models and maps of species distribution, ecosystem services and human impact. In addition, gaps in scientific knowledge will be identified to inform locations to prioritise research and improved management initiatives.

2. Contact information if any, of the person in charge of the data management from whom the metadata can be accessed by interested IIOE-2 stakeholders.

Please note that for all IIOE-2-endorsed projects, IIOE-2 will have developed its own metadata portal. Once the project is endorsed, the project leader will be asked to provide the metadata information of the project.

Please contact Professor Alex Rogers, University of Oxford, Nekton Science Director (details above). We do note that all metadata will be available on OCTOPUS.

3. Recognizing the need for an initial period of exclusive data use, would you be willing to provide timely access to all data generated under this project and associated metadata in accordance with relevant national and funding agency data sharing policies?**YES**

9. FUNDING

Please note that IIOE-2 strongly encourages funded/resourced projects. However, IIOE-2 may endorse projects yet to receive funding/resourcing if IIOE-2 endorsement can be clearly shown to significantly aid in prospects for funding/resourcing.

Has funding and resources to successfully achieve and undertake the project been obtained? Indicate the sources of funding and resources that have been approached and/or secured.

Since launch 2016, Nekton has successfully raised £3.8m (£2.3m of funding and £1.5m VIK). Kensington Tours have become Nekton's launch partner for the Indian Ocean Mission (funding levels are subject to an NDA). Significant cost areas for the Mission still need to be finalised, notably around the research vessel(s) which will either be utilised through partnership (value-in-kind contribution reducing the Mission costs) or will need to be chartered. Costs can then be finalised and further funding will then be secured.

Nekton is already actively engaged in fundraising with 150 different leads currently including individual philanthropists, Foundations and Corporates operating at different tiers (Founding, Official, Operations) and offered different benefits including Title Rights, rights of association and branding. A sponsorship agency has been engaged to develop corporate partnerships. With a very strong product, supported by a proven team, Trustees and world-leading Advisory Board along with proven and established partners and funders in place, the tangible success and output from Mission I, Nekton are confident in securing the remaining funds.

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10. BENEFITS FROM IIOE-2 ENDORSEMENT (1/4 page maximum)

Specify why you are seeking endorsement and how the activity would benefit from endorsement, and how the IIOE-2 SC could assist in the implementation of your project.

Endorsement from the IIOE-2 would demonstrate strong alignment to the objectives of IIOE-2's wider programme along with clear evidence that the Nekton Mission is a major collaboration with local, regional and international partners to provide leadership and legacy to the region.

Specific areas of assistance from the IIOE-2 SC include:

- Further alignment with IIOE-2's strategic objectives across scientific research, capacity development, ocean policy and public engagement initiatives to specific measurable outputs.
- Identification of local, regional and international research vessels and marine research institutes interested in collaborating with Nekton during research cruises.
- Identification and introductions to key local and regional partners to participate and lead in scientific research, capacity develop, ocean policy and public and engagement initiatives.
- Advice, guidance and co-development of pre-Mission reviews of existing scientific research, capacity development, ocean policy and public and engagement initiatives to identify specific gaps and define programmatic goals with measurable outcomes with local and regional partners.
- Engagement with other scientific research initiatives involved in IIOE-2 to create alignment with research parameters and protocols and enable comparative analysis of all ocean data. If required and appropriate to share the Nekton Protocol as a suitable standardised multi-disciplinary framework for marine research projects as part of the IIOE-2.
- Invitation to all other participating organisations and programmes to participate in the State of the Indian Ocean Conference in November 2021.

11. OPTIONAL: OTHER COMMENTS/INFORMATION/MATERIAL (length and detail may be at the discretion of and as deemed necessary by the applicant)

Please feel free to provide any other comments, information or materials that you feel relevant to your proposal for the IIOE-2 Steering Committee's information and benefit. You may provide this as general information or provide the additional comments/information/materials as relevant to any of the specific Sections above.

Nekton provides an element of deep-sea ecology to the IIOE2 that significantly enhances the overall programme and speaks especially to Science Aims 1 and 6. To this end Nekton and IIOE2 are highly complementary. Alex Rogers has already participated in three major cruises to the Indian Ocean region, one off the coast of Oman working on the oxygen depleted zone and two over the South West Indian Ridge focusing on pelagic and benthic ecology (see recent thematic volume 136 in Deep-Sea Research II). The University of Oxford is also participating in a project describing the biodiversity of the coral reefs of British Indian Ocean Territory as well as working on coral disease in the same location. Alex Rogers has also participated in a recent meeting led by Greg Cowie to put together a strategic bid for work in the Indian Ocean to NERC in support of IIOE2.

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