THE UNIVERSITY OF MELBOURNE

CSDILA
THE CENTRE FOR SPATIAL DATA INFRASTRUCTURES & LAND ADMINISTRATION

Centre for Spatial Data Infrastructures and Land Administration

2001 -2021

20th Anniversary

20 Years of Research and Development Excellence

MESSAGE FROM THE DIRECTOR

Welcome to our Centre 20th highlights.

I am very pleased to present this document highlighting selected activities and achievements of our Centre for Spatial Data Infrastructures and Land Administration (CSDILA) over the last 20 years, since its inception in 2001.

CSDILA is committed to excellence in research, innovation and training related to land and property management and spatial data infrastructure domains, with a strong focus on future proofing research. Our work is empowering the global vision for modernisation of land administration systems, spatial enablement by connecting drivers and enablers, advancement in sustainability and resilience, furthering the Sustainable Development Goals (SDGs), and pioneering theories and practical solutions that deliver a sustainable future for all. Research undertaken within the Centre over the past 20 years has been instrumental in providing the basis for several major advancements in technical, policy and capacity-building and economic growth at different jurisdictional levels, from local to city, state to national and international levels.

We are designing and developing technical solutions and analytical platforms, such as 3D spatial visualization – or digital twin – for urban analytics in support of changing modern societies and empowering governments. We are proud of our work, and simply put, we will continue our journey to help create the world's sustainable future. The Centre's role of pioneering land and geospatial theories and practical capabilities that deliver sustainable development will respond to the new focus on resilient systems for managing increasingly complex urban and rural environments, as well as fragile coastal and marine zones. The explosion of location intelligence and associated data delivered by smart and portable devices, advancements in sensing, machine learning, AI and automation solutions, VR/AR for visualization of multi-dimensional information to support future scenarios, forecasting, simulation, and more strain on our ability to use information intelligently to convert it into smart and purposeful outcomes.

Foreseeable strategies of the Centre include:

- Advancement of science and technology in capturing, modeling, analysing and visualising spatial and land information systems
- Modernisation of land administration and information flows among hierarchies of government and in cross-jurisdictional regions
- Embedding sustainability and resilience in the design and development of land and spatial information systems
- Digital Twin technical and architectural solutions to support an urban and rural analytics and applications platform
- Advancement in 3D Cadastre and BIM modeling, validation, queries, and visualization techniques
- Integrated solutions for urban planning and analytics
- Identification of business cases for merging sustainability in modern land information throughout government agencies, especially to improve capacity for policy making and implementation, and to deliver fair and transparent compliance systems in land transactions management, planning, taxation, valuation, and land acquisition
- Intensive professional training and more capacity building in land and geospatial solutions and skills to support infrastructure engineering and wider society
- Identification of a new standard for good governance in digital twin and land administration for spatially enabling governments and societies.

Major research themes that have emerged over the past decade, and a focus for the Centre over the coming

years, are on advancement in digital twin, solutions to contribute to achieving the SDGs, improving resilience, and increasing capabilities for capturing, managing, analyzing and visualizing geospatial and land and cadastre information. This would further help in realising Spatially Enabled Societies and beyond.

The success of the Centre is in no small part due to the support of The University of Melbourne and our industry partners and supporters over the last 20 years. I would like to acknowledge and to thank particularly the Victorian Government, and also NSW and WA and Federal Governments, along with the ARC and many international organisations including the United Nations and the World Bank. These organisations and institutions have provided support, including financial support, and permitted the Centre to make use of their data, systems and processes for our research.

The Centre of course would not be what it is today without the hard work and dedication of staff and students, both past and present, who have worked as a team and have been instrumental in the advancements of the Centre. In particular I would like to acknowledge and thank Emeritus Prof Ian Williamson, our CSDILA founder and first director (2001-2006), and our lifetime mentor and great supporter.

I would also like to acknowledge the important role of the Industry Advisory Committee under the leadership of the Hon. Gary Nairn, who together have guided the Centre to success through their exemplary leadership and vision over the years.

As Director of the Centre, I look forward to continuing to engage and work with a wider group of partners from governments, industries and academia across the globe in developing our ambitions in research and development, and training spatial solutions to empower and enable societies.

Thank you for your collaborations, trust, and support.

Professor Abbas Rajabifard

Director

OUR CENTRE

The Centre provides a focus for research in Spatial Data Infrastructures (SDIs) and Land Administration by building on research relationships and creating new links through national and international collaboration. The Centre was established in 2001 and this year celebrates its 20-year Anniversary. Over the past two decades the Centre has undertaken world class research with a broad range of partners, influencing Government and many national and international agencies in their policy and decision making. A snapshot of these achievements is presented here in this document.

The Centre will continue to undertake innovative world class research and development and prioritise its research to lead and take advantage of emerging technological and institutional changes. The principal role of the Centre is undertaking research within the location intelligence and dynamic ICT and emerging technology environment in a modern society. It will continue to provide pioneering research and analysis of land and geospatial information systems that support sustainable development for wider societies and nations at all levels of development. This will be built on the principal mechanisms of a strong internationally recognized Research Program, world-class Postgraduate Training Program, and a Visiting Scholars Program.

20 YEARS AT A GLANCE

+30
Senior Industry & Advisory Members

+150
Professionals & Senior Researchers

+40
Developers & Data Scientists

+50
PhD & MPhil Graduates

+200
Refereed Journal and Conference Publications

13
Scientific & Technical Books

+250
International Conference Article

+10
Roadmaps and Strategic Planning Documents

+10
Research & Development Teams

+40
Strategic and Major Research Projects

+10
Major Software Platforms & Applications

+30
Strategic Partnerships & Alliances

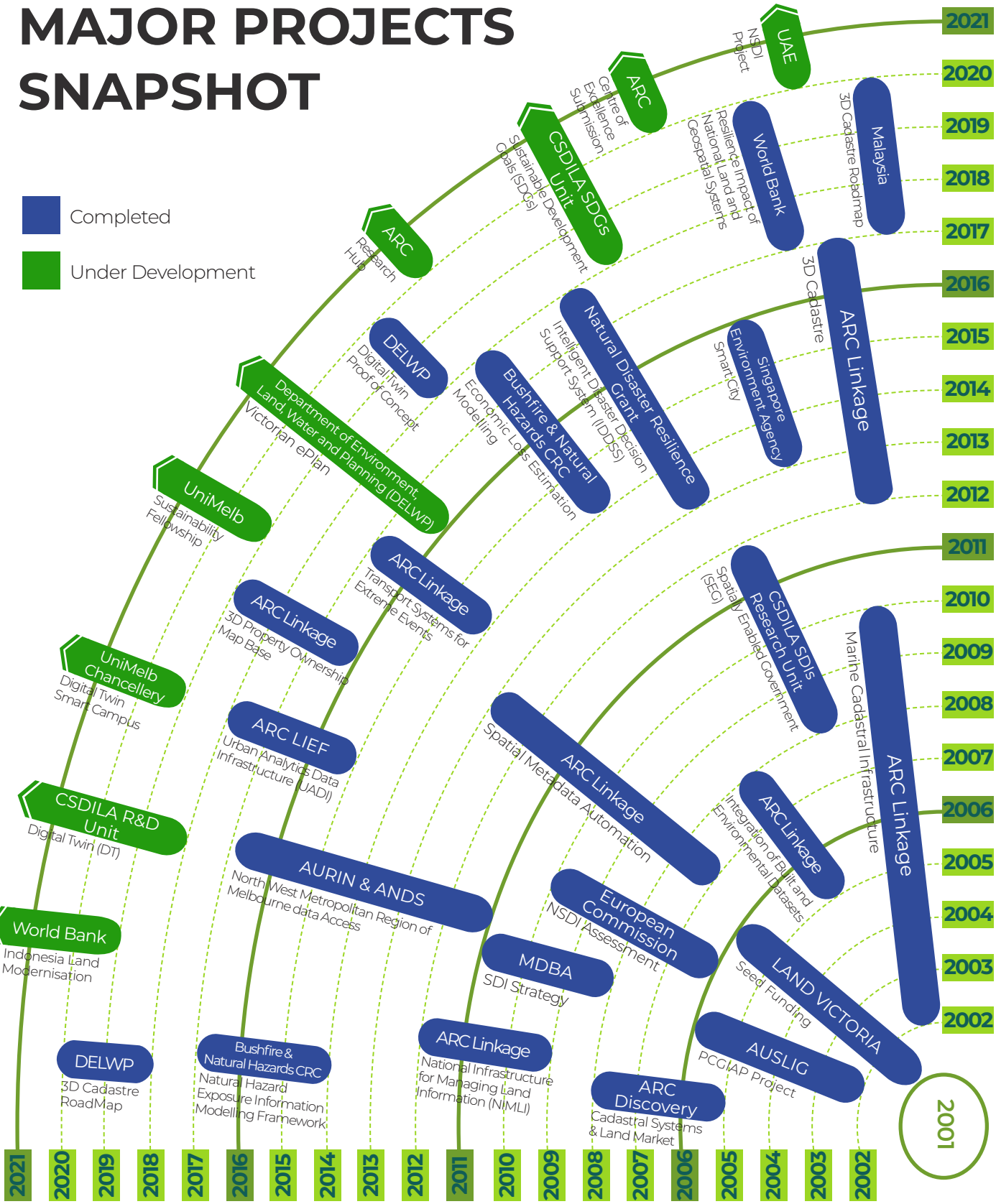
+40
International Events, Forums and Workshops

+200
International Visitors & Exchanges

+100
International Visits

+80
Executive Training & Leadership Coaching Webinars

MAJOR PROJECTS SNAPSHOT



SUSTAINABLE DEVELOPMENT GOALS

GOAL 4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

CORE CAPABILITIES

Centre for Spatial Data Infrastructures and Land Administration offers an extensive range of scientific, strategic and innovative services in the following areas to meet the needs of industry, governments and research community:

Modern Land Administration systems

To advance towards e-land administration and demand for stronger property rights in land.

Building Information Modelling (BIM)

To streamline construction project delivery workflow and improve building performance.

Spatial Data Infrastructures (SDIs & NSDIs)

To enable seamless discovery, access, use and fusion of spatially enabled data for all users.

Community Resilience & Public Safety

To effectively respond and recover from the impacts of the increasingly frequent disaster events.

Digital Twin Technologies

Digital counterpart of physical environment to promote integration between virtual and physical models.

Advanced Hologram & AR/ VR Visualisation

To enable interactive 3d visualisation for better analysis, engagement and informed decisions

Urban Analytics & City Science

To inform the planning process and to support data-driven insights, creative actions, and better governance

Sustainable Development Goals (SDGs)

Universal call to end poverty, protect the planet, and ensure a better and sustainable future for all

Future Smart and Connected Cities

Explore new ideas and new approaches for the acceleration and realisation of smart and connected cities

Capacity Building & Executive Training

Strengthen both public and private agencies and support better leadership and effective policy making

KEY ACTIVITIES AND STRATEGIC PRIORITIES

The Centre for Spatial Data Infrastructures and Land Administration (CSDILA) provides a focus for research and innovation in **Modernisation of Land Administration Systems**, **Spatial Data Infrastructures**, and **Spatial Enablement** of society by building on ongoing research relationships, delivering tailored and specialised **Capacity Building** programs, and creating new links through extensive collaboration with government and industry internationally. The Centre also undertakes original world-wide research in **Sustainable Development Goals (SDGs)**, **Digital Twin Technologies**, **Smart Cities**, **Urban Analytics** and **Land Tenure**, **Policy and Management**.

Strategic Industry Partnerships

that address industry problems and embed research in innovative organizations to extend their R&D capabilities.

International Network

connection to global, national and local universities, research organisations and industry to build cross-disciplinary teams to solve research challenges.

Capacity Building & Training

extending our world-class training to build capacity from practitioners to executives across our core capabilities.

Competitive Research Grants

successfully maintaining funding through industry collaborations and winning competitive research grants.

Prototype Development

via in-house agile development team.

INTERNATIONAL ADVISORY COMMITTEE

The Centre Advisory Board comprises distinguished Australian and overseas leaders in spatial science and technologies from academia and industry. Advisory Board members help with the strategic direction setting and encourage the promotion of networking linkages and research opportunities between the Centre researchers and their own institutions and networks.

HON. GARY NAIRN
Chair, CSDILA Advisory Committee; Chairman, Duke of Edinburgh's International Award Australia

PROF. STIG ENEMAR
Former President, Int'l Federation of Surveyors; Planning Dept., Aalborg University, Denmark

JAMIE LEACH
CEO & Founder, Open Data Australia

PROF HARLAN ONSRUD
Head, Department of Spatial Information Science and Engineering, University of Maine, USA

DR GREG SCOTT
Senior Advisor, Global Geospatial Information Management; UN Statistics, NY, USA

DR KEITH CLIFFORD BELL
Senior International Land Administration Advisor

CRAIG SANDY
Surveyor General, Victoria; Land Use Victoria, DELWP, Victoria, Australia

PROF DAVID COLEMAN
Former Dean of Engineering, The University of New Brunswick, Canada

TOM CHAMPION
Director, Reeds Consulting Australia

DR DANIEL STEUDLER
Federal Office of Topography Swisstopo, Switzerland; Chair, EuroGeographics-CLRKEN

TONY BURNS
Executive Director & Business Development, Land Equity International Pty Ltd, Australia

JAN WANDEK
Director, Emerg Solutions Australia

OUR PEOPLE

SUSTAINABLE DEVELOPMENT GOALS

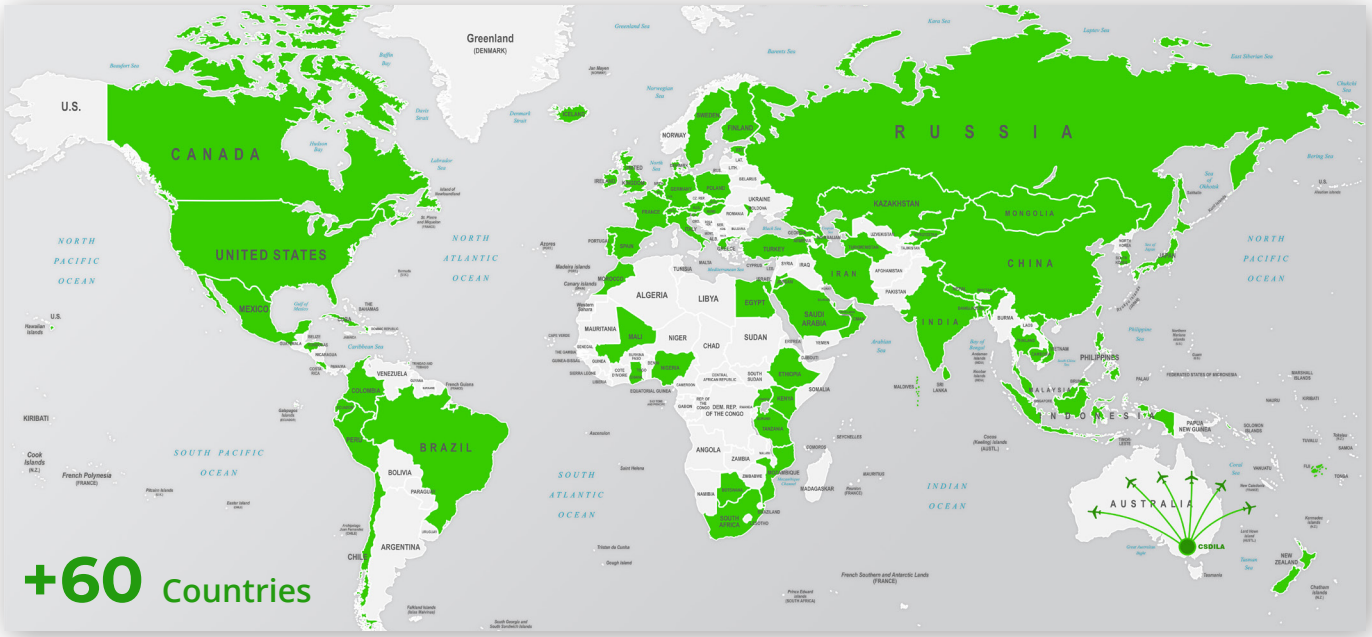
8 DECENT WORK AND ECONOMIC GROWTH

GOAL 8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

INTERNATIONAL VISITS

Over the past twenty years, we have built strong international links across the globe to bring together new research technologies and scientific partners in varied domains and to draw on a wealth of experience and expertise in addressing local and global challenges. Our international visits and visitors have been and will continue to be an essential part of creating and strengthening our international collaboration and improving our research-industry links.



Countries visited by CSDILA's delegates and members (2001 - 2021)

Countries CSDILA hosted visitors from (2001 - 2021)

SOFTWARE AND VISUALISATION PLATFORMS

SMART CADASTRE

A modern, future-proof, smart and scalable land information system for sustainable development

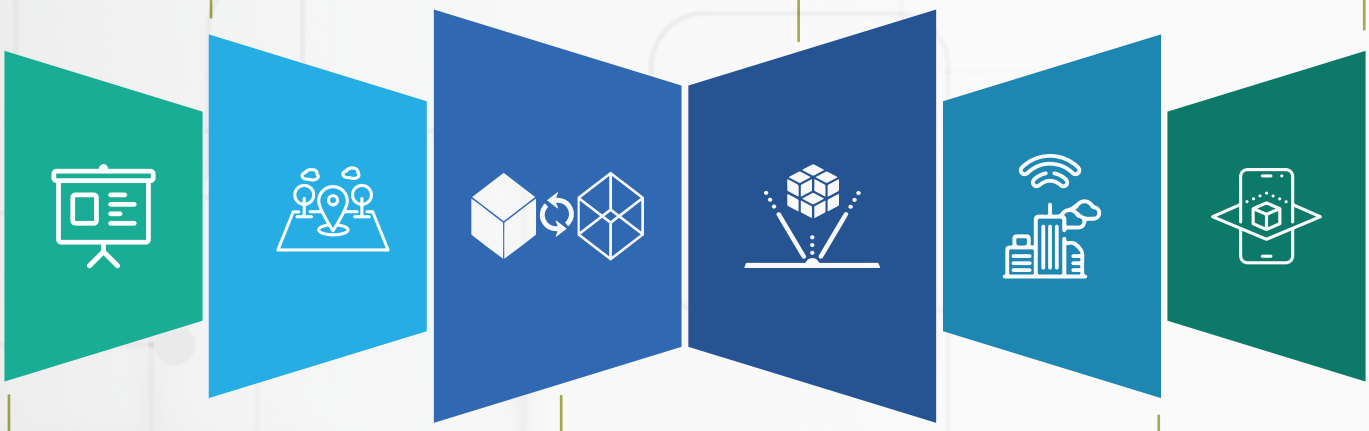
D-LAB

A nationally unique visualisation facility bringing together the latest visualisation technologies including cutting-edge hologram tables, 360 degree cameras and AR/VR devices

SPACEMAN

(IoT-enablement for SDGs Monitoring)

An innovative platform to improve the accessibility of various data sources and interactive dashboards for advocating transparency of how the University supports the UN SDGs



IDSS

A hybrid decision support system that integrates a smart geospatial platform with an advanced optimisation simulation engine to perform urban planning scenarios and incorporate various data sources

DIGITAL TWIN

A virtual representation of real-world entities and processes, synchronized at a specified frequency and fidelity that incorporates 2D and 3D data and services to meet business and decision-making requirements

GEOCITY

A mobile enabled platform bridging the connection between the virtual and physical world and allowing users to visualise models in both indoor and outdoor settings

MAJOR EVENTS

SDGs Open Seminar
CSDILA Open Seminar on Latest Research on Sustainability & UN-SDGs

June 2020 CLICK

FMB-Digital Twin Launch
Fishermans Bend Digital Twin Project launched by the Minister for Planning Victoria

August 2019 CLICK

A Sustainable & Resilient World
Capacity Building and Geospatial Research for Implementing the SDGs

November 2018 CLICK

SSF 2018
International Symposium and Workshops on A Smart Sustainable Future for All

September 2018 CLICK

3D GeoInfo Conference
CSDILA Open Seminar on Latest Research on Sustainability & UN-SDGs

October 2017 CLICK

UN-GGIM Academic Forum
Secure Land Rights and Smart Cities – Making it work for Sustainable Development

July 2017 CLICK

CSDILA's 15-Year Anniversary
& International Symposium on Smart Future Cities: Role of Spatial Data and Urban Analytics

September 2016 CLICK

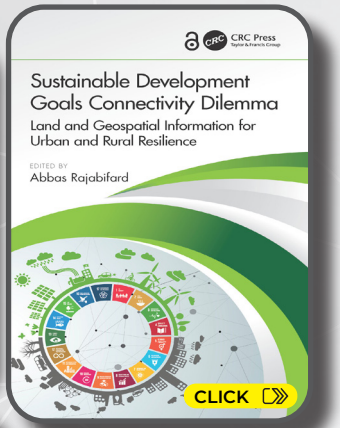
Smart Future Cities
International Symposium on Smart Future Cities: 3D Land, Property and Cadastre

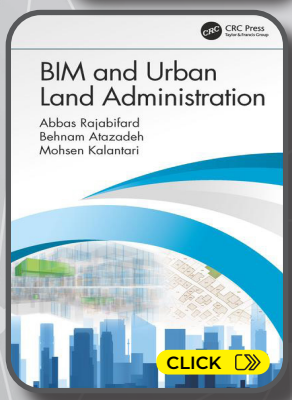
February 2015 CLICK

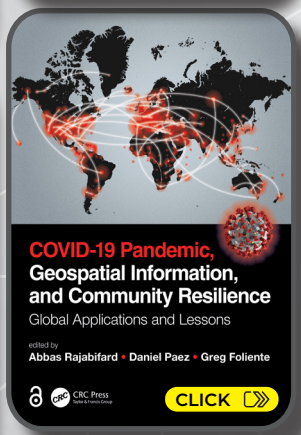
CSDILA's 10-Year Anniversary
& Beyond Spatial Enablement; A Vision for A Spatially Enabled Future

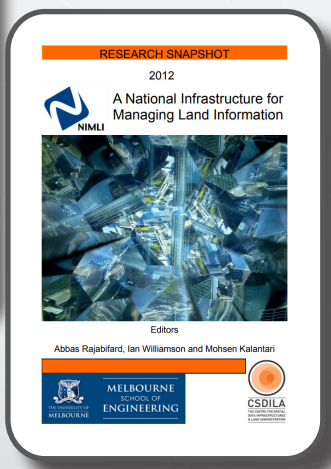
October 2011 CLICK

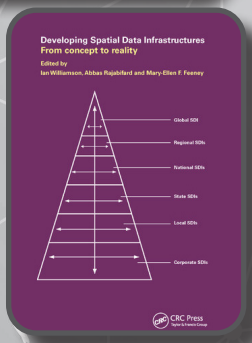
PUBLICATIONS - BOOKS

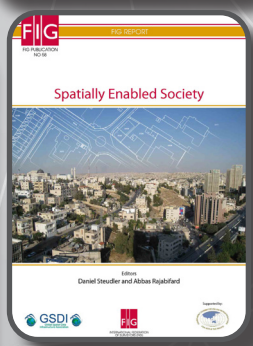


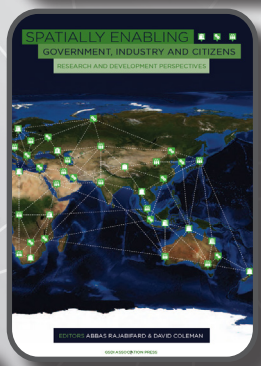


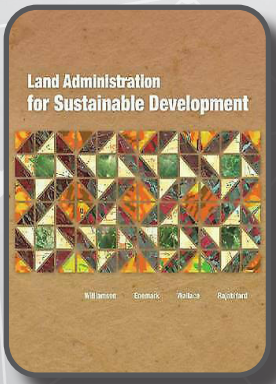


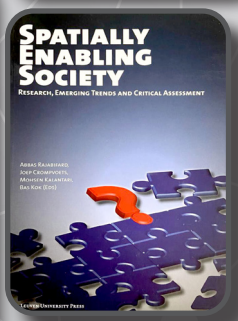












SCIENTIFIC CONTRIBUTIONS

Publication Stats

+200
Journal Articles

+250
Conference Articles

+50
PHD Graduates

13
Published Books

+100
Book Chapters

+100
Professional Magazine Articles

Main Journals Used for Publications

MOUs AND STRATEGIC PARTNERSHIPS

CSDILA has signed several Memorandum of Understanding (MoUs) and established strategic partnerships and collaborations with industry leaders and academic institutions across the globe to advance scientific research and development and to exchange experiences, insights and innovations.

SUBMISSIONS AND UPCOMING PROJECTS

RESEARCH HUB

RIIS RESILIENT, INTELLIGENT INFRASTRUCTURE SYSTEMS

GRANTED 2021

Australian Research Council (ARC) Industrial Transformation Research Hub, is a joint project in partnership with UNSW, Western Sydney University, and QUT, along with more than 20 top industries. The Research Hub entitled "Resilient and Intelligent Infrastructure Systems (RIIS) in Urban, Resources and Energy Sectors" will be empowered by the Digital Twin platform and has secured a total cash funds of over $10m for five years, from ARC and industry partners.

This project will integrate advances in sensor technology, connectivity, data analytics, machine learning, robotics, smart materials, and reliable models to deliver resilient and adaptive infrastructure systems in urban, energy and resources sectors.

CENTRE OF EXCELLENCE

SUBMITTED BID 2021

The intention of this Centre of Excellence (CoE) is to build upon the findings and strategies of ANZLIC, ICSM, VDAS, UN-GGIM and focus the efforts of world-leading researchers and industry partners to close gaps that will enable digital land and spatial data to add value to the economy, with a focus on Australia and the Asia-Pacific region.

With networks extending from Australian Universities to large companies in the Asia Pacific region and to the UN and World Bank globally, CSDILA is uniquely placed to extend existing Australian research strengths and build critical mass with new capacity for interdisciplinary, collaborative approaches to address the most challenging and significant digital land and spatial data research problems through this CoE.

TRAINING HUB

UPCOMING SUBMISSION 2022

The proposed Training Centre for Digital Engineering of Australia's Assets targets digital transformation of the Australian mining, energy, utility and civil infrastructure sectors. Serving as a talent pipeline of PhD and Masters students and postdoctoral researchers, the proposed Centre will build capacity to deliver secure, data-driven ecosystems for the delivery, operation, maintenance and decommissioning of engineering assets.

CSDILA'S FUTURE DIRECTIONS

- 2021 SNAPSHOT
- TO 2030 AND BEYOND

FUTURE DIRECTIONS - 2021 SNAPSHOT

A snapshot of CSDILA's interdisciplinary work for sustainable solutions:

Digital Land+ for Sustainable Societies

CSDILA's proposed Centre of Excellence in Digital Land+ aims to provide solutions for urban sustainability and resilience using digital twins. The centre will advance knowledge from artificial intelligence and machine learning in innovating solutions for sustainability and resilience to manage issues such as climate change and cross-jurisdictional disasters.

Towards the Twin

CSDILA continues to develop the maturity of Digital Twin (DT) solutions via hackathons and working with industry partners to learn how DT can provide cost savings, improve safety and enable sustainable development

DIGITAL TWIN

Sharing Digital Twin Infrastructure

CSDILA plans to support the research community and industry by providing LIEF funded shared computing infrastructure (Digital Twin) for new discoveries in visualisation, simulation, real-time analysis of sensor networks, and processing large 3D datasets to support life-cycle modeling, design, planning and management of urban areas.

Research Innovation

CSDILA continues to focus on advancement in data capturing, modeling and simulation, with applications in urban analytics and 3D urban land admin.

D-LAB VISUALISATION SUITE

CSDILA is building capacity in adopting AI, Machine Learning, VR/AR via the D-Lab visualisation suite which includes cutting-edge hologram table, video walls, Virtual Reality headsets, sensors for data capture, and cameras for 360 videos.

CLIMATE RESILIENCE

Climate Resilient Utilities

The ARC Industry Transformation Research Hub for Resilient and Intelligent Infrastructure Systems - awarded in 2021 to commence in 2022 will see CSDILA work with several industry partners including water utilities where CSDILA will co-develop solutions including BIM for facilities, SDI architecture for 3D sewer networks and terrain and climate adaptation solutions.

Technical Training

CSDILA is working with others across the University of Melbourne to provide technical training to help organisations to build workforce knowledge and capability by delivering: Executive briefings and training workshops, Short courses to help teams apply research-led education into practice and Purpose-built (and co-designed) micro-credentials

CAPACITY BUILDING

Digital Engineering Training Centre

CSDILA plans to drive Industry transformation via a Training Centre proposal to be developed in 2022 for a new generation of digital engineers equipped with the skills to operate at the cross-section of engineering, cyber-security and information technology.

NEW PARTNERSHIPS

Landscape Architecture and Ecology

CSDILA has commenced new interdisciplinary projects bringing together vegetation and city modeling (landscape architecture and ecology) with inundation and climate change models and urban planning tools in a Digital Twin (DT) environment. This collaboration will enable landscape design scenarios to be explored by decision makers and other stakeholders to directly inform the planning process

Affordable Housing

New projects with Architecture, Building and Planning are being developed including a proposal for advanced off-site manufacturing and prefabrication techniques for Future Homes winning designs combined with new land tenure models, ROI for development site selection and mixed community models to assess financial viability of innovative affordable home models.

SUSTAINABILITY

Digital Intelligence for SDGs

CSDILA continues to investigate the challenges in effective and sustained access to trusted and secure digital technology, the Internet of Things (IoT), emerging data, information systems, analytics and associated enabling tools, and technologies to support the timely and reliable implementation and monitoring of the progress in SDGs.

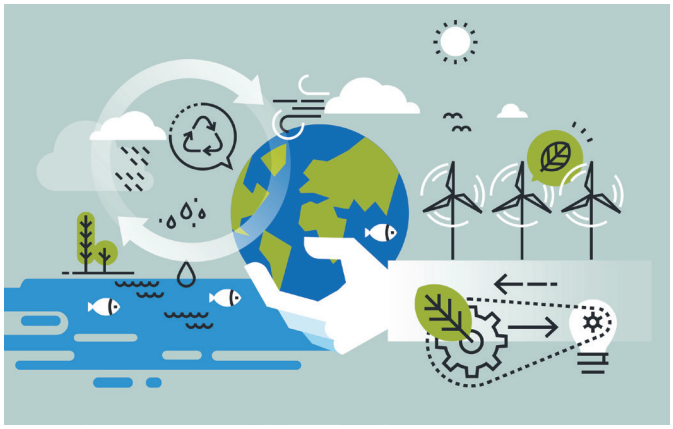
Future Infrastructure & Circular Economy

Along with others in the Faculty of Engineering and IT (FEIT) CSDILA is working to provide the digital foundations for linking planning and governance data across heritage, urban development, and the environment to drive more sustainable and efficient project design and delivery.

CSDILA TO 2030 AND BEYOND

GLOBAL TO LOCAL CHALLENGES AND RELEVANCE

The landscape of society's grand challenges is vast, inter-related and complex. Although our current environment already gives us a foretaste of things to come, the future will likely be even more complex with new and/or unique combinations of historical disruptors, which at times will occur concurrently.



Global regions and jurisdictions have identified several Grand Challenges that fall into different cross cutting themes, such as *Sustainability, Health, Security, Joy of Living, climate mitigation and adaptation, achieving the UN Sustainable Development Goals (SDGs)*, and *boosting competitiveness and growth*. To respond to these, different communities have proposed or adopted different approaches and strategies.

From global to national and local perspectives, the future aspirations converge around ***a more sustainable and resilient future*** where ***economic prosperity benefits all of society*** and supports the ***health and wellbeing of communities and individuals equitably***. The successful pursuit of these goals also means overcoming the setbacks that arise from the weight of chronic stressors and from extreme events, both natural and human-caused – including pandemics – and especially those caused by climate change.

CONTEXT IS KING

GEOSPATIAL AND LAND INFORMATION AND LOCATION INTELLIGENCE

Solutions to address these grand challenges and risks require land or place context and location intelligence. The Centre's know-how, technologies and capabilities in geospatial data infrastructures and ecosystems, spatially enabled advanced modelling and analytics, land administration modernisation techniques, and location intelligence are critical components of the required solutions.

The links and the digital divide between the global agenda, drivers and challenges and the developments in and applications of geospatial and land information technologies and management systems have been comprehensively identified and mapped in the report *Future Trends in Geospatial Information Management: The Five to Ten year Vision*, commissioned by the UN Global Geospatial Information Management (UN-GGIM). This report shows where future changes are most likely to occur and how the Integrated Geospatial Information Framework (IGIF) should evolve to keep pace and adapt over time. The identified trends, which are expected to impact the IGIF pathways at different levels and at different times, are grouped under five headings:

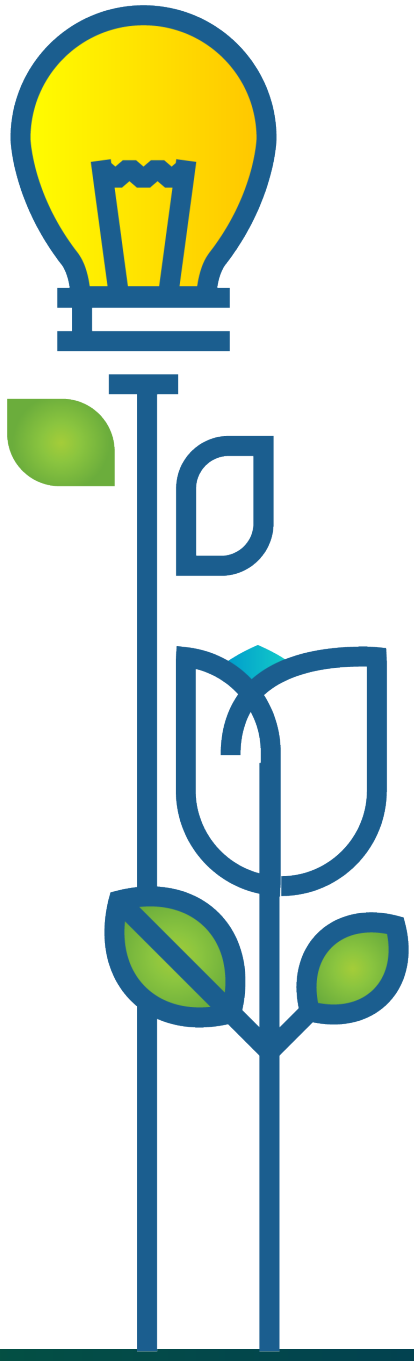
- Technological advancements
- Rise of new data sources and analytical methods
- Industry structural shift
- Evolution of user requirements, and
- Legislative environment.

Geospatial and land information technologies and management systems will become even more ubiquitous across industry sectors and as part of our everyday lives in the future. The greatest risks within the sector are: the fragmentation of information exchange standards (from a variety of sensing devices, within information systems and across to domain applications); the technical and ethical issues in the use of black-box algorithm;, opaqueness in values-based decisions; and cybersecurity and privacy, amongst others. Unaddressed, these would lead to avoidable problems and inefficiencies that could hinder the full potential of geospatial and land information technologies and management systems to power the digital transformation of industry and society.

Thus, it is more important now than ever to address these challenges and risks through a holistic systems approach informed by science and technology (S&T) and research and development (R&D) and applied to meet industry and society's global to local challenges.

CSDILA TO 2030

WORLD CLASS RESEARCH AND INNOVATION BY COLLABORATION



The Centre will continue to drive and advance the science and knowledge base in spatial data infrastructures, land administration systems, location intelligence, and digital system technologies to address real-world industry and societal challenges.

Our focus will be on technological advancements and the rise of new data sources and analytical methods and harnessing their power for industry and societal contributions. The trajectory of our historical and recent teaching, research, development, and engagement activities will continue, with a strengthening and deepening of capabilities in:

- Harmonised and modern land and property-based data ecosystems, built on emerging technologies in AI, Blockchain, and data capture and visualisation, including enhancing the exchange interfaces with big data feed from varied sources (existing and still emerging remote/proximal sensing devices and systems);
- Digital representation of physical assets, enriching their semantic attributes and including smart asset management across their physical and digital life cycles;
- Change leadership: supporting organisations in their digital transformation journey through developing roadmaps, strategic intelligence, and operational capabilities including training, design and implementation of innovative business processes and models around Digital Twins;
- Expanded Digital Twin and digital engineering applications:
  - From individual building components to whole-site, precinct, urban, and regional-scale environments;
  - From 3D visualisation to nD models used in advanced simulation, modelling and analytics;
  - From infrastructure systems and the built environment to increasingly include also natural environments and human agents;

and towards more explicit considerations of uncertainties, sensitivities, and complexity.

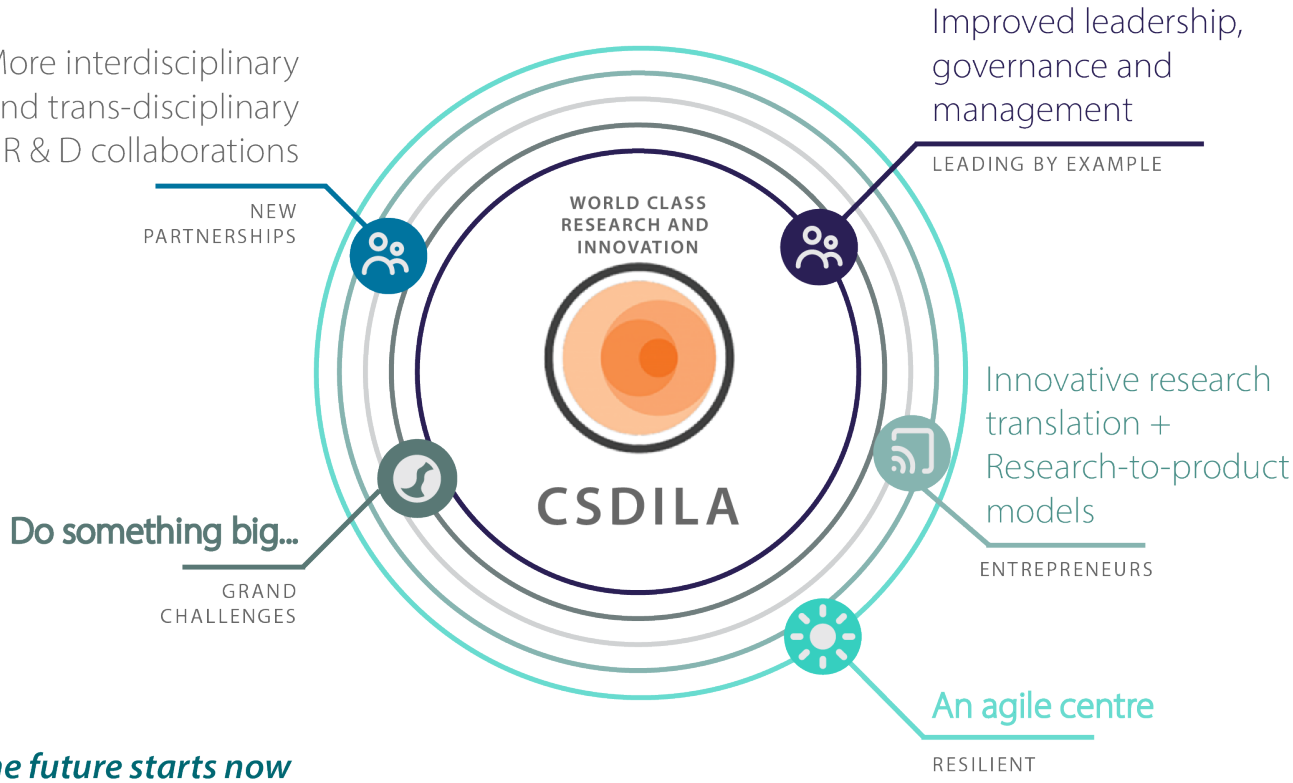
The application opportunities are almost unlimited. But we will prioritise our contributions towards high-impact ambitious challenges related to sustainability, resilience, and community wellbeing, and embrace any disruptors to achieve broader society's goals and aspirations.

Unprecedented vulnerabilities and risks will emerge in new interdisciplinary and

transdisciplinary areas of science and technology and enquiry. This will require closer and stronger interdisciplinary collaboration with wider industry experts nationally and internationally, and with colleagues not only in the Faculty of Engineering and Information Technology (FEIT) and Architecture, Building and Planning, but also in Science, Law, Business and Economics, and Medicine, Dentistry and Health Sciences, particularly the Doherty Institute and the Melbourne School of Population and Global Health (MSPGH). Our new research collaborators will have established networks and transdisciplinary collaborations. The Centre will integrate our geospatial and location intelligence capabilities with other disciplinary experts and domain partners (in industry, government and/or wider community) to elevate the quality of science and innovation in a specific domain or sector.

In summary, the Centre in the next decade will be characterised, amongst other factors, by:

a. doing something "big and ground breaking";
b. pursuing a more balanced portfolio of research and training programs, and more diverse and innovative ways of research translation to policy and practice, underpinned by a strong research-to-product model that is more entrepreneurial;
c. having more interdisciplinary and transdisciplinary R&D collaborations;
d. turning issues of staff/student turnover and limited project duration in university-based centres into an advantage; and
e. improved leadership, governance and management with integrity, trust and inclusivity.



The future starts now

Geospatial, land information systems and location intelligence will only become more important to industry, government and society in the years ahead. The Centre will be there to contribute with world-class research and education and training – in collaboration and partnership with others – to achieve the needed urban, industry, energy, land and cultural shifts identified in the ***Outlook Vision*** for Australia[4] towards an inclusive, resilient and prosperous future. And not just here in Australia, but globally.

THE UNIVERSITY OF MELBOURNE
Australian Government
Australian Research Council
VICTORIA State Government
Environment, Land, Water and Planning
NSW GOVERNMENT
Land & Property Information
UNSW AUSTRALIA
ARUP
THE UNIVERSITY OF QUEENSLAND AUSTRALIA
THE UNIVERSITY OF WESTERN AUSTRALIA
UNIVERSITY OF WOLLONGONG AUSTRALIA
UNIVERSITY OF CANBERRA
RMIT UNIVERSITY
here
VICTORIA State Government
Economic Development, Jobs, Transport and Resources
ands
AUSTRALIAN NATIONAL DATA SERVICE
AURIN
Australian Urban Research Infrastructure Network
Australian Government
Department of Industry, Innovation and Science
PSMA AUSTRALIA
ICSM
ANZLIC COMMITTEE ON SURVEYING & MAPPING
FENDER KATSALIDIS ARCHITECTS
AAM
strata community australia
Spatial Vision
Alexander Symonds
Surveying Consultants
Landgate
CubeWerx
CGI
WAGENINGEN UR
USQ
TU Delft
Delft University of Technology
KATHOLIEKE UNIVERSITEIT LEUVEN
Lower Hume Primary Care Partnership
Murrindindi
Shire Council
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DEAKIN UNIVERSITY AUSTRALIA
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SWINBURNE
OGC
Making location count.
VICTORIA State Government
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Coordinates
A monthly magazine on positioning, navigation and beyond
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FIRE SERVICES COMMISSIONER VICTORIA
EMERG
Victorian Spatial Council
UC
UNIVERSITY OF CANTERBURY
CITY OF MELBOURNE
SSSI
Carlton Connect Initiative
NUS
National University of Singapore
KOREA CADASTRAL SURVEY CORP.
GSDI
Global Spatial Data Infrastructure Association
WORLD BANK
UN-GGIM
Food and Agriculture Organization of the United Nations
UNIVERSITY OF CAMBRIDGE
UNB
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UNIVERSITY OF NEW BRUNSWICK
AALBORG UNIVERSITY
DENMARK
1865 THE UNIVERSITY OF MAINE
Universitas Gadjah Mada
EMERSON
MURRAY–DARLING
bushfire&natural HAZARDSCRC
VEKTA
GFDRR
Global Facility for Disaster Reduction and Recovery
here

THE FUTURE IS BRIGHTER

We welcome new partnerships and collaborations.

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