



**The Abdus Salam  
International Centre for Theoretical Physics**



**2333-8**

**Workshop on Science Applications of GNSS in Developing Countries (11-27 April), followed by the: Seminar on Development and Use of the Ionospheric NeQuick Model (30 April-1 May)**

*11 April - 1 May, 2012*

**Opening Ceremony**

SCARDA Stefano  
*European Commission, Directorate General Enterprise and Industry  
Av. d'Auderghem, 45, B - 1049 Brussels  
BELGIUM*

# GNSS in Africa

## *Status and prospects of cooperation*

**Stefano Scarda**

European Commission

*Directorate General Enterprise and Industry*



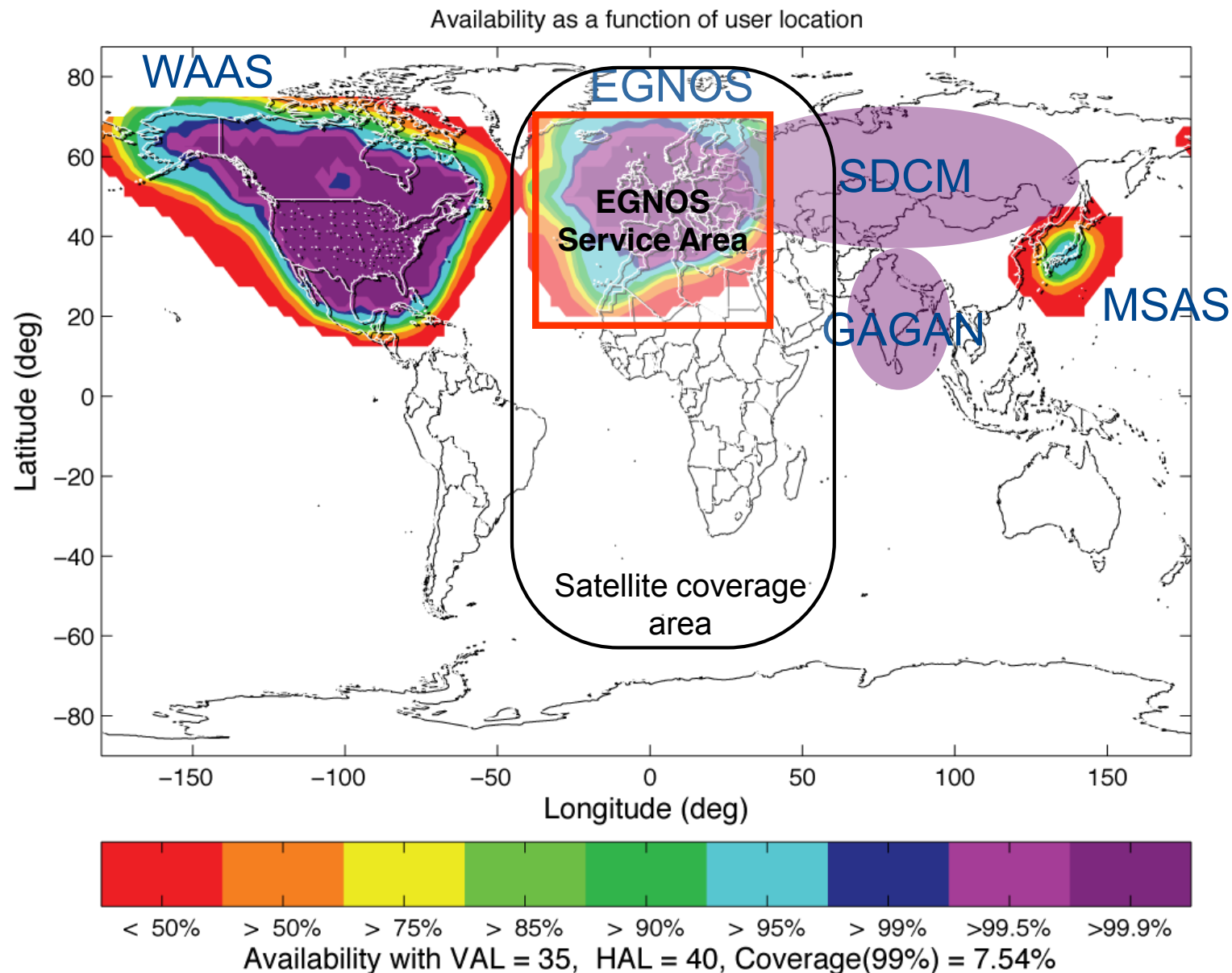
# Outline

- ★ The technical rationale
- ★ Applications and socio-economic benefits
- ★ Africa-EU cooperation policies
- ★ Next steps for capacity building: the role of ICTP



# **THE TECHNICAL RATIONALE**

# Towards a worldwide SBAS coverage



Source: Stanford University

# **APPLICATIONS AND SOCIO- ECONOMIC BENEFITS**

# Benefits of SBAS in Africa

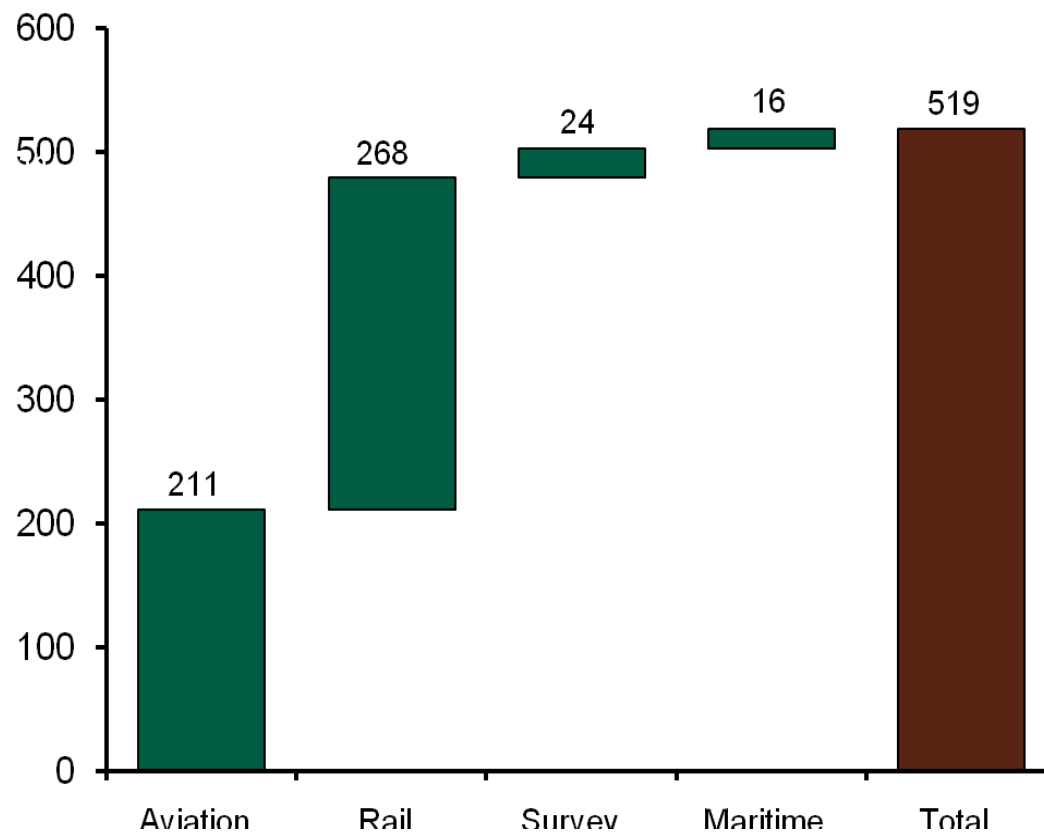
- ★ **Safer** guidance during airport approaches
  - ★ Savings on **investments at local level**, by reducing drastically the need and maintenance costs of ILS-type ground facilities in the airports
  - ★ The economic **opening-up of airports and isolated regions**, by making regional airports currently not equipped with the traditional aid instruments (ILS, VOR, DME) accessible to national, intercontinental, and intra-continental flights
  - ★ Facilitated **exchanges with Europe**, through the harmonisation of operational flight procedures between African countries and the rest of the world
  - ★ Positive and very substantial repercussions in other sectors, such as the **rail transport, agriculture** and the **territory planning**
  - ★ Reduction of costs and greater reactivity for **humanitarian interventions**
-

# Expected socio-economic benefits

The use of EGNOS can bring benefits for various economic sectors

Total **Net Present Value** surpass **500€m** over the 2012-2042 (30 years) period

Millions of Euro



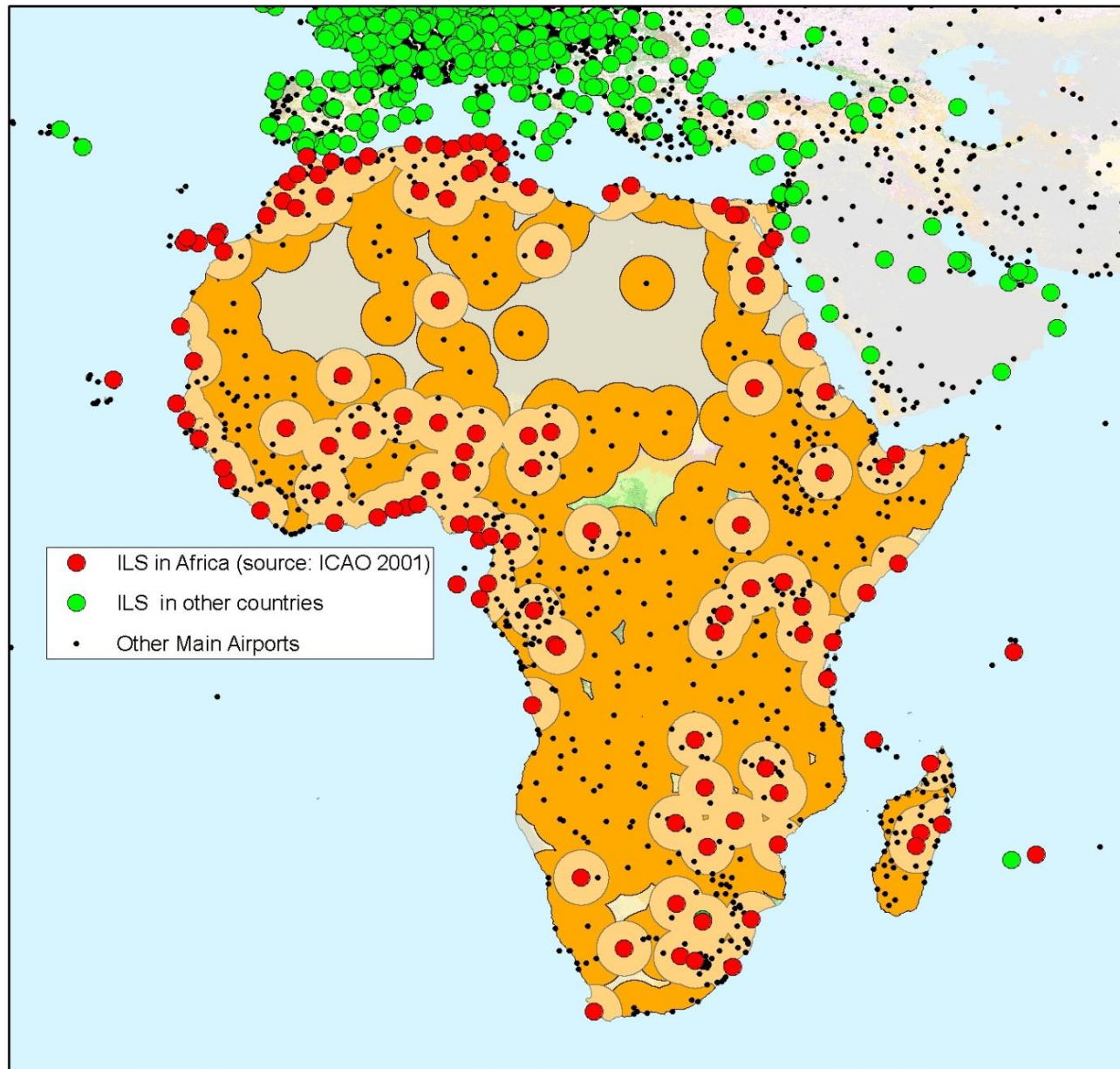
Evaluation for the  
case of Africa

**Total discounted  
net benefits**  
(Discount rate  
of 8%)

**~ 520€m**



# Impact on Economic development and integration



**37 % from Africa is  
250km from an ILS  
equipped airport**

**87 % from Africa is  
250km from a main  
or regional airport**

**EGNOS  
potential**

# **AFRICA-EU COOPERATION POLICY**

# Policies in support to sat-nav in Africa

- ★ **Communication from the Commission** *"Partnership between the European Union and Africa. Connecting Africa and Europe: working towards strengthening transport cooperation"* COM(2009) 301 final, dated 24 June 2009
  - ★ **Communication from the Commission** *"Action Plan on Global Navigation Satellite Systems (GNSS) Applications"* COM (2010) 308 final, dated 14 June 2010
  - ★ **High-level Meeting** on *"Space for the African citizens"* organised by the Belgian EU presidency on 16 September 2010
  - ★ Resolution of the **7th Space Council**: *"Global challenges: taking full benefit of European space systems"* Brussels, 25 November 2010
  - ★ *"Second Action Plan (2011-2013) for the Implementation of the Africa-EU Strategic Partnership"*, adopted at the **Africa-EU Summit** held in Tripoli on 29-30 November 2010, under the "Thematic Partnership on Regional Economic Integration, Trade and Infrastructure"
-

# Addressing Africa as one - complementarity



**EUROMED  
GNSS Project**

Euro-Mediterranean  
Partnership with North Africa  
+  
Neighbourhood Policy

Cotonou Agreement  
with sub-Saharan  
Africa

**Space  
Dialogue with  
South Africa**

Agreement on Trade,  
Development and  
Cooperation with South  
Africa



# **CAPACITY BUILDING**

# Programme implementation steps

1. Preliminary studies
2. Cost Benefit Analysis
3. Programming (implementation and management plan)
4. Political support
5. Governance scheme
6. Funding
7. Implementation (Preparatory phase and infrastructure deployment)

2002..  
- 2009

2010

2012-



## ★ Preliminary phase (2012-2013)

- ★ Build core of technical competences
- ★ Build a preliminary backbone infrastructure
- ★ Training activities

*10th EDF  
Intra-ACP*

## ★ Infrastructure Deployment Phase (2013-2016)

- ★ Detailed system design
- ★ Deployment of stations across Africa
- ★ Service provision and operation

Other  
cooperation  
funds

# Preliminary Phase (2012-13)

- ★ *Two "sister projects" are now being launched, funded by intra-ACP 10th European Development Funds (€4.5 m)*

## PROJECT I (Open tender)

- ★ **Staffing** of the African *satellite navigation programme management entity*
- ★ Set-up and activity of **Working Groups**
  - ★ *performance, applications, certification policy, industrial issues, maintenance, liability policy, project management issues, cost and schedule, and governance structure, etc.*

# Preliminary Phase (2012-13)

## PROJECT II (Contribution agreement with ICTP)

- ★ **Training** of the African experts and African *programme management entity*
  - ★ GNSS systems and applications
  - ★ Space project management
  - ★ Procurement and tendering for space projects
  - ★ GNSS operations and service provision
- ★ Preliminary **backbone infrastructure** development
  - ★ Deployment of a simulator and test platform for training and ionosphere characterisation





Thank you for your attention  
and all the best for a  
successfull workshop!