

iGNSS 2015

Australia

THALES ALENIA SPACE



ThalesAlenia
A Thales / Finmeccanica Company *Space*

SBAS overview

Accuracy: sub-meter regularly achieved

Parameter	GPS	SBAS
Horizontal Position Accuracy	10 m	1-2 m
Vertical Position Accuracy	15 m	2-3 m

Integrity: Alert in 6s

4

Navigation Land Earth Stations (NLES):
uplink error corrections to EGNOS satellites



3 geostationary EGNOS satellites: relay error corrections to users



5

GPS satellite constellation



1



EGNOS position accuracy

GPS position accuracy

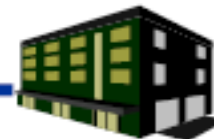
2

Ranging and Monitoring (RIM) stations receive GPS data to determine errors



3

Mission Control Centres (MCC): process GPS data to determine errors



EGNOS

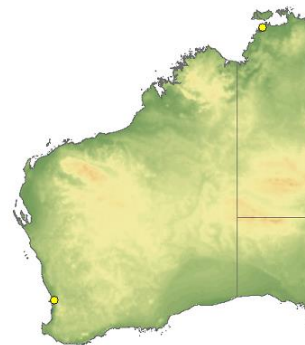
EGNOS – European Geostationary Navigation Overlay Service

- ◆ European component of the ICAO Satellite Based Augmentation System (SBAS)
- ◆ Collects GPS data from a network of remote monitoring stations, processes it in the Master Control Centres and sends correction messages to the users via geostationary satellites
- ◆ GPS errors and integrity warnings within 6 seconds
- ◆ EGNOS is owned by the European Union
- ◆ Development managed by the European Space Agency
- ◆ Certified for Safety of Life operations in March 2011
- ◆ Prime contractor: Thales Alenia Space
- ◆ Service provider: ESSP

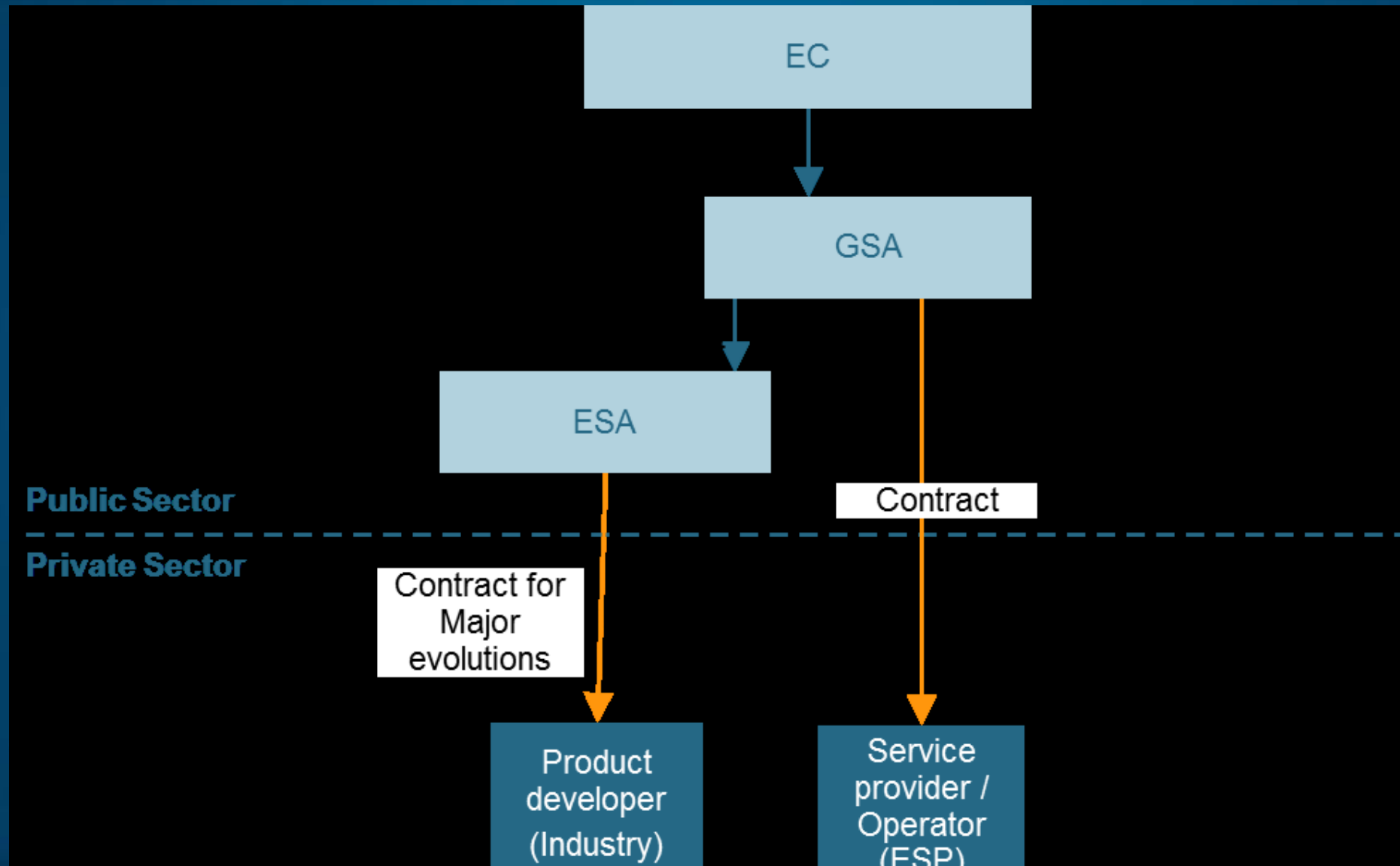
EGN



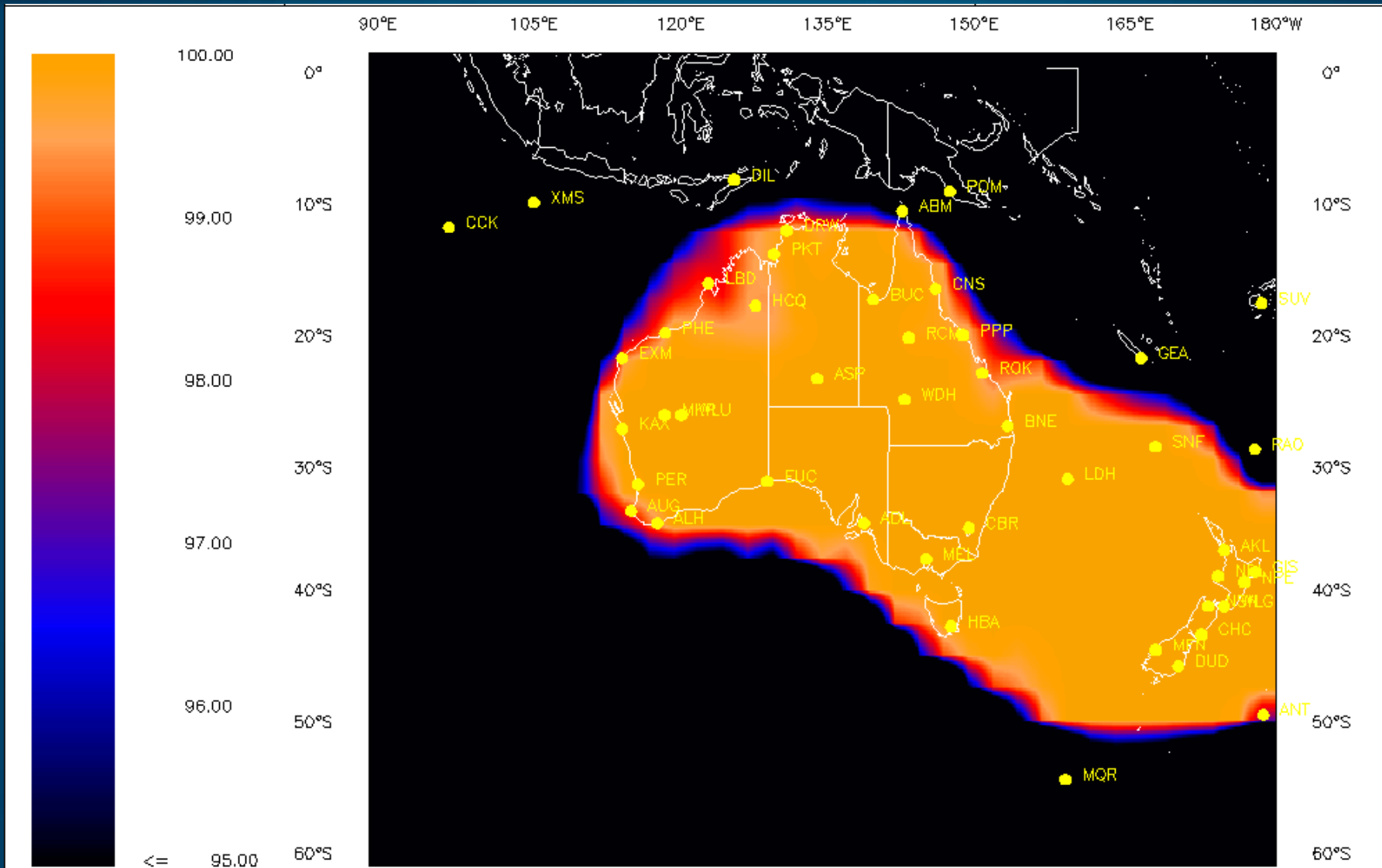
AU-S



EGNOS Governance



SBAS ANZ footprint



EGNOS users

Aviation



SBAS-certified devices for commercial, regional, general & business aviation.



Maritime

SBAS devices to support general navigation, Automatic Identification System (AIS), the Long Range Identification and Tracking (LRIT) System and port operations (including portable pilot units)



Rail

SBAS usage in safety-critical devices supporting signaling (high and low density lines) and non-safety devices supporting other applications (asset management and passenger information).

Agriculture



SBAS devices used for tractor guidance, automatic steering, asset management and Variable Rate Technology (VRT).

Surveying Mapping' Mining



SBAS devices to support land /marine surveying and mapping.



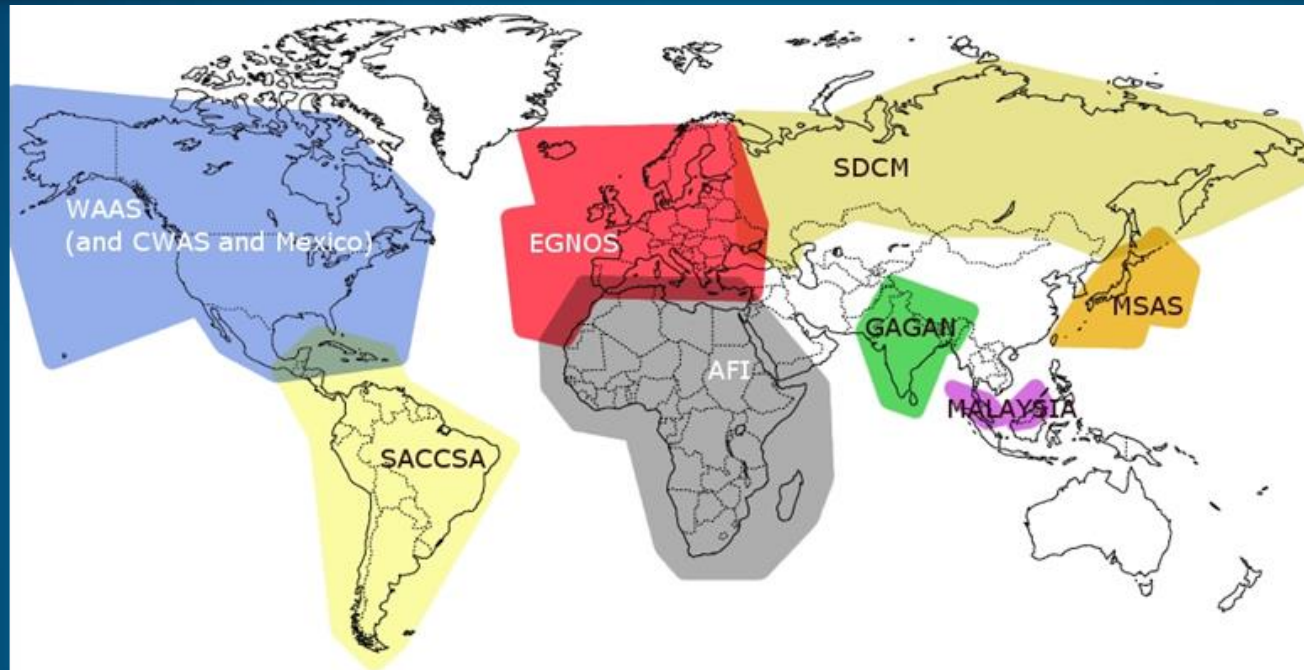
Road

Personal Navigation Devices (PNDs) SBAS enabled used for navigation; Road User Charging (RUC), Advanced Driver Assistance Systems (ADAS); Other devices supporting Intelligent Transport Systems.

Commercial advantage

- 7 of 10 receivers for agriculture are SBAS enabled
- 9 of 10 receivers for roads are SBAS enabled
- 7 of 10 receivers for rail are SBAS enabled
- 8 of 10 receivers for surveying are SBAS enabled
- 7 of 10 receivers for LBDs are SBAS enabled

SBAS global



- ◆ SACCSA-Phase III study feasibility of implementation
- ◆ Malaysia-System under study
- ◆ AFI-Extension of EGNOS system study
- ◆ GAGAN-India: certified NPA
- ◆ SDCM-under development by Russia
- ◆ SNAS-under development by China
- ◆ MSAS: certified NPA

*Thank you
for your attention*

