



Workshop on

Cooperation in Scientific, Technical and Entrepreneurial Skills

Pretoria, 19-20 November 2013

Developing skills in satellite navigation

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GNSS market report presents the global overview of GNSS market

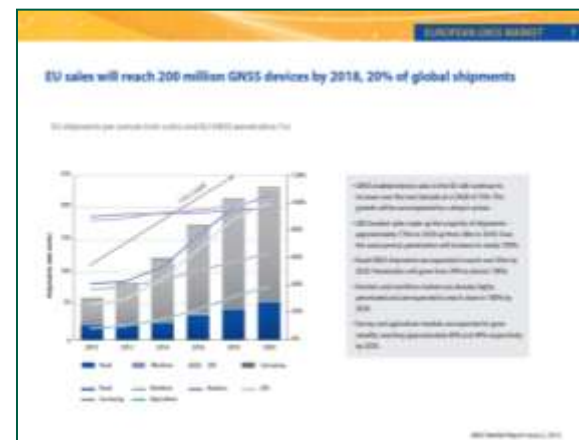


SECTORS COVERED:

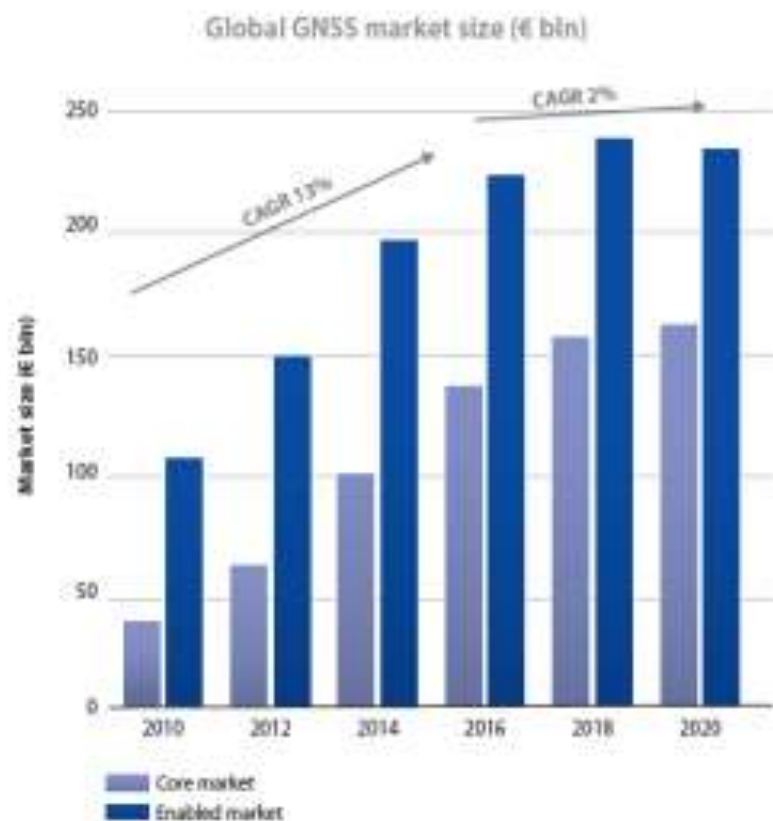
- Aviation
- Agriculture
- Road transport
- LBS
- Surveying
- Maritime (open

sea)

<http://www.gsa.europa.eu/news/gsa-releases-2012-gnss-market-report-0>



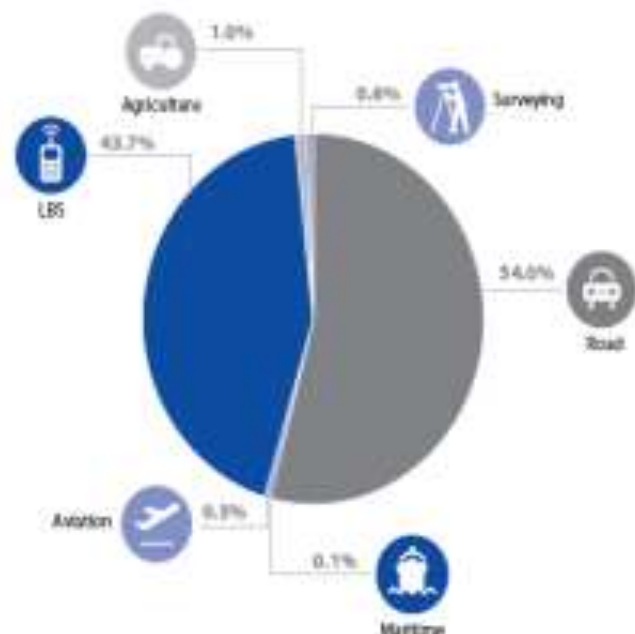
The enabled GNSS market will continue to grow rapidly for the next five years



Core GNSS market includes only the parts of products' retail value that are directly attributable to GNSS (1% in the case of GNSS enabled smartphones). It also includes service revenues directly attributable to GNSS.

The **enabled market** includes the Core GNSS market plus the full retail value of all GNSS-enabled platforms.

Global core GNSS market by segment
(cumulated revenues 2010-2020)



- The worldwide GNSS market is growing fast and total enabled revenues are expected to increase at 13% CAGR between 2010 and 2016.
- The total enabled GNSS market size is expected to stabilise in the latter half of this decade due to market saturation, price erosion and platform convergence.
- Road is the largest market by revenue, followed by LBS.

Training in satellite navigation- an overview

- *Sat nav is lagging behind other space sectors wrt dedicated training*
- *Yet location based services (LBS) are becoming ubiquitous, and sat nav and augmented sat nav are an essential part of LBS*
- *LBS is rapidly growing market that can lead to significant industrial and economic development*
- *EGSA (EGNOS for SA) – and SBAS system – analyses have shown benefits for civil aviation (NPV = 20 M€), but considerably more for PA (NPV = 130 M€ for wheat only)*

Skills development for satellite navigation – some pragmatic proposals

Follow-on from SATSA training on SBAS:

- *Cross-sector summer school in GNSS and SBAS topics (2-3 week)*
 - **for engineering and geomatics students**
 - **professionals from downstream sectors (PA, vehicle tracking, rail fleet management, maritime, surveying, etc.)**
 - **the proposed SA testbed would facilitate hands-on training opportunities**

- *Important link with training in ICT and mobile communications*
 - **Integrated location based services and apps are the future!**
 - **Developing African applications for Africa., e.g. under a RSA chapter for Europe's satnav competition (ESNC)**

Skills development for satellite navigation – proposals cont.

Tertiary training

- *Introduce a one semester module into Geomatics Course at University of Cape Town on SBAS*

- *Send students abroad to attend*
 - **Master of Science in Global Navigation Satellite System, ENAC & ISAE, France**
 - **Specializing Master in Navigation and Related Applications, ISMB, Italy**

- *Long-term – RSA could consider introducing a diploma or MSc course in satellite navigation (GNSS)*
 - **At Space node of Pan-African university in SADC when that becomes a reality**