SSSI Tasmanian Surveying and Spatial Conference 2021

Modelling the Real World

How Do Citizens Win?

FINAL PROGRAM

FRIDAY 3 SEPTEMBER 2021

The Tramsheds Function Centre
4 Invermay Road
Invermay, Tasmania

SSSI
SURVEYING & SPATIAL SCIENCES INSTITUTE

Major Sponsors

C.R.Kennedy | SURVEY SOLUTIONS |

Tasmanian Government

Supporters

LISTECH

HxGN SmartNet

EMLID

MapGear

Tasmania Sustaining Partners

Tasmanian Government

UPG

City of HOBART

PROGRAM

8:30 AM	**REGISTRATION**		
Keynote Session | Chair: Michael Giudici			
9:00 AM	Welcome	**Inga Playle** SSSI Tasmania Regional Chair	TAS CPD 1.50 General Education
9:05 AM	Official Opening	**Jo Palmer MLC** Member for Legislative Council, Division of Rosevears	
9:15 AM	Pau: The French City that is pioneering the art and science of Multiscale 3D modelling	**Fabrice Marre** Geospatial Innovation Manager, Aerometrex	
9:45 AM	Insights from the evolution of Australia's spatial data ecosystem towards Digital Twin	**Marie Truelove** Product Manager, Data61 CSIRO	
10:15 AM	LIST Futures Presentation	**Todd Baker** Manager Service Delivery, Land Tasmania	
10:35 AM	**MORNING TEA**		
Plenary Session | Chair: Inga Playle			
11:00 AM	Innovation through Iteration	**Jarred Ranson** Team Leader Strategy, Economic Development and Analytics, Launceston City Council **Andrew Ritchie** GIS Administrator, Launceston City Council	TAS CPD 2.25 Land Survey Education
11:25 AM	The Greater Hobart Digital Twin Strategy	**Kelly Grigsby** CEO, Hobart City Council	
11:50 AM	Q&A Panel session		
12:15 PM	Exhibitors' Forum		
12:30 PM	**LUNCH**		
Technical Session: Modern data acquisition | Chair: Chris Walsham			
1:30 PM	Reality Capture Tools for the 3D World	**Francois Du Bois** National Laser Scanning Specialist, C.R. Kennedy	TAS CPD Land Survey Education 0.45 General Education 1.20
1:50 PM	Making Your Data Smarter - Australian Case Study Snapshots of Spatial Data Management Innovation	**Andrew Bashfield** Sales Manager, 1Spatial	
2:10 PM	Reality Capture: 3D Scanning & Photogrammetry for AEC – Tasman Arch Project	**Tom Murphy** Project Manager, Jacobs **Josh Downes** Senior Surveyor & Spatial Analyst, Jacobs	
2:30 PM	Building a custom web GIS to sell a 25,000 hectare Plantation Estate	**Tim Bendall** Spatial Analyst & Mobile App Developer, Esk Mapping & GIS	
2:50 PM	Q&A Panel session		

PROGRAM

3:10 PM	**AFTERNOON TEA**		
Academic Session | Chair: Kristy Petroff			
3:30 PM	Searching for Huon Pine with new drone technology	**Arko Lucieer** Deputy Head of School Geography, Planning, and Spatial Sciences, UTAS	TAS CPD 1.50 General Education
3:50 PM	How the SWOT satellite mission will change how we see the world	**Andrea Hay** Graduate Surveyor, PhD Candidate, Geography, Planning & Spatial Sciences, UTAS	
4:10 PM	UTAS Course Review and Future Offerings	**Rachael Hurd** Senior Lecturer, Surveying and Spatial Sciences Coordinator, UTAS **Bethany Melville** Lecturer, Geography, Planning and Spatial Sciences, UTAS	
4:30 PM	Q&A Panel Session		
4:50 PM	Closing Remarks	**Paul Digney** SSSI President	
5:00 PM	Conference concludes		
6:00 PM	**APSEA-T DINNER**		

***Tasmanian Registered Land Surveyor CPD allocations under the *Professional Development Directions, Tasmania*:**

Land Survey related Education: 2.7 points

Service and General Education: 4.2 points

ASIA-PACIFIC
SPATIAL EXCELLENCE AWARDS
TASMANIA

ABSTRACTS

Fabrice Marre | Geospatial Innovation Manager, Aerometrex

Pau: The French City that is pioneering the art and science of Multiscale 3D modelling

Accurate 3D data is a key component to harness the potential of smart cities. Smart city applications often require 3D data at more than one scale and a multiscale approach is necessary. A multiscale 3D city model approach is the seamless integration of data captured from different platforms, at different resolutions.

While many may know France for its culture and gourmet food, a small city in the South-west of France, Pau is gaining recognition for their progressive and innovative attitude towards new technologies and innovation. Pau was one of the first French cities to develop a high-speed internet fibre network in 2004 and has recently launched its own Hydrogen Bus Network in November 2019.

The city has recently captured and generated the most advanced multiscale 3D reality mesh model in the world as part of their smart city initiative. This 3D dataset is the foundation that shall form the heart of their interactive 3D environment platform which will support smart city operations.

This multiscale 3D model is made of:

- a 400 sq. km 3D reality mesh model (at 10cm and 5cm resolution) of 31 council areas surrounding Pau, using fix-wing aircrafts
- a 29 sq. km 3D reality mesh model (at 2cm resolution) of the city of Pau using a helicopter
- a 10 Ha 3D reality mesh model (at 0.2cm resolution) of the Old Town area using helicopter, drone and street-level platforms

In this presentation, we will give you a sneak peek at what happened behind the scenes while creating this unique work of art and science.

We will show you how 3D reality mesh models captured from fix-wing aircraft, helicopter, drone and street-level platforms were combined into an integrated & interactive 3D environment.

We will also show you how this 3D data shall be used as a support to improve decision-making processes, community consultations, town planning and urban design, virtual tours, asset management as well as a range of innovative applications.

Marie Truelove | Product Manager, Data61 CSIRO

Insights from the evolution of Australia's spatial data ecosystem towards Digital Twin

Since the launch of National Map in 2014, the number of open geospatial datasets made available to the ecosystem of users has grown to over 14,500, supported by data custodians from all levels of government across Australia. In addition to the direct benefits to citizens, businesses, research organisations, and governments themselves gain from discovering, visualising and sharing geospatial data, the indirect benefits include lowered costs and improved investment decisions for businesses, and improved government policy and societal outcomes. At Data61, we believe our founding technology development principles have contributed to this positive impact for Australia, including leveraging and enabling open standards and open source software, federated data sharing, accommodating a range of data formats and services, and accessibility for users regardless of expertise.

Today, in addition to the National Map where we partner with Geoscience Australia and the Digital Transformation Agency, our Terria Digital Twin data technologies underpin the NSW Spatial Digital Twin Visualisation Service from NSW Department of Customer Service, the QLD Spatial Digital Twin prototype from QLD Department of Resources, and the recently announced Digital Twin Victoria platform from VIC Department of Environment Land Water and Planning. These digital twin initiatives are spearheading the step-change underway in Australia's spatial data ecosystem: to make more accessible whole new categories of data from a range of industry sectors, that together promise a future of hi-fidelity models of the physical world. Along the way our founding principles have been reflected and formalised by others, firstly with the Gemini Principles published by the Centre for Digital Built Britain, and ANZLIC's Principles for Spatial-Enabled Digital Twins for the Built and Natural Environment.

In this talk Marie will provide insights from Data61's Digital Twin data journey including challenges, learnings, and use cases expected to benefit Australia's data ecosystem and citizens.

Todd Baker | Manager Service Delivery, Land Tasmania

LIST Futures Presentation

The current version of the Land Information System Tasmania – theLIST, was released in 2014 to much acclaim across government and industry. Increased knowledge and integration of location data in society since its release has seen the use of the LIST infrastructure grow beyond the expectations of even those involved in its 2014 development. Land Tasmania is now embarking on developing a roadmap for the new LIST.

Hear what work has been undertaken to date and gain an insight to some of the future plans for a new LIST, which will provide a foundation location infrastructure for the spatial industry in Tasmania.

Jarred Ranson | Team Leader and **Andrew Ritchie** |GIS Administrator, Launceston City Council

Innovation through Iteration

City of Launceston is quite early in its digital transformation journey. Recent organisational focus has been on generating cultural change and developing structural efficiencies.

Focus is now shifting back to process improvement and digital transformation. Particularly through embedding of Lean organisational thinking. The Strategy, Economic Development and Analytics team is continuing to focus on enhancing data workflows and data discoverability throughout the organisation, as well as providing 'Smart' solutions to 'wicked problems'.

SEDA continually balance their desire to 'fix everything', with the resource realities of today, Transformation continues to be achieved through smaller iterations targeting specific pain points through the organisation

Kelly Grigsby | CEO, Hobart City Council

The Greater Hobart Digital Twin Strategy

Our services, and the business and tourism opportunities of our region, must be available online 24/7 to anyone in the world wanting to move, work, invest or holiday in Greater Hobart, the capital and economic hub of Tasmania. For cities, that requires both digital transformation and digital infrastructure programs.

The Digital Twin is that single environment and common interface through which local, state and the Australian government authorities, the public, commercial investors and many other stakeholders will interact with data and services specific to our city. It will give cities and governments the tools to plan, and investors the data to make better, faster and more efficient decisions.

As a living 4D model the digital twin is beautiful, but not only beautiful. It is more than an image or a map. It is a true visualisation of big data—cultural, geographical, historical, real-time and predicted. It will provide a high-res model to attract overseas investment, to monitor vehicle and pedestrian counts for tourism, to assist retail or mobility planning, and open the door to anyone wanting a better jurisdictional, technical, historical and cultural understanding of our great capital city and region.

Francois Du Bois | National Laser Scanning Specialist, C.R. Kennedy

Reality Capture Tools for the 3D World

How Reality Capture Tools allow the industry to have post processing, and at times, live access to be able to assess and check differences between design and as-built scenarios in the 3D world of the Geospatial portion of the industry. The Digital Twin concept is growing faster and faster using so many different approaches and tools.

Francois will present some examples of how these tools and software would suit the demand and expectation required.

Andrew Bashfield | Sales manager, 1Spatial

Making Your Data Smarter - Australian Case Study Snapshots of Spatial Data Management Innovation.

Good data management is not just about the GIS and it is not always spatial data that needs to be incorporated. It is about the quality of your input data, adherence to standards, completeness and currency. It's about the processes and tools used to link disparate systems in the organisation to build a more complete picture of assets and risk.

This presentation consisting of short case studies will look at five Australian organisations and the innovative steps they have taken to improve spatial data quality to meet their corporate objectives.

* Yarra Valley Water and North East Region Water – providing self-service as-constructed water network drawing validation to the property development industry.
* Parks Victoria - GIS assisting Parks Victoria bushfire recovery.
* Hancock Victorian Plantations – using spatial integration process to improve business efficiency.
* Tweed Shire Council – automating recurrent spatial processes with server-based technology.
* Department of Environment, Land, Water and Planning - implementation of a new data delivery platform for search, discovery and download of DELWP's state-wide spatial data.

In each case the organisation is getting answers faster and with greater reliability through more streamlined data processing workflows.

Tom Murphy | Project Manager & **Josh Downes** | Senior Surveyor & Spatial Analyst, Jacobs

Reality Capture: 3D Scanning & Photogrammetry for AEC – Tasman Arch Project

This presentation will showcase a recent project undertake by Jacobs to complete a 3D reality capture and production of a reality mesh of the iconic Tasman Arch.

Tim Bendall | Spatial Analyst, Esk Mapping & GIS

Building a custom web GIS to sell a 25,000 hectare Plantation Estate

Abstract to come.

Arko Lucieer | Deputy Head of School Geography, Planning, and Spatial Sciences, UTAS

Searching for Huon Pine with new drone technology

In this presentation, Arko will give an overview of recent developments in drone technology for remote sensing and aerial mapping applications. This includes advances in lidar, mapping cameras, multispectral and hyperspectral sensors, and high-accuracy RTK GNSS positioning.

Arko has teamed up with the vegetation mapping group in the Department of Primary Industries, Parks, Water and Environment (DPIPWE) to test the use of hyperspectral sensors for identification of Huon Pine trees. The aim of this research is to develop an operational workflow to improve mapping of Huon Pines to assist in their conservation.

Andrea Hay | Graduate Surveyor, UTAS

How the SWOT satellite mission will change how we see the world

The SWOT satellite mission launching in late 2022 represents a paradigm shift in the observation of Earth's oceans and inland waters. With new technology comes new challenges in how we validate this completely new measurement type. This presentation will provide an overview of the Tasmanian contribution to the SWOT mission, and highlight why this matters to our everyday life.

Rachael Hurd | Senior Lecturer, Surveying and Spatial Sciences Coordinator and **Bethany Melville |** Lecturer, Geography, Planning and Spatial Sciences, UTAS

UTAS Course Review and Future Offerings

It's been a while since we provided an update on what we do to who we are in the UTAS surveying & spatial sciences group so our presentation today will provide an overview of current UTAS teaching and research activities and an insight into our future plans.

Additionally, as we all know, the activities being undertaken across the geospatial industry are rapidly evolving and expanding and we'd like to take this moment to invite you all to start some conversations with us.

We would particularly like to discuss how we can work together to ensure our graduates are prepared for their entry into the workforce and begin to sow the seeds for new and exciting research collaborations.

We believe we have a unique opportunity in Tasmania to be brave and bold with the opportunities for collaboration between the academic and industry sectors to enhance the spatial capabilities in our state.