

I. Overall benefits

II. Benefits by application

- I. Aviation**
- II. Rail**
- III. Agriculture**
- IV. Survey/ Mapping**
- V. Maritime**
- VI. Other domains**

I. Overall benefits (1/2)

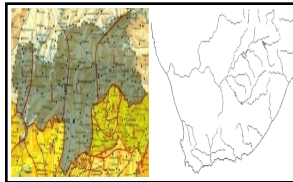
Aviation:

- Less CFIT (Controlled Flight Into Terrain)
- ADS-B improvement
- Traditional nav aids replacement
- Less DDC (Delays, Diversion, Cancellations)



Rail: Cost savings due to reduced maintenance of signalling equipment

Agriculture: Reduction of inputs and yield increase



Cartography: Cost effective solution where high-accuracy low-cost service is desired

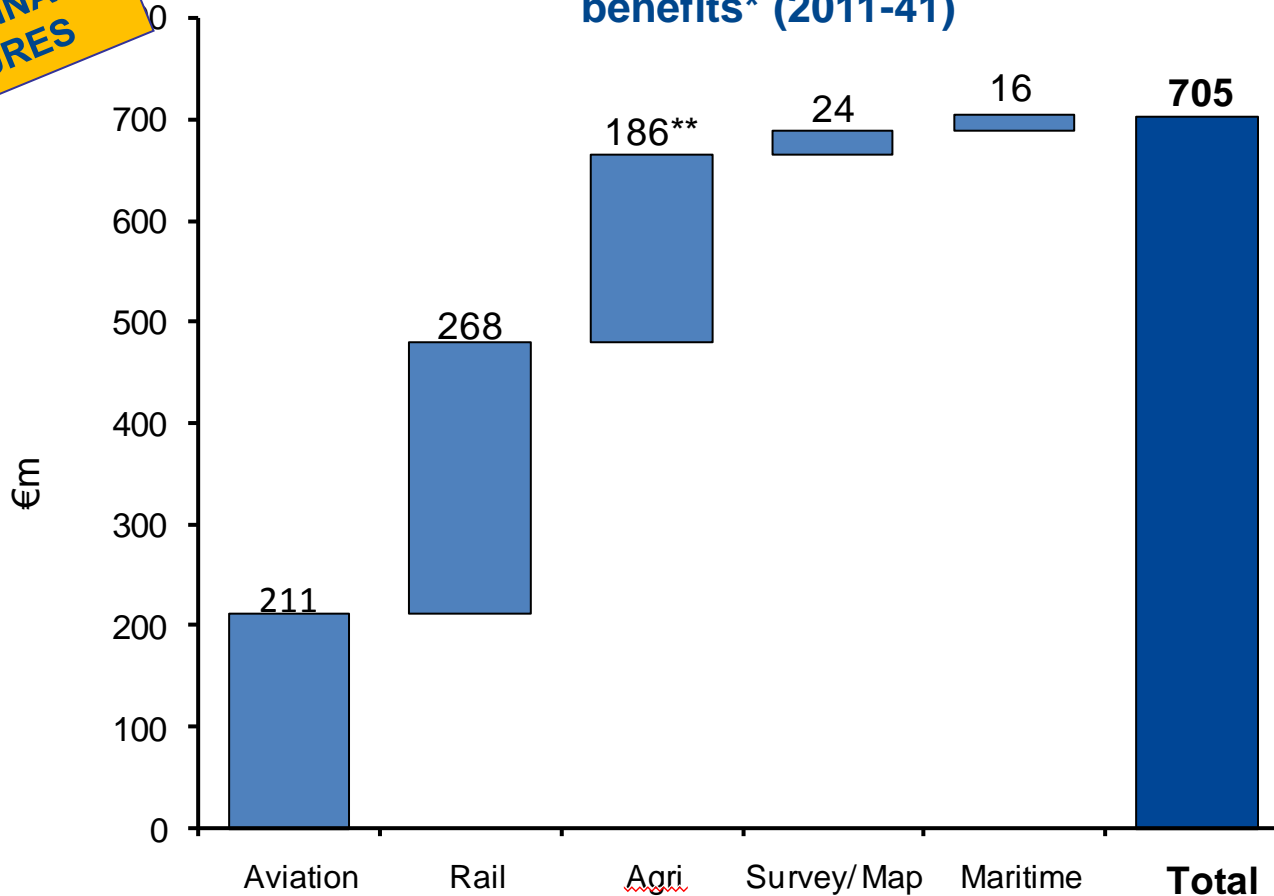
Maritime: Support to navigation both in Open seas and in In-land waterways



Other applications (e.g., road, LBS) are expected to foster Africa's economic development

PRELIMINARY FIGURES

EGNOS in Africa cumulative discounted net benefits* (2011-41)



Benefits of other applications (e.g., road, LBS) still to be preliminarily quantified

* Discount rate: 8%; ** Only selected SSA countries

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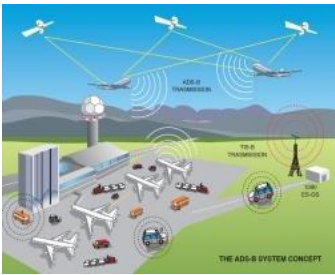
Benefit

EGNOS added value



Accidents reduction

Improved safety of flights through reduction of CFIT (Controlled Flight Into Terrain)



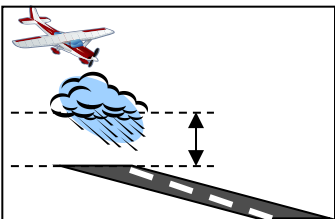
ADS-B improvement

Better route optimization by improving ADS-B (Automatic Dependent Surveillance-Broadcast)



Nav aids reduction

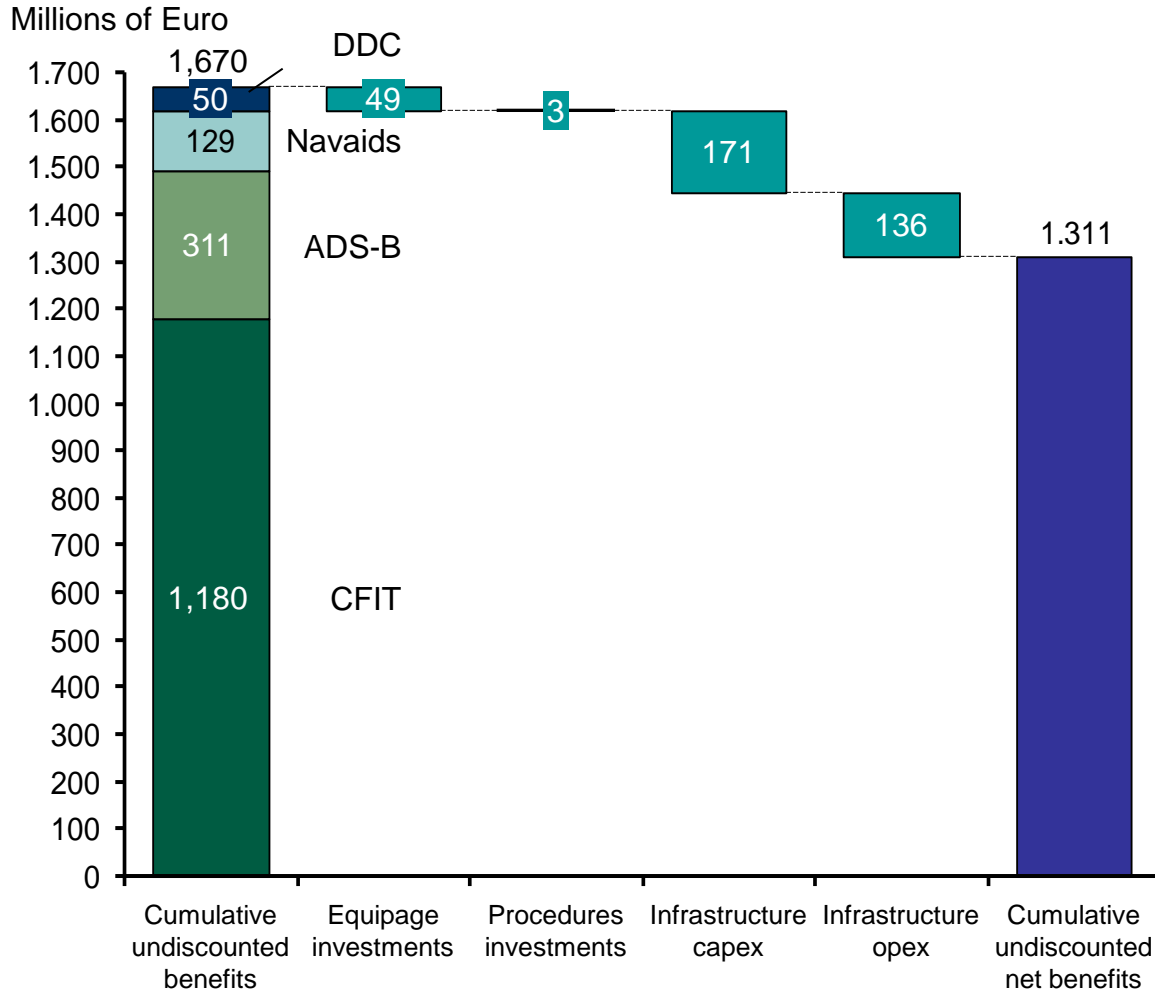
Costs reduction due to phasing out of some nav aids (VOR and NDB)



Decision height reduction

Less Delays, Diversions and Cancellations (DDC) occurrence in African airports

EGNOS in Africa cumulative undiscounted net benefits on a 30 years timeframe for the aviation industry (2011-41)



Discounted* net benefits 211.1€m for aviation

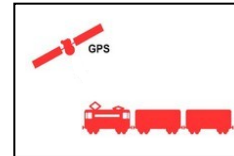
* With a 8% discount rate

Current situation



- African railway network is **poor, mostly single line and with low traffic**
- The **costs** of classical **safety** measures are extremely **high**
- **Command-control systems** are **expensive** and cannot normally be justified for railway of low traffic density

EGNOS benefits

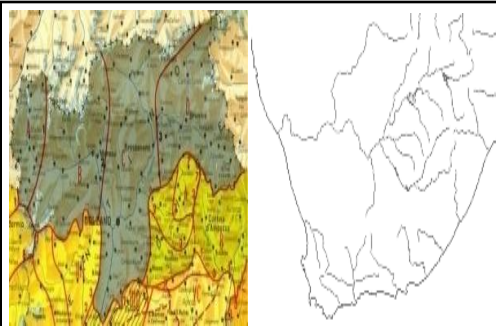


- EGNOS in Africa could **lead to a decrease in maintenance and investments costs** and an increase in capacity or availability of the infrastructure,
- In a low traffic network as in Africa, EGNOS could allow for **strong costs savings in signaling equipment**

- High precision agriculture at a low cost
- Reduction of environmental impact through lower use of pesticides and fertilizers

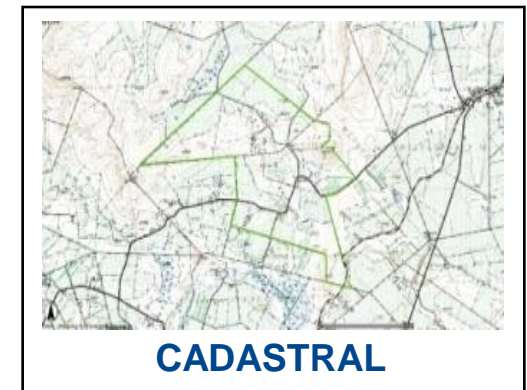


For each cultivation	Soil preparation		First Treatments	Seeding	Treatment after planting	Harvesting
Activity	Primary tillage	Secondary tillage	Fertilizer application	Seeding	Plant protection products application and fertilizers	Harvesting
EGNOS impact on cultivations	2,36%	2,36%	2,49%-3,55%		0-3,55%	0-2,36%



CARTOGRAPHY

- EGNOS in Africa could be used in **cartography applications** where a meter accuracy is considered enough



CADASTRAL

- In **cadastral applications**, SBAS has some potential especially in rural parcels surveying



ENERGY

- In the **energy sector**, routine surveying and maintenance tasks can be performed with EGNOS, relying on a high-accuracy low-cost service



INLAND WATERWAYS

- River Information Systems (RIS) **could be used for the African rivers/ basins**, also leveraging on EGNOS integrity and accuracy to support traffic- and transport management

- EGNOS can **provide navigation support services** to precisely guide small ships from port entrance to an assigned moorage place



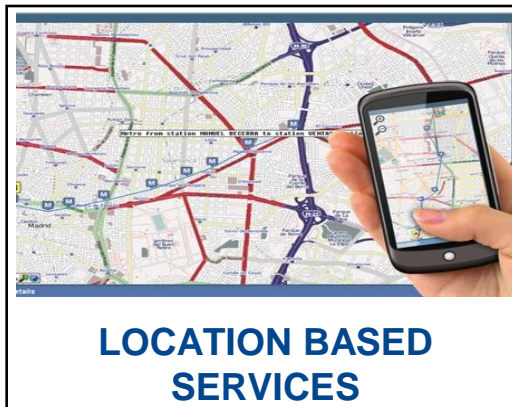
RECREATIONAL MARITIME



PERSONAL LOCATION BEACON

- The embryonic market of **Personal Location Beacons** can exploit EGNOS high accuracy

- Reduced transport time
- More effective logistics
- More effective emergency management
- Vehicle tracking (esp. in case of theft)



- Pedestrian navigation
- Location-based advertising
- Real-time info on local public transport