Satellite-Based Augmentation System (SBAS) Testbed Demonstration Project Update

LOCATE18, Adelaide
10 April 2018
Overview

• What is SBAS?
• What is the SBAS testbed?
• Details on some projects
• Project hardware
• Project status
• Conclusion
What is SBAS?

GNSS

GEO satellite
SBAS worldwide
Why have a SBAS testbed?

• SBAS infrastructure is expensive

• 2011 Australian SBAS Report:
  • *Consideration of any future investment in SBAS would need to be a part of a whole of Government approach with the significant cost considered against potential benefits across a range of industries*
Project Background

• $14 million invested from ANZ Governments

• The project will demonstrate the potential safety, productivity, efficiency and environmental benefits of these SBAS technologies which provide more accurate positioning information across a variety of industry sectors
What is the SBAS testbed?
SBAS Testbed Signals

• Three different signals are being trialled:

- **SBAS L1**
  - June 2017

- **PPP L1**
  - September 2017

- **DFMC L1/L5**
  - October 2017

Signals are live until 31 Jan 2019

WORLD FIRST TEST OF DFMC SBAS
SBAS Testbed Signals

• Three different signals are being trialled:

SBAS L1 • June 2017

PPP L1 • September 2017

DFMC L1/L5 • October 2017

• Integrity
• Same as WAAS, EGNOS, etc
SBAS Testbed Signals

- Three different signals are being trialled:
  - June 2017: SBAS L1
  - September 2017: PPP L1
  - October 2017: DFMC L1/L5

- Integrity
- ICD being finalised
- EGNOS v3 DFMC live in 2025
What is the SBAS testbed?
What is the SBAS testbed?
Demonstration Projects - Sectors

Agriculture
Spatial
Aviation

Construction
Maritime
Consumer

Rail
Resources
Utilities

Road
Spatial
Aviation

Agriculture
Spatial
Aviation

Construction
Maritime
Consumer

Rail
Resources
Utilities

Road
Key:
- Aviation
- Agriculture
- Consumer
- Construction
- Maritime
- Rail
- Resources
- Road
- Spatial
- Utilities

Notes:
1. Some projects are still being finalised
2. Projects may test in multiple locations
New Zealand SBAS Projects – primary test location

Key:
- Aviation
- Agriculture
- Consumer
- Construction
- Maritime
- Rail
- Resources
- Road
- Spatial
- Utilities

Notes:
1. Some projects are still being finalised
2. Projects may test in multiple locations
Agriculture – livestock tracking, precision farming and other
Road – connected automated vehicles, intelligent transport systems, lane accuracy ...
Maritime - more precise horizontal and vertical positioning; increased freight, quicker dock operations....

Source: wikipedia
Hardware

“Gen 1”

“Gen 2”
Project Status

- 27 projects in work; 20+ signed contracts so far
- Projects across ANZ with industry, academia and government
- EY is the Economics Consultant engaged analysing the economics benefit of SBAS
- Majority of benefits will be seen in 2018
- Many projects up and running now
Summary

• Nearly 30 projects in ten sectors across ANZ
• Many SBAS projects are underway and showing successful testing results
• Significant benefits have been identified and applications will be demonstrated in projects
• Full project results expected in 1H 2019
Thank you. Questions?

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Useful SBAS project information: