Intergovernmental Committee on Surveying and Mapping

Spatially Enabling Australia

Review of Consultancy Report

Version 1.0

17 June 2008

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PREPARED: DATE: 17 / 06 / 2008
(for acceptance)   Peter Murphy, Chair ASDI Working Group

ACCEPTED:_____ DATE: ___/___/___
(for release) Garry West, Chair, Intergovernmental Committee on Surveying and Mapping

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1	0.A	6 May 2008	Workshop participants
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1 Executive Summary

The meeting of the ASDI Working Group with other interested ICSM members was convened to complete a detailed review of the output from the consultancy by Geomatic Technologies.

The meeting was held 10:00 am to 5:00 pm on 17 March 2008 in the Legal Services Conference Room at the Department of Lands Office, Queens Square, Sydney.

The participants heard verbal reports about ANZLIC's consideration of the draft report[1] during its meeting on 11 and 12 March 2008.

PSMA Australia Ltd also provided a briefing on its current initiative known as LYNX2 so that this could be taken into account as the group considered the recommendations and actions contained in the report.

All of the recommendations and actions identified by Geomatic Technologies were discussed to confirm those to be adopted by ICSM.

General agreement with the majority of the recommendations was confirmed however there were a significant number of the actions that are not within ICSM's scope to carry out.

This report contains the details of the considerations during the meeting and a complete compilation of the final decisions. It forms the basis for recommending the future work program for the ASDI Working Group and ICSM.

A list of participants is included at Appendix A.

2 Background

In November 2005, the Intergovernmental Committee on Surveying and Mapping (ICSM) developed a new strategic plan for the period 2005 – 2010. This plan was based around ICSM's role as a standing working group of ANZLIC – the Spatial Information Council.

ANZLIC's strategic plan had indicated that responsibility for the Australian Spatial Data Infrastructure (ASDI) should pass to ICSM. ICSM agreed that this transfer of responsibilities was appropriate and undertook to revitalise the ASDI. This undertaking was subsequently reflected in ICSM's 2005–2010 strategic plan. It was agreed that the current model for the ASDI should be reviewed and possibly refreshed.

ICSM established a working group that reviewed the current status of the ASDI and produced some initial discussion papers. A stakeholder workshop was also held in Melbourne in August 2006 to develop a direction for the ASDI and to identify any issues for implementing the vision. A workshop report and some further elaboration of ideas in key areas have been produced. A proposal for the ASDI vision for "Spatially Enabling Australia" was suggested to ANZLIC.

ANZLIC considered this early work and defined the direction for further work by ICSM in the development of new concepts for the ASDI based on collaboration and partnerships for:

- Building support for the national vision;

- Providing mechanisms for contribution of and access to information and services;

- Establishing and maintaining governance arrangements; and

- Reviewing the current data and systems.

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[1] Spatially Enabling Australia Recommendations, V2.1, Geomatic Technologies, 2008

Geomatic Technologies was engaged by ICSM to further develop proposals within these parameters. The consultancy commenced on 1 October 2007. ICSM referred the draft report to ANZLIC for comment in February 2008.

3 Workshop Purpose and Objectives

The purpose of the workshop was to review the report "Spatially Enabling Australia Recommendations", Version 2.1 to:

- Provide ICSM with overall comments on the report;

- Identify the recommendations that are to be adopted;

- Identify the actions that are to be implemented; and

- Nominate the organisation best placed to carry out the actions.

This review is to result in a work program for ICSM and the ASDI Working Group to implement in the future and provide the basis for additional advice to ANZLIC about the ownership of actions.

It was also planned:

- To develop the Terms of Reference for the ASDI Working Group including proposed objectives, strategic Plan alignment and membership;

- Identify the actions that are to be implemented; and

- To draft a report to ICSM about the workshop.

4 Workshop Introduction

The objectives for the workshop were outlined and the verbal reports from ANZLIC's consideration of the report were discussed.

Reported comments included:

- The report could have gone further with its recommendations

- The move away from data towards services needed further emphasis

- The need for standards for services could have been explored

- An ASDI toolkit could have been considered

- The relationship with the position paper on framework data is not clear

ANZLIC has undertaken to prepare a paper on the objectives of the ASDI to position the ASDI for the future.

The review started with discussion about the ASDI vision and associated recommendations. This was suspended for the briefing on LYNX2.

5 LYNX2 - PSMA Australia Ltd

Dan Paul noted that this Working Group needs to be aware of the overlaps with PSMA's initiatives.

LYNX was developed with the objective of improving the end-to-end efficiency and effectiveness of data maintenance, integration and supply. PSMA plans to automate data logistics.

- Thirteen suppliers → PSMA → Data Manager → PSMA → thirty resellers.

LYNX delivers:

- Integrated data model at its core → other benefits
- Physical implementation for the Harmonised Data Framework
- Data logistics facility → up and down load and monitor

The whole process requires more work:

- Acquisitions from custodians to be automated → data pull
- Automated data integration

These are the key challenges → delivery to meet markets then relatively easy.

The role of standards is to be balanced with business drivers. PSMA needs to be sufficiently flexible to deal with the difference through technology and data sufficiently well developed.

The PSMA mechanisms are to achieve consistency at a national level:

- To support jurisdiction supply for national level
- Requires sufficiently flexible systems to accept multiple combinations

LYNX2 is to close data supply and return loop:

- Dynamic, flexible, extensible
- Near real time
- Requires externally exposed web services → service oriented architecture

Geomatic Technologies have been working on a high-level implementation plan and an infrastructure document over the last three or four months.

- Fourteen business requirements defined
- May be developed in priority – Acquire → manage → deliver → value add → update

PSMA concept approval in late 2006

LYNX2 extends initial concept:

- Similar to SLIP[2]
- Central servers linked with local servers
- A current suggestion is to put hardware in the jurisdictions
- Conceptually could extend again → direct server update
- Hub and spoke model
- LYNX2 link with mini LYNX
- Commonality of services
    - Western Australia and Victoria have offered services for this model
    - Address validation, online notification and edit
    - Remote monitoring of services
- Practical sharing of a common engine with multiple branding
    - Powerful concept improving service availability and quality

The value is in closing the gap between jurisdiction systems and a PSMA-loaded server operating as a local LYNX2.

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[2] Shared Land Information Platform

PSMA is to talk with jurisdictions about what they need over the next eight weeks. Alignment of needs with PSMA business case will produce greater additional benefit.

The potential for more options for data feed lifts the availability to become more robust. It includes redundancies with fail-safe switch over and disaster recovery.

PSMA's international benchmarking showed that Ordinance Survey systems are similar though more limited.

There is potential to extend the network to other agencies. For example, a Geoscience Australia gateway to LYNX2 local links.

PSMA has funded work up to the definition of the architecture. Future components will be funded as separate initiatives.

5.1 Discussion

The practical considerations needed to deliver the PSMA initiative include:

- Lack of standards across jurisdictions
- Standardising access
- Pragmatic approach towards a standardised approach
- Commercial approach
    - Creates markets
    - Could be upset by government policy on pricing
- Recognition of returns to jurisdictions

It was noted:

- That LYNX2 would not be the ASDI
- This doesn't threaten jurisdiction or ICSM work
- That role of standards needs more discussion
    - Will PSMA create standards?
    - Should ICSM work on custodians' standards?
    - There is tension between pragmatism and standards.
    - Does ICSM need to identify standards needed by PSMA?
    - What about standards of data from utilities?
- There may be value in a gap analysis between the ASDI and LYNX2
    - Interoperability enhancements gap?

In summary:

- LYNX2 will move to a higher level of interoperability with jurisdictions; potentially other contributors e.g. Australia Post, Telstra
- Over time there will be convergence of standards, systems and services
- There is synergy with the ASDI concept proposal; same language, similar concepts, physical implementation model at Government level.

6 Workshop Outputs

6.1 Comments on the Report

The report draws together information and concepts for the ASDI in the areas selected by ANZLIC for ICSM's further development.

It is based on consultation across government, industry and the academic sectors as well as preliminary documentation for ICSM work on revitalising the ASDI. ICSM has noted that there are some aspects of the report that will need further discussion and acknowledges that the report was intended to provide a catalyst for that discussion.

In particular, the example used to demonstrate the principles for future governance associated with the ASDI includes the Australian Spatial Consortium concept. It is understood that this may not necessarily reflect the actual governance. Similarly, the concept of PSMA taking the leading role in the supply of government data is a suggestion of a future possibility rather than an approach agreed within ICSM.

The report has been given in-principle acceptance within ICSM through a recent teleconference and this report summarises a more detailed review of the recommendations and actions.

This will be the basis for defining the action to be taken by ICSM in those areas and for making appropriate recommendations to ANZLIC.

6.2 Recommendations to be Adopted

It is noted that these are generally quite high-level recommendations that are consistent with both industry views and emerging trends. However those that are 'accepted' with comments are not seen as critical for moving forward and those that are 'noted' only are seen as difficult to achieve.

The level of ICSM support for each recommendation is detailed in Appendix B.

6.3 Actions to be Implemented

ICSM has determined that it is not the appropriate organisation to lead the actions identified in the report. While ICSM can contribute to one third of the actions and take a limited or advisory role in another third, there is no role for ICSM in the remainder of the actions.

For those actions where ICSM has some role, the ASDI Working Group will need to identify the ICSM work for inclusion in its work program.

The comments for each action are included in Appendix B.

6.4 Organisations to Implement

There was insufficient time at the workshop to examine the actions in sufficient detail to be able to suggest the appropriate organisations to involve in implementing these actions.

6.5 Terms of Reference

The ASDI Working Group agreed to consider draft terms of reference at its meeting in Alice Springs on Tuesday 20 May 2008.

6.6 Report to ICSM

This document is the basis for the report to ICSM.

While the ASDI Working Group of ICSM commissioned the report by Geomatic Technologies and is broadly supportive of the directions suggested, it does not necessarily endorse all recommendations or actions. In particular, the governance model suggested is recognised as requiring further consultation and development.

The Group also recognises that ANZLIC intend to "Prepare a paper (two-pager) on the objectives of the ASDI and positions ASDI for the future" and that this statement will provide a framework to guide discussion, debate and the future development of the ASDI.

The Working Group will consider the ANZLIC statement as part of its preparation of its future work program.

Appendix A: Participants

Subject: ASDI Working Group – Review of Consultancy Report

Date: Monday 17 March 2008

Time: 10 am – 5 pm

**Venue: Legal Services Conference Room at the Department of Lands Office,
            Queens Square, Sydney.**

Jurisdiction	Representative
Tasmania	Peter Murphy
Queensland	Russell Priebbenow
Northern Territory	Garry West
New South Wales	Paul Harcombe
Victoria	John Gallagher
South Australia	Peter Kentish
Australian Capital Territory	Bill Hirst
New Zealand	Dave Mole
PSMA Australia Ltd	Dan Paul

Appendix B: DECISIONS ON RECOMMENDATION & ACTIONS

R=Recommendation   A=Action

VISION

#	Description	Decision	Comments
R1	**The ASDI should facilitate the spatial enablement of Australia** 'Spatially enabling Australia' will involve leveraging and maximising the potential of the spatial information that is currently locked away in corporate and government databases. The spatial attribute/component that exists within a range of data sets can and should be used to help correlate information previously regarded as disparate, allowing greater analysis and improved decision making. Additionally, spatial enablement implies more than just providing access to data; the ASDI should accommodate and provide access to services and business processes.	Agreed	Emphasis on more than just information access i.e. access to services and business processes as well as information.
R2	**The ASDI should contribute to and help support the Virtual Australia concept** Virtual Australia describes a vision of a knowledge base that includes complete, correct and current information about the natural and built environment, together with spatial information applications in a usable and readily available manner.	Agreed	Of course! Provided 'Virtual Australia' is the understood and agreed concept nationally. Virtual Australia, ASDI linkages need further promotion – see **A2**.

#	Description	Decision	Comments
R3	**The ASDI should include a range of information** Traditionally SDI definitions have focused on identifying a set of framework or fundamental data sets for which the policy, standards and access apply. Moving forward, the ASDI should not be restricted to only a set of fundamental data sets but rather should be able to support a dynamic set of data, information, services, publications or software. The ASDI should inherently promote the reuse of data ('collect once, use many times'), leading to efficiencies related to economics and time.	Agreed	Emphasis on 'dynamic' in time, theme and content.
R4	**The ASDI should act as a foundation for the delivery of resources** Currently the ASDI can be regarded as a collection of technologies and services that deliver spatial information to those that need it, in the timeframes that they require, as a result of standards, protocols and governance frameworks. The ASDI should provide a foundation from which data, solutions, business processes and applications can be built. It must be stable, reliable, scalable, interoperable and distributed. Like other infrastructure, the ASDI should be free or of minimal cost to use, but value added services built upon it may be provided for a fee.	Agreed	Some overlap with other recommendations; defines characteristics.
R5	**The ASDI should provide efficient and timely delivery of resources to users** The ASDI must support efficient access, retrieval and delivery of data, information, services, publications or software to users. Efficient and timely delivery encompasses both the time taken to extract the appropriate resource, as well as any processing required in order to render the resource on the requesting device (ranging from desktop computers through to mobile devices).	Agreed	

#	Description	Decision	Comments
R6	**The ASDI should provide resources for a 'reasonable' price** Without devaluing the data, information, services, publications and software that the ASDI will offer, cost should not be a barrier to its use. Options for sourcing or generating the necessary funding to build and maintain the infrastructure should be examined – e.g. can funding be obtained from general taxes or from a small percentage of the fee charged for services built upon the infrastructure? In a practical sense the administration and control of funding may be linked to the governance arrangements for the ASDI.	Agreed	Costs should not be a barrier to use, however jurisdictions need some flexibility for their particular business models.
R7	**The ASDI should seamlessly serve society** Typically a thorough awareness and understanding of spatial concepts and principles is not prevalent throughout society. However the popularity of spatially enabled systems such as Microsoft Virtual Earth, Google Maps and Google Earth indicate that an in depth understanding is not necessarily required in order to perform queries and undertake decision making using spatial information. The ASDI should be able to provide access to spatial resources in an easy to use and seamless manner; users should not have to understand or even be aware that they are relying on the ASDI.	Agreed	
R8	**The ASDI should have a national focus** Incorporating data, information, services, publications and software from various jurisdictions, the ASDI should be able to support data from a variety of levels – e.g. from highly localised and specialised street level data through to generalised national data, the services necessary to deliver the data also need to be supported by the ASDI.	Agreed	

#	Description	Decision	Comments
R9	**The ASDI should be implemented with interoperability in mind** Given that spatial problems rarely exist solely within state or national boundaries, the ASDI should be implemented so that it can be incorporated as required with other national/regional SDI initiatives (e.g. through interfaces such as Google Earth or World Wind).	Agreed	
R10	**A review of the term ASDI should be undertaken** Debate has commenced on whether the ASDI term appropriately describes the proposed role of the supporting structure that allows spatially related decision making, or whether an updated term is required. While the SDI term has gained acceptance internationally, it is currently unclear whether it can adequately represent the vision of spatial enablement that the revised ASDI is intended to achieve. However, the 'infrastructure' element of the ASDI may remain as a building block, upon which the spatially enabling services are provided in which case the term will not be heavily publicised or promoted outside the spatial industry.	Accepted	Need to review the scope of the definition ; SDI's are well accepted internationally; ICSM considers this to be a low priority.

#	Description	ICSM Role in Action Item	Comments
A1	Develop a network of spatial resources (data, information, services, publications and software) from government, private and academic sectors	Contributor	ICSM is able to contribute to establishing a government based network of spatial data and services – but has a limited role in other aspects.

#	Description	ICSM Role in Action Item	Comments
A2	Promote the ASDI concept outside the spatial industry	Contributor	ICSM has limited influence outside the spatial industry, but has some tools which could be utilised, including: • ICSM website • ICSM NEWS • ICSM subscription list.
A3	Publicise the content of the ASDI (to promote reuse)	Contributor	The primary tool available to ICSM is its website.
A4	Identify standards and protocols that will be supported by the ASDI	Contributor	This role is dependent upon resources being made available to ICSM. The most significant role for ICSM is in the development of data related national & international standards and promotion of their consistent use – particularly to government. (Includes **A9, A15**.)
A5	Develop a pricing structure policy for ASDI infrastructure	No role	

#	Description	ICSM Role in Action Item	Comments
A6	Develop metrics to assess efficiency of the ASDI	No role	
A7	Develop a pricing structure policy for ASDI components (actual data/service prices should be able to be set by individual service providers within the policy)	No role	
A8	Develop guidelines for services and interfaces that do not require spatial knowledge or expertise	No role	
A9	Examine standards used by other SDI initiatives, in order to ensure interoperability with standards selected for the ASDI	Contributor	Part of A4.
A10	Examine appropriateness of the term ASDI	No role	See R10 comments.

COMPONENTS

#	Description	Decision	Comments
R11	**The ASDI should avoid resource duplication where possible** Different organisations have different definitions for 'fundamental' data sets. While the ASDI's ability to reference multiple copies of data across the same spatial extents contradicts the collect once, use many approach that it promotes, the scenario should not be prohibited. The data storage environment(s) of the ASDI should be able to act as a repository for historical data as well as current data and thus the definition of 'duplication' needs to be clarified.	Agreed	'Collect once, use many' is the mantra; duplication of authoritative sources is to be avoided; challenge is how historical data is managed.
R12	**A mechanism to register resources with the ASDI will be required** New resources should be able to be added to and made available through the ASDI at any time. Additionally, existing resources may need to be revised/updated as they evolve.	Agreed	An expanded 'ASDD type' mechanism to encompass services, tools, etc is needed. May not be a centralised register. Strong role for definition of 'standard' semantics.
R13	**Mechanisms to modify resources within the ASDI should be provided** In the future, with the ASDI acting as the main and authoritative source for resources registered within it, mechanisms for resource modification and update should be provided (e.g. allowing authorised users to directly edit data within the ASDI framework).	Agreed	An expanded 'ASDD type' mechanism to encompass services, tools, etc is needed. May not be a centralised register. Strong role for definition of 'standard' semantics.

#	Description	Decision	Comments
R14	**A standardised approach to licensing should be defined for spatial resources** Licensing arrangements that encompass user authentication should be developed and form part of the ASDI's access policies. Given that the vision is for resources to be automatically chained together, methods for automated licensing creation and assessment should be considered.	Agreed	Eminently sensible
R15	**The ASDI should consist of Policy, Standards, Data, Access Service, Integration Service and User Interface components** The ASDI components should interact with one another through standards. as shown in Each component will be defined and operate within a set of policies and standards, as will the cohesive structure of the combination of the components.	Agreed	
R16	**Policies should be developed for each ASDI component at a national level** In order to achieve the nationally focused vision for the ASDI, policies will need to be developed and mandated at a national level.	Agreed	The need for policies at national level is agreed, however 'mandated' should be replaced by 'encouraged'.
R17	**Australia should present a focused approach on a variety of standards development boards** The ASDI is and will remain to be highly dependent on standards, thus an awareness of existing and emerging standards is imperative. A broader discussion and promotion of standards activities will help to ensure that Australia can have a say in the development of standards that impact and are of relevance in our specific context.	Agreed	Availability of expertise limits capacity in this area; 'gap analysis' by ICSM is needed to identify missing and essential standards - should be needs driven.

#	Description	Decision	Comments
R18	**Services arising from the ASDI should be able to be chained together** In order to deliver spatial business processes that can be integrated into standard workflows or processes, ASDI services should be able to be chained together. Initially this is expected to be a manual process of identifying the relevant services to execute, but in future could be a process undertaken directly machine-to-machine.	Agreed	LYNX2 will help solve this for data that is delivered by PSMA.

#	Description	ICSM Role in Action Item	Comments
A11	Develop guidelines by which resources are defined to help avoid duplication	Contributor	ICSM's role lies with understanding and sharing national infrastructure and a register of resources. All ICSM Working Groups have a primary purpose of promoting the consistent use of national / international standards.
A12	Develop guidelines to distinguish historical versus current resources	Contributor	ICSM's particular contribution to this is related to establishing data standards and influencing how jurisdictions archive their data.
A13	Develop a tool to manage ASDI resources (including registration and modification)	Contributor	May be able to assist and provide advice if required.
A14	Develop a standardised approach to resource licensing	No role	
A15	Identify the standards through which ASDI components should interact	Contributor	See **A4**.

#	Description	ICSM Role in Action Item	Comments
A16	Develop a policy for each ASDI component	Contributor	Participate in policy development if required. ICSM's role generally involves the implementation of policy (developed by 'policy' organisations such as ANZLIC or COAG) as opposed to having an actual role in policy development.
A17	Promote awareness of standards groups and existing standards	Contributor	Tools available to ICSM include: • ICSM website • ICSM NEWS • ICSM subscription list.
A18	Improve industry involvement in standards development and organisations	Contributor	ICSM has a partial role only because its sphere of influence is government. Other organisations can have a more significant impact (eg Google).

ACCESS

#	Description	Decision	Comments
R19	**Policies describing the access to services should be established** Policies should be developed that cover the spectrum of issues encompassed within Digital Rights Management (DRM) as it relates to spatial data and services (e.g. ownership, access, maintenance, distribution and stewardship. Guidelines for the pricing of data should be developed, and a decision made as to the price of government spatial data. Feedback received to date on this issue has suggested that government data should be made available for free, however those adding value to it (either government or the private sector) may then charge users. These policies should be developed by a national organisation.	Agreed	However a nationally agreed pricing policy framework for data has been problematic to date. This needs further definition of 'data' and 'services'. The Australian Spatial Consortium (ASC) could be the logical 'carrier' for this.
R20	**A policy should be established to recommend that all government agencies provide access to their resources via the ASDI** The ASDI should be regarded as the main framework for access to government resources. While also including a range of non-government resources, initially government resources will form the bulk of the content within the ASDI and thus promotion will be required. Private organisations, academia and the general public will also need to be encouraged to contribute to the ASDI.	Noted	Discovery rather than access should at least be through ASDI.

#	Description	Decision	Comments
R21	**Interfaces for the discovery of ASDI resources should include all registered resources** The ASDI does not need to be a single physical data storage facility, but rather a unified interface should exist for the discovery of all resources registered within the ASDI.	Agreed	
R22	**Resource access should be provided as seamlessly as possible** In order to facilitate spatial data and information as a ubiquitous commodity, access to it must be provided as seamlessly as possible. Data transfer standards should be adopted and employed and pricing and licensing should not be a barrier to the use of data/information; Users should not have to be aware that they are relying on the ASDI. The ASDD should be revised to ensure usability amongst a range of users, not just spatial professionals.	Agreed	ASDD should be replaced rather than revised.
R23	**A policy should be established to enforce the inclusion of metadata for all resources available through the ASDI** Metadata will be the key component in identifying and assessing resources for particular purposes. As such, it should be mandatory to include metadata as part of the resource registration process. The structure and content of the required metadata elements must be defined. The minimum set of metadata elements should allow an assessment of data quality of the resource to be made. The metadata policy should allow for the possibility of restricted data sets, and indeed restrictions in metadata elements themselves.	Noted	Some form of enforcement (minimal) will be required. Potential for rating metadata (e.g. three stars). Proper disclosure limits liability.

#	Description	ICSM Role in Action Item	Comments
A19	Develop policies to describe access to ASDI mechanisms and services	Minimal	
A20	Investigate Digital Rights Management as it applies to ASDI resources	Minimal	
A21	Develop guidelines for resource pricing	Minimal	
A22	Develop a policy encouraging the contribution of resources to the ASDI by government agencies	Minimal	See comments to A16.
A23	Develop guidelines to encourage the contribution of resources to the ASDI by private organisations, academia and the general public	Minimal	
A24	Identify standards for the seamless access of resources	Minimal	Limited to data related standards.
A25	Revise the Australian Spatial Data Directory to enhance its usability and functionality	Advice	
A26	Develop a policy to mandate the inclusion of metadata for ASDI resources	Advice	

GOVERNANCE

#	Description	Decision	Comments

R24	**The governance model of the ASDI should incorporate:**
	
	• **education/outreach**
	• **collaboration/partnerships**
	    ○ accountabilities, reporting structures, resources and operational aspects
	• **standards, policy and legal issues**
	• **custodianship**
	    ○ responsibilities
	    ○ incorporating points of truth, single authority sources, distribution points
	• **resource delivery and maintenance**
	    ○ including data creation and collection
	    ○ framework data
	• **metadata**
	
	The governance model should provide the institutional arrangements for delivering spatial information and services in a coordinated and integrated environment, and where possible should leverage existing frameworks/collaborative arrangements (e.g. PSMA's relationship with jurisdictions, and jurisdictions relationships with local government)
		Agreed	Governance should 'consider' rather than 'incorporate' items listed.

#	Description	Decision	Comments
R25	**The governance of the ASDI should be a collaborative effort between government, the private sector and academia** The governance model should accommodate all SDI stakeholders (e.g. manufacturers, suppliers, users and researchers). Governments are seen as having an overarching role with regards to the provision of frameworks and services to the community. Unlike other bodies, governments are in a unique position in terms of knowledge of strategic direction and planning and can often guarantee that proposed strategies are indeed implemented. The private sector's immediate focus is on solving business problems. With a great knowledge of current and emerging technology, processes and practices, the private sector understands the technical and commercial practicalities of delivering services to customers. Academia can help to provide new ideas and directions as well as valuable context and comparison on local, national and international levels. The foresight and vision that results from academic research can help to ensure that strategies and policies proposed today will still be relevant in the future. Additionally established community groups (e.g. those created within the emergency service sector or natural resource management area) should be involved in the formation and creation of the governance model.	Agreed	Government will initially need to have the major role.

#	Description	Decision	Comments
R26	**Government agencies should participate in the policy, coordination and provision of data/products** Issues related to policy development and coordination will principally remain the focus of government agencies, however should be undertaken within the collaborative framework of government, private sector and academia.	Agreed	
R27	**An independent body should coordinate the governance of the ASDI** The generation and distribution of funds for the creation, maintenance and operation of the ASDI should be administered by a national agency responsible for the ASDI. This organisation may need to be established or the priorities of an existing organisation adjusted. To be effective, this organisation will require authority to define policies and encourage conformance to standards and practices, and will need a strong connection between each of the jurisdiction's governing bodies. Existing structures such as the Council of Australian Governments (COAG) and the proposed Australian Spatial Consortium (ASC) should be used as a model for operational organisation and collaborative initiatives that should be employed by the ASDI governing body.	Noted	A new body would be dependent upon new funding and broad acceptance. ANZLIC could coordinate.

#	Description	ICSM Role in Action Item	Comments
A27	Establish a governance model for the delivery of spatial information and services from the ASDI that encompasses government, private industry and academia	No role	
A28	Define a policy to encourage the participation of government agencies in the policy, coordination and provision of resources for the ASDI	No role	
A29	Review and identify an independent organisation to coordinate the governance of the ASDI	No role	

STANDARDS

#	Description	Decision	Comments
R28	**Reviewing and monitoring data standards and systems should be the responsibility of all ASDI stakeholders** In support of a self governing approach for the ASDI, reviewing and monitoring processes should be able to be performed by all ASDI stakeholders.	Agreed	
R29	**The process of monitoring standards and systems should be automated where possible** The extent to which the ASDI will need to ensure the quality of the resources that it provides needs to be defined, however ideally this should be performed in an automated manner with no or little human interaction. Benefits associated	Agreed	
R30	**Metadata standards should be defined and enforced** Accurate metadata facilitates data and service discovery. A standard for the description of metadata has been developed for Australia, but should be more strongly mandated and enforced.	Noted	Recognise that some minimal level of metadata compliance is essential. Encourage full compliance via metadata tools and education.

#	Description	Decision	Comments
R31	**Resources should be required to meet a base standard in order to be included within the ASDI** The 'base standard' may simply be a requirement that metadata (of a particular form) accompanies the resource. Actual details for the 'base standard' will need to be researched and identified.	Noted	Recognise that some minimal level of metadata compliance is essential. Encourage full compliance via metadata tools and education.

#	Description	ICSM Role in Action Item	Comments
A30	Develop guidelines for ASDI stakeholder responsibilities	Advice	
A31	Develop processes to automatically monitor standards and systems use	Advice	
A32	Develop a policy for resource metadata	Advice	
A33	Identify a 'base standard' for ASDI resources	Advice	

ORGANISATION

#	Description	ICSM Role in Action Item	Comments
A34	Define and adopt an organisational vision that enables industry wide collaboration and benefit	No role	ICSM would be consulted.
A35	Nominate leader organisations to drive ASDI implementation	No role	
A36	Develop a commercial framework that ensures service quality and provides investment security	No role	