



The Australasian Hydrographic Society & The Society for Underwater Technology  
co-host their 11<sup>th</sup> Autonomous Underwater Technology, technical conference & exhibition:

# AUT 2019:

*An ocean of opportunities*

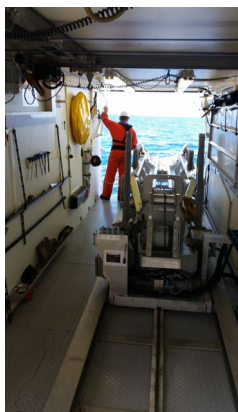
23<sup>rd</sup> October 2019 ♦ Parmelia Hilton Perth, Western Australia



The AHS/SUT Autonomous Underwater Technology (AUT) Conference is celebrating its eleventh occurrence. The conference has brought to the industry actionable information on the advances in AU technology and applications along with gaining an insight to where the technology is developing. Technological advancements have translated to increases in AUT utilisation, reliability and function across the oil and gas, hydrographic, renewable energy, environmental, research and defence industries, to name a few.

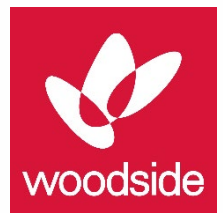
The Australasian region has experienced a significant increase in underwater oil and gas infrastructure associated with LNG field development. This increase in subsea infrastructure, coupled with autonomous technology becoming more mainstream, has created downstream applications in addition to the more traditional upstream applications; such as exploration surveying and export pipeline route development. These include environmental monitoring, pipeline and infrastructure inspections and data harvesting. The Navy are also actively investigating the implementation of AUT across their current operations.

This year the AHS/SUT conference organising committee aims to demonstrate these new applications and different technologies along with supporting the ongoing experiences of the traditional acquisition of underwater data. After 10 prior events, this conference continues to be one of the most important gold standard networking opportunities in this field, allowing contact between pipeline engineers, subsea asset managers, geophysicists, environmental scientists, hydrographic surveyors, defence organisations, oil & gas field development specialists, government bodies, equipment manufacturers, academic & research bodies, oceanographers, survey companies and port & security operators.



Photos courtesy of Fugro

### Major Sponsors



### Ice Breaker Sponsor



### Coffee Cart Sponsor



### Exhibitors include



*Sponsorship packages and table top exhibitions are still available.  
Contact SUT (details on page 3) for further details.*



# AUT 2019

## 23<sup>rd</sup> October 2019

*Parmelia Hilton Hotel*  
14 Mill St, Perth, Western Australia



### AUT KEYNOTE – Opening Our Eyes

#### Sail, Steam...Autonomy? AUTs & 21st century Naval Operations Lieutenant Harry Hubbert, Royal Australian Navy.

The Royal Australian Navy’s transition toward Maritime Autonomous Systems (MAS) for naval operations is comparable to the transition from sail to steam. This change is also underway throughout the world’s militaries, and the application of MAS today is already shaping future warfare. This evolution is forcing a paradigm shift in the way business is done. In Australia, the RAN is currently looking at “Off-The-Shelf” solutions, and also supporting innovations in MAS technologies.

This is deliberately blurring the lines between Defence and civilian MAS expertise, whilst also opening the door to countless opportunities for collaboration and cooperative improvement. This paper explores some of the RAN’s experimentation with, and integration of MAS; showcasing the importance of collaboration with industry and academia for these uniquely complex systems.

Specific examples examine deployment of MAS for countering sea mines and conducting hydrographic survey, and more broadly, the challenges faced when delivering and supporting such radically different capability. Finally this presentation explores how the future may unfold for MAS-related partnerships between RAN, industry and academia.

### Ice Breaker Function

**Date:** Tuesday, 22<sup>nd</sup> October 2019  
**Time:** 5.30 pm - 8.30 pm  
**Venue:** Belgian Beer Cafe (Cnr King & Murray Streets, Perth 6000)  
**Cost:** \$55 members / \$80 non-members  
**Details:** Enjoy an evening welcoming the conference with drinks and canapes in the west end of Perth’s bustling metropolis.  
**RSVP:** [AUTicebreaker2019.eventbrite.com.au](https://aut2019.eventbrite.com.au)



### Conference Closing Drinks

**Date:** Wednesday, 23<sup>rd</sup> October 2019  
**Time:** 6.00 pm – 7.30 pm  
**Venue:** Parmelia Hilton  
**Cost:** Complimentary as part of your conference attendance ticket.

**Details:** A chance to network and socialise with your fellow subsea community as we wrap up the conference



### 2019 Conference Organising Committee:



Shuhong Chai  
AMC UTAS



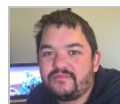
Steve Duffield  
AHS



Pat Fournier  
Neptune



Ian Hobbs  
Fugro



Nicholas Lake  
Shell



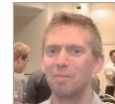
Graeme Moya  
UTEC



Brendan Reid  
Innovative  
Solutions Plus



Anurag Saxena  
TMT



Chris Saunders  
INPEX



Peter Wademan  
Woodside Energy



Phil Wells  
Neptune



# AUT 2019

23<sup>rd</sup> October 2019

Parmelia Hilton Hotel

14 Mill St, Perth, Western Australia



## Tuesday, 22 October 2019

**Ice Breaker:** 17.30 – 20.30 at the Belgian Beer Cafe, cnr King & Murray St

## Wednesday, 23 October 2019

**08.00 Registration, Tea/Coffee and Exhibition**

**08.30 Welcoming Address**  
TBC, SUT Representative

### "AUT - Opening our Eyes"

Session Chair – TBA

**08.40 Keynote Address: Sail, Steam....Autonomy? AUT's & 21<sup>st</sup> century Naval Operations**  
LEUT Harry Hubbert, Royal Australian Navy

**09.05 Situational Awareness for Resident AUVs**  
Joaquin Joseba Tena Ruiz, Sonardyne International

**09.30 Building on the X-Prize: Collaborative Unmanned Survey Capabilities**  
Richard Mills, Kongsberg Maritime

**09.55 Optimising Hull, Mooring and Riser ROV/UAV Inspections - An Industry Position**  
Mark Evans & Alex Mosnier, RHUM

10.20 Tea/Coffee & Exhibition

### "AUT - Survey Operations & Subsea Inspection"

**10.50 Drix, the mapping tool of the future**  
David Donohue, iXblue Pty Ltd

**11.15 AUV Integrated Cathodic Protection (ICP) Inspection System – Results from a North Sea Survey**  
Craig Donald (ISES)

**11.40 FIGS® - Contactless CP on AUV**  
Leiv Erling Grytten, FORCE Technology Norway

**12.05 A Cloud-Based Solution to AUV Pipeline Inspection**  
Stephen Bertram, Fugro

12.30 Lunch & Exhibition

### AUT - "Bites"

Session Chair – TBA

**13.15 Long-Term Robust AUV Control using a Gyro-compassing Inertial Navigation System** Geoffrey Lawes, iXblue

**13.25 Dawn of the Drone: A new method for delivering IRM services subsea**  
TBA, Subsea7

**13.35 HUGIN Superior: Increased Survey Productivity**  
Richard Mills, Kongsberg Maritime

**13.45 The use of highly economic, lighter class AUV's for shallow water infrastructure surveys.**  
Rachel Koch, Blue Ocean Monitoring

**14.00 The Freedom ROV - An Autonomous Underwater Vehicle with Remote Piloting Using 4G Satellite Technology**  
TBA, Oceaneering

### AUT – "Power & Communications"

**14.10 Subsea Power Enabling New Autonomous Technology Applications** Darren Burrowes, Blue Zone Group

**14.35 Bi-directional wireless power transmission for underwater robotics and sensing**  
Morgan McDermont, Advanced Navigation

**15.00 WFS - subsea communications** TBA, WFS

**15.25 An Inductively-coupled Wireless Power Transfer Application for Autonomous Underwater Vehicles**  
Dowon Kim, Curtin University

15.50 Tea/Coffee & AUT Bites Q & A in Exhibition

### AUT – "Realising the Opportunities"

**16.15 Enabling Autonomous Inspection Technologies to Transform IRM Operations** TBA, Subsea7

**16.40 Using Simultaneous Operations of AUV and Seabed Sampling to Optimize Marine Mineral Exploration Programs**  
Christine Devine, Fugro

**17.05 Shearwater – A Homogenous Platform for Ocean Applications**  
William J. Kirkwood, (MBARI).

**17.30 Unmanned Surface Vessels: A recent example of the Force Multiplier effect.** Steve Duffield, Guardian Geomatics

17.55 Conference concludes

18.00 - 19.30 Conference Closing Drinks

## Cost & Inclusions

Costs include GST

*SUT reserves the right to amend/change the programme as it sees fit.  
Photography/videos are prohibited at this conference unless authorised by the SUT*

**Conference Registration: Early Bird**  
(Early Bird closes 1 October)

\$250 - SUT/AHS Member  
\$300 - Non-member  
\$130 - Student  
N/C - Presenter  
\$180 - Co-Presenter/Session Chair/Panelist

**Ice Breaker**

\$55 - Members/Presenters/Co-Presenters/Students  
\$80 - Non-members

**Fee includes:**

Attendance at all technical sessions, USB of conference proceedings/PDF presentations, morning afternoon tea, lunch, delegate wallet and registration at the closing drinks.

**Conference Registration: Regular**  
(from 2 October)

\$325 - SUT/AHS Member  
\$375 - Non-member  
\$150 - Student

**To register visit <https://AUT2019.Eventbrite.com.au>**

(Separate registration for Ice Breaker Function = <https://AUTicebreaker2019.eventbrite.com.au>)