



# Main Priorities of the Horizon 2020 Space Work Programme 2018-2020

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# Outline

- Space Strategy
  
- Key Role of H2020 & Lessons Learnt
  
- A Few Key Recommendations on:
  - Budget
  - GNSS Applications
  - Multi-Constellations
  - Galileo Infrastructure Evolutions
  - Capacity Building
  - Further H2020 Instruments

# Space Strategy

# A European Strategic Plan

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- The upcoming release of *A Space Strategy for Europe* is welcomed
- June 2016: publication of *China's BeiDou Navigation Satellite System* white paper ([http://news.xinhuanet.com/english/china/2016-06/16/c\\_135441516.htm](http://news.xinhuanet.com/english/china/2016-06/16/c_135441516.htm))
  - **Chapter IV: BDS Applications and Industrial Development**
- Need for a European Strategic Plan
  - To restore a level playing field
  - To “reap the economic and societal benefits of Europe's investments in space infrastructure” \*
- The European Strategic Plan must consider several support actions:
  - Massive funding from R&D to manufacturing capabilities
  - Regulation
  - Public procurement (e.g. PCP/PPI)
  - Standardisation

## **Key Role of H2020 & Lessons Learnt**

# Key Role of H2020

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- Horizon 2020 and its instruments are key pillars of the Space Strategy
  
- They are in particular essential to:
  - Encourage research in key enabling technologies
  - Develop critical technologies, applications and services based on end-user requirements, on which European GNSS will have a unique value proposition
  - Strengthen the European industry competitiveness
  - Make sure that technology is available to allow Galileo market uptake
  - Make sure that the specificities of Galileo signals and services design are effectively implemented at user requirement level and used

# Lessons Learnt

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- Cut of GNSS applications budget in FP7 had major consequences
  - Budget agreed at the outset: **€350 million**; Actual budget: **€100 million**
  - The decrease stopped the momentum
  
- **Absence of H2020 calls dedicated to GNSS in 2016 and the lack of visibility after 2017 are particularly worrying**
  - Lack of downstream segment funding would be detrimental to:
    - Potential Galileo market uptake
    - European economy

## A Few Key Recommendations



# Budget

- EU contribution to GNSS applications and services R&D must reach the required level – i.e. €200-400 million per year
  - The objective is for Europe to win 33% of the global GNSS downstream market by 2025
  
- Necessity of investing in other actions such as public procurement or technical support. Therefore Galileo Services recommends an investment of €2 billion (2016-2020)
  
- Calls have to be released on a yearly basis to ensure European industry presence on emerging and fast-evolving markets
  
- Need for continuous open calls dedicated to innovation and breakthrough technologies

# GNSS Applications



## Road

e.g. Connected vehicles and autonomous / automatic driving vehicles



## Agriculture

e.g. autonomous vehicles



## Maritime

e.g. autonomous vessels / Intelligent ships / sensor fusion



## Civil Remotely Piloted Aircraft Systems (RPAS)



## M2M & Internet of Things

e.g. smart grids / energy management / smart cities



## Indoor navigation



## Big data

e.g. data position and time stamping



## Rail

e.g. GNSS into ERTMS-ETCS railways train control system



## Timing & Synchronization for Critical Infrastructure



## Protection and efficiency of critical transport network infrastructure



## Multimodal logistics

e.g. fleet and asset management



## Offshore infrastructure, Defence and many other GNSS applications and services markets...

# Multi-Constellations & Galileo Infrastructure Evolution

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- Support from H2020 essential to ensure that Galileo will be used, leveraging in particular its enhanced performance parameters in a multi-constellation environment
- R&D on the optimal way to combine signals from various constellations
  - Trade-offs on performance depend on each application requirements and constraints
- R&D related to Galileo infrastructure evolution needs to involve the downstream industry in a significant manner
  - Leading role of the downstream industry in proposing Galileo service and mission evolutions

# H2020 for Capacity-Building & Further Instruments

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- H2020 to support enabling activities to foster market penetration and development:
  - Market analyses and business cases
  - Promotion and awareness activities
  - Standardisation in relevant domains
  - Support for certification process for safety/security critical application
  - Demonstrations and operative pilot projects
- Establishment of a permanent Forum between institution & industry
- Support of international cooperation when favouring European industry interests
- Public procurement (PCP/PPI) of European products and applications in some key sectors (e.g. critical infrastructure, security)
  - Ensures commercialisation and radically boosts private investment

# Conclusion

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- A substantial earmarked budget for the GNSS applications and services development within H2020 is critical to “reap the **socio-economic benefits** of Europe’s investments in Galileo infrastructure”\*
- H2020 has a role to play in key GNSS applications and services markets. Will help sustain **European economic growth** and industry **competitiveness**
- A full use of **H2020 instruments** of critical importance for industry competitiveness and leadership in the global market
- Level of EU contribution to GNSS applications and services R&D: **€200-400 million/year**
- Recommended EU investment in the development of value-added GNSS applications and services: **€2 billion** (2016-2020)

# For Further Information



Satellite Navigation Applications realizing the Ambitions of EU2020 - Position Paper of Gali

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