



SUBSEA INNOVATION CLUSTER AUSTRALIA SICA

BUSINESS PLAN & STRATEGY
OCTOBER 2017

Table of Content

1	INTRODUCTION	3
1.1	CLUSTER GOALS, VISION & OBJECTIVES	3
1.2	RELATIONSHIP BETWEEN SICA, SEA AND SUT	4
2	STRATEGIC PLATFORM	5
2.1	REGIONAL OPERATIONAL CHALLENGES	5
2.2	IMPROVE SME'S INDUSTRY ENGAGEMENT	6
2.3	EXPANDING THE MARKET	6
3	SICA ACTIVITY PROGRAM.....	8
3.1	SYSTEMS AND SOLUTIONS	8
3.2	NEW PRODUCTS, SERVICES OR TECHNOLOGICAL SOLUTIONS	9
3.3	MARKETING	10
3.4	FACILITIES & INFRASTRUCTURE.....	10
3.5	GLOBAL CLUSTER LIAISON	10
3.6	STANDARDISATION FORUMS	11
3.7	EXTERNAL COLLABORATION	11
3.8	REGULAR CLUSTER FORUMS	11
4	CLUSTER ORGANISATION	12
4.1	STEERING COMMITTEE	12
4.2	CLUSTER MANAGER	13
4.3	CLUSTER TEAM	13
4.4	PARTNERSHIP	14
5	CLUSTER FINANCING	16
5.1	PARTNERSHIP FEES.....	16
5.2	FURTHER FUNDING OPTIONS	17
5.3	GUIDANCE & SUPPORT FOR EXTERNAL/GOVERNMENT FUNDING	17
6	REPORTING	18
	APPENDIX A – SUBSEA INDUSTRY CHALLENGES	19
	APPENDIX B – SUBSEA IMR DEFINITION	20
	APPENDIX C – CLUSTER MANAGER JOB DESCRIPTION	21

1 Introduction

A recent Subsea Energy Australia (SEA) survey of the Australian subsea oil and gas sector showed that there are over 50 companies operating in Australia that provide equipment or services (directly) into the subsea inspection, maintenance & repair ('IMR') sector. Whilst the total size of the Australian oil and gas services market is expected to decline from its high of \$29.3 billion in 2014 to \$23.1 billion by 2020, the IMR sector is expected to grow from \$3.5 billion to \$4.6 billion (32%) over that same period¹.

The unique operating environment in Australasia, by virtue of its remote operations and ambient conditions, presents opportunities bespoke to the region. Australian operators, service companies and research institutions alike have developed specialised knowledge and skills making them industry leaders in subsea IMR, particularly to the Asian sector. In order to leverage this, a group of Australian companies, together with a number of research institutions, have decided to form an Innovation Cluster² ('cluster'), the Subsea Innovation Cluster Australia ('SICA'), to be operated and managed in Perth, WA. The initial focus of SICA will be the subsea IMR sector. However, it is anticipated as this cluster grows, it will expand it's focus to other subsea sectors where the Australian industry displays unique capabilities and competence.

1.1 Cluster Goals, Vision & Objectives

The goal for the cluster is to improve growth and revenue opportunities for participating Australian based subsea IMR companies by:

- Stimulating innovation and technology development through collaboration and improved understanding of operator subsea IMR needs;
- Facilitating better subsea IMR technology development through closer links between industry and Australian research institutions;
- Attract and develop competence by ensuring Australia is the go-to location for experts and researchers in subsea IMR associated fields;
- Providing enhanced access to government R&D funds through an improved ability to collectively conceive of, bid for, and manage research linked subsea IMR technology projects;
- Stimulating prospects for exporting subsea IMR products and services, with a strong focus on the Asia Pacific region, through collective business development, marketing and branding of the cluster;
- Allowing participant cost savings through the promotion of shared test facilities, R&D infrastructure, expertise, ideas and business support;
- Offering a platform for the operators to better communicate their subsea IMR needs while providing improved opportunities for members to communicate their ideas and capabilities to the operators;

¹ Accenture's report "Ready or Not? Creating a world-leading oil and gas industry in Australia", 2015.

² For definitions and guidelines on Innovation Clusters, refer to NERA document: "Energy Resources _Innovation Clusters Guidelines_draft.pdf"

- Facilitating opportunities beyond oil & gas in areas such as defence, subsea mining, aquaculture and offshore renewable energy by creating opportunities for alternative industries to come together with the subsea IMR sector;
- Review opportunities and benefits of standardising subsea IMR contracts, procedures and interfaces in the Asia Pacific region;
- Facilitate interaction with other subsea clusters, such as Norway's GCE Subsea Cluster, to seek areas for more global opportunities for subsea IMR collaboration.

VISION	To be the Asia Pacific center of expertise in subsea IMR technology and services. SICA will bring together companies across the whole value chain, attracting capital, knowledge and skilled individuals.
OBJECTIVE	Collaboration to strengthen SICA's competitive advantages to realise sustainable growth and value creation for the IMR sector both in the regional market and globally.

1.2 Relationship between SICA, SEA and SUT

Since SEA's inception in 2008 it has increasingly played a key role in coalescing the subsea sector. It has a substantial member base and has established itself as a respected body for representing the subsea oil and gas sector. It is therefore important that SEA continue to play a key role in the establishment and nurturing of the proposed Australian subsea IMR cluster. There is no value in duplicating effort or having one organisation inadvertently adversely impact the other. Therefore the proposed subsea IMR cluster will continue to work closely with SEA, particularly during its initial setup and consolidation period, to ensure its charter dovetails with the SEA charter.

The Society for Underwater Technology (SUT) also plays an important role in the Australian subsea sector. SUT is a non-commercial, learned body whose focus is on technical knowledge sharing in the subsea oil and gas sector. While knowledge and skills sharing is a desired outcome of collaboration, the proposed cluster management will ensure that any knowledge and skills sharing programs are managed in harmony with SUT.

2 Strategic Platform

The process for developing this strategic platform has been extensive and inclusive, involving a large number of the suppliers and end users involved in the subsea IMR sector. Through this process, SICA has identified opportunities to strengthen collaboration, innovation and the market expansion of the Australian subsea sector.

The strategic platform presented here is deeply rooted in SICA – it represents the shared understanding of the goals and strategies for further cluster development. It is also understood by the cluster members that these goals and strategies may be updated as the cluster develops.

Key elements of SICA are to develop stronger interaction between industry/corporate players, R&D/Academia and government. Fostering entrepreneurship and attracting capital are important elements to increase innovation.

Figure 1: Innovation Ecosystem Stakeholder Model (Source: MIT-REAP)

illustrates the link between all these five components.

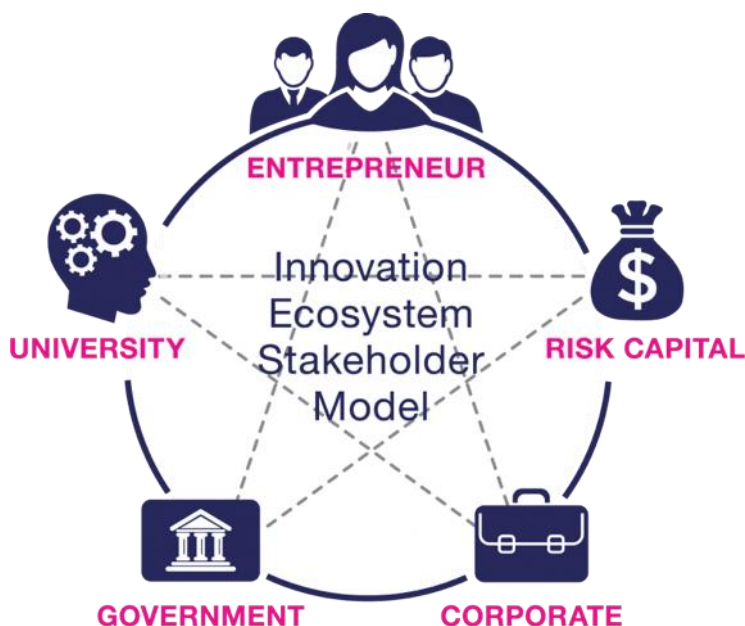


Figure 1: Innovation Ecosystem Stakeholder Model (Source: MIT-REAP)

The following 3 key strategic program areas have been established to form the Strategic Platform of SICA. In the process of developing this program, 8 challenges facing the Subsea IMR sector were identified. Summaries of these challenges are listed in the Appendix (Subsea/Industry Challenges).

2.1 Regional Operational Challenges

Addressing challenge items #1, 2, 3, 4, 7 and 8

SICA will develop technologies, solutions and services to solve the unique challenges faced by the industry in Australia and the Asia/Pacific region. We will better understand these challenges and identify, develop, test and make commercially available methods and technologies for mitigation and remediation of these challenges.

A strong focus will be on identifying solutions that will assist in driving down costs.

This will require close collaboration between industry players and between industry and relevant research institutions. Strong focus will be on developing trust within the cluster and between the cluster members and these research institutions. We will strengthen the cluster's innovation capabilities with emphasis on improving existing and where relevant, creating new joint R&D test facilities. ^[1]_{SEP}

SICA will develop a streamlined process for accessing additional industry and public research funding to support the collaboration and to strengthen the innovation capabilities of the members and their supporting partners.

SICA will also expand the collaboration with world-class clusters in other regions to ensure we have access to existing "best available technology".

2.2 Improve SME's Industry Engagement

Addressing challenge items #3, 4, 5 and 6

SICA will work with the SME's to strengthen their position in the regional market and establish a service program with focus on value proposition and market opportunities.

SICA will help member companies improve their business models and assist in identifying services or products that could be added to their value offering. This may include creating collaborative links and partnerships with international service/technology providers wanting to enter the Australian region.

SICA will develop processes and a framework to attract investors and funding to the entrepreneurial SME's.

SICA will establish collaborative relationships with the larger Tier 1 contractors and the operators (end customers) to ensure increased visibility for the member companies. A closer relationship between the cluster and the end customer will provide better guidance and feedback, improving the value proposition of the member companies.

2.3 Expanding the Market

Addressing challenge items #1, 2 and 5

SICA will identify key alternative sectors for cluster members to offer their technologies, services and solutions.

Examples of alternative sectors can include, but are not limited to;

- Subsea markets in South East Asia/ Asia Pacific (see figure 2 below)
 - It is recognised that these subsea markets have similar challenges to the Australian subsea industry and the cluster members can therefore capitalise on deliverables

from “programme 1 - Regional Operational Challenges”. The focus will be on collaborative marketing and improving the value proposition.

- Other industries include aquaculture/fish farming, offshore renewable (wave energy) and the navy. The focus will be on raising the awareness of the possibilities and potential in utilising subsea technology and the knowledge base in these related industries. Other areas of engagement will include;
 - Identify opportunities for collaborative research and technology development to solve current and future challenges faced by these industries.
 - Expand collaboration with world-class clusters and research centres within these other industries.

SICA’s resource base will lay the foundation of industry crossovers and entries into these new markets. The cluster will facilitate multidisciplinary collaborations between companies, industries and competencies to ensure these new market entries are successful.

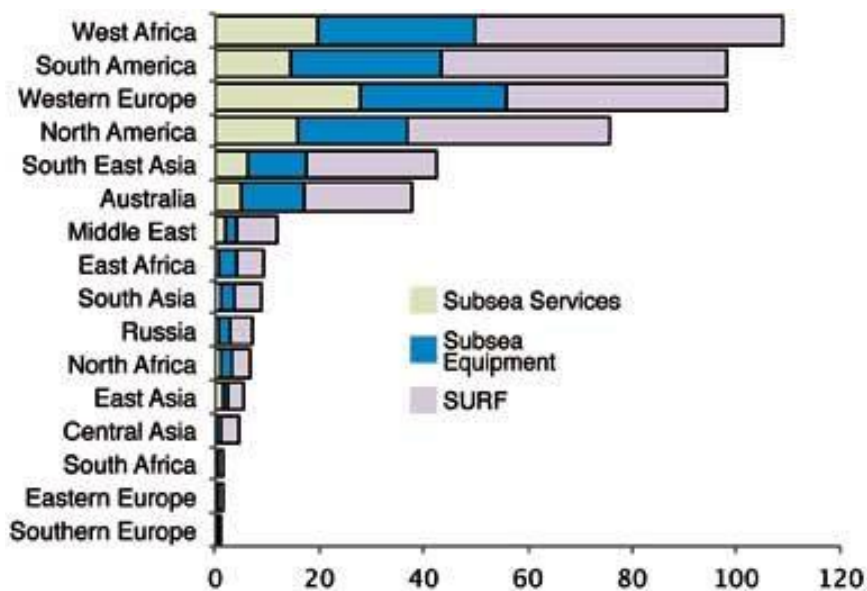


Figure 2: Global E&P subsea expenditure 2014-2020 [\$ billion] (Source: Rystad Energy)

3 SICA Activity Program

The proposed cluster will be focused on technology, products and services that directly relate to the inspection, maintenance or repair of subsea assets (refer Appendix B for a definition of IMR). This will not only include the oil and gas sector, but may also include synergistic areas such as defence, subsea mining, aquaculture and offshore renewable energy.

The activities are expected to be more clearly defined by the early members over the initial 6 months of cluster start-up. It will be focused on activities with clearly defined short and medium term outcomes.

Cluster Activity Teams (CATs);

SICA will establish short term temporary task forces, *Cluster Activity Teams* ('CATs'). Those members with passion for an issue/activity will participate in relevant CATs. These CATs will become the main engine for the cluster's initial activities.

Proposed salient activities of the cluster management are shown in the table below and outlined in detail in the following sections.

Table 1: SICA Activity Program

Activity	Est start	Est Duration
1. Systems and Solutions	Jan 2018	6 months
2. New Products, Services or Technological Solutions		ongoing
2.1. Operator, Contractor & OEM Workshops	Feb 2018	3 months (repeated)
2.2. Sub-Domain Workshops	Apr 2018	12 months
2.3. Group Projects	Jun 2018	ongoing
3. Marketing	Feb 2018	ongoing
4. Facilities & Infrastructure	Mar 2018	6 months
5. Global Cluster Liaison	Mar 2018	ongoing
6. Standardisation Forums	Oct 2018	ongoing
7. External Collaboration	Jan 2019	6 months
8. Regular Cluster Forums	Jan 2018	ongoing

3.1 Systems and Solutions

Addressing all 3 strategic program areas.

SICA will work with members to develop systems and solutions to support collaboration and facilitate trust between members. This may include:

- Standard membership contract;
- Standard IP framework agreements;
- Agreements for sharing test facilities/R&D infrastructure;
- Establish a framework to assist in attracting investors and funding entrepreneurial SMEs;
- Members only online portal to facilitate sharing of problems/challenges, documents etc.

The standardised agreements will need to be prepared very early in the SICA setup phase and will require the support of an external lawyer.

3.2 New Products, Services or Technological Solutions

Addressing strategic programs 2.1 (Regional Operational Challenges) and 2.2 (Improve SME's Industry Engagement).

3.2.1 Operator, Contractor & OEM Workshops

SICA will work to identify ideas for new products, services or technological solutions needed by the industry through organisation of workshops/forums with cluster participants, operators and major contractors/OEMs to allow them to communicate their challenges and for participants to present their ideas and capabilities.

It is anticipated that early first year workshops would bring together groups of subsea IMR personnel from the operator's organisations. Based on the Pareto principle, the initial 1-2 workshops would use the operators experience and expertise to help identify the 20% of challenges within IMR that could have an (80%) impact on the cost of annual IMR.

While operators generally recognise where their money is spent in macro terms, they don't always have knowledge of the micro cost breakdowns and where significant savings can be made within project scopes. Therefore the early workshop process should be repeated with contractors/OEMs and SMEs to identify further high impact challenge areas. It is expected that there be a further 2-3 workshops in this category in the first year.

The goal of these workshops is to distil an ordered list of potential IMR sub-domain project topics for further review. To maximise the output of the workshops, an experienced workshop facilitator is considered essential.

3.2.2 Sub-Domain Workshops

Continuing on from the activities in section 3.2.1 above, SICA will organise workshops with participants and research institutions focused on key subsets of the IMR sector to develop ideas for group R&D projects which can in turn facilitate the development of proposals to seek government or joint industry funding where appropriate.

Based on the ordered list derived from 3.2.1, SICA anticipate facilitating workshops comprising a cross section of contractors/OEMs, SMEs and researchers with sub-domain knowledge to review the potential project topics. Depending on the breadth of sub-domain topics, it is anticipated that some of the workshops could review more than one topic in a session.

SICA anticipate that there will be approximately 8 sub-domain workshops held in the first year with a list of at least 6-8 project topics generated as an outcome.

3.2.3 Group Projects

From the sub-domain workshops a number of project groups will be established. Each project will establish a steering committee and would typically be managed by an external consultant for the project duration. Early activities of each project group would include:

- Select and employ a suitable project manager;
- Clearly define the project parameters and expected outcomes;
- Define the project budget and schedule;
- Establish project funding (via industry, CRC-Projects, SICA funds as appropriate etc);
- Ensure project specific agreements (covering IP etc) are established.

The Cluster Manager will guide and assist the establishment of each project, oversee project budgets and facilitate the reporting of government co-funded projects as required. It is anticipated that while

up to 8 project steering committees may be formed within the first year, only approximately 4 projects will achieve funding to move to the research phase.

3.3 Marketing

Addressing strategic program 2.3 (expanding the market).

A salient feature of the cluster is its potential to boost the profile of all member companies in the global market through a unified offering of complementary products, services and competence. This is facilitated through a strong marketing effort. Therefore SICA, in conjunction with SEA, will undertake marketing activities for the cluster, including:

- cluster web site, social media platforms and newsletters;
- development of strong cluster branding;
- compilation of a comprehensive SICA and SEA member company skills and capabilities matrix;
- participation in conferences and exhibitions such as AOG, APPEA, Asia Pacific Petroleum Conference etc.

These activities are high priority for the cluster and will be undertaken early in the first year in collaboration with SEA.

3.3.1 Overseas Exhibitions & Trade Delegations

SICA as directed by the members, would assist in the organisation (either through Austrade or directly) of overseas exhibitions and trade delegations. This would be undertaken in conjunction with SEA.

3.4 Facilities & Infrastructure

Addressing strategic program 2.1 (Regional Operational Challenges).

SICA will facilitate the preparation of a comprehensive list of member's test facilities/R&D infrastructure that may be shared. This has the potential to lower development costs by allowing for a better use of available capital investment funds by reducing test facility repetition amongst member companies. This activity will require:

- Survey of all cluster members on available test facilities/R&D infrastructure along with:
 - Constraints for access (security, availability, training requirements etc);
 - Salient contractual requirements, including indemnity provisions;
 - Costs.
- Compilation and publication of the detailed matrix;
- Preparation of a standardised contract for cluster member access.

This activity is considered to be of high priority and therefore it would be expected that this activity will commence soon after the cluster is established.

3.5 Global Cluster Liaison

Addressing all 3 strategic program areas.

In the same way collaboration amongst a group of Australian companies via this proposed cluster is considered advantageous, it is also likely to be beneficial to collaborate with other related/similar clusters around the world (e.g. GCE Subsea in Norway). Other clusters have access to resources, skills, experience that could benefit SICA (and SICA could equally benefit them). Therefore the

Cluster Manager will liaise regularly with other appropriate clusters and would initiate MOUs to facilitate closer links.

It would be advantageous for the Cluster Manager to visit the other related global clusters (e.g. GCE Subsea Norway) to gain a better appreciation of how they operate and to forge closer ties. It is anticipated this activity will be undertaken in the first 6 months of operation.

3.6 Standardisation Forums

Addressing strategic program 2.1 (Regional Operational Challenges).

SICA will facilitate forums around the possibility of standardising IMR contracts, procedures and/or equipment interfaces in the Asia Pacific region. This would involve the formation of an initial sub-committee which would include a number of operators as well as OEMs and SMEs to firstly review what areas of IMR can best be standardised (eg ROV tooling interfaces) and then undertake the process of preparing 'standards style' documents.

This activity is expected to start late in year one, with higher focus in years 2 and beyond. Therefore just 1 forum would likely be conducted in year one with a view to establishing the key target areas for standardisation.

3.7 External Collaboration

Addressing strategic program 2.3 (expanding the market).

The subsea sector's skills, experience and infrastructure can be readily applied to areas outside of oil and gas. Therefore, SICA will organise workshops with people from areas outside of subsea oil and gas to establish synergies and cooperation with the IMR sector. This may include areas such as:

- defence;
- subsea mining;
- aquaculture;
- offshore renewable energy.

Due to the limited size of these synergistic industries in Australia, this external collaboration is not a high priority activity and is therefore likely to be part of the year 2 program.

SICA will, where appropriate, facilitate participation of cluster members in conferences and events run by synergistic industries and vice versa.

3.8 Regular Cluster Forums

SICA will establish regular meetings to provide opportunities for people from across the cluster to meet face-to-face, mix and mingle, share knowledge and identify new opportunities for collaboration. These forums will include, but not be limited to;

- Regular breakfast or evening gatherings, "first Tuesday" of the month – guest speakers will be invited as draw cards
- Awareness briefings / cluster activity / project updates
- Celebrate project completions / achievements / milestones...

4 Cluster Organisation

The SICA organisation structure is shown in Figure 3 below.

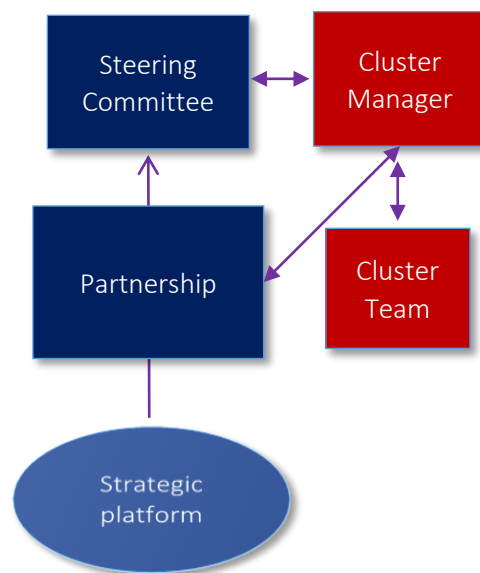


Figure 3: SICA organisation structure

4.1 Steering Committee

The Steering Committee will be an elected body that represent the interests of all cluster members and is responsible for providing guidance, overall strategic direction and endorsement of recommendations from the Cluster Manager. The Steering Committee will consist of nine (9) member companies and will have a market-focused composition. As the cluster develops and meets challenges, change of committee composition may be advantageous. The Steering Committee will hold, as a minimum, one meeting per quarter with a minimum quorum of 5 members.

The key focus of the Steering committee:

- Strategy development
- Ensuring the innovation cluster's Strategic Platform is followed
- Ensuring the innovation cluster's actions and activities are prioritised
- Manage and represents ownership (both formal and informal) in cluster projects but, is not directly involved in the project execution
- Guidance of cluster project resources
- Settling disagreements between cluster members
- Review and endorsement of the cluster finances

The Cluster Manager will organise and participate in the Steering Committee meetings, but will not be a voting member of the committee.

4.1.1 Industry Demographic

It is recommended that the Steering Committee be made up of the following industry demographics. See section 5.1 for definitions.

- Micro or Small business (Three seats minimum)
- Medium and Large business (One seat minimum)

- R&D institutions and Universities (One seat minimum)
- SEA Board Member (One seat minimum)
- State Government

4.1.2 Committee Chairman

The chairman of the Steering Committee, convenes and chairs the steering committee meetings and is elected by the steering committee from its delegates. The Chairman is the main contact person for the Cluster Manager.

4.2 Cluster Manager

The Cluster Manager has day-to-day operational responsibility for the innovation cluster including managing the processes and activities in line with the cluster Strategic Platform. The cluster manager- will also facilitate the interaction and cooperation between the partners.

A Cluster Manager job description is included in the appendix.

4.3 Cluster Team

The Cluster Team is a diverse team engaged in supporting the day-to-day operation to ensure the cluster operates effectively and delivers results of a high quality.

4.3.1 Project Manager

The Project Manager will be selected/hired in accordance to the specific requirements and duration of each project.

4.3.2 Finance Manager

The SEA treasurer will serve as the interim SICA finance manager and shall approve all budgets and expenditure above \$1,000. This oversight is to ensure liquidity and that the cluster is operating within rules set out by NERA and Section 295(1) Corporations Act 2001, which includes proper records keeping.

When SICA has established a financial structure and governance that is compliant with the rules set out by NERA and Section 295(1) Corporations Act 2001, this responsibility can be transferred to a SICA elected finance manager.

4.3.3 Administration

SICA will, during the first stages of establishment (2yrs), operate as an independent decision-making entity, but will be supported by SEA with roles such as:

- IT and website design and maintenance
- Accounting and record keeping
- Marketing and communications (e.g. newsletters, blogs etc.)
- Events
- Office Space (e.g. CORE) and meeting spaces

These services will be sourced either from SEA members or from external suppliers.

When SICA is operationally established, its own legal entity will be set up to make SICA independent of SEA. The relationship between SEA and SICA will remain synergistic to achieve a common goal of growing the Australian Subsea Industry:

- **SICA** – A commercial entity which nurtures industry growth through innovation, differentiation and business improvement for the Australian Subsea Industry through

collaboration amongst its membership, other clusters, research and academia. SICA will be funded by membership, sponsorship and grants.

- **SEA** – The Industry Peak Body representing the Australian Subsea Industry to promote the industry, connect, educate and develop its community, connect to other industries and communities. SEA will be funded by membership of SEA and SICA, events, fees and sponsorship.

4.4 Partnership

Companies/organisations making up the Partnership shall play an active role in providing input into the strategic direction of the cluster, the creation of, and participation in cluster projects. It is required / expected that the members have strong ownership of the cluster and specific projects that they participate in to induce wider cooperation and facilitate increased activity.

The Partnership should participate in the cluster activities on a frequent basis, however the opportunity to formally communicate their input and participate in the cluster direction should take place through regular feedback opportunities.

4.4.1 Partnership Categories

SICA Partnership categories are as follows:

- Member
- Innovation / Research Member
- Partner
- Alliances / International & National Relations

These categories are more fully defined in the following sections.

4.4.1.1 Member

SICA is being established with an initial focus on developing a stronger IMR sector in Australia and it is expected that IMR companies with activities in Australia, initially, will make up the majority of paying members of SICA. However, the membership is available to any company involved in the subsea sector including, but not limited to, the following:

- Companies offering services directly related to the subsea IMR sector
- Companies offering services broadly related to the subsea industry
- Financial Institutions
- Recruitment firms
- Law firms
- Consultancy firms

4.4.1.2 Innovation / Research Members

The Innovation / Research members are invited to take an active role in the establishment of the cluster organisation and will be imperative in developing a sustainable and industry leading innovation cluster. Member categories include, but are not limited to:

- Universities
- R & D institutions
- Co-working spaces

4.4.1.3 Partner

Partner membership will be offered to the following industries;

- Oil and gas operators
- Companies with activities in synergistic industries, e.g.;
 - Aquaculture
 - Renewables
 - Subsea mining
 - Defense
 - Other ocean industries

A Partner role in an innovation cluster can include, but is not limited to:

- Sharing knowledge and/or information related to a specific industry challenge;
- Sharing specific data needed to develop ideas or innovative solutions to solve specific industry challenges;
- Participating in workshops and other relevant events where the Partner's input and guidance is beneficial;
- Placing specific pre-competitive research and development and innovation projects under the management of the cluster.

Cluster Partners can be managed with various levels of formality. However, it is expected for a prospective cluster Partner to enter into a formal contract agreement with the innovation cluster.

4.4.1.4 Alliances / International & National Relations

- GCE Subsea
- SUT
- SPE
- RINA
- Subsea UK
- Space / Aviation Organisations
- Mining Organisations

Alliances are collaborative relationships with domestic and international industry bodies, centres of expertise and other complimentary clusters.

5 Cluster Financing

A critical factor in early stage success for SICA is access to a suitable level of funding to ensure the initial momentum is maintained and a strong foundation formed. Indeed, as is the case with most start-up enterprises financial support can prove to be the most challenging. Nevertheless, the enthusiasm for SICA has been strong and the Subsea IMR industry will provide the bulk of the fiscal support.

A significant opportunity for SICA to establish a strong financial platform is through government funding specifically allocated to industry-led, collaborative projects through the “NERA Project Fund”.

5.1 Partnership Fees

SICA Partnership is organised with a tiered fee structure according to size of the company in Australia and its global support / reach. The definition of size is based on the definition used by the Australian Bureau of Statistics:

- Microbusinesses have 1–4 employees,
- Small businesses 5–19 employees,
- Medium businesses 20–199 employees, and
- Large businesses >200 employees.

The above categories are based on employees working in jobs related to the subsea sector. Supporting functions for specialist subsea companies will be categorised as employees.

The SICA Partnership pricing structure can be found in the table below (excl. GST).

Table 2 Membership Pricing Structure

Partnership Category	Employees	Fee
Member		
• Large business	>200	\$8,000
• Medium business Local and international presence	20-199	\$5,000
• Medium business Local presence only		\$3,000
• Small business Local and international presence	5-19	\$3,000
• Small business Local presence only		\$2,000
• <u>Micro business</u> Local and international presence	1-4	\$2,000

<ul style="list-style-type: none"> • Micro business Local presence only		\$1,000
Innovation / Research Member		
<ul style="list-style-type: none"> • Universities • R & D institutions • Co-working spaces 	N/A	\$5,000
Partner	N/A	From \$10,000
Alliances	N/A	-
Sponsorship	N/A	From \$10,000

5.2 Further Funding Options

Whilst initial funding through NERA and industry will provide the basis for financial support, it will be the responsibility of the Cluster Manager and the steering committee to continue to seek alternative funding options whether that is through government bodies or approaching the operators within the region or alternative sources. Importantly, any funding options that are tied to industry operators can only be sanctioned with the Steering Committee approval.

5.2.1 Sponsors

Sponsors can consist of R&D institutions, government bodies, operators and select companies. As such the acceptance of a sponsors will be at the discretion of the Steering Committee. Sponsorship fees have no upper limit, with the minimum found in table 2 above.

5.3 Guidance & Support for External/Government Funding

A key role of a cluster is to leverage external and government funding for innovation projects. SICA will therefore play a guidance and support role in applying for funds for innovation projects. When seeking government funding (such as through CRC-Projects etc), SICA, as required, will engage consultants with expertise specific to preparing funding requests.

SICA will maintain close ties with state and federal government and seek funding support (outside of the main government cluster support funds) on a more general (ie non project specific) basis.

Other funding sources may include the operators or JIP arrangements. The cluster manager will assist the group project committees to obtain funding from these external sources.

6 Reporting

Reporting back to cluster member organisation is an important ongoing role for the cluster organisation. Reporting will likely include frequent newsletters and web updates, with more formal quarterly reporting by the Cluster Manager back to the Steering Committee. This report would include activity status updates and financial reporting.

Additionally, as a NERA funding pre-requisite, NERA may request SICA prepare and submit reports and case studies from time to time.

APPENDIX A – Subsea Industry Challenges

Challenge	Description
1. Regional operational challenges	<p>The Australian subsea environment is quite unique with a number of operational challenges not seen in many other parts of the world, e.g. North Sea, GoM, West Africa etc.</p> <ul style="list-style-type: none"> • Warm water causing extensive/rapid marine growth • Calcareous deposits on marine structures making interventions challenging • Remote fields with little or no infrastructure in the region. This causes excessive mobilisation costs and requires extensive time for planning
2. Size of market	<p>The Australian offshore/subsea market is considered small compared with offshore regions in the North Sea, GoM, West Africa and South America. Historically, this has created a very competitive environment with little appetite for collaboration – “each fight for a piece of the small pie”.</p>
3. Cost	<p>Cost of operating subsea infrastructure in Australia is very high. Some of the main factors affecting these costs are;</p> <ul style="list-style-type: none"> • The high cost of personnel; Australian engineers and technicians are some of the highest paid in the world. • The remoteness of our infrastructure and as a consequence the high cost of down time due to equipment failure, poor planning etc • The cost of bringing in specialised vessels for subsea activities
4. Collaboration versus Competition	<p>There is not a history of close collaboration on a larger scale in the Australian oil and gas industry. This is reflected in the;</p> <ul style="list-style-type: none"> • lack of sharing of infrastructure offshore, • lack of collaboration between research and industry, • lack of collaboration between suppliers which is partly due to a lack of trust
5. Poor industry visibility	<p>The Australian subsea IMR industry is quite mature with significant expertise and capability. However, this is not well understood/known across the sector. There is no common “portal” to identify the sector’s;</p> <ul style="list-style-type: none"> • research and innovation capabilities • equipment and tooling capabilities • relationships outside of the region with overseas technology/capability hubs
6. Operators procurement systems	<p>There seems to be a challenge for local SME’s to “get in the door” with the operators who prefers larger frame agreement and contractual relationships with larger “Tier 1” contractors. This causes disengagement between operators and SME’s.</p>
7. Common testing facility	<p>There are few relevant subsea lab/testing facilities and those that exist are not well known to the larger industry. This creates a hurdle to innovative thinking and new technology development in our sector locally.</p>
8. Adoption of new technology	<p>Adopting new technologies in a project is perceived as high risk. This creates a hindrance to innovative thinking and an entrepreneurial mindset.</p>

APPENDIX B – Subsea IMR Definition

The below gives a (non exhaustive) list of typical subsea IMR activities

I: Inspection

- Planned structural inspections
- Routine CP measurements
- NDT inspection
- Riser & pipeline inspection
- Subsea sampling

M: Maintenance

- Routine marine growth management
- Scheduled valve operations
- Remedial dredging, burial or stabilisation of pipelines, umbilicals and seabed structures
- Routine subsea diagnostics
- Anode and cathode protection/replacement

R: Repair

- Onshore preservation and maintenance of tooling and spares
- Pipeline repair
- Mooring repair/replacement
- Subsea hardware recovery & replacement
- Start-up/shut down support

Typically subsea IMR requires an IMR vessel which is normally fitted with 1 or 2 ROVs and/or an air dive spread and/or a sat dive spread complete with suitable cranes, survey spread, inspection spread, grout spread (freespan correction/structure scour prevention), ROTs, ROV tools etc and is typically supported by teams of engineering, project management and asset management personnel.

IMR may also include subsea light well intervention (LWI): vessels, equipment and services related to both riserless and riser based well intervention.

APPENDIX C – Cluster Manager Job Description

The Subsea IMR Innovation Cluster Manager (the 'Manager') drives the clustering initiative.

The Manager is responsible for planning and carrying out activities within the framework provided by the cluster's strategic platform and budget set by the Steering Committee ('SC').

The Manager will be an active contributor to reinforcing innovation activity, raising industry engagement and increasing capacity, competitiveness and value creation among the various players in the cluster and in the cluster as a whole.

The Manager will report to the Innovation Cluster Steering Committee.

Main Responsibilities:

- Responsible for the cluster's strategy development and day to day business activities;
- Develop extensive knowledge of the clusters members' capabilities and resources;
- Gain the trust of the cluster members and stakeholders and build relationships and trust within the cluster;
- Actively contribute to the interaction between the cluster's members, as well as between the cluster and external parties, both locally and internationally;
- Actively promote the cluster initiative and build the cluster membership base;
- Overall responsible for all activities undertaken by the cluster and ensure these activities meet the requirements and expectations the SC and member companies;
- Responsible for developing processes and systems required to operate the cluster;
- Responsible for all communication and reporting to the SC, as well as implement all measures decided by the SC;
- Responsible for managing the cluster's resources and ensuring efficient financial management;

Experience:

- Experience from and a well-developed network in the oil and gas industry (preferably in the subsea industry) both nationally and internationally;
- Experience with developing strategies and developing/executing processes to meet these strategies;
- Experience with handling complex projects in terms of technology, personalities and relationships;
- Experience with both financial and personnel responsibility;

Key Attributes:

- Advanced interpersonal skills, with demonstrated ability to bring people together from across sectors to reach a collective understanding;
- Strong personal integrity and resourcefulness;
- Self motivated and can motivate the cluster members to actively engage with and participate in cluster activities;
- An understanding of the SS IMR industry sector including its challenges and opportunities;
- An expansive network across sectors, preferably including industry, government, research and academia;
- A strong ability to build trust between enterprises within the partnership and between the partnership and external stakeholders;
- Ability to plan and implement processes and projects;