

**2012 GNSS.asia workshop**

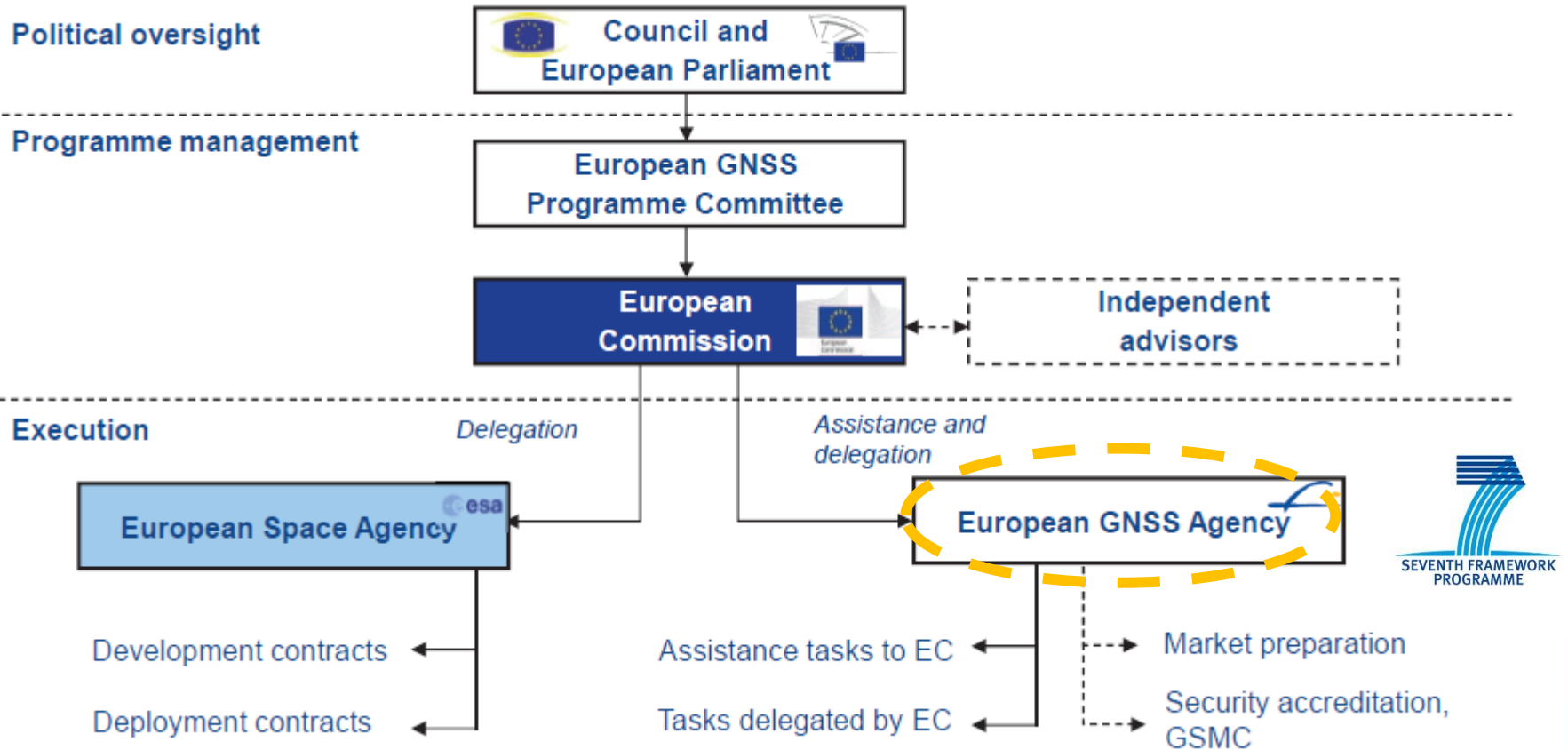
# **Overview of the global GNSS market and status of Galileo**

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6 November, 2012  
Taipei

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European GNSS Agency

# European GNSS Agency supports European Commission in Galileo programme



GSMC: Galileo Security Monitoring Centre



# The European GNSS Programmes: EGNOS and Galileo

## Galileo

- Global Navigation Satellite Systems (GNSS)
- Fully compatible with GPS\*
- 4 fully operational IOV satellites
- Early services starting from 2014
- Open service free of charge and delivering dual frequencies (better performances)



## EGNOS

- Satellite Based Augmentation System (SBAS)
- Measures and improved GPS performance
- Sends corrections to users via satellite or terrestrial links (EDAS)
- European coverage (but under extension in other regions, e.g. North Africa)



# Galileo has already taken-off



- **4 operational satellites** have been launched, as 12 October 2012 (in addition to the 2 test satellites launched in 2005/2008)
- All **industrial contracts** necessary have been signed to ensure up to **26 satellites**:
  - ✓ Early Galileo services in 2014
  - ✓ 18 satellites are expected in 2015/16

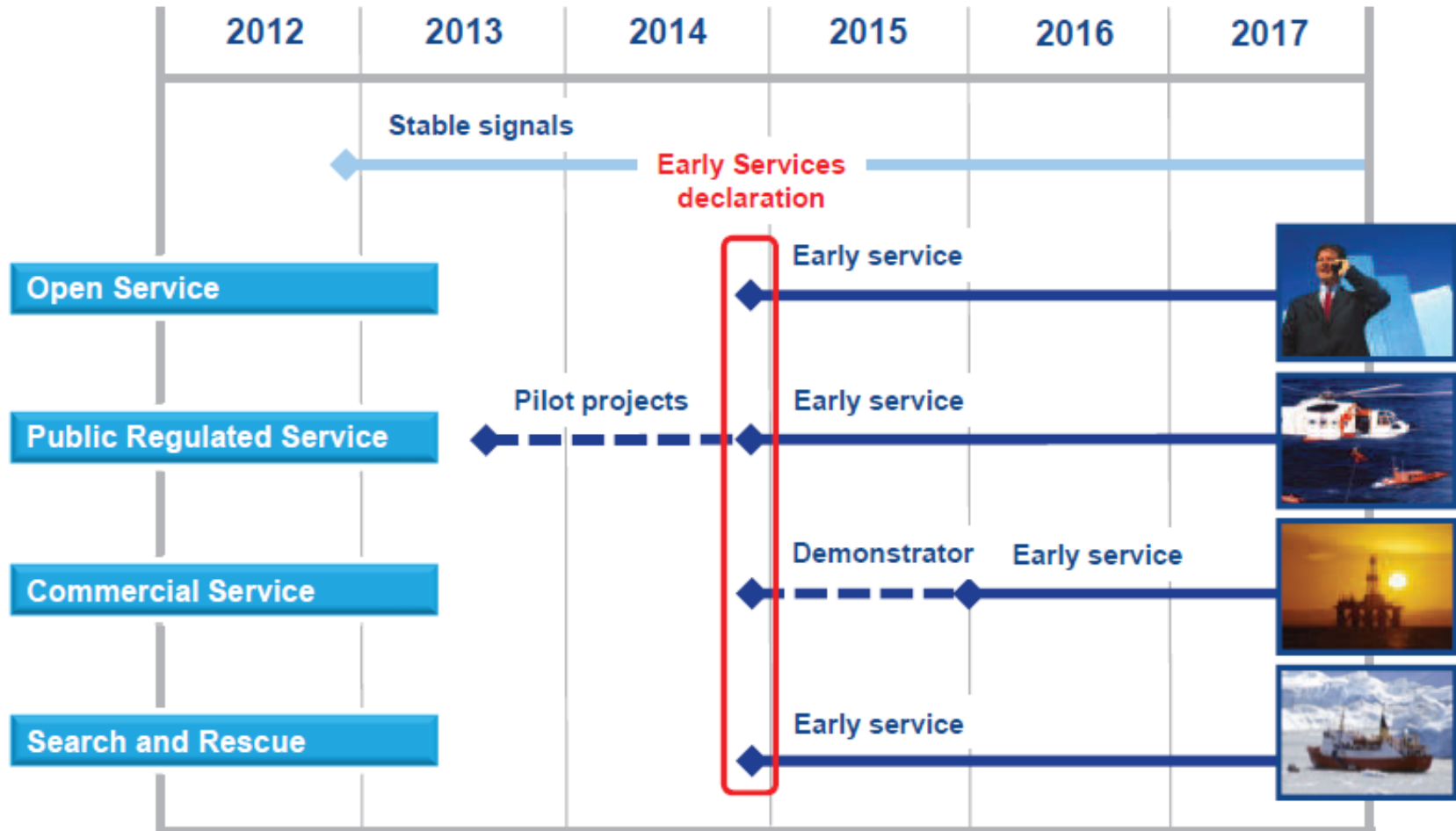
# Galileo will deliver better performance mostly in terms of availability and accuracy

Service name	Description	Main benefits	Main applications
<b>Open Service (OS)</b>	Freely accessible service for position, navigation and timing	Availability Accuracy	LBS Road navigation
<b>Commercial Service (CS)</b>	Delivers authentication and high accuracy services for commercial applications	High precision Authentication	High precision in agriculture and surveying Authentication in RUC, PPUI, secure transactions (e.g. mobile payments)
<b>Search and Rescue Service (SAR)</b>	Assists locating people in distress and confirms that help is on the way	Near real time delivery of beacon position Return link service	Maritime navigation Aviation
<b>Public Regulated Service (PRS)</b>	Encrypted service designed for greater robustness and higher availability	Robustness Availability Encrypted message	Defence, homeland security Critical infrastructure
<b>Integrity Monitoring*</b>	Provides vital integrity information for life-critical applications.	Integrity	Aviation Rail transport Road transport e.g. dangerous goods





# Early services will be provided from 2014



# Interface Control Document is publicly available and free of charge



## Table of contents:

- overview of the Galileo system
- signal-in-space radio frequency specifications
- characteristics of the spreading codes
- message structures
- characteristics of the navigation message data contents



# Examples of current GNSS applications in EU



## Aviation:

- Approaches with vertical guidance (SBAS APV)
- Advances procedures for approach and landing

## Road:

- Navigation
- Road tolling
  - eCall
  - ITS
- Logistics
- ADAS

## Maritime:

- Entering ports
- Coastal navigation
- Open sea navigation
- Inland waterways navigation

## Agriculture:

- Tractor guidance
- Automatic steering
- Variable Rate Technology
- Asset monitoring

## Surveying:

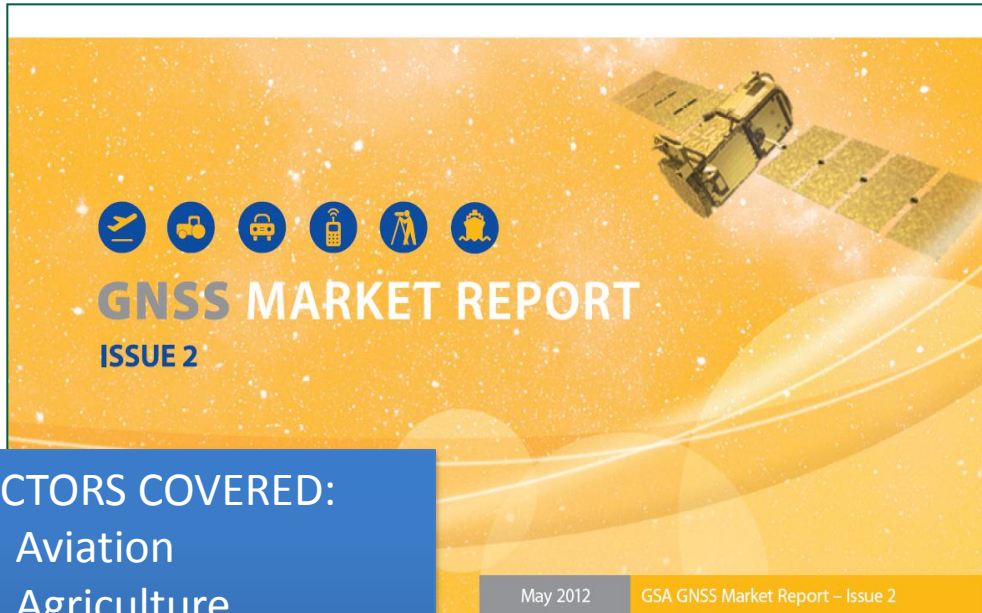
- Cadastral surveying
- Construction surveying
- Mapping

## LBS:

- Location based applications
- Weather info, gaming, social media, advertising
- Personal navigation

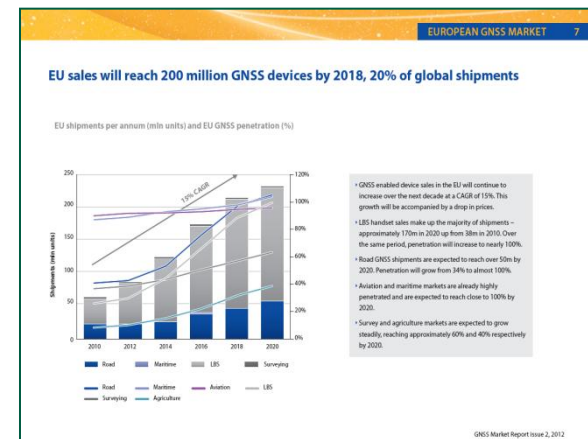
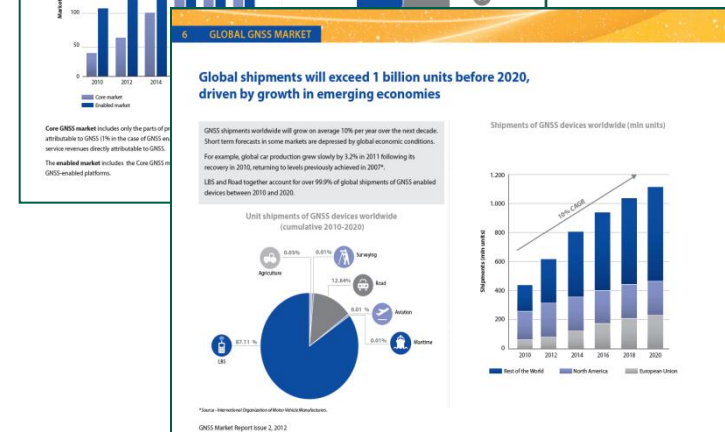
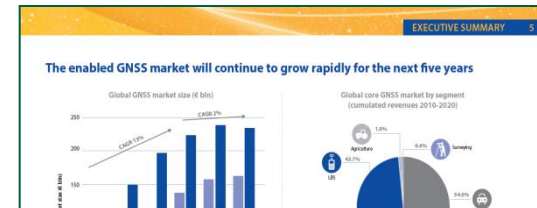


# GNSS market report presents the global overview of GNSS market

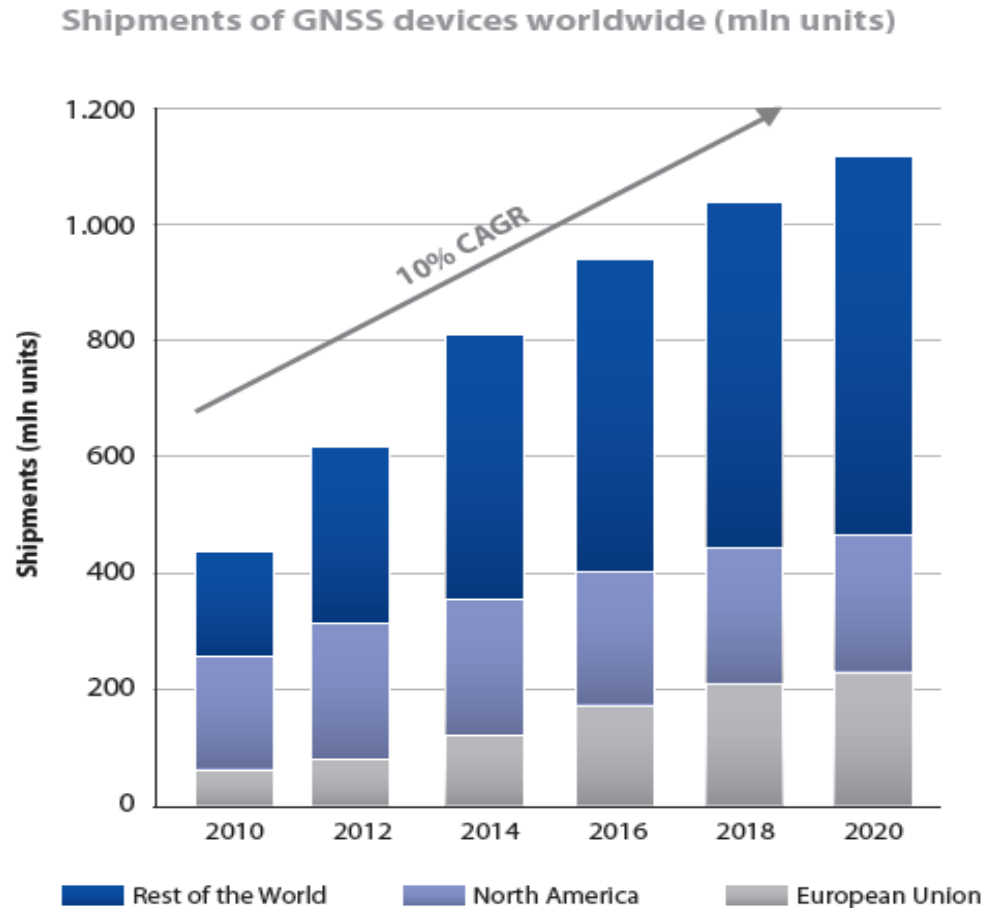


- SECTORS COVERED:**
- Aviation
  - Agriculture
  - Road transport
  - LBS
  - Surveying
  - Maritime (open sea)

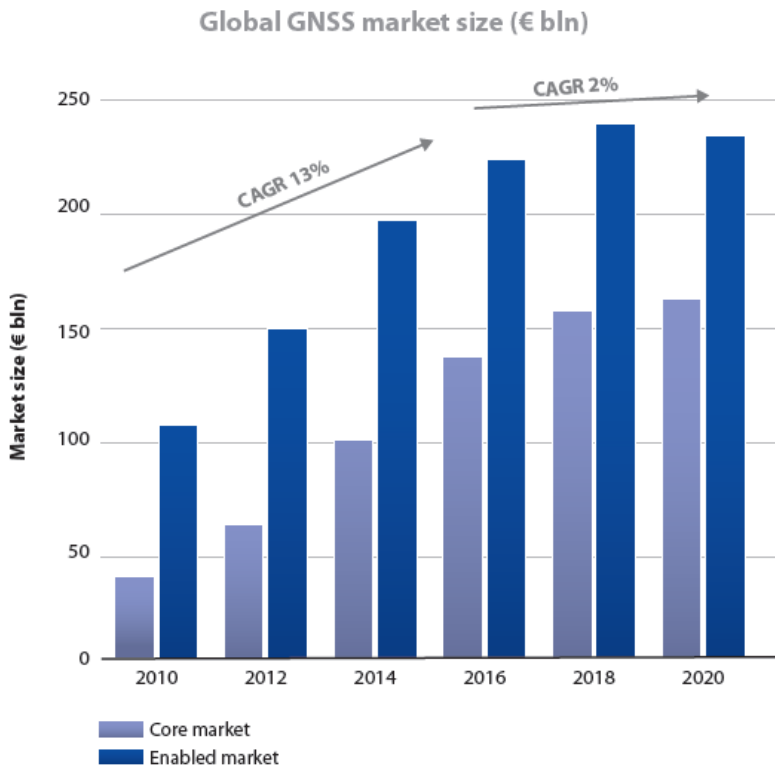
<http://www.gsa.europa.eu/news/gsa-releases-2012-gnss-market-report-o>



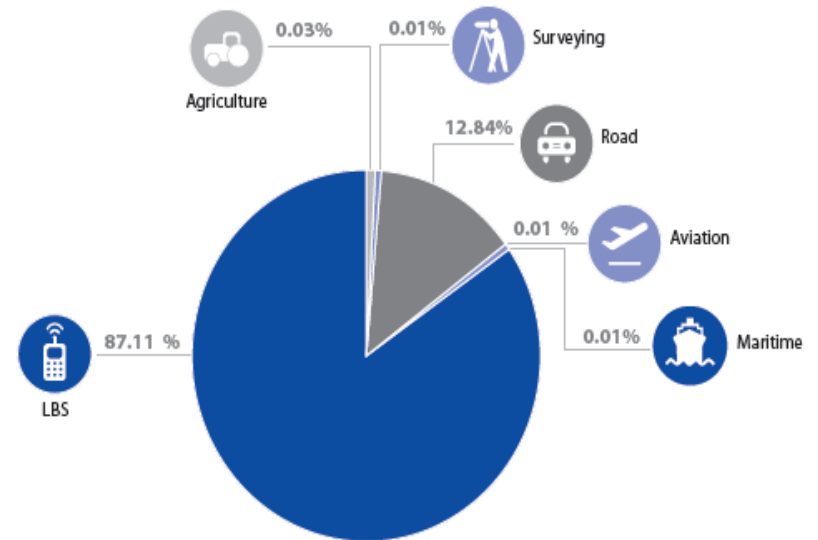
# Global shipments of GNSS devices will exceed 1 billion units before 2020



# Growing revenues concentrated in Road applications and Location Based Services



Unit shipments of GNSS devices worldwide (cumulative 2010-2020)

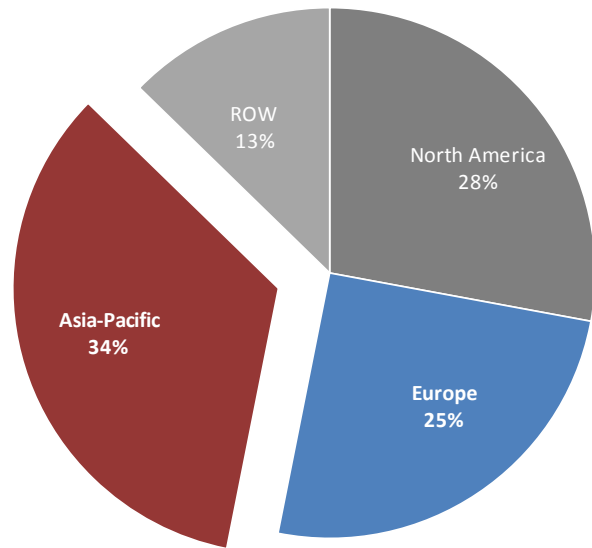


\* Source - International Organization of Motor Vehicle Manufacturers.

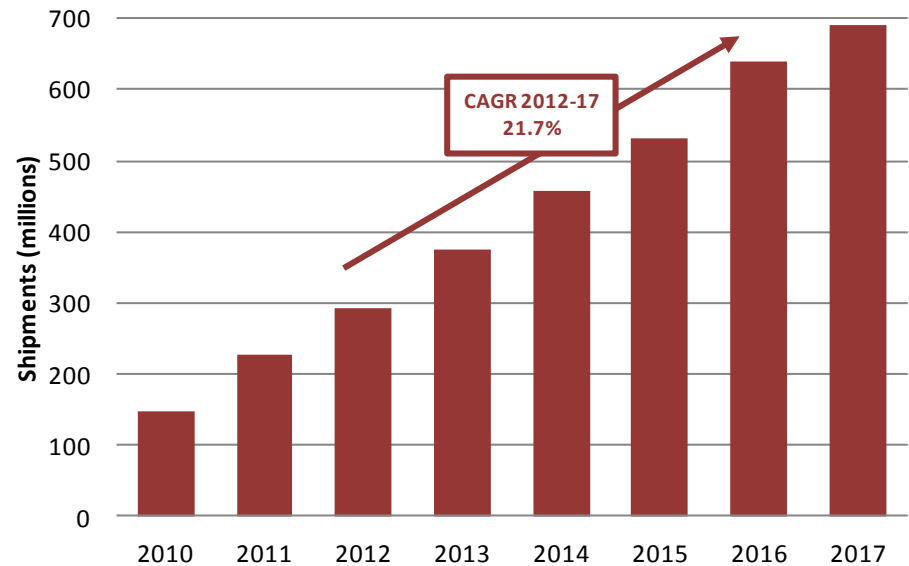
GNSS Market Report Issue 2, 2012

# Asian market is of key importance

Asia-Pacific region accounts for 34% of worldwide GPS/GNSS Integrated Chipset shipments (2012)

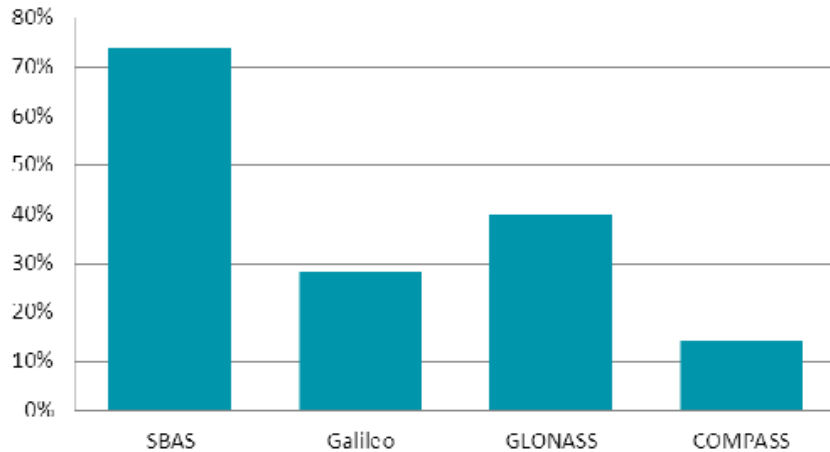


GPS/GNSS Integrated Chipset shipments forecast to increase by 21.7% in Asia-Pacific from 2012 to 2017

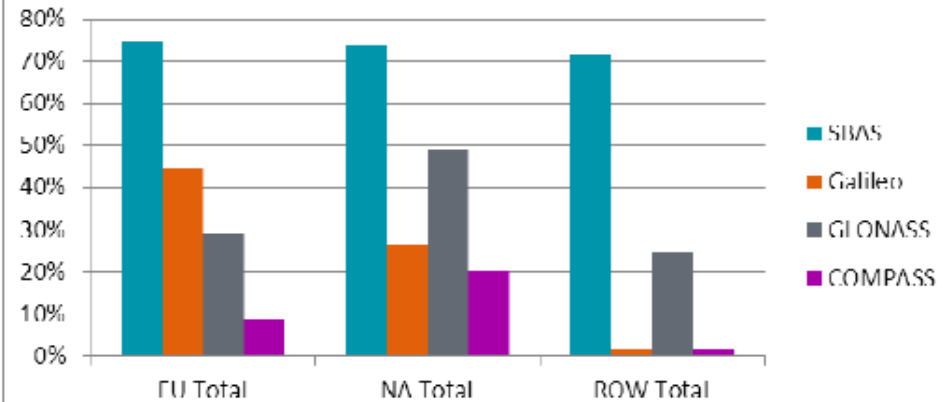


# Don't miss the opportunity...

## GNSS capabilities of today's receivers



## GNSS capabilities of today's receivers - per region



- Galileo is currently the 3<sup>rd</sup> constellation being adopted in the receivers worldwide.
- In Europe Galileo is present in 40% of receivers, followed by 25% adoption in USA.
- We hope to see more interest from Asian manufacturers in future.



Be ready for the early services in 2014 – include Galileo in your product roadmaps today



**Thank you!**

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