



Australian Government  
Geoscience Australia



POSITIONING  
AUSTRALIA

# Progress Towards a Regional SBAS Service for Australia and New Zealand

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**Vision: an integrated national positioning capability to accelerate the adoption and development of location-based technology and applications**

1. Datum Definition: +/- 1 mm
2. Products and Services: +/- 1 cm
3. National Positioning Capability: PPP + SBAS





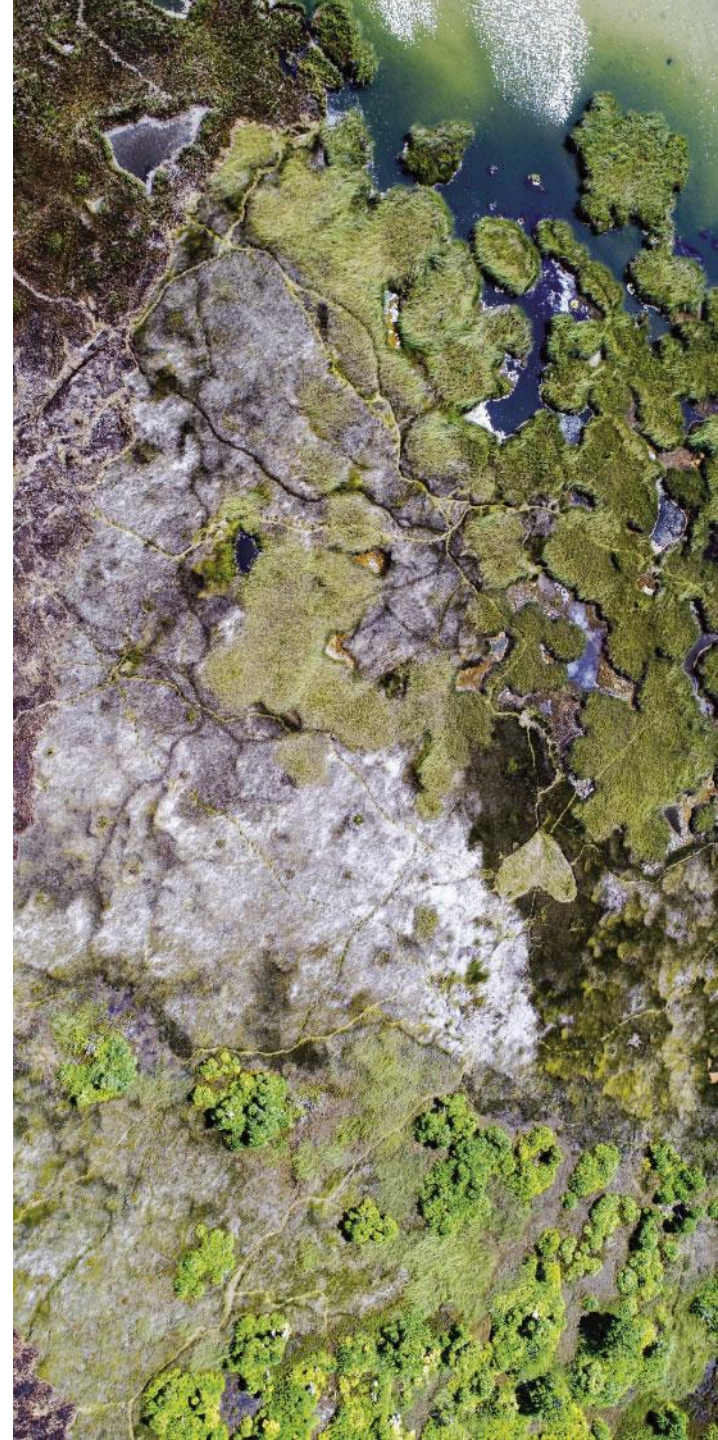
# Background

Position, Navigation, and Timing services are considered national infrastructure

Ten industry sectors are heavy users of PNT services:

- > Transport
  - Aviation, Maritime, Rail, Road
  
- > Non-transport
  - Agriculture, Construction, Consumer, Health, Mining, Spatial, Utilities

What value does this infrastructure provide?



# Economic Benefits Analysis

Report publically available

<https://frontiersi.com.au/wp-content/uploads/2018/08/SBAS-Economic-Benefits-Report.pdf>

Economic benefits analysis considered

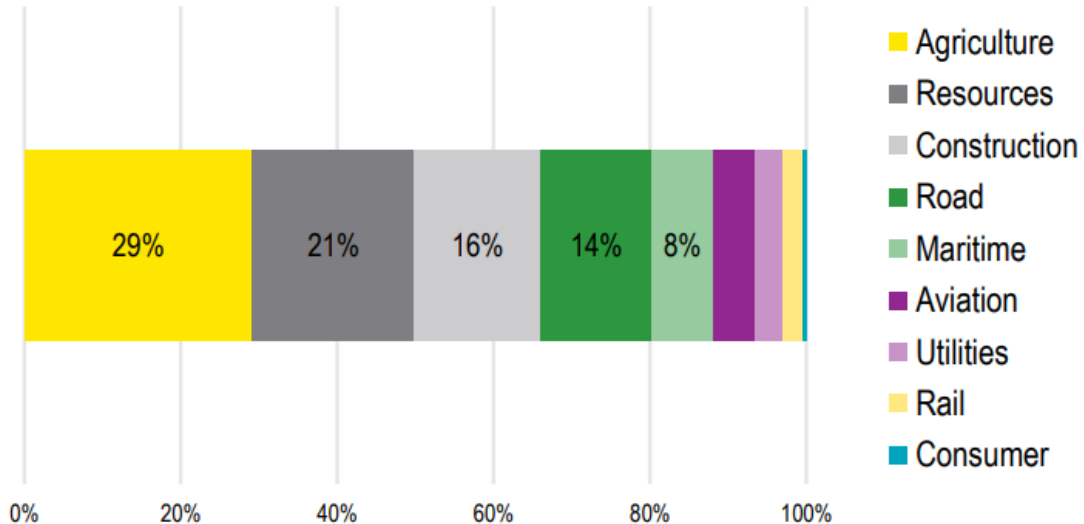
- > Health and safety
- > Operational savings: labour and other productivity
- > Environmental
- > Capital expenditure avoidance
- > New revenue

Report based on two years of analysis of real applications, with real users, using a satellite signal-in-space

# Economic Benefits Analysis



Agriculture	\$2.2b
Aviation	\$404m
Construction	\$1.2b
Consumer	\$34m
Maritime	\$590m
Rail	\$190m
Resources	\$1.6b
Road	\$1.1b
Spatial	N/A
Water utilities	\$280m
<b>Total</b>	<b>\$7.6b</b>



Over 30 years

## PRECISION AGRICULTURE:

Improve the efficient spraying of nutrients, chemicals and water by 1-7%



## IMPROVE VERTICAL GUIDANCE ON APPROACH

so pilots can land safely in a greater range of weather conditions



## AVOID 1700 FALLS FROM HEIGHT SERIOUS INJURIES AND 7 FATALITIES

with geo-fencing



## ACCESSIBLE CITY NAVIGATION: ENABLE ASSISTIVE TECHNOLOGIES

for the visually impaired, reducing the risks of incidents associated with trips, falls and collisions



## MISPLACED FREIGHT CONTAINERS REDUCED BY 16,000



## PROVIDES MORE EFFICIENT OPERATION MANAGEMENT

and control of the movement of trains



## AVOIDANCE OF 45 ROAD-RELATED FATALITIES

and 2800 road-related serious injuries through SBAS enabled Cooperative Intelligent Transport System (C-ITS)

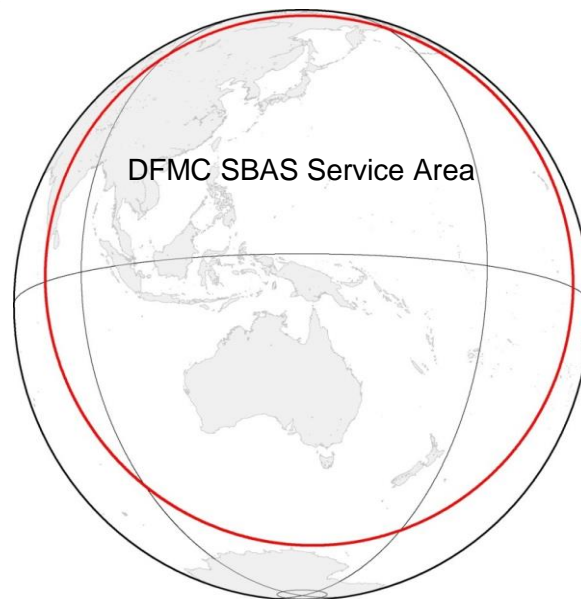
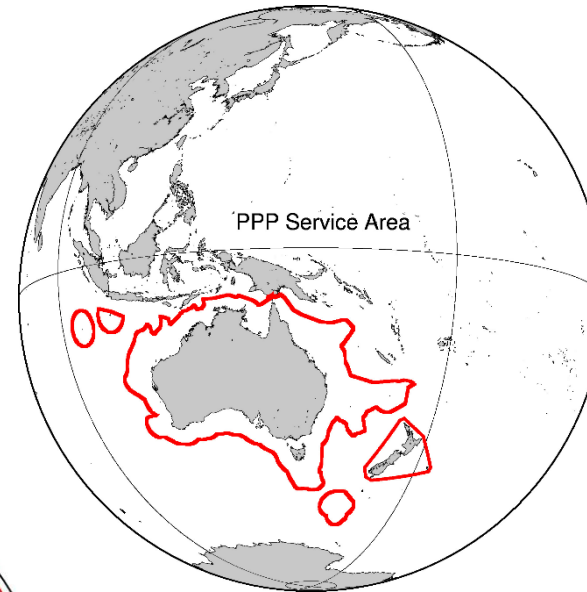
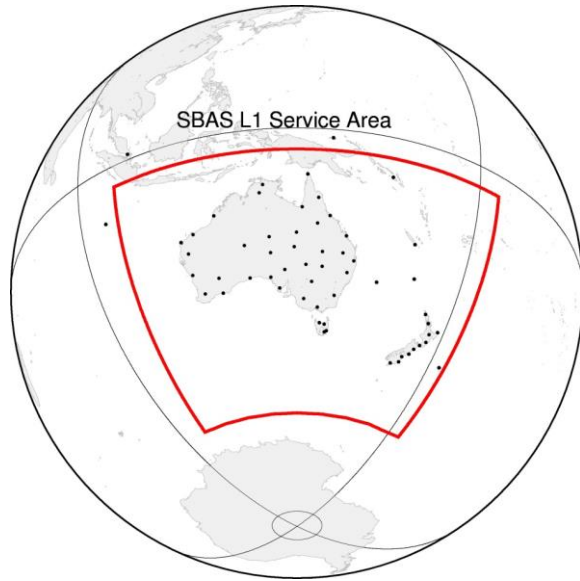


## INCREASE OF 10-20% IN OVERALL EQUIPMENT AVAILABILITY

through faster location of idle equipment



# A regional SBAS





# Delivery Timeline

- > Request For Information currently out (GA2019/2994 on AusTender)
- > Market analysis complete in October 2019
- > Request For Tender in January 2020
- > Contract Award September 2020
- > System Design, Implementation, Verification from Oct '20 to Nov '23
- > Safety-of-Life Certification by November 2023

# Test-bed Extension

Existing test-bed arrangements will continue as a mechanism to provide continuity of signals to support:

- > Research & Development
- > Industry testing
- > Early adoption

FrontierSI (project management organisation for economic benefits analysis) engaged to support test-bed activities.

If interested, industry may approach FrontierSI to get involved:

- > Eldar Rubinov ([erubinov@frontiersi.com.au](mailto:erubinov@frontiersi.com.au))

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