

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

LOCATE18, Adelaide

10 April 2018



Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Programme



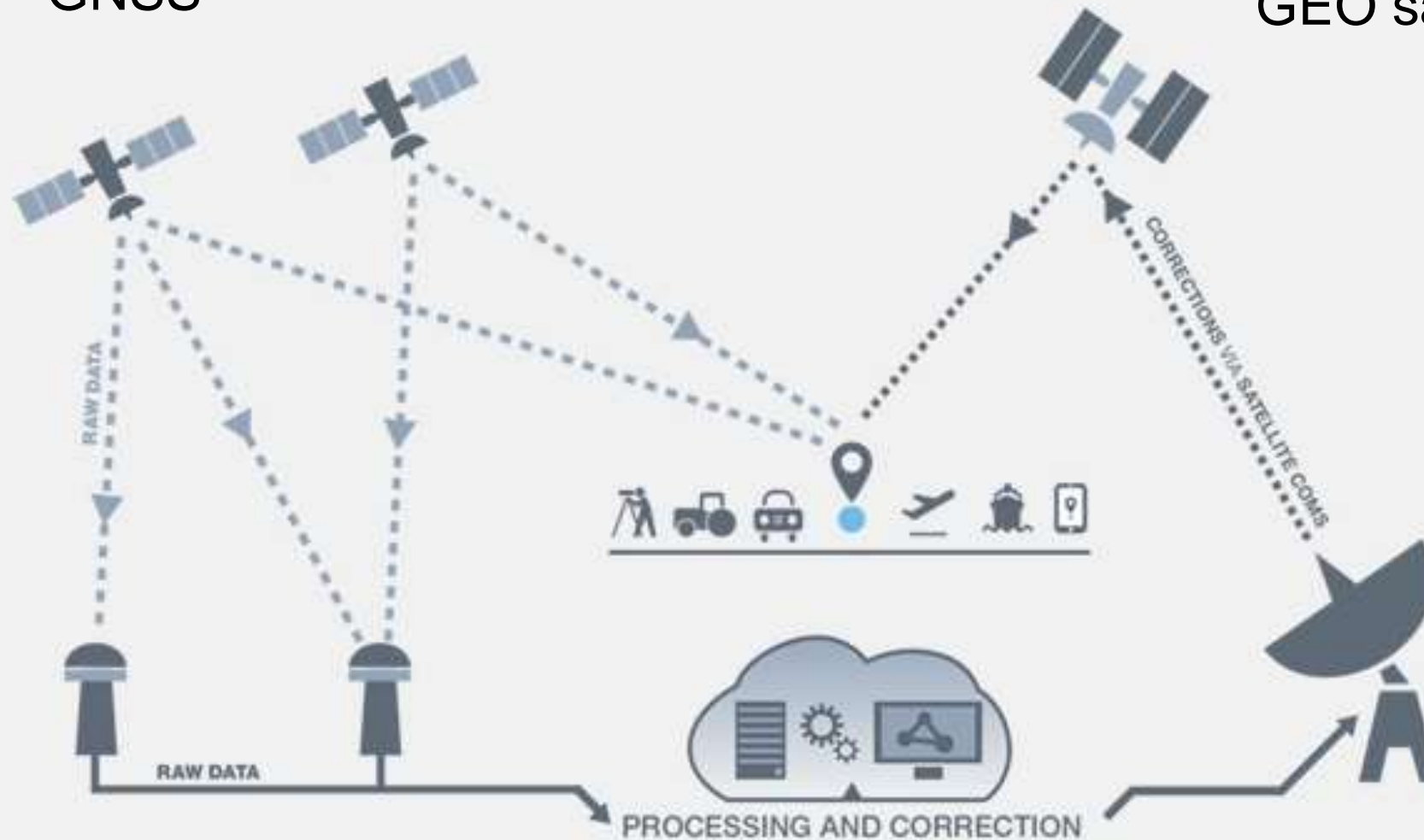
Overview

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

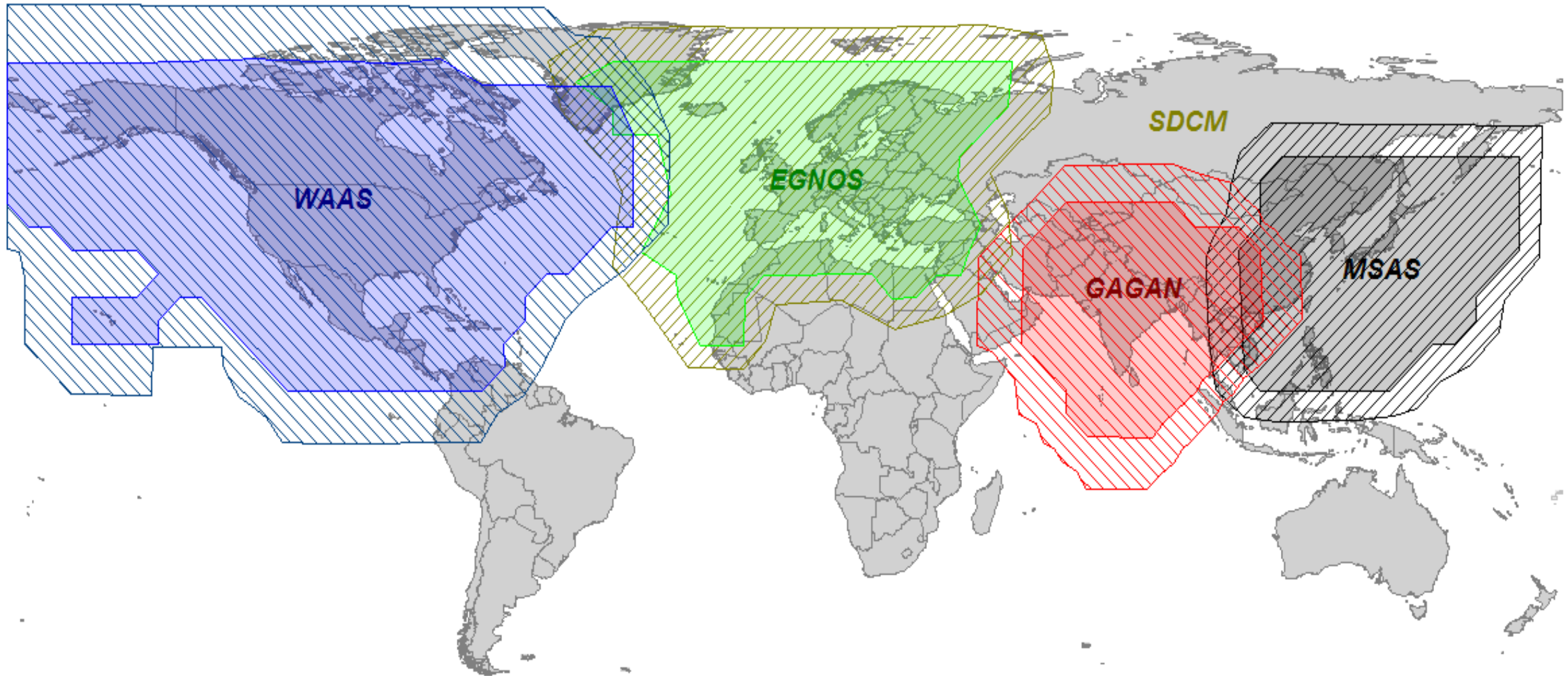
What is SBAS?

GNSS

GEO satellite



SBAS worldwide



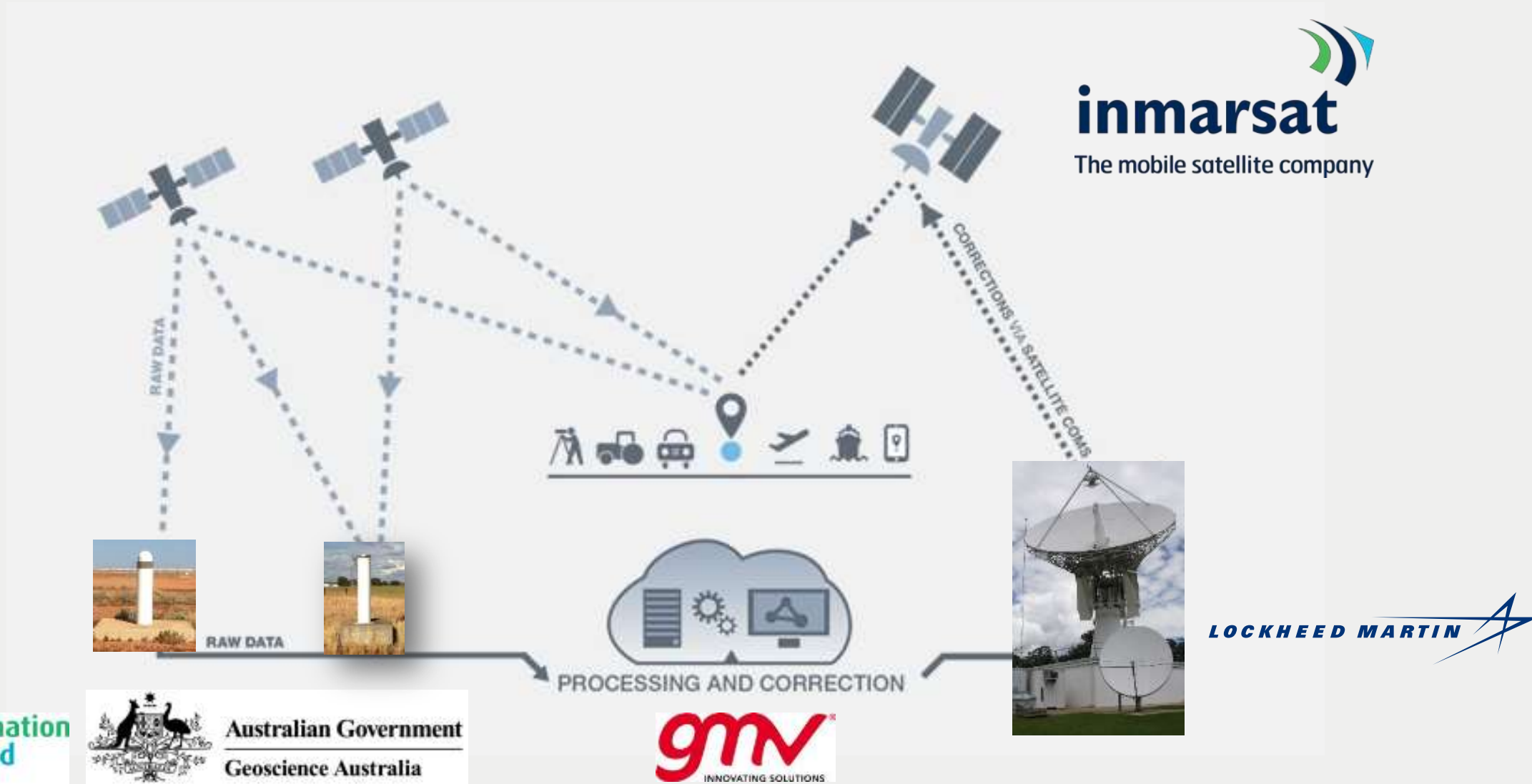
Why have a SBAS testbed?

- 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:



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

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SBAS
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June
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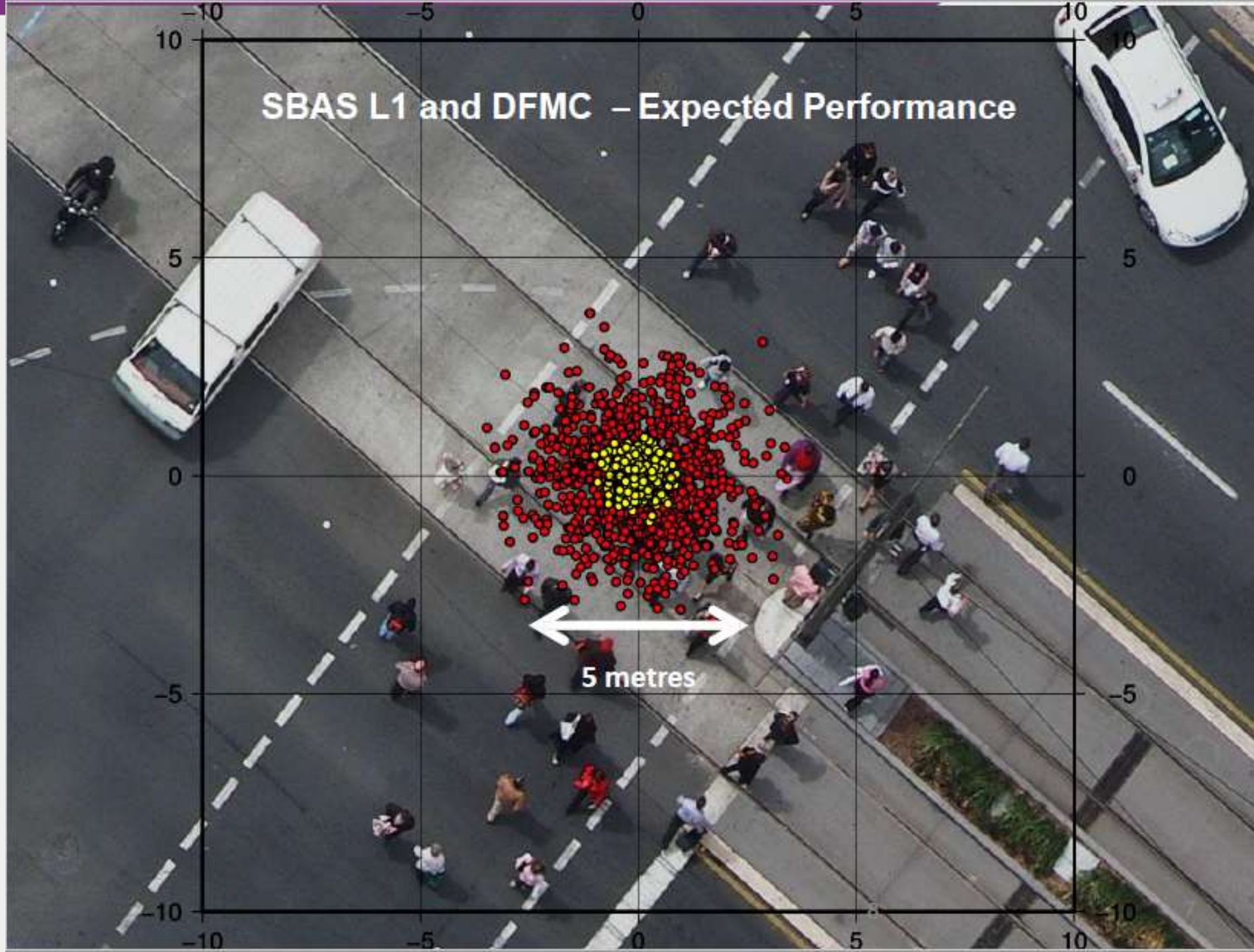
DFMC
L1/L5

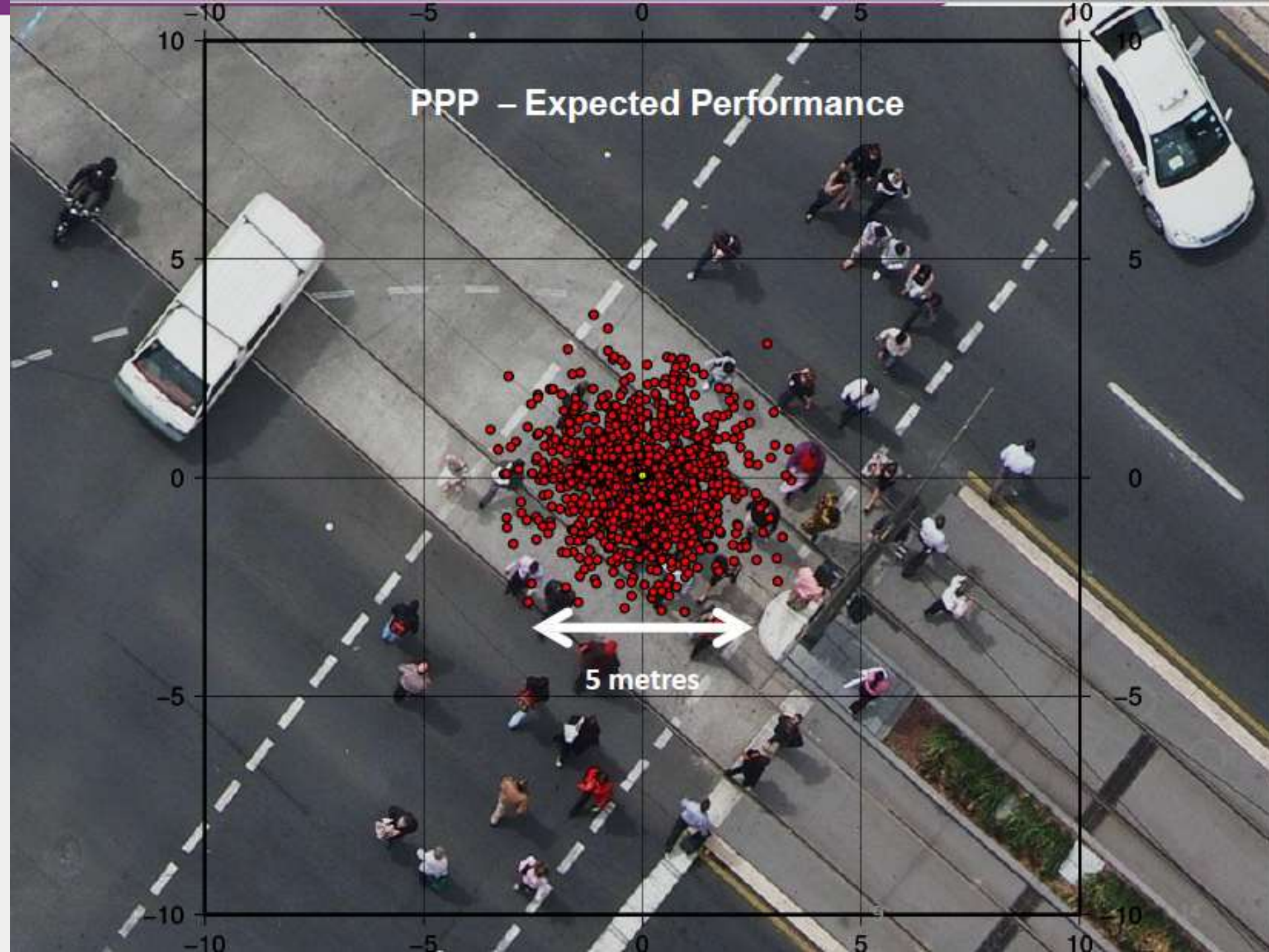
October
2017

- Integrity
- ICD being finalised
- EGNOS v3 DFMC live in 2025

GPS Standard Positioning Service – Typical Performance







Demonstration Projects - Sectors

Agriculture

Spatial

Aviation

Construction

Maritime

Consumer

Rail

Utilities

Resources

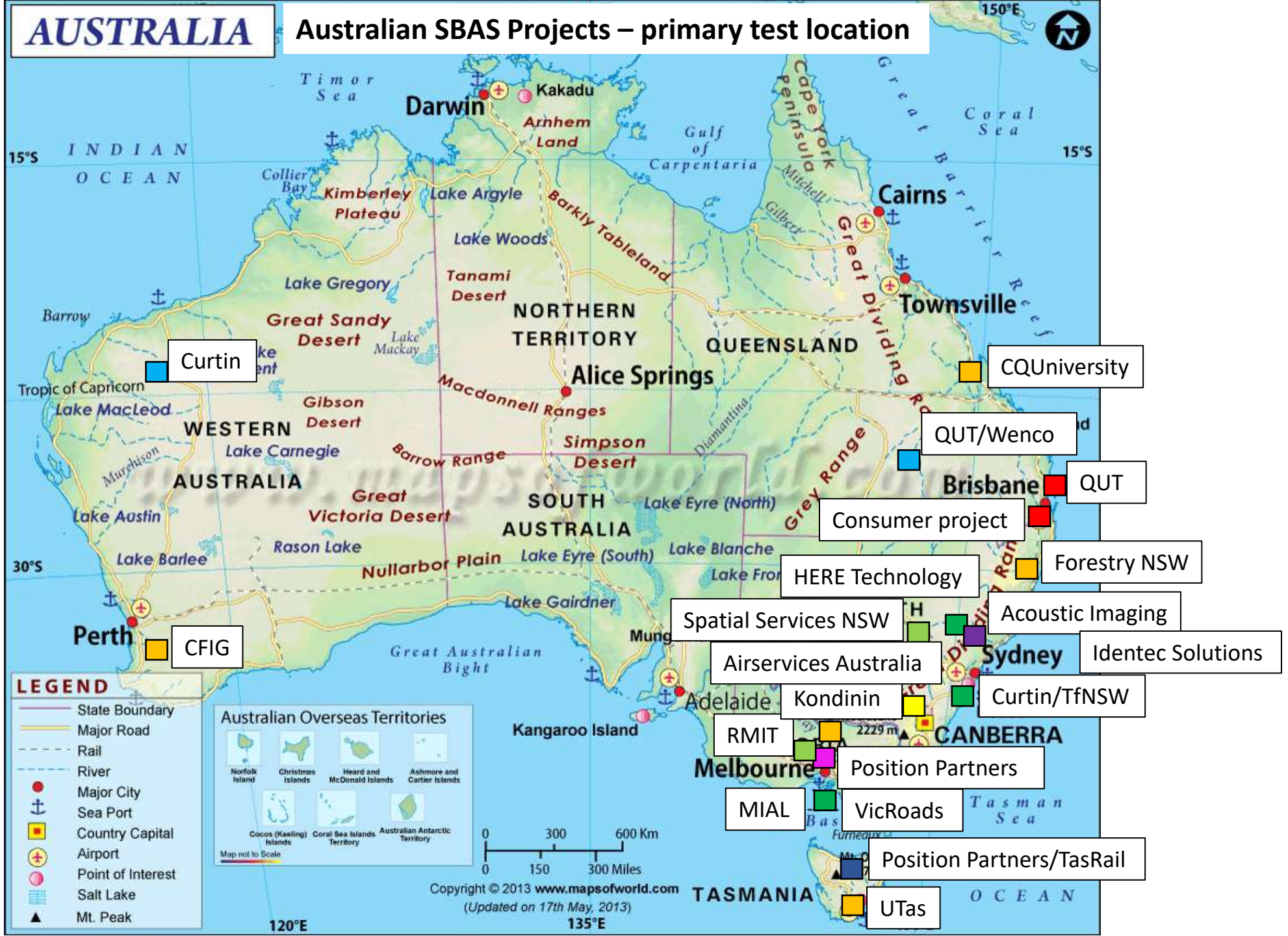
Road

AUSTRALIA

Australian SBAS Projects – primary test location

Key:

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



Notes:

- Some projects are still being finalised
- Projects may test in multiple locations

New Zealand SBAS Projects – primary test location

NEW ZEALAND

Key:

- Aviation
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Notes:

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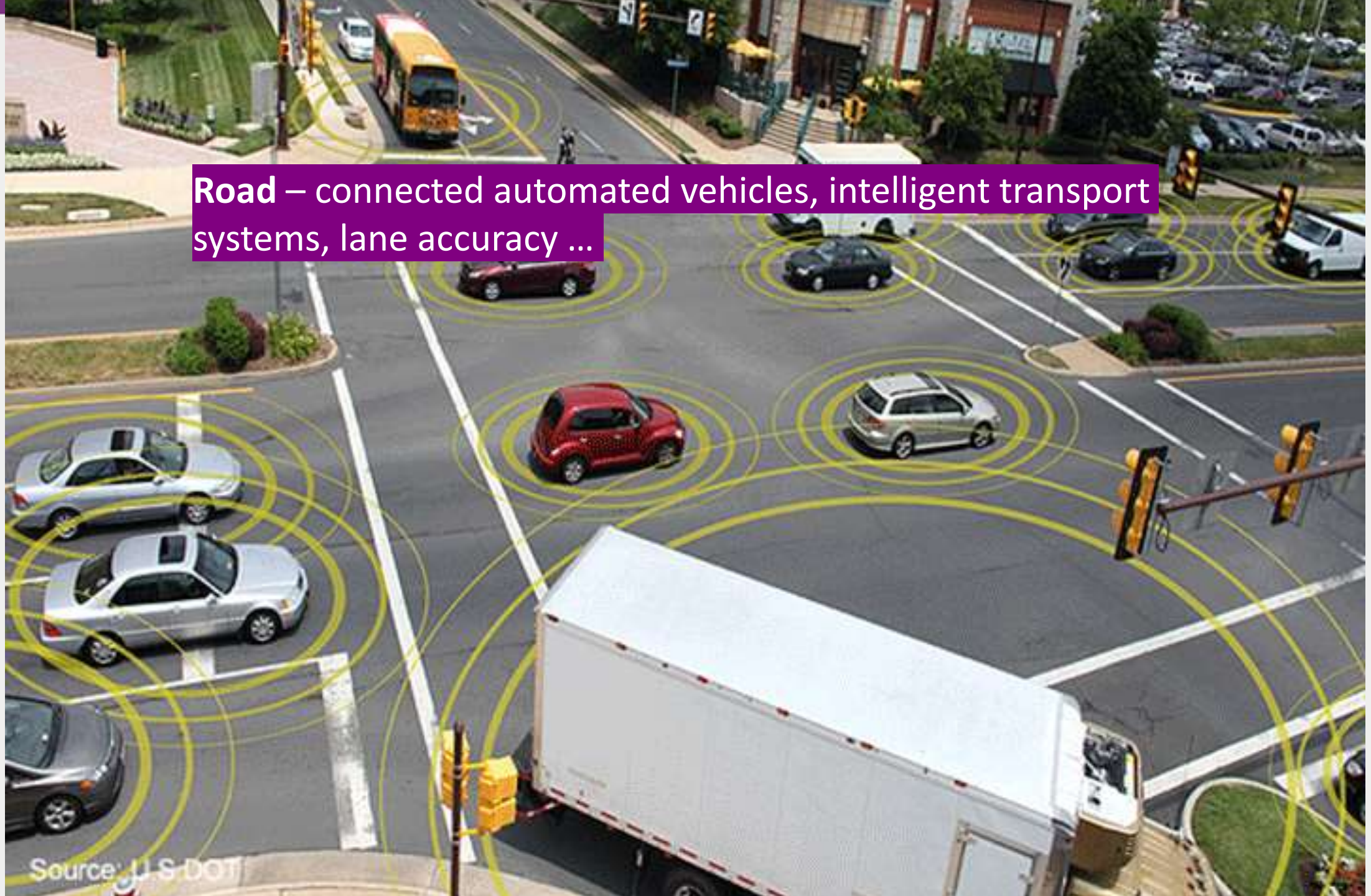


LEGEND

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....

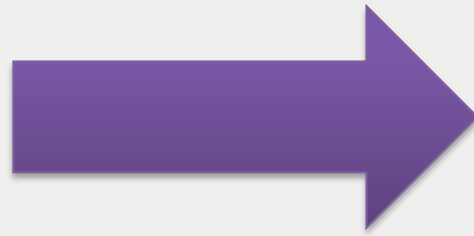


Source: wikipedia

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?

For more information, contact:

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Useful SBAS project information:

www.crcsi.com.au/sbas

<http://www.ga.gov.au/scientific-topics/positioning-navigation/positioning-for-the-future/satellite-based-augmentation-system/profiles>

