



الأكاديمية العربية للعلوم والنقل البحري

Arab Academy for Science, Technology & Maritime Transport

## International Maritime Transport & Logistics Conference A Sustainable Development Perspective for Mega Projects

Conference Hall at Radisson Blu Hotel – Alexandria – Egypt  
29 - 31 March 2015

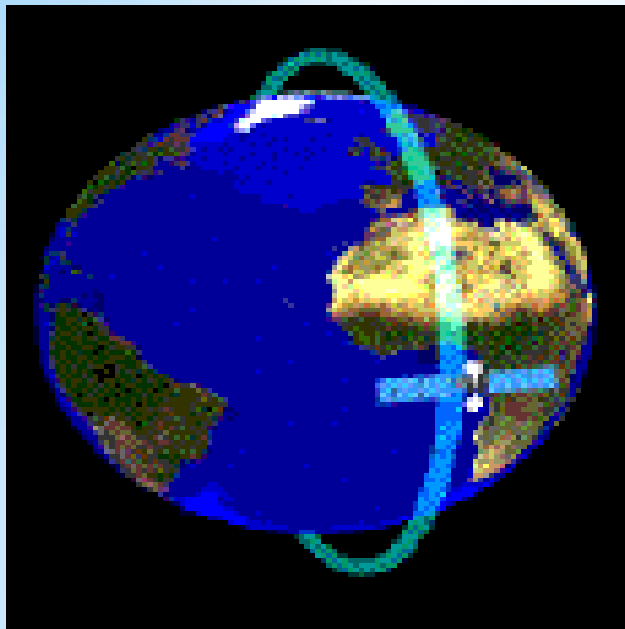


# Monitor and Tracking of Transport in Egypt Using The EU. Global Navigation Satellite System (E-GNSS)

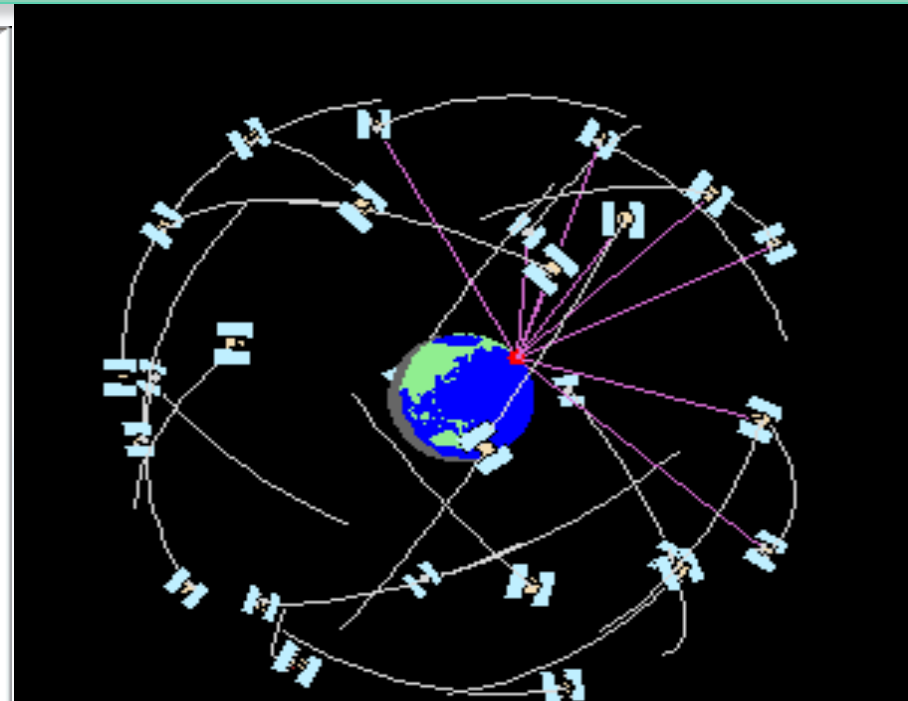
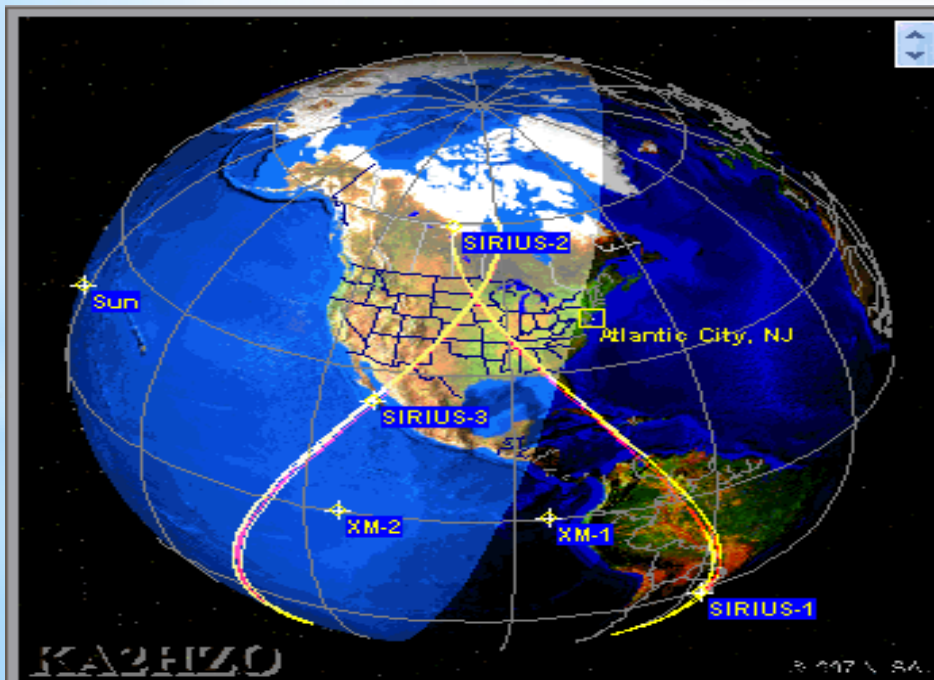
*Refaat Rashad*  
*AIN*

# \***MENUE**

- ✓ **Introduction.**
- ✓ **Monitoring and Tracking Systems.**
- ✓ **Intermodal Freight Transport.**
- ✓ **Tracking by EGNOS.**
- ✓ **Conclusions.**

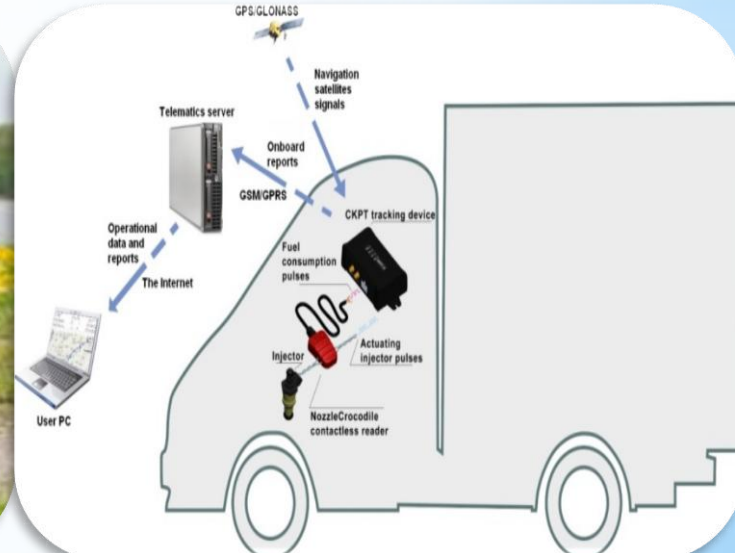


With GNSS and Communication System Every thing on the Earth can possibly be Monitored and Tracking not for spying or breaking the privacy but for effective Management and assure Safety

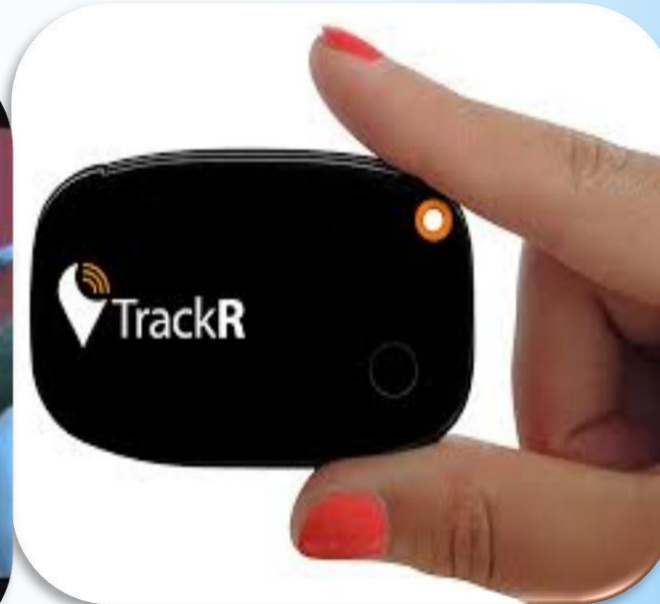




# \* Any thing can possibly be tracked



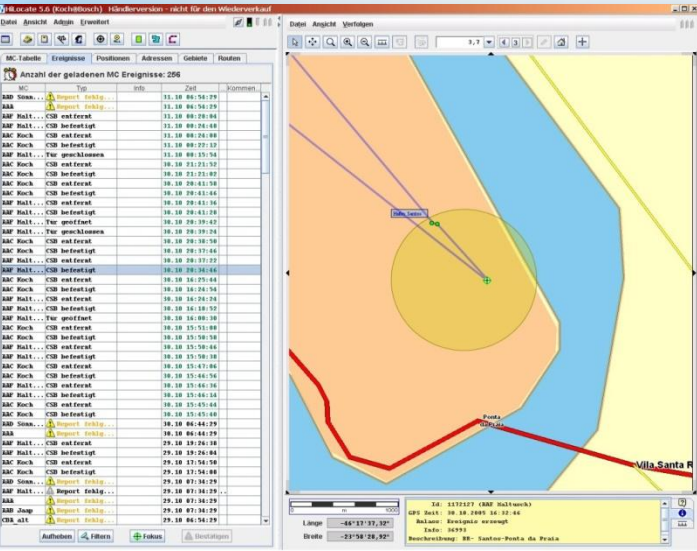
# \* Tracking Devices





# Tracking Systems

## Online monitoring via internet



Mobile Terminal



Satellite Gateway

TrailerTrak Operations Center



Internet

XML Feed



Customer Operations

## Position is shown on Google Earth map



# CONTAINER SHIPS



# CRUISE LINER



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# WORLED MARITIME TRACKING LOCATIONS

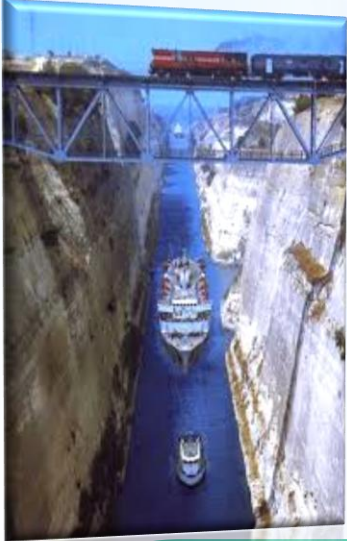
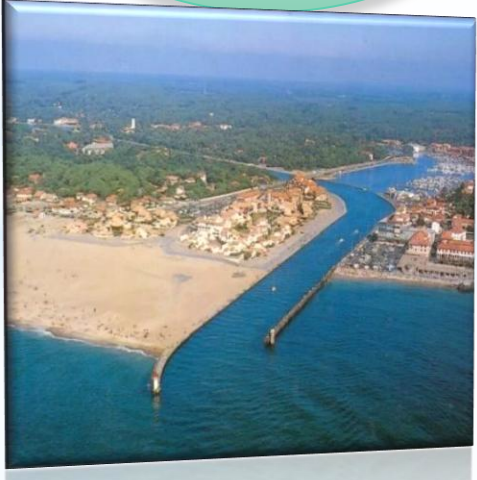
**Overseas**



**Ports**



**Approach Channels**



**Narrow Waterways**



**Under water Technology**

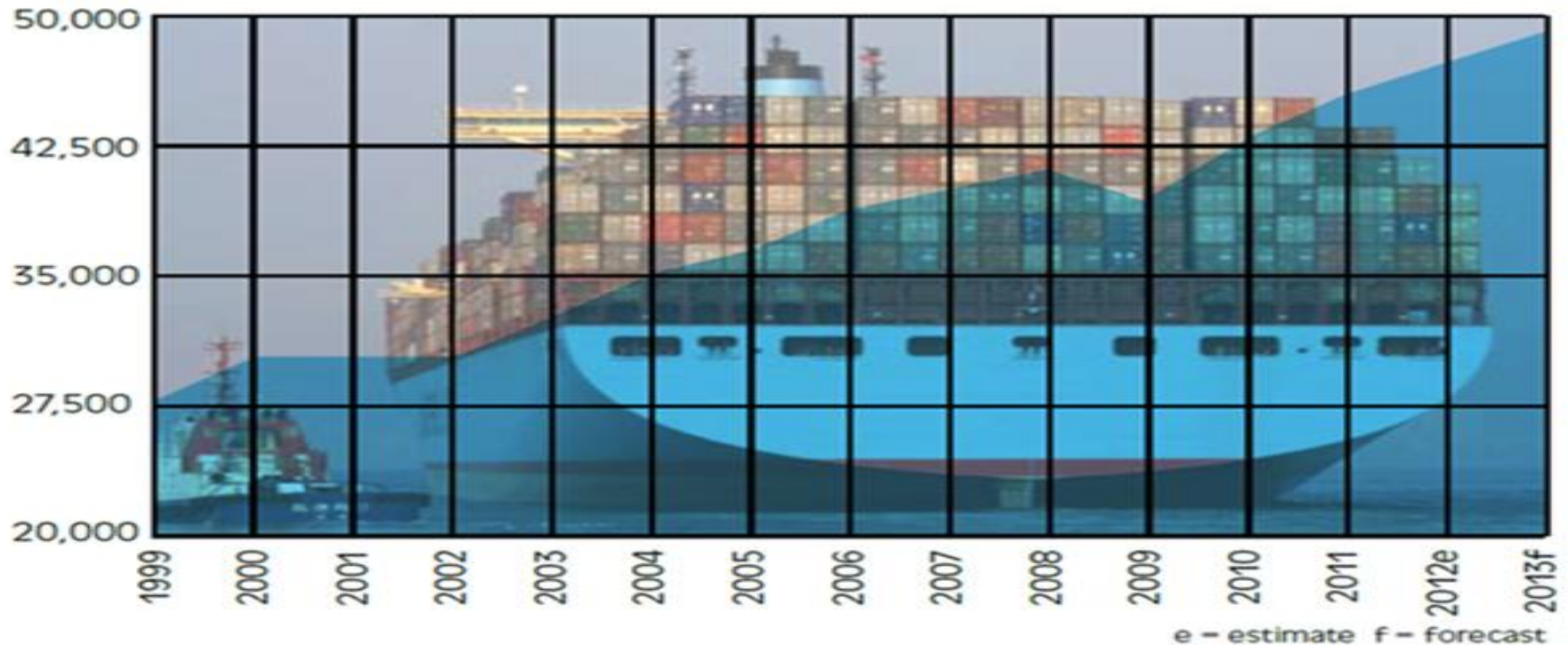




# Why Maritime

## World seaborne trade (billion tonne-miles)

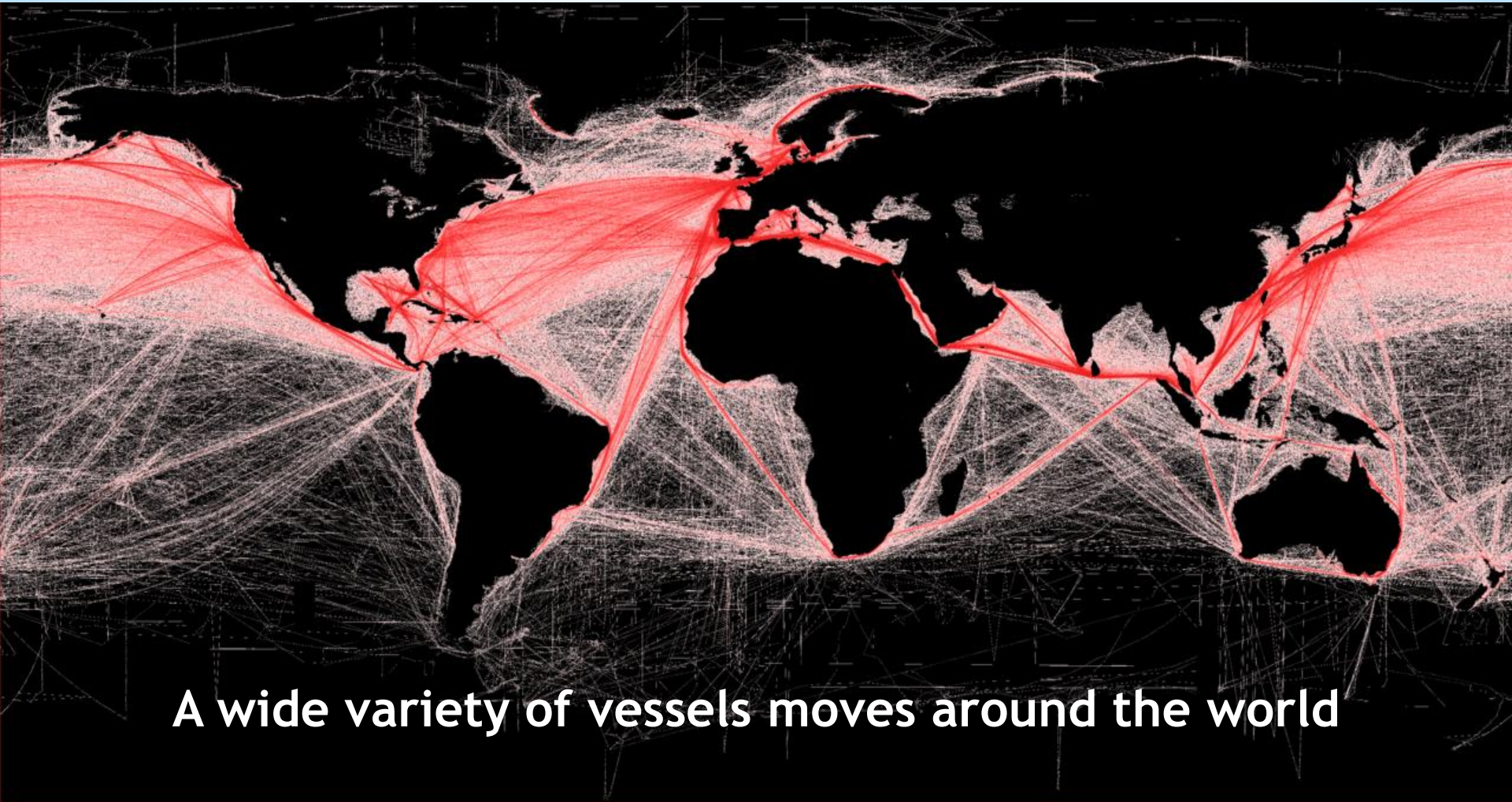
Source: Clarkson Research Services



**Sea-born Trade Reached 8.7 billion Tons 2013**  
**About 700,000 ships carry the world Trade**

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# \* MARITIME ROUTES



**A wide variety of vessels moves around the world**

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# \* Container Tracking Benefits

- \* **Tracking Valuable cargo, Dangerous goods**
- \* **Sensitive cargo**
- \* **Insurance companies are aware of claims**
- \* **Cargo owner no more anxious**
- \* **Shipping companies seeks better management**
- \* **Container terminals would have better planes**
- \* **Minimizes terrorism threats**
- \* **Assure the safety and security of transportation**



# River and Inland Transportation System



River transport in Egypt < 5% of the volume of trade



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# \* Tracking of Road Transportation



Control Center: Consists of communication/ Data base and application servers for processing signals received from the trucks.

Electronic maps and Satellite images of the country can be displayed on a large Monitors.







**Railways have low percentage of trade transportation  
and  
high rate of accidents**



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**WITH TRACKING**







# \* TRACKING REQUIRIMENTS

- \* Availability
- \* Accuracy
- \* Reliability
- \* Continuity
- \* Accessibility
- \* Integrity
- \* Trustability

**This requirements are provided by the GPS and Augmented by EGNOS**



# Can The Transportation Systems Withstand without The Monitoring and Tracking

**The Answer  
is No**

***Currently Tracking is done using  
GPS***

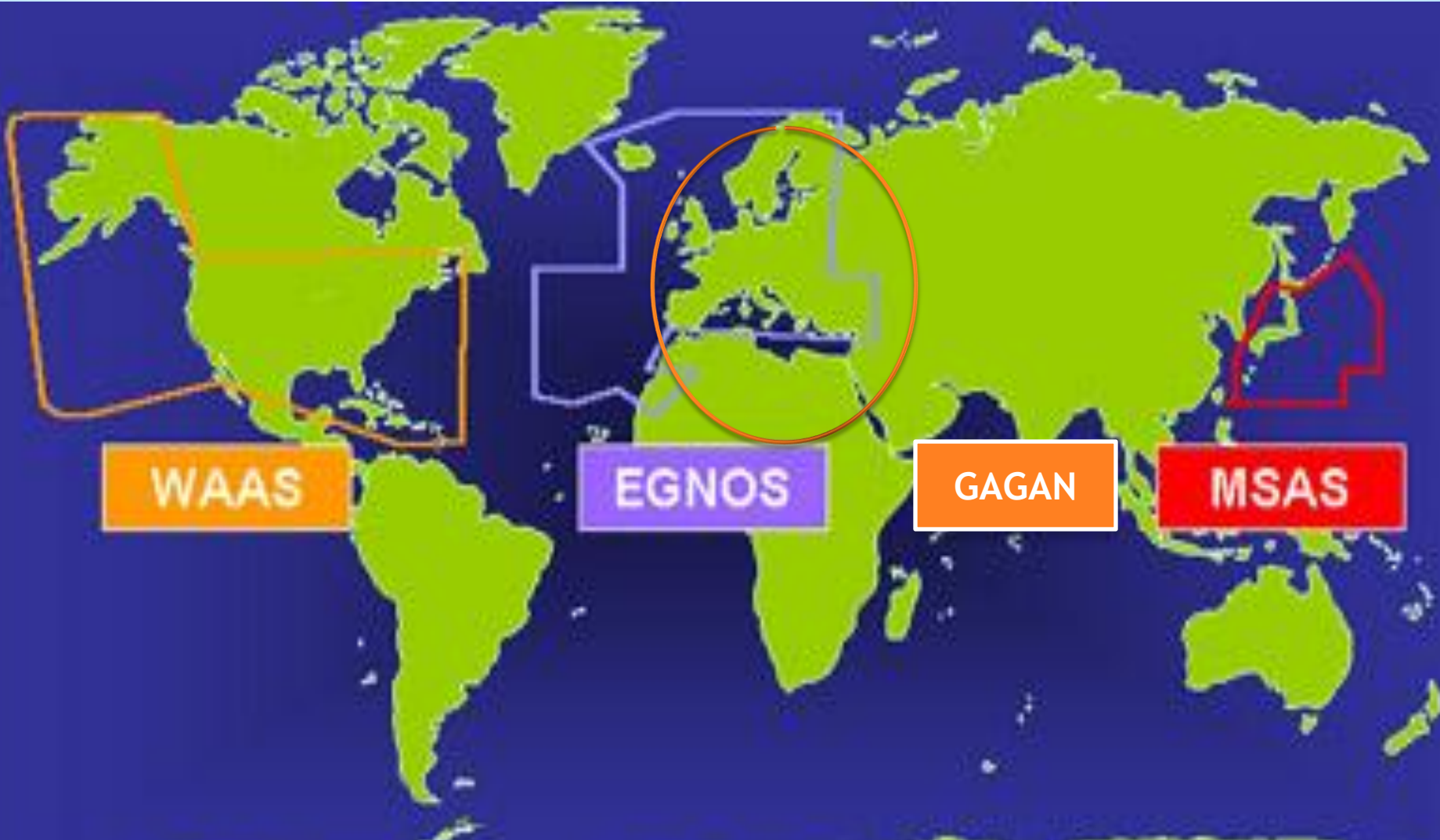
**If Tracking can be done with  
the current GPS!**

***Then what is the  
Problem?***



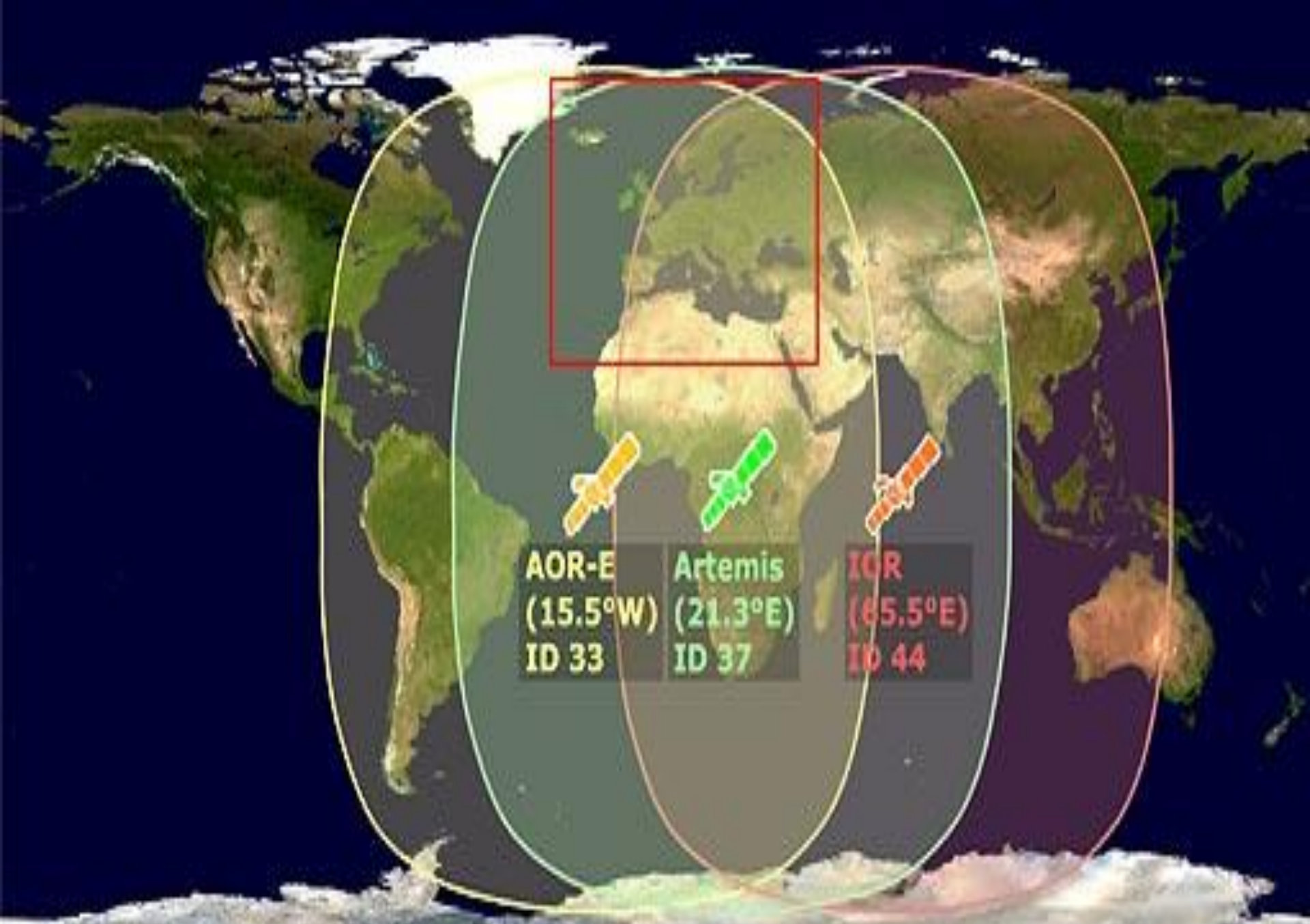
*The Problem is GPS is not  
Augmented Unless we use  
**EGNOS !!***

# \*Augmentation Systems



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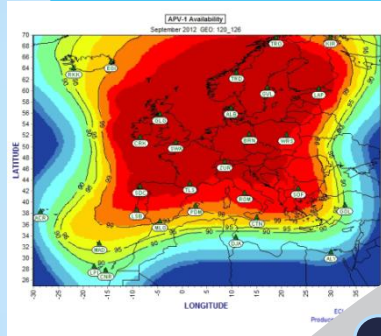


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# EGNOS Versions History

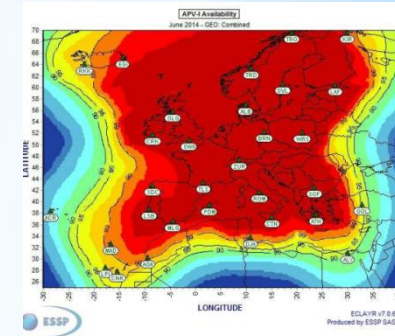
**August 2012: 2.3.1i**

! Robustness in front of high solar activity



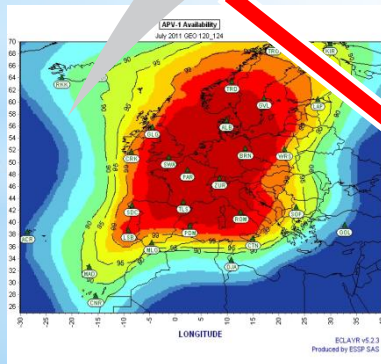
**November 2013: 2.3.2**

! 2 New RIMS: Agadir and Abu Simbel



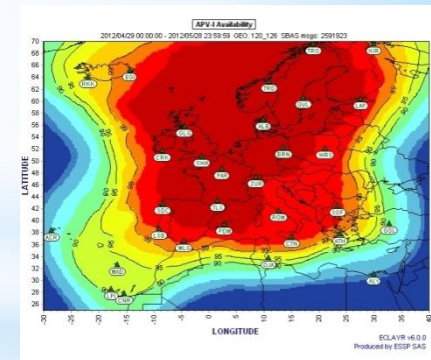
**February 2012: 2.3.1P**

- ! 3 New RIMS: La Palma, Alexandria, Athens
- ! PRN01 and PRN25 added to PRN mask
- ! Iono monitoring improvements



**March 2011: v2.3.1**

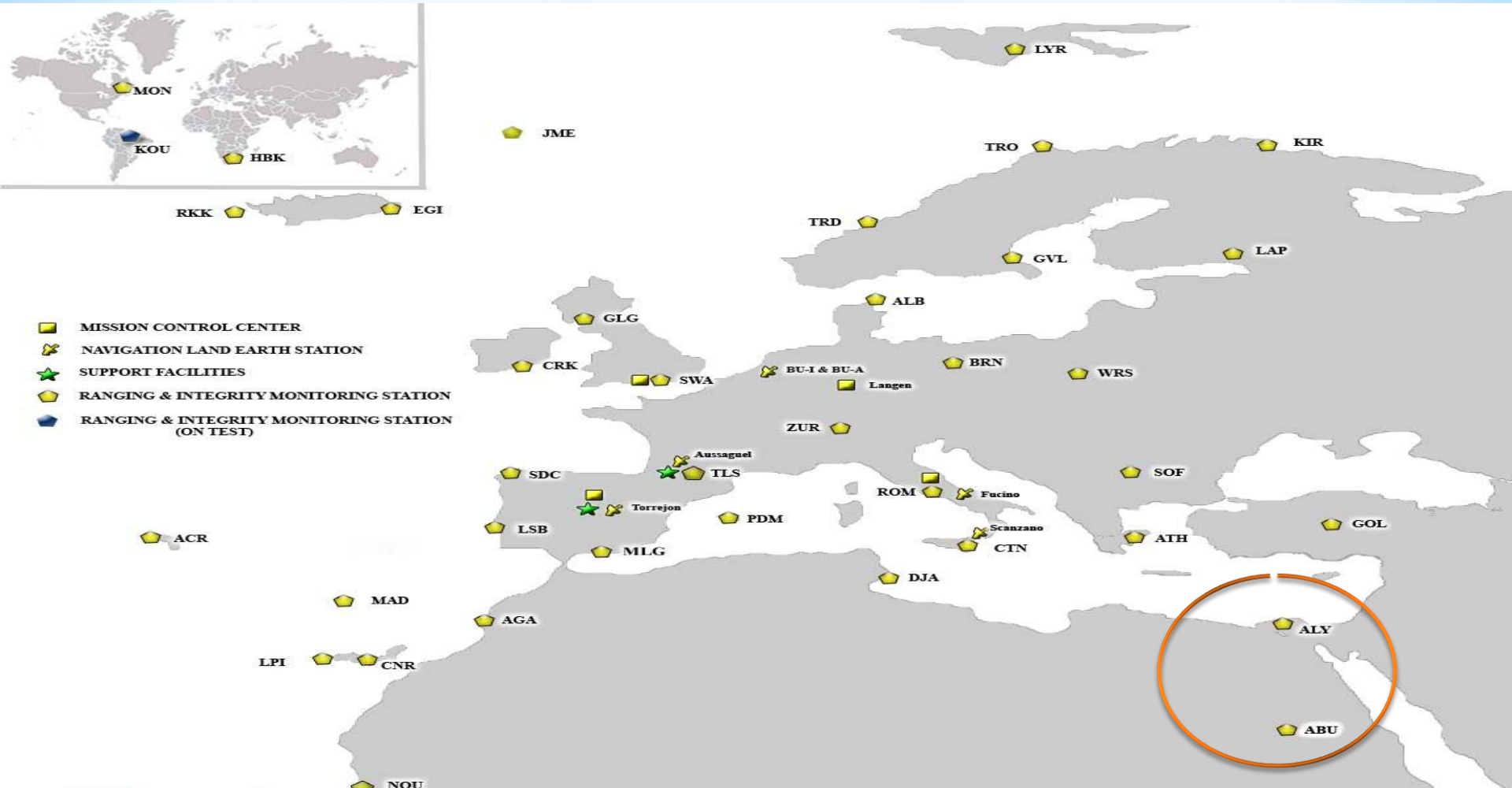
- ! SoL declared available for aviation
- ! EGNOS NOTAM Proposals service declaration



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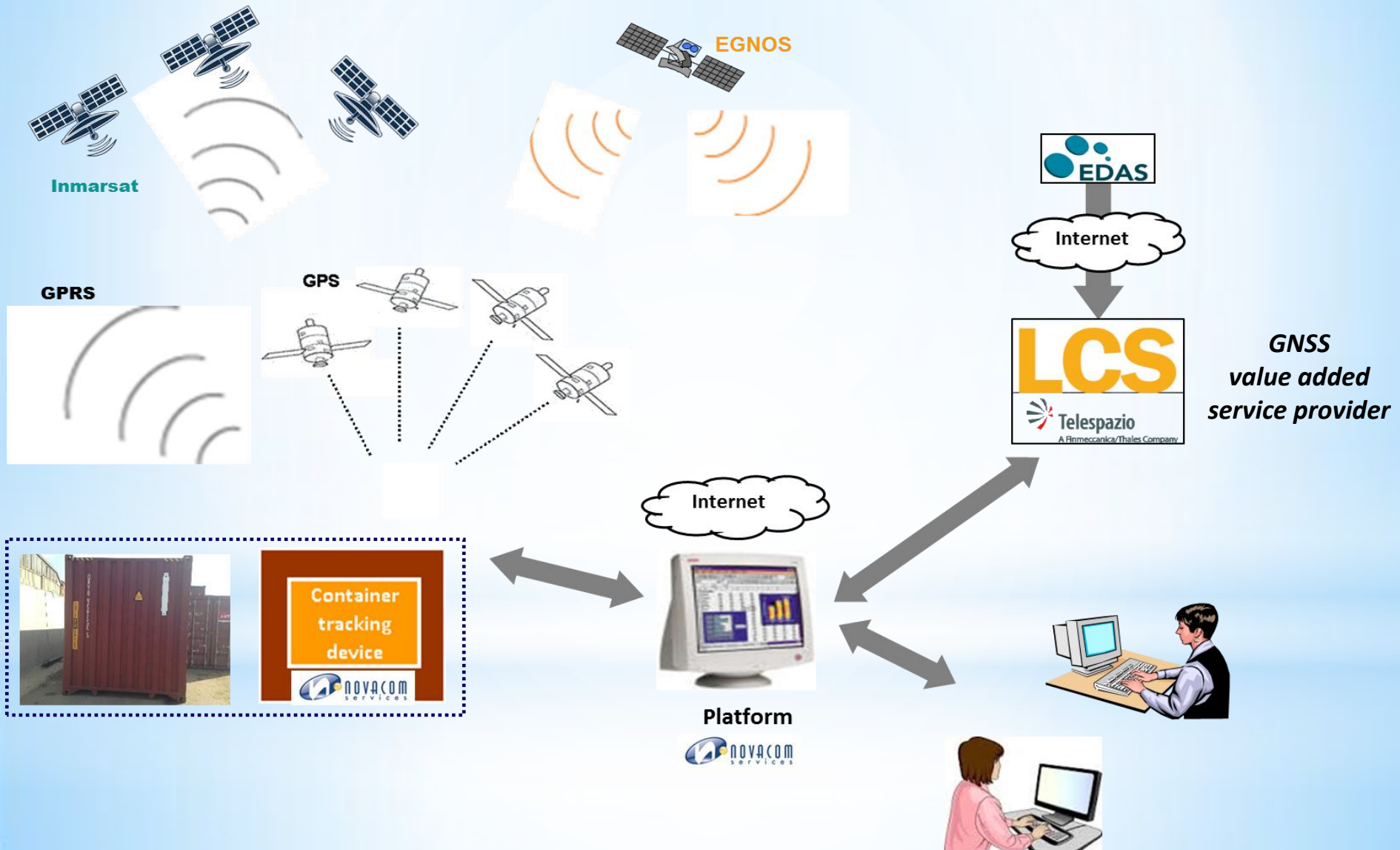


# EGNOS Ground stations include Alexandria and Abusimble



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# GPS+EGNOS based tracking & tracing services for freight transport - architecture





# \* WHAT WE NEED

**MEDICINE**

**M**

**Market for E-GNSS Applications**

**e**

**Expand coverage of EGNOS in the region**

**D**

**Develop Info-Network for decision making**

**i**

**Insurance-Based EGNOS Business to be fostered**

**C**

**Create jobs in the advanced technologies**

**i**

**Improve safety of transportation**

**N**

**Navigate the opportunities for Service Providers**

**e**

**Economic Added Value**

# \*Conclusion

- **EGNOS enabling to improve the GPS position accuracy/integrity.**
- **EGNOS is value added for tracking & tracing of dangerous goods.**
- **Insurance companies may reduce the insurance premium over the goods shipped by tracking and protected containers.**



# \*Conclusion

**EGYPT has Unprecedented opportunities to Capitalize on its Geographic location with Europe**

**Main Trade**

**Principal  
Economic  
Value**

**Strategic  
Partner**

**by Using  
EGNOS**

Thank You!

