

National Marine Technology Development Roadmap

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Why start the conversation?

- When developing the NMSP, technology development was a common theme for each white paper
- Repeated view was that we are lagging behind, not for want of effort or the quality of that effort
- NMSP identifies development as a key need
- Informal conversations initiated to construct a strawman but now needs to mature and be integrated

What do we mean by technology development?

- Not just about new stuff – the widgets
- Includes adaptation of technologies
- Improved efficiencies in the whole-of-missions and whole-of-life

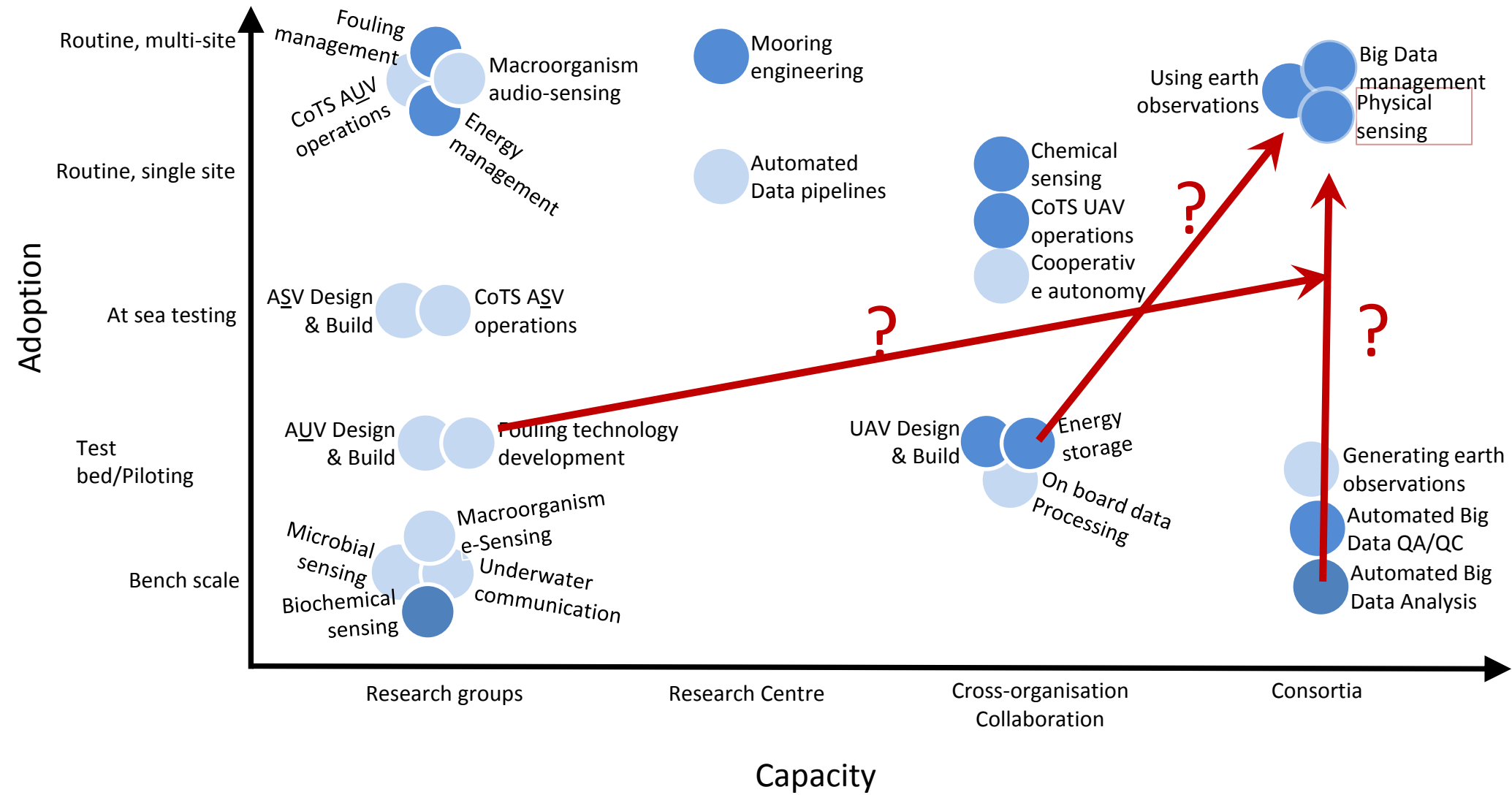
Drivers

- Bigger bang for buck:
 - Reduce cost per observation
 - More and better data for same effort
 - Volatile costs of imported technologies
- Maintain international linkages by remaining current and remain internationally competitive
- Sustain does not mean unchanged

Development already happens organically

- Scientists are always seeking improvements
- Always have an eye on the budget bottom line
- A proactive and targeted national approach to technology development will deliver efficiencies and increase likelihood of delivering tangible long-lasting, national outcomes

National Mapping of Future Marine Technology Capability



Applicability

Specialised Platform

(Light Blue Circle) (Dark Blue Circle)

Acronyms

CoTS=Commercial off-the-shelf
 AUV=Autonomous underwater vehicle
 ASV=Autonomous surface vehicle
 UAV=Unmanned aerial vehicle

Development foci

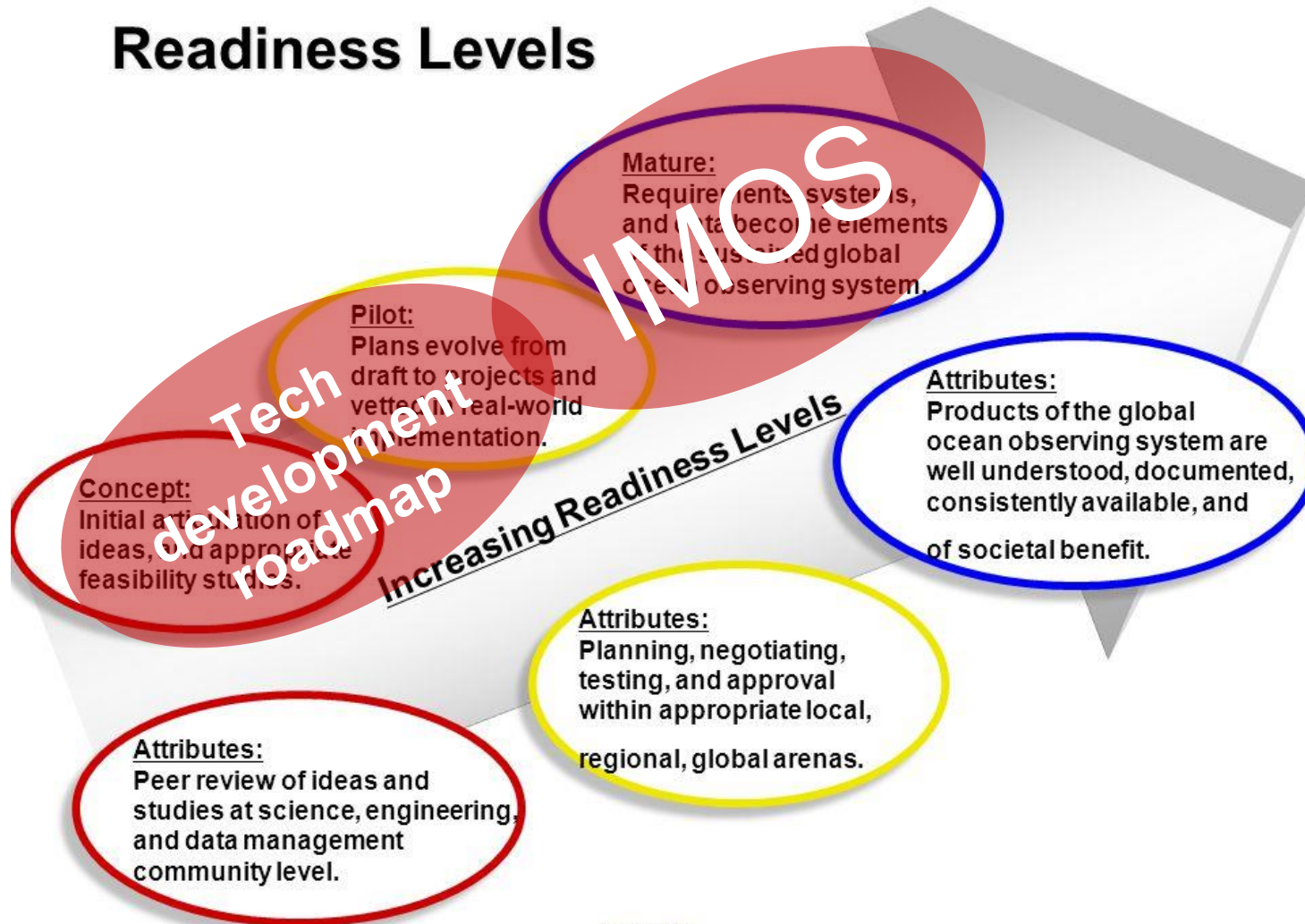
- Force multiplication through autonomy & automation
- Sensing and sampling
- Platform design and build
- Engineering for Resilience and Persistence
- Big Knowledge from Big Data

NMSP Grand challenges	Development Foci				
	Force multiplication through autonomy and automation	Sensing and sampling	Platform design and build	Engineering for Resilience and Persistence	Big Knowledge from Big Data
Marine sovereignty, security and safety	Critical		Relevant	Critical	Critical
Energy security	Critical	Relevant	Relevant	Critical	Relevant
Food security		Critical	Relevant	Relevant	Relevant
Biodiversity conservation and ecosystem health	Relevant	Critical	Critical	Relevant	Critical
Urban coastal environments	Relevant	Critical	Relevant	Relevant	Relevant
Climate variability and change	Relevant	Relevant		Critical	Critical
Resource allocation					Critical

Observing readiness framework

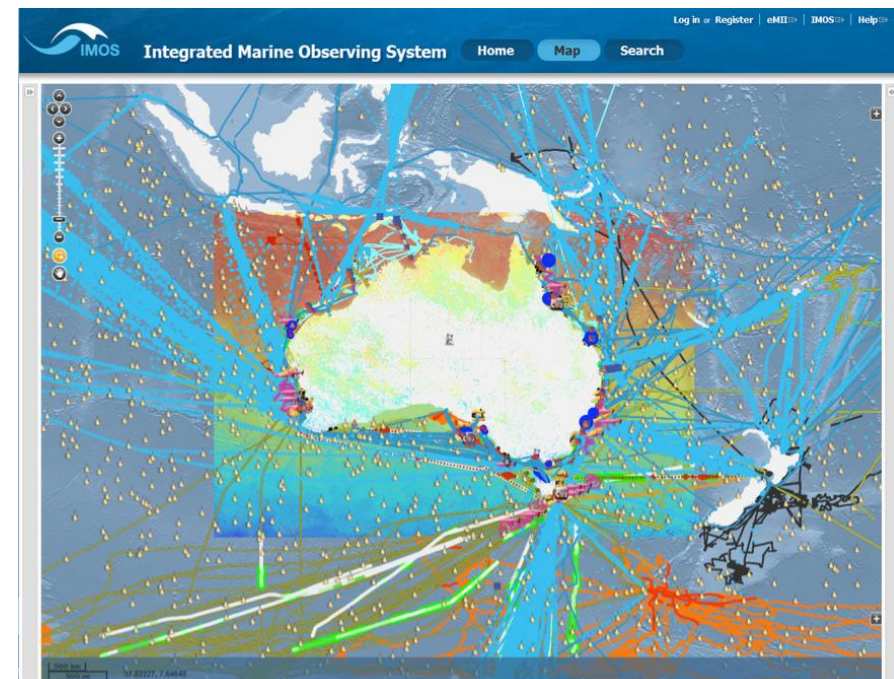
- Provides a framework for a measured conversation

Readiness Levels



National pipeline?

National Test Bed



Processes needed

- Technology foresighting
- Assess for fitness-of-purpose
- Selection – an active decision
- Planning for adoption
- Adoption
- Checking for success
- Phasing out?

Where to next

- Goal is to develop a roadmap that is easily communicated with a clear value proposition to both the marine science community and its stakeholders
- Start of a broader conversation and debate
- IMOS is a key stakeholder in technology development
- IMOS members are highly connected so captures most of the marine science community

Colleagues to date

- CSIRO
- University of Tasmania
- University of Queensland
- University of Sydney
- QUT
- Deakin University
- DSTG