

Spatially Enabling Australasia

CRC SI-2: The Next Decade



CRC FOR **SPATIAL INFORMATION** 2009-2017

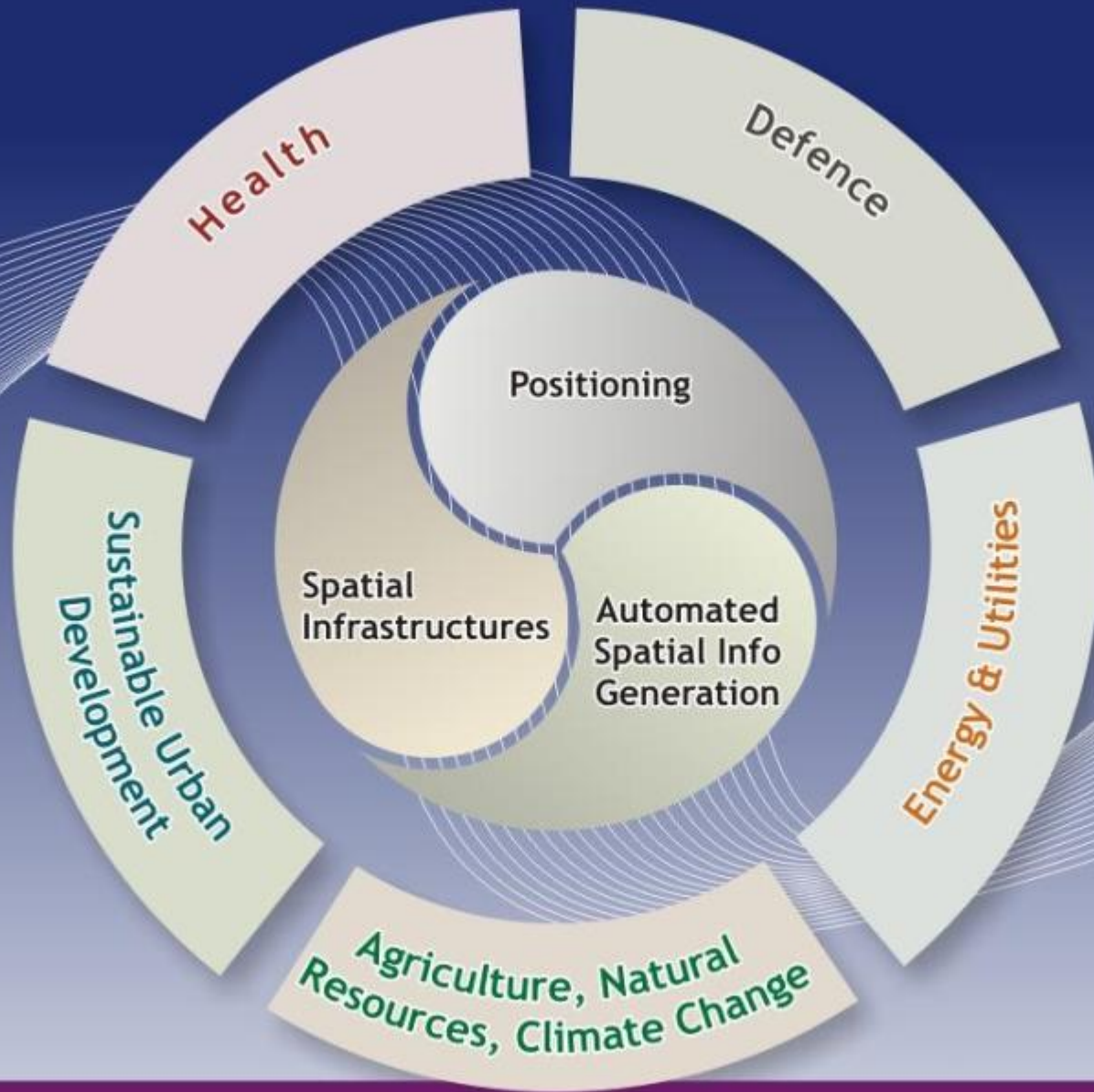
Key Challenges

Create a new infrastructure for Australia & NZ
precise positioning

Implement automated information generation
explosive growth in remote sensing systems

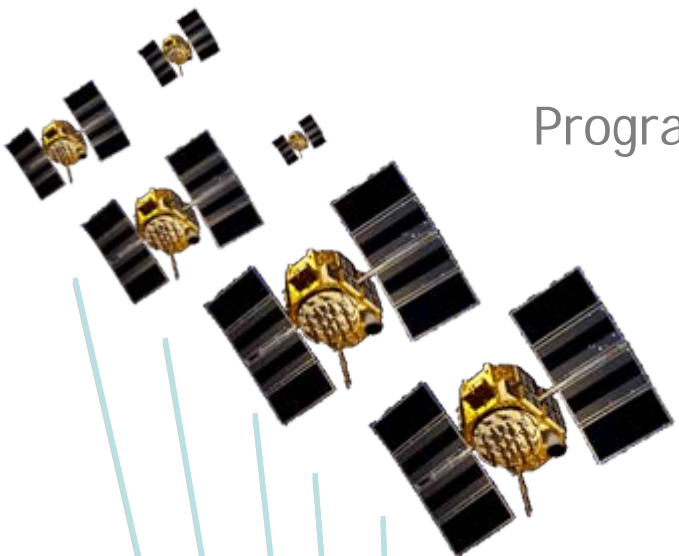
Create an Australia & NZ Spatial Marketplace
unlocking data potential

SPATIALLY ENABLING AUSTRALASIA



Program 1 Positioning

Research challenges



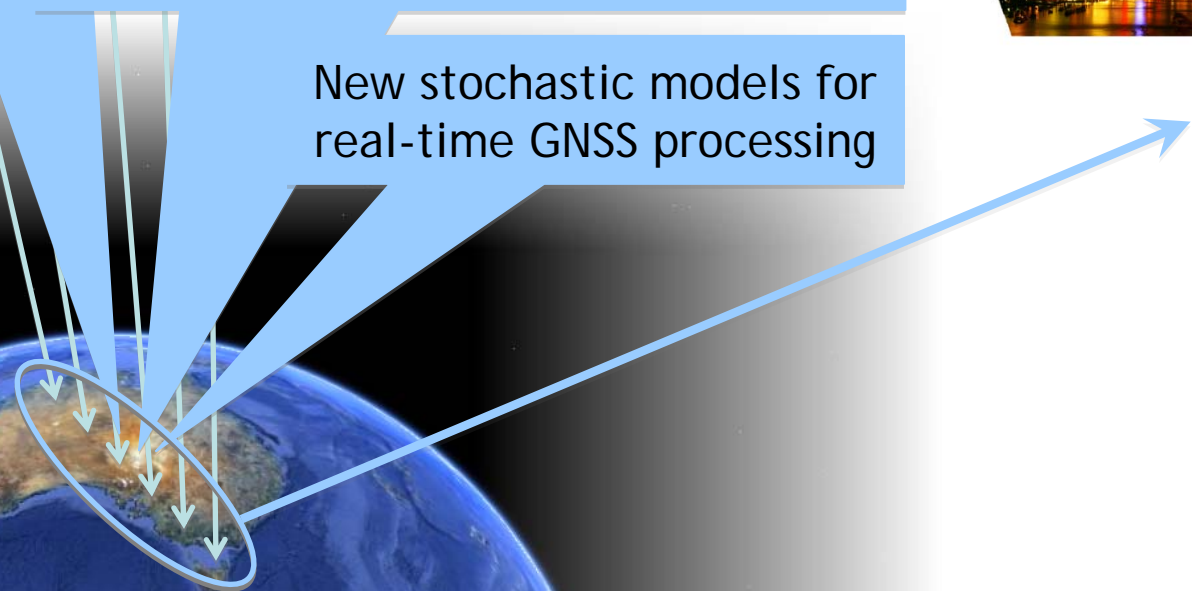
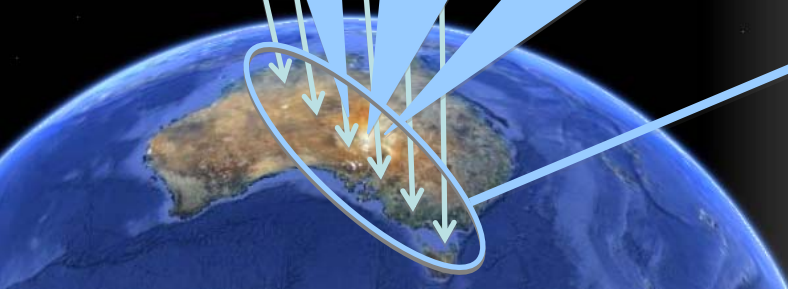
Integer inference theory

Ionospheric & tropospheric modelling

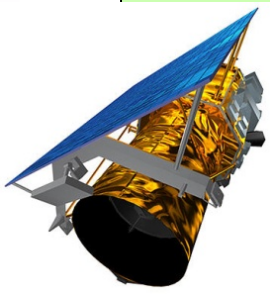
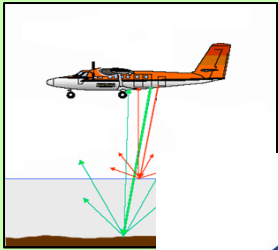
New stochastic models for real-time GNSS processing



Real time positioning for users



Integrated multi-sensor data acquisition systems



... from aerial, space and terrestrial platforms

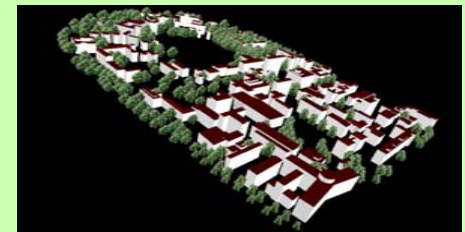
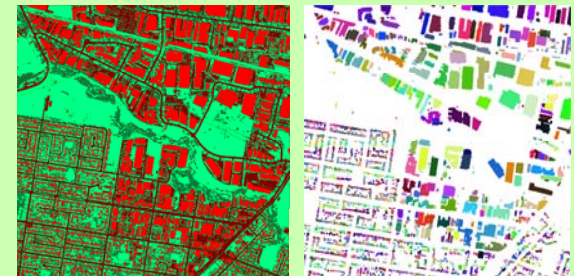
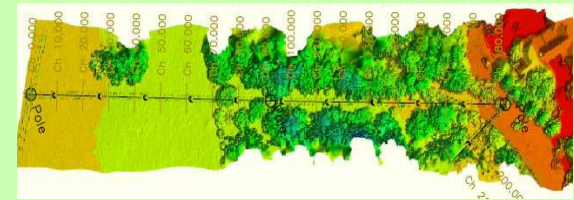


Research challenges

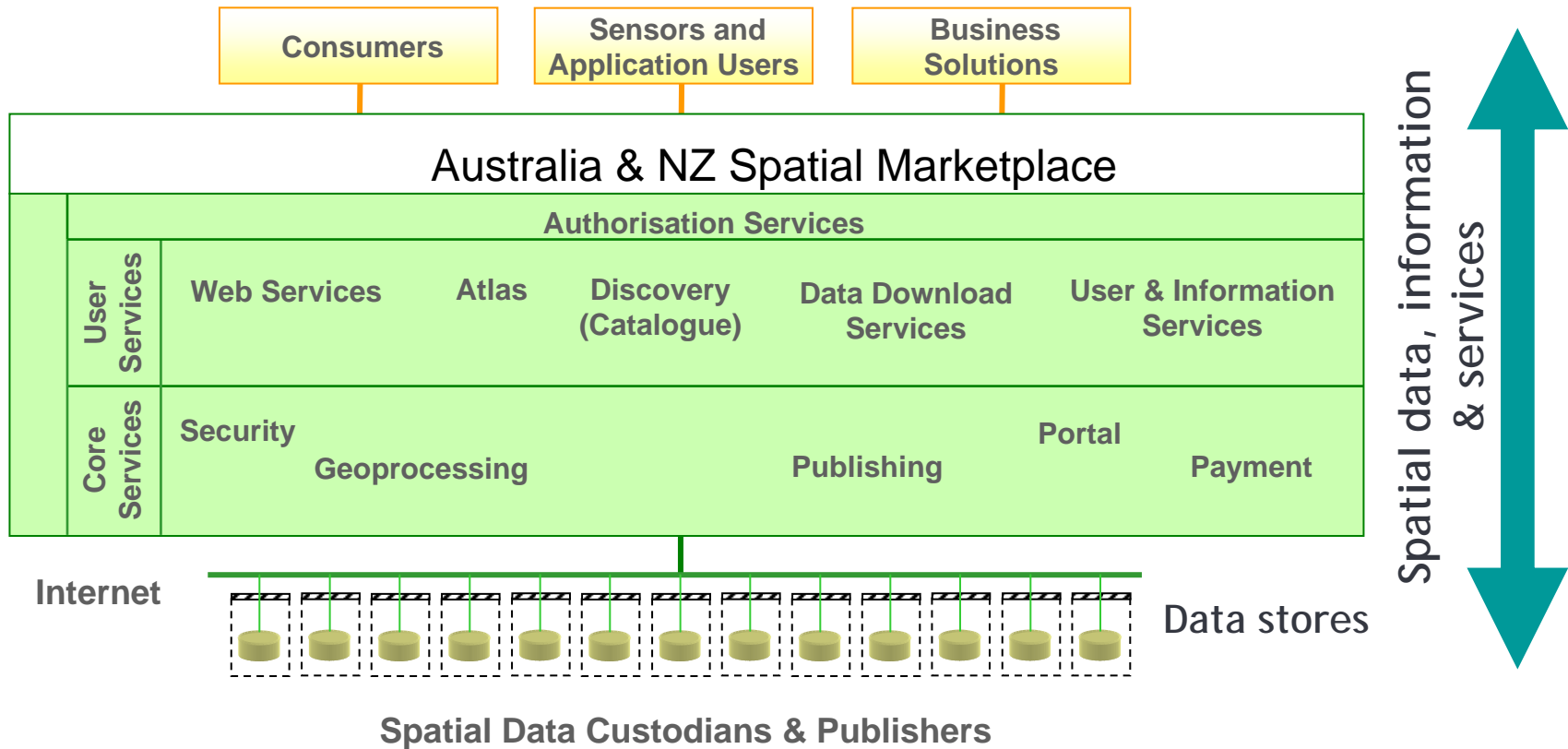
- Sensor Modelling & Georeferencing
- Data Fusion
- Feature Extraction



Fit-for-purpose, automatically generated spatial information products



Program 3 Spatial Infrastructures



Research Challenges

- Advanced on-line geoprocessing models for Web 2.0
- Develop national & international standards
- Develop a federated data model to facilitate spatial enablement

Key Research Outputs

A program of fundamental and applied research outputs

Mathematical, stochastic & functional models to enable accurate and reliable characterisation of physics processes within both signal transmission and integrated multi-sensor data acquisition systems

Innovative models & methodologies for automated object feature extraction from integrated, multi-sensor data acquisition systems

Robust algorithms and experimentally validated **computational processing systems** suited to industry adoption

National & international standards for new geoprocessing tools, federated data models to enable the Australian Spatial Marketplace

Spatial Education Program

- 50 postgraduate scholarships
- Mentoring placement of postgraduates
- Collaboration with SSSI (4000 members)
- Expanded to undergraduate, vocational, school
- Project specific approach eg for health professionals
- End-user driven



Participants & Stakeholders

<p>INDUSTRY</p>	<p>43PL SME consortium of 75 companies Large Energy utilities & Agriculture</p>
<p>GOVERNMENT (all levels)</p>	<p>ANZLIC - Lands Depts including LINZ Diverse agencies eg Health; Planning and Infrastructure; Environment; Defence; Agriculture</p>
<p>RESEARCH</p>	<p>Universities - 4 Essential and 6 Other Participants including Internationals; and Telethon Institute for Child Health Research</p>



Spatial Industries
Business Association

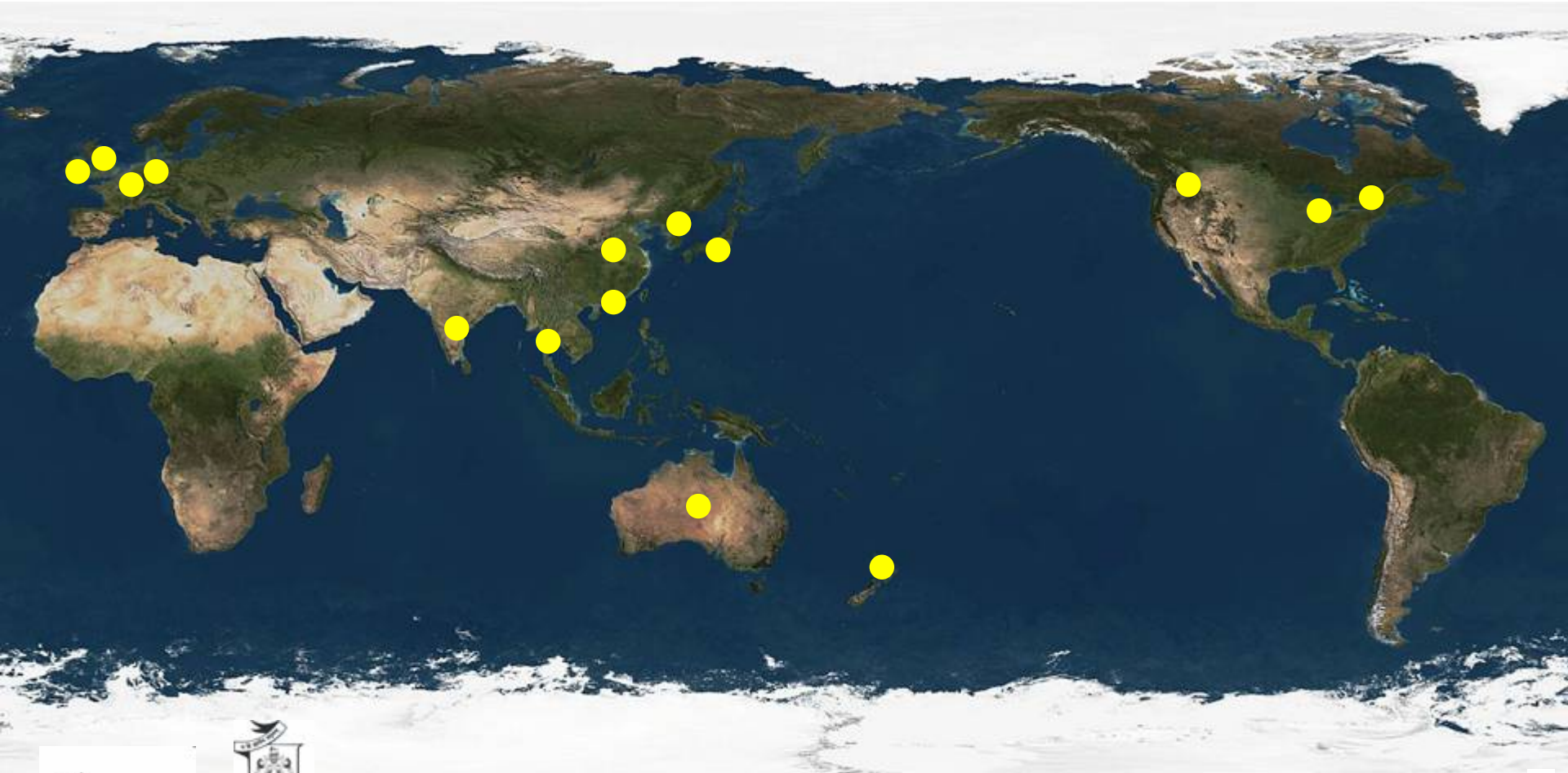


Surveying & Spatial
Sciences Institute



Australian Spatial
Consortium

International Collaborations



What is new about CRCSI-2 ?

Research Needs

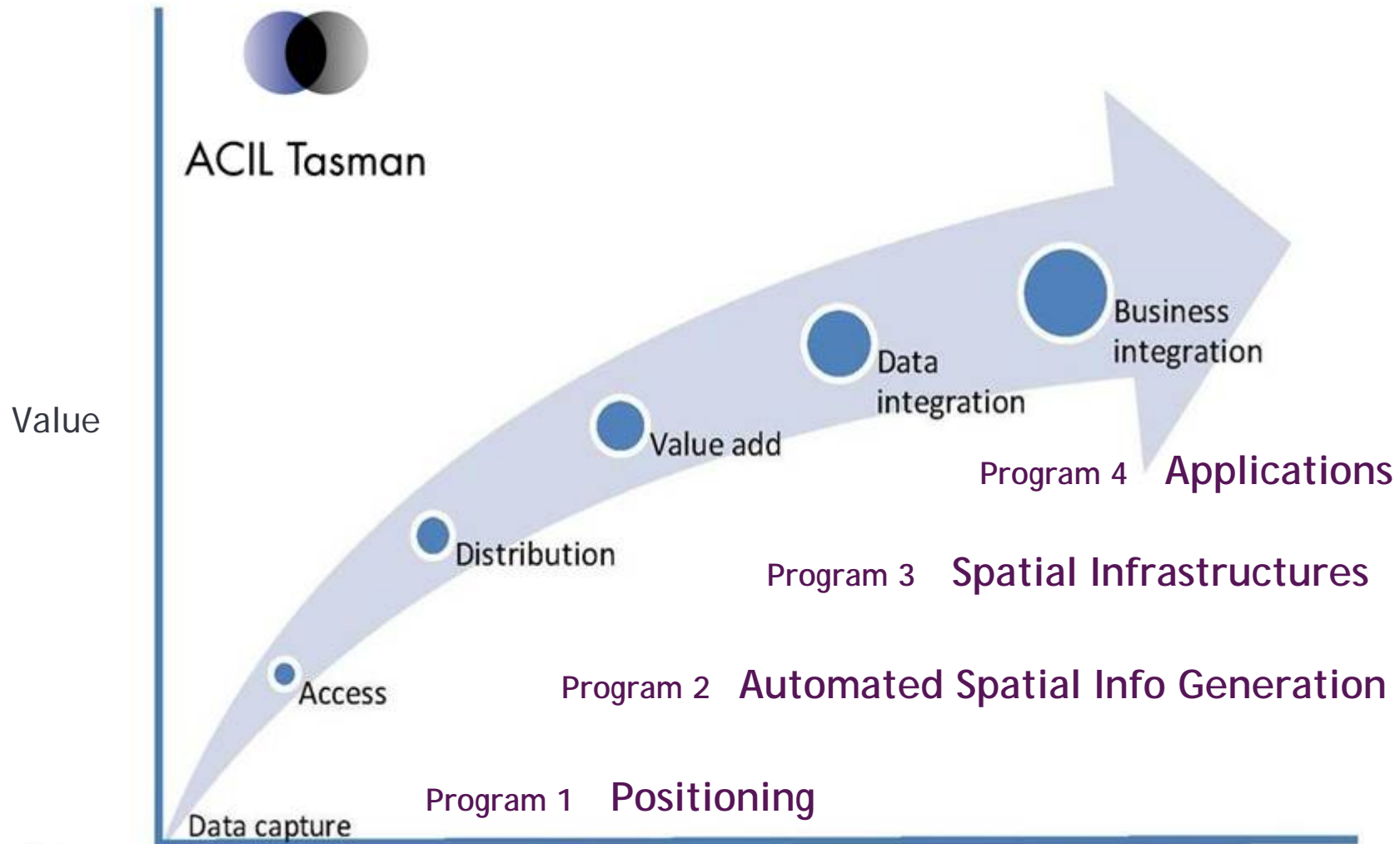
CRCSI-1: addressed the needs of the spatial information industry

CRCSI-2: spatially enabling end-user industries

Utilisation

- Business Development Program with 43pl
- Innovation program with 500 SIBA members & their 5000 clients
- Expanded user base: 43PL, New Zealand, Government agencies

Spatial Industry Value Chain



Major Benefits

Our research is critical to the delivery of

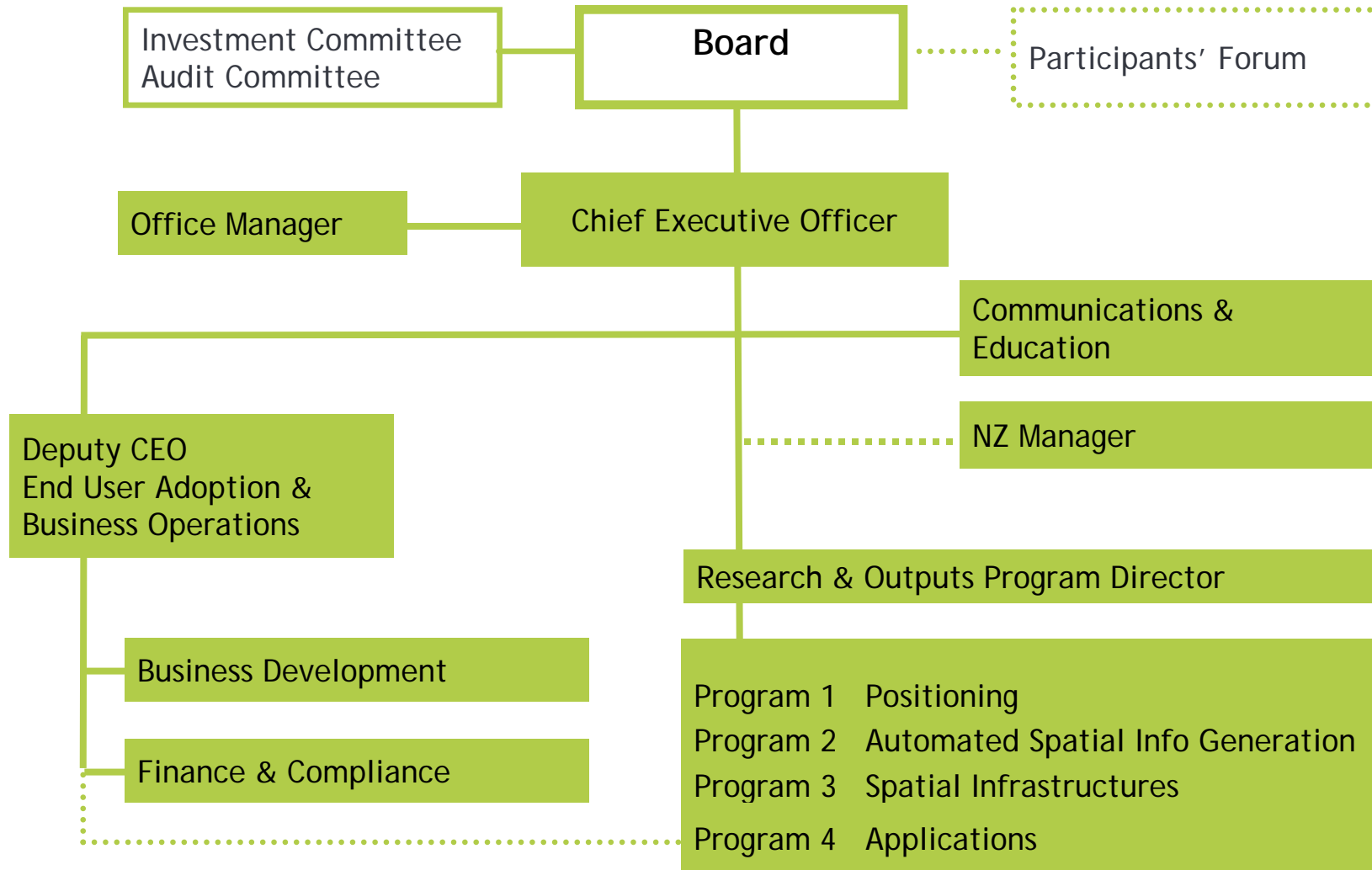
- **Economic and societal benefits through productivity boosts in**
 - Agriculture
 - Defence
 - Energy
 - Health
 - Urban Planning



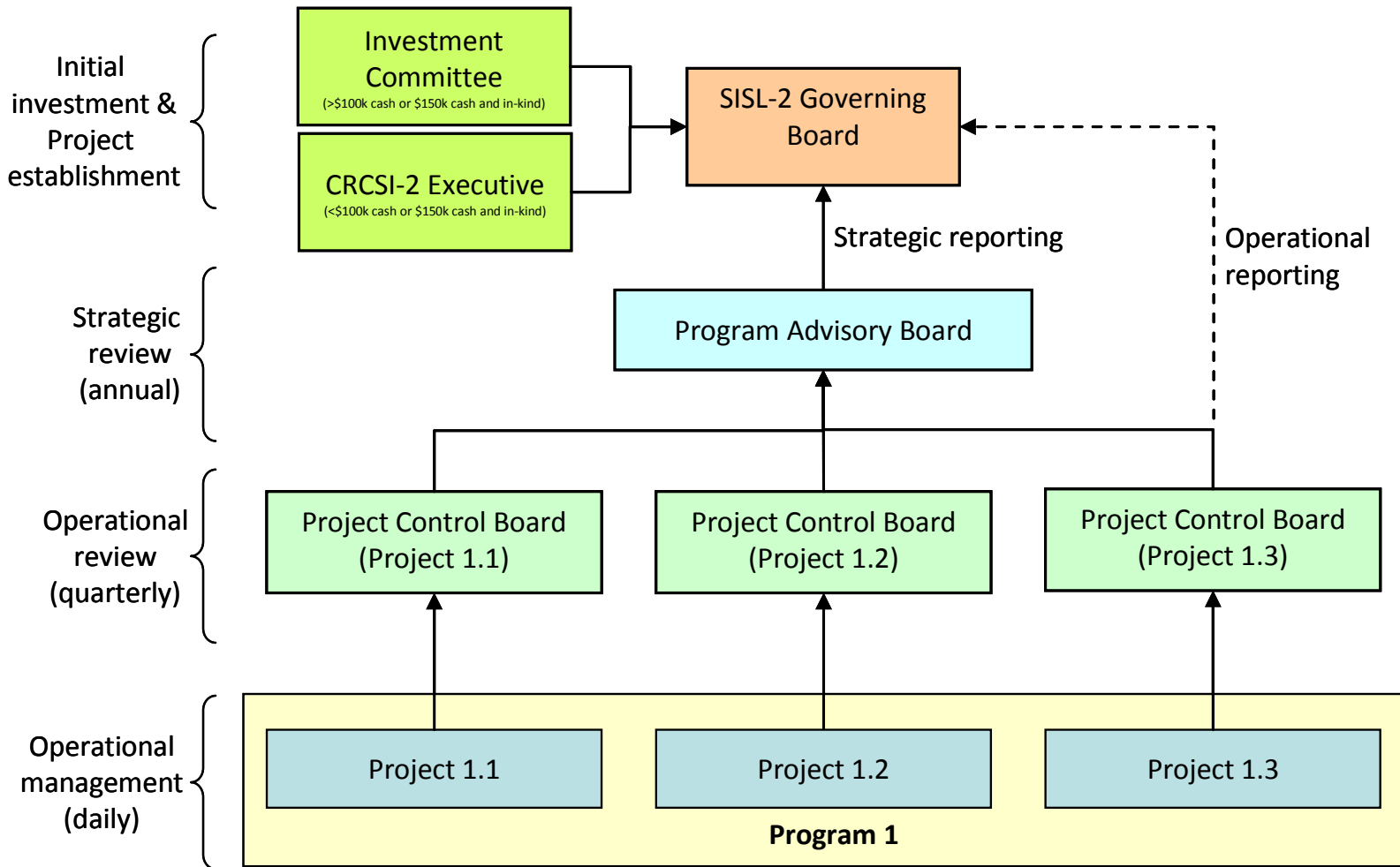
Through

- **National Precise Positioning Infrastructure**
- **New processing tools for information generation**
- **Australia & NZ Spatial Marketplace**

Governance & Management



CRCSI2 Project Management and Review Structure



Research Leaders per project & Project Managers per program



70 companies



Depts Sustainability & Environment ; and Primary Industries



Australian Government
Geoscience Australia

Representing the federal government consortium



ASt
Advanced Spatial technologies

AAMHATCH

aerometrex.

agLAB
AGRICULTURAL SOFTWARE

Akuna

Alexander Symonds
Surveying Consultants

APOGEE

bp

brazier motti

BSR Solutions

Clyde Agriculture

SWIRE

costa group

C.R. KENNEDY
TOTAL SURVEY SOLUTIONS

CTF solutions
CONTROLLED TRAFFIC FARMING

CTG Consulting

ebr

eco logical
AUSTRALIA

erdas

ESRI Australia
Putting knowledge into place™

e-Spatial
LOCATION BASED BUSINESS INTELLIGENCE

fba
FITZROY BASIN ASSOCIATION

FreshTrack Software™

FUGRO

fusion GIS

GENERAL DYNAMICS

geogenx

GEOIMAGE

GeomaticTechnologies

Geomatix

geometry

gps-Ag

GPSat SYSTEMS AUSTRALIA
Pty Ltd

GRACE
Detailed-GIS Services

HAMES SHARLEY

iintegrate systems

industrea

insight.gis

INSITU

LAND identity

LANDZONE
International

HASSELL

iDelve

MACROHealth

McMULLENOLAN

Myriax

Leica Geosystems

LESTER FRANKS

Spatial Relationships, Human Technology

LISAsoft
Linking IT

43opl

MILNE AgriGroup

OmniSTAR™
The Global Positioning System

logica

OMNI-LINK
LINKING PEOPLE AND INFORMATION

NZ Aerial Mapping Limited
Established 1986

NZ Aerial Mapping Limited

PHOTOMAPPING SERVICES

Position One Consulting

Position Partners

ngis
people partnership success

PSMA

Qasco
The spatial data professionals

Scanalyse
EFFICIENT SAFE COST-EFFECTIVE MINERALS PROCESSING

PHOTOMAPPING SERVICES

SKM
SINCLAIR KNIGHT MERZ

SKYVIEW SOLUTIONS
ULTRA HIGH RESOLUTION AERIAL IMAGING

pracsys.

Spatial Vision

SPOT IMAGE

SUNDOWN COUNTRY
RICKY WELLS CONSULTING

Septentrio
satellite navigation

S.I.T.E

terranean mapping technologies

TWYNAM
Agricultural Group

V-TOL AEROSPACE

SUPERAIR

VPAC
VICTORIAN PARTNERSHIP FOR ADVANCED COMPUTING

SURVEY 21
LAND & ENGINEERING SURVEYORS

we-do-IT
Spatial Information Technology Consultants

Trimble™

TRUE 3D

whelans

Government	Corporate	Research
ANZLIC	43pl (representing over 75 companies)	Curtin University
Landgate (WA) Dept Agriculture and Food Dept of Health Dept for Planning	Ergon Energy Energex Western Power Corporation	Queensland University of Technology
Dept of Lands (NSW) and other agencies		University of Melbourne
Department of Sustainability and Environment (Vic) and other agencies		University of New England
Commonwealth Consortium Geoscience Australia Defence Australian Bureau of Statistics Australian Institute of Health & Welfare and other agencies		CEODE, Chinese Academy of Sciences McGill University (Canada) RMIT Swinburne University Telethon Institute of Child Health Research Wuhan University (China)
Dept of Environment & Resources (Qld) and other agencies		

Thank You

www.crcsi2.com.au

