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Reference Frame in Practice

Manila, Philippines 21-22 June 2013

Role of Manufacturers in Geodetic Infrastructure

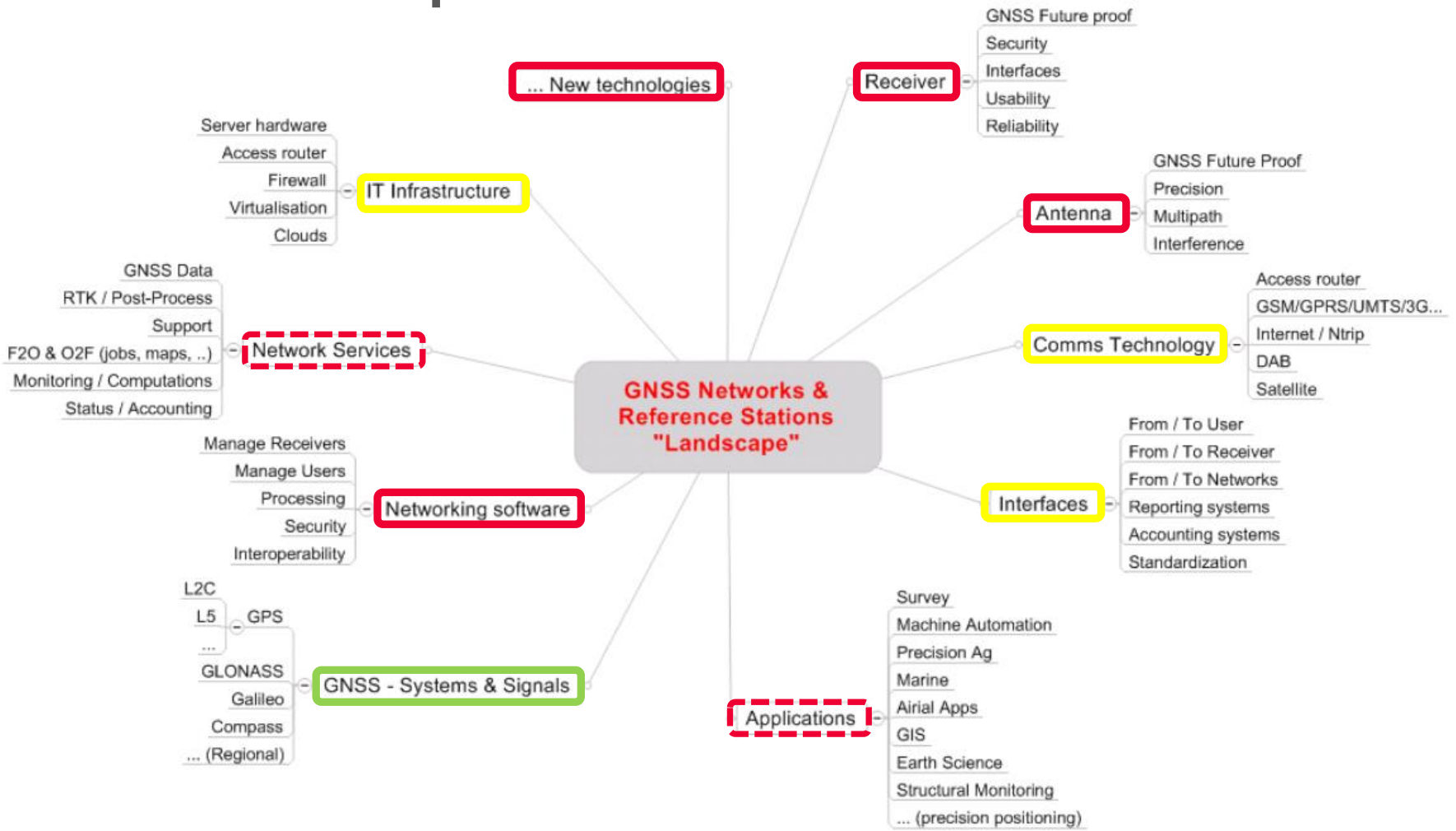
Leica Geosystems

Neil Ashcroft

Sponsors :

GNSS Networks

The “landscape” for GNSS Networks & Stations

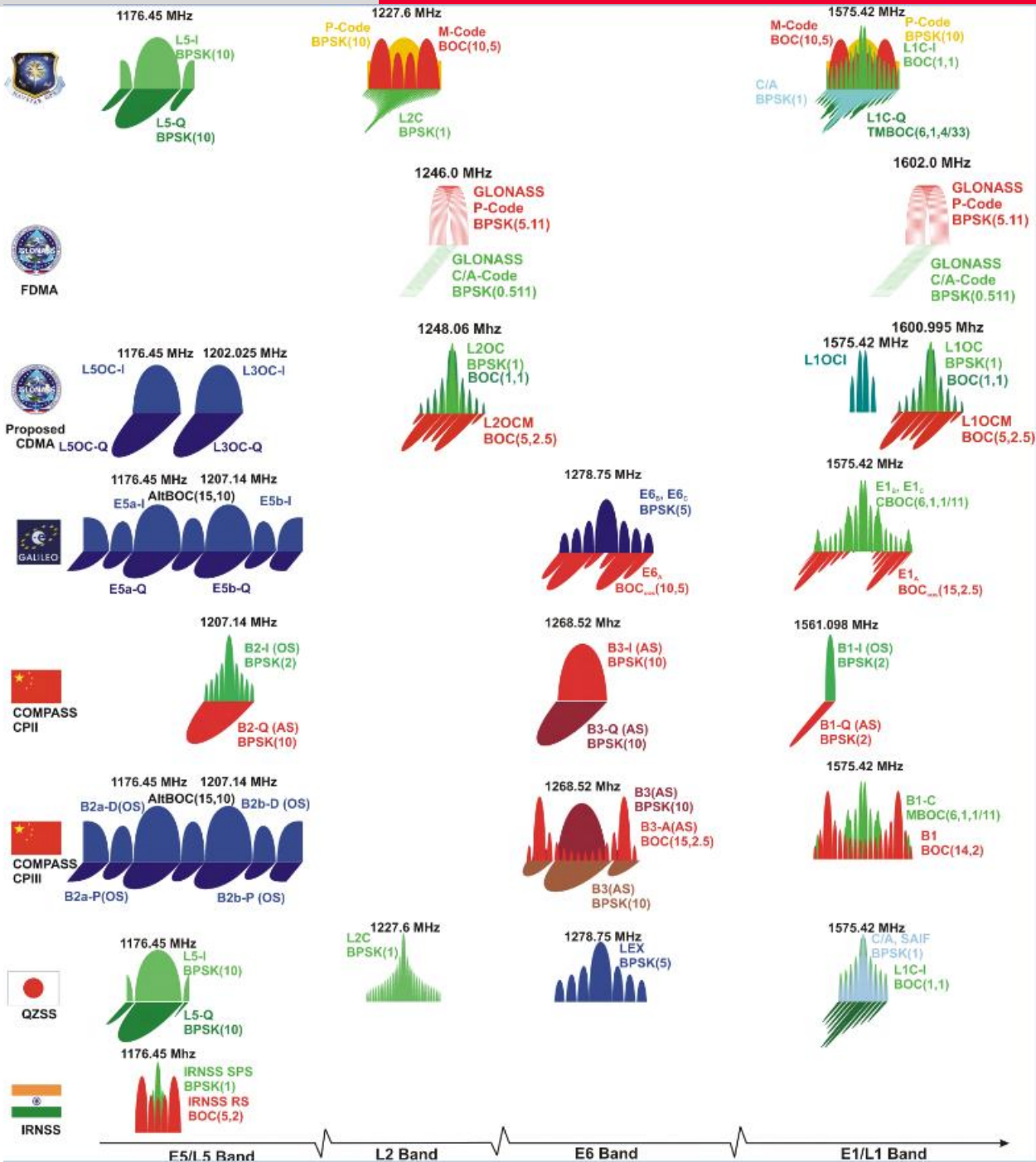


Signal tracking

Please be aware that Receiver Channels are not necessarily indicative of how many Satellite Signals are tracked.

In specifications ensure receiver can :

- Track a minimum # of satellites
  - Example 44
- Support a minimum of signals per satellite
  - Example 6



HEXAGON GEOSYSTEMS

GNSS Hardware – “Future Proofing”

GRX1200Pro : GPS : C1, P2

GRX1200GGPro : GPS : C1, C2, P2
GLO : C1, P2

GRX1200+GNSS : GPS : C1, C2, P2,L5
GLO : C1, P2
GAL : E1, E5a, E5b, E5a+b

GR10 : GPS : C1, C2, P2,L5
GLO : C1, P2
GAL : E1, E5a, E5b, E5a+b
BEI : B1, B2,B3

GR25 : GPS : C1, C2, P2,L5
GLO : C1, P2
GAL : E1, E5a, E5b, E5a+b
BEI : B1, B2, B3

2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013

AT504: GPS Only (D+M)

AT504GG: GPS/GLO (D+M)

AR25: Multi GNSS (D+M)

AR10: Multi GNSS

AR20: Multi GNSS

Ensuring NEW Antennas are calibrated

Sending NEW Antennas for Geo++ robot calibration so that ANTEX files are always up to date

GeoScience Australia robot in Canberra, Australia

What can manufacturers do to further assist ?

Respond to Requests For Information in order for you to put together a feasible operating CORS.

- Will provide simple advice on what needs to be considered.

Some key points to consider…

- GNSS Antennas should rarely be changed. Get antennas that are able to track all planned Satellite Signals now.
- Examine the upgrade path of GNSS Receivers to ensure they are upwards compatible with tracking appropriate Satellite Signals WHEN you need them.
- Get the GNSS receiver to log native RINEX on the sensor and FTP push to central archive store directly. Allows for greater manufacturer interoperability at the Central Server
- Set up front conditions that when Central Software has additional sites added there is a single fee, not manufacturer independent.
- …

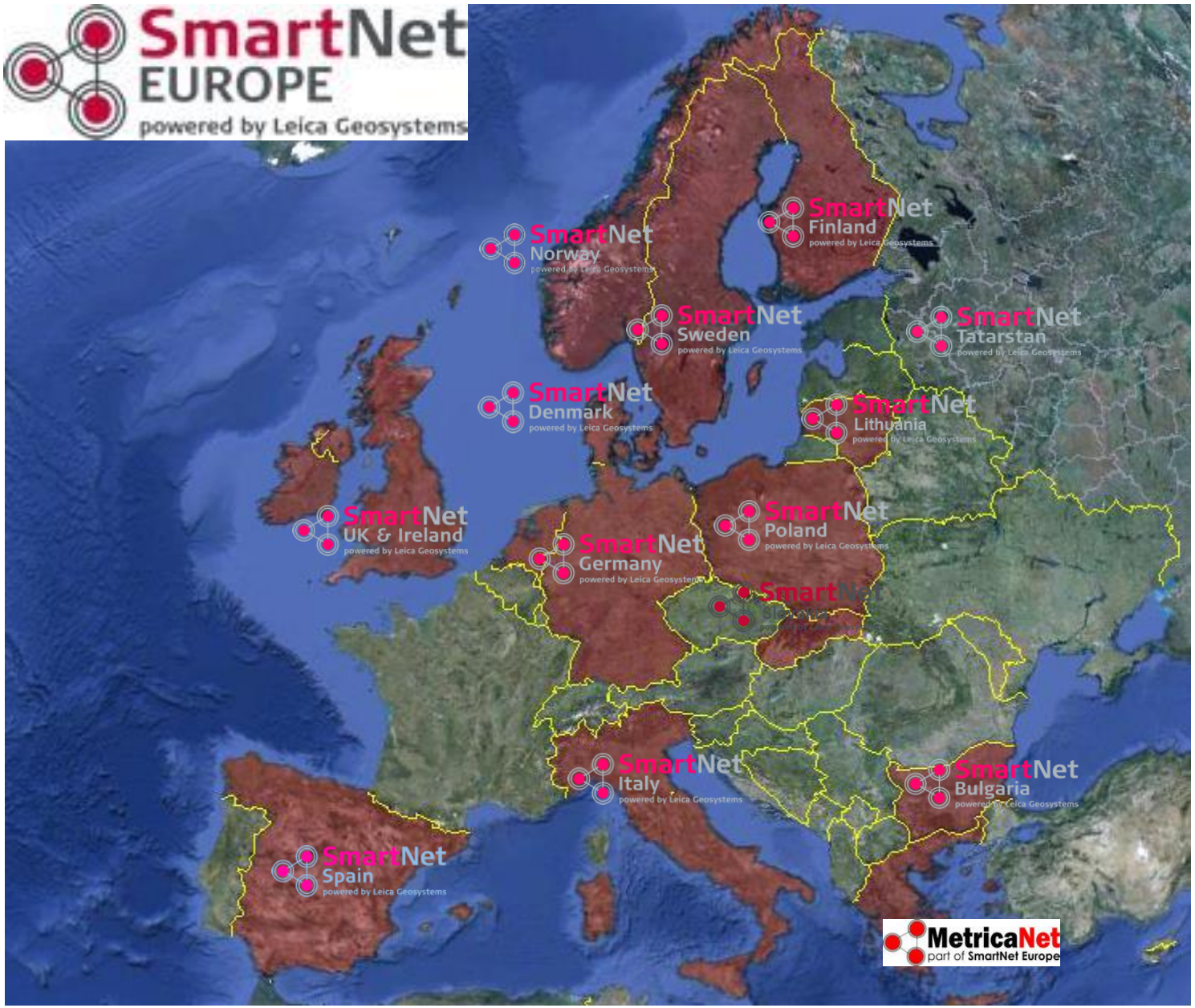
Providing operational services

SmartNet

Managing Day-Day operations of a CORS Network through provision of Internet based GNSS Products:

- Monitoring of CORS Data Streams
- Real Time Streaming (RTCM) of Single Base and Network RTK services via NTRIP
- Providing RINEX download service and Coordinate computation through RINEX upload

SmartNet UK has been operational from Jan 2006


SmartNet
EUROPE
powered by Leica Geosystems
SmartNet
Finland
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SmartNet
Norway
powered by Leica Geosystems
SmartNet
Sweden
powered by Leica Geosystems
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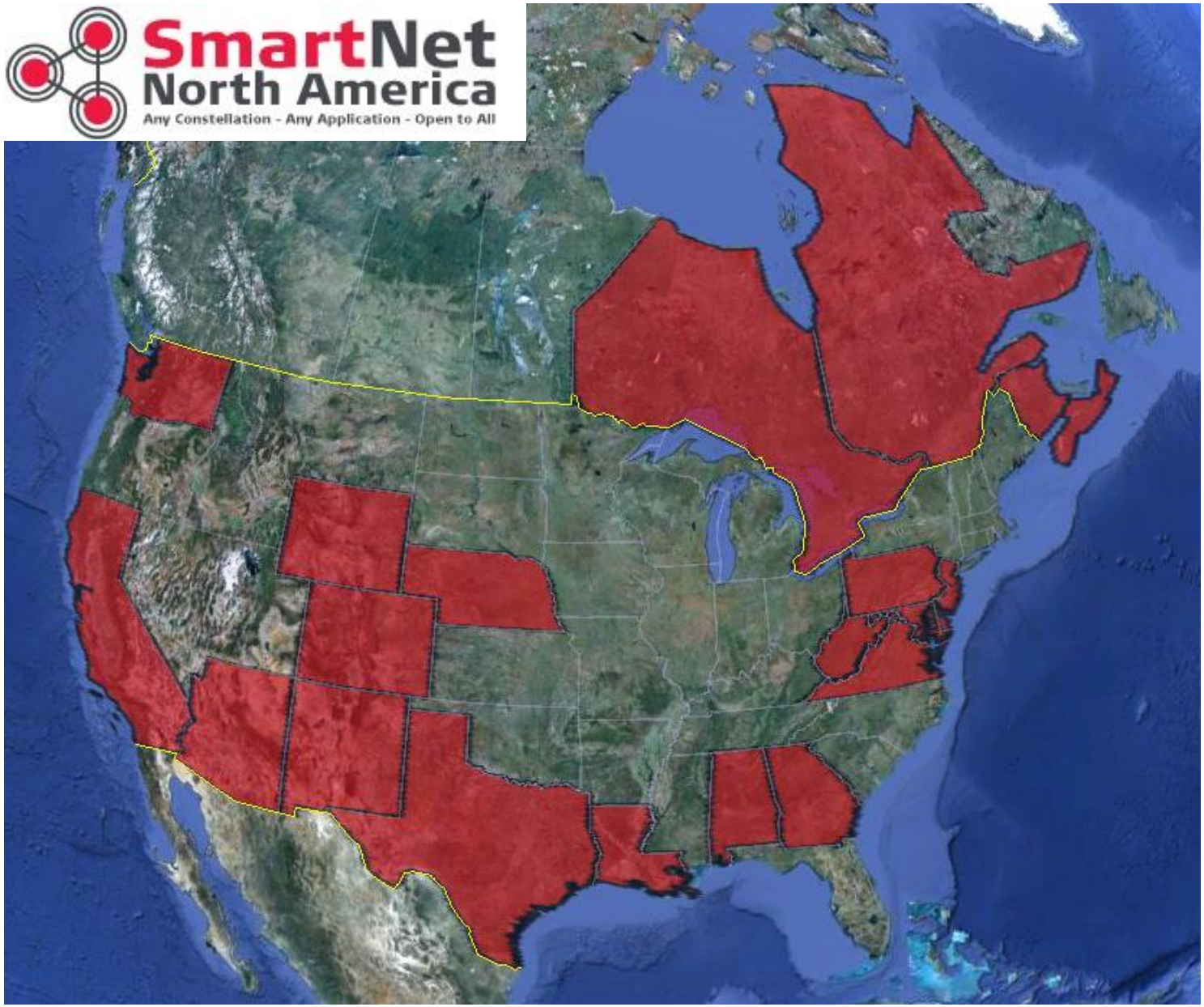
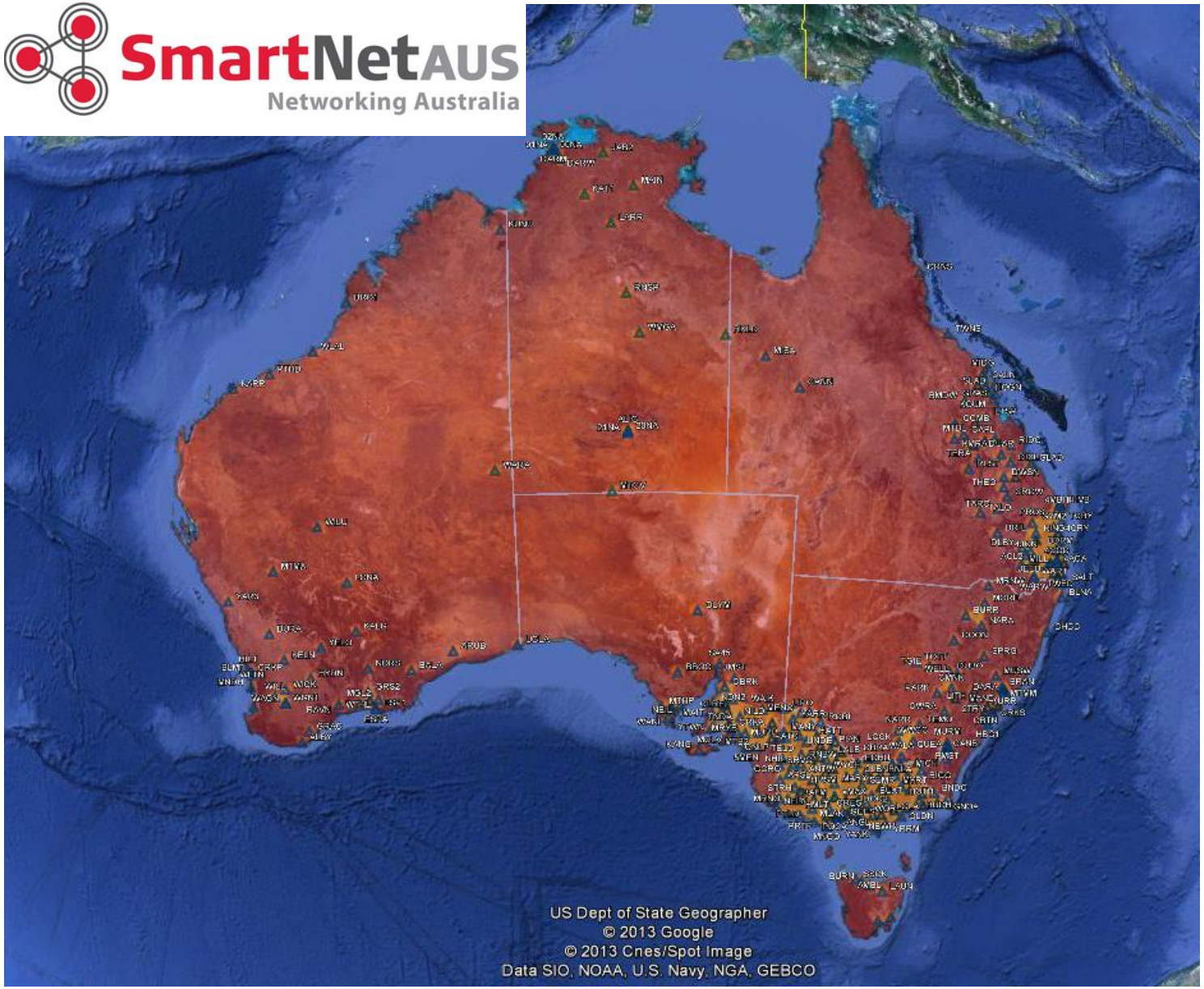
Spain
powered by Leica Geosystems
MetricaNet
part of SmartNet Europe


SmartNet
North America
Any Constellation - Any Application - Open to All

SmartNetAUS
Networking Australia



Various $ models and Business Plans

330 Sites

500+ Users

Split between AG and SUR

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Thank you