Smart Identification Systems for Smart Ports

MARLOG (5) 13-15 March, 2016

Hilton Plaza Alexandria

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EVELUTION OF PORTS

- Conventional ports , Modern and New ports.
- Small, Medium, Large and Mega Ports,
- First Generation, Second Third and Fourth Generation of Ports.
- Central ports, and Hub ports
- It is an endless chain of names aiming at obtaining a market place in the expanded maritime transportation.
- Smart ports, Intelligent Ports and Information Ports are the new versions of the advertising of this nonstop progress.
- However, smart ports have received a sound recognition in the freight business;
- Nano Technology and Internet of Things IOT are the next generation of future ports, 2020 and Beyond

Ports of Rotterdam, Vancouver , Singapore and other smart ports Prospective

- Sustainable developments of transport
- Safe transportation
- Reliable transport times
- Better use of existing infrastructure
- Reduction of the Rate of Customs Inspections
- Improvement of the quality of Services
- Change from a Landlord strategy towards a Port Developer business model

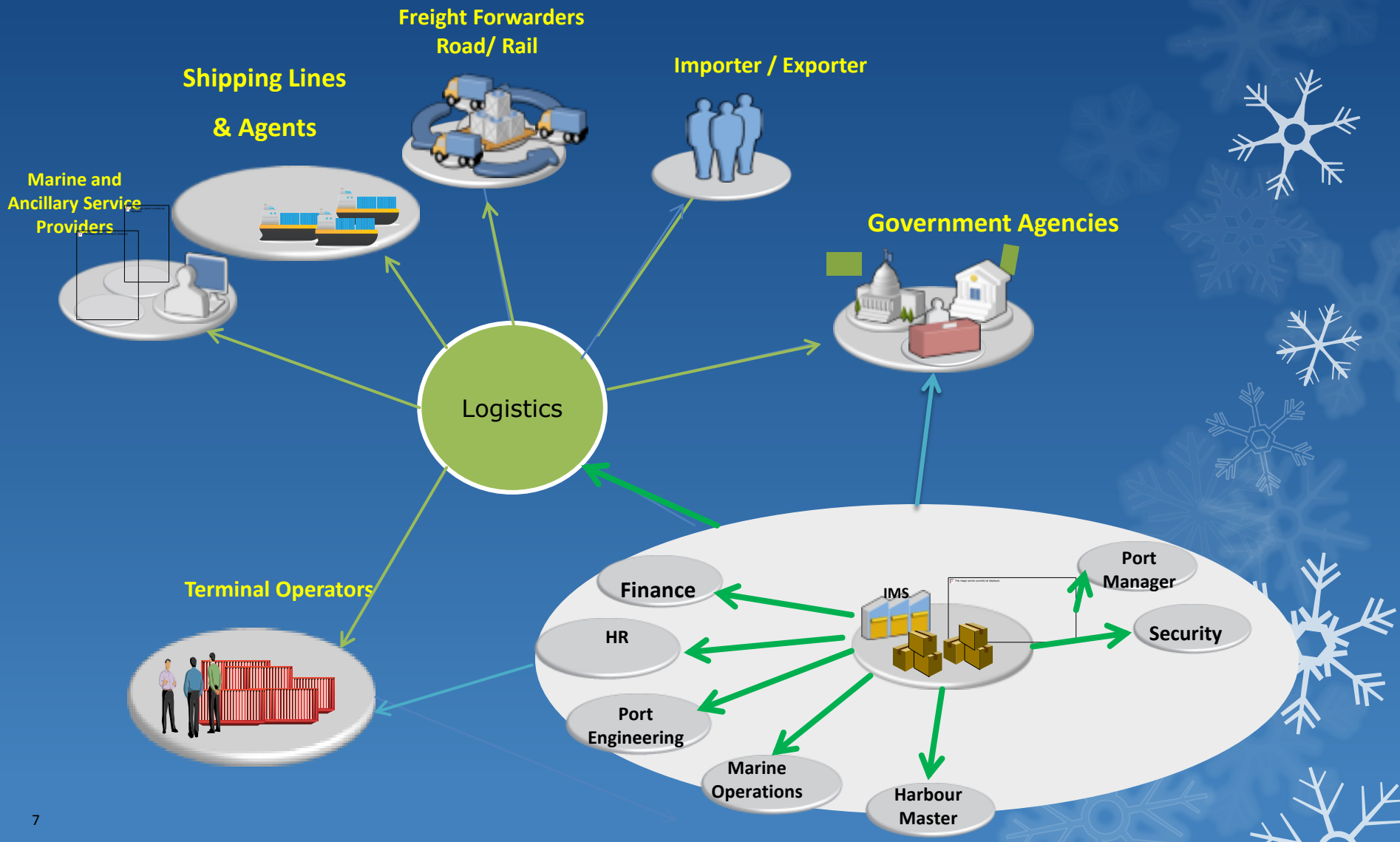
Prospective of European Maritime Transport Policy

- Improving market conditions
- Modernization of the fleet
- Development of skilled labor force
- Image improvement and awareness raising
- Improved infrastructure and ports in 2050
- Egypt is the major trading partner for EU (€24 b)

Smart Ports Features

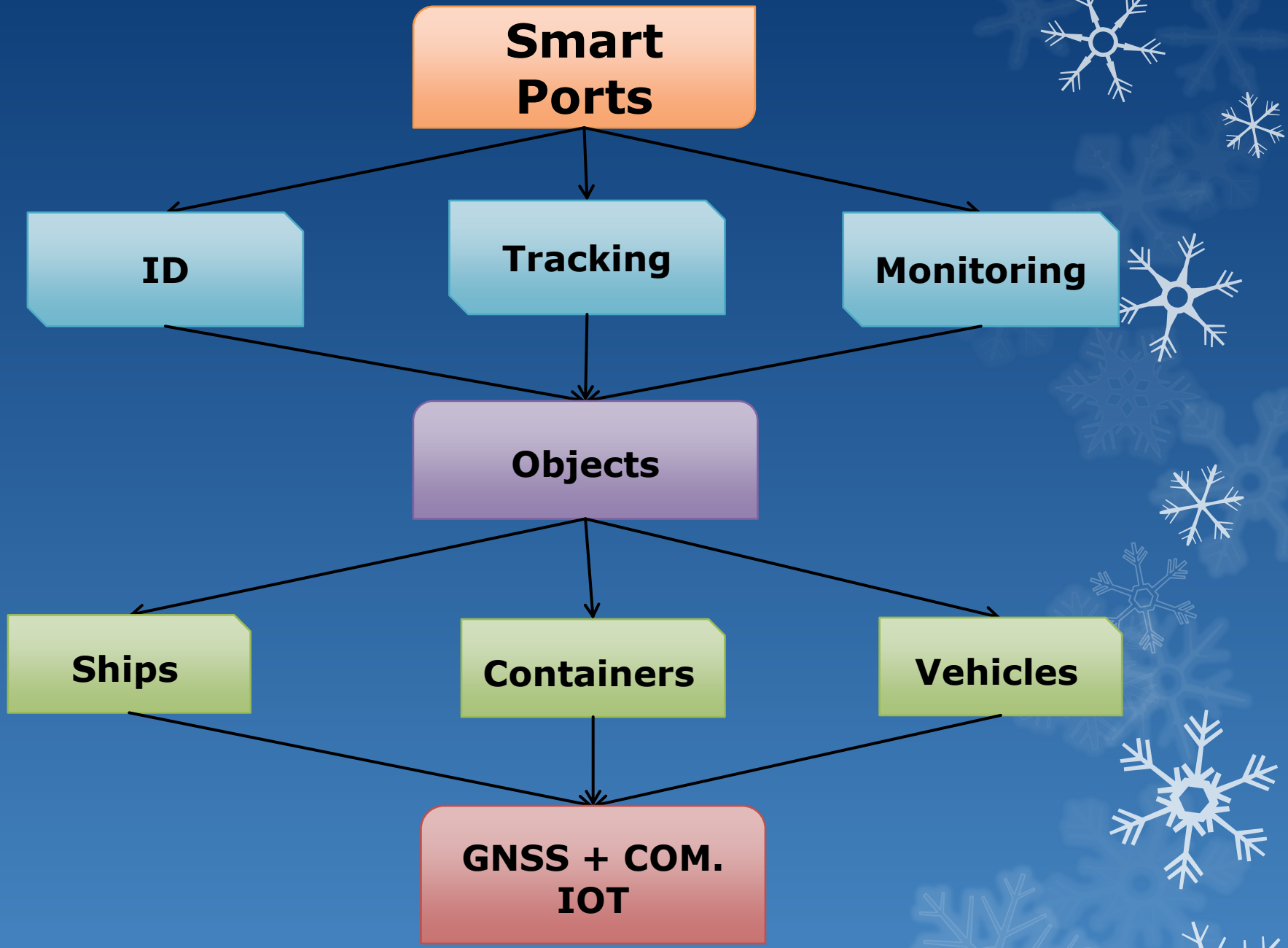
- **S**implify, Standardize and Automate Port Operational p
- **M**aximize, resources utilization and turnaround times
- **A**ccessibility, to data / information fast connectivity networks
- **R**edundancy, Seamless Integration & Interoperability of Plat-Forms
- **T**ight Control for Time, Positioning and Identification

Smart Ports Integration

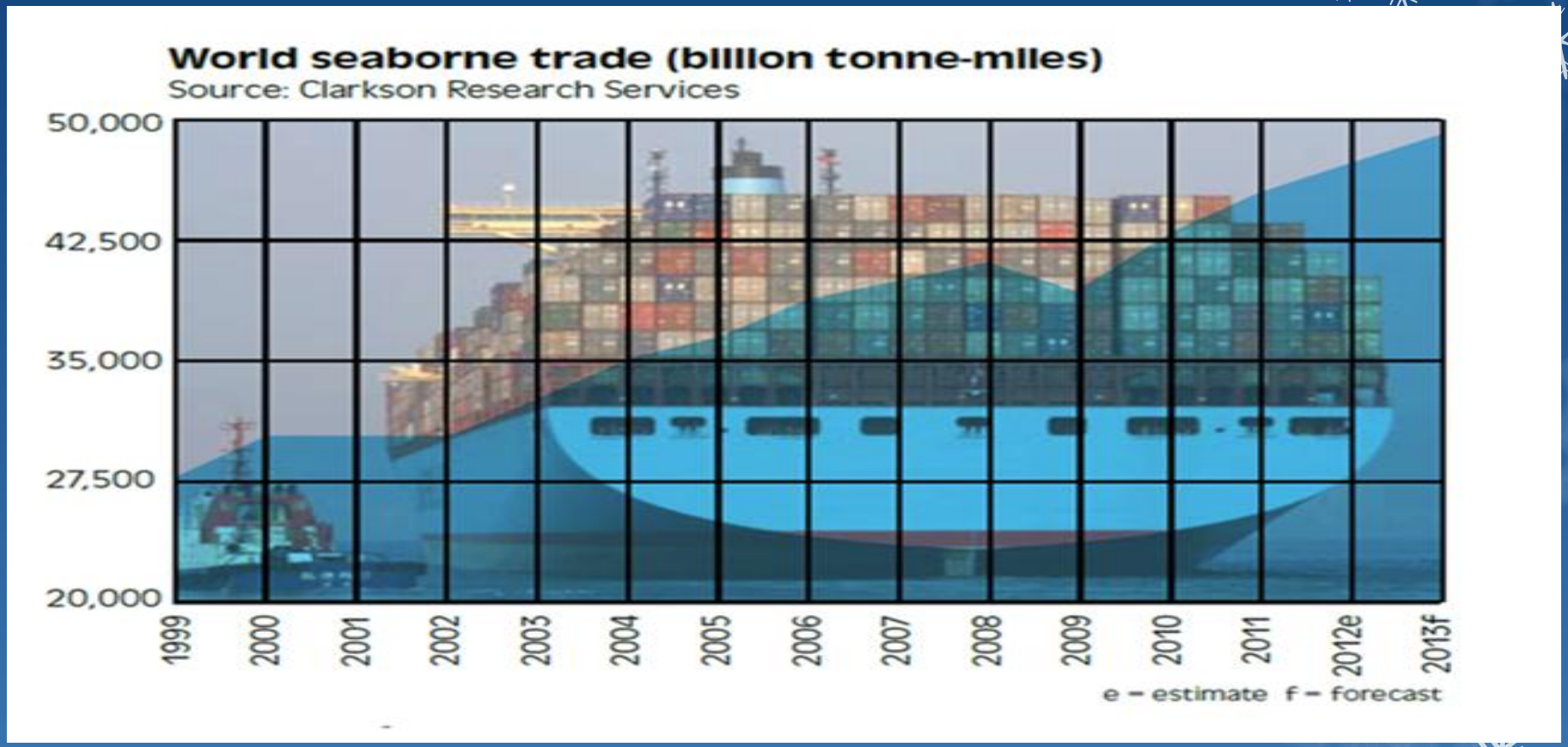


SMART PORTS AND SMART CITIES

- Smart cities are able to create smart ports,
- Songdo, is the first fully equipped and wired smart city in South Korea.
- Nearly everything in this city is planned to be wired, connected and turned into a constant stream of data that would be monitored and analyzed by an array of computers with little, or no human intervention.


Smart Ports
ID
Tracking
Monitoring
Objects
Ships
Containers
Vehicles
GNSS + COM. IOT

Why Ships



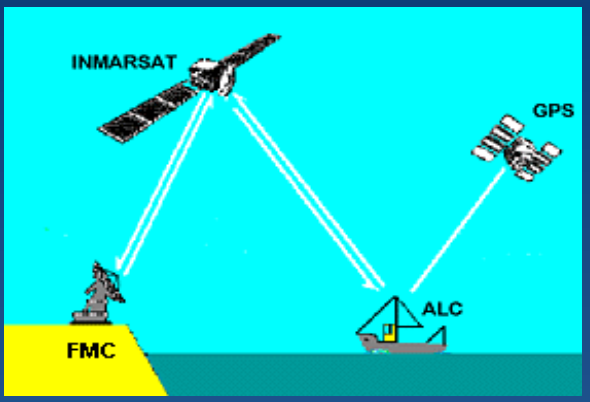
Sea-born Trade Reached 8.7 billion Tons 2013

About 700,000 ships carry the world Trade

Most of them are smart ships

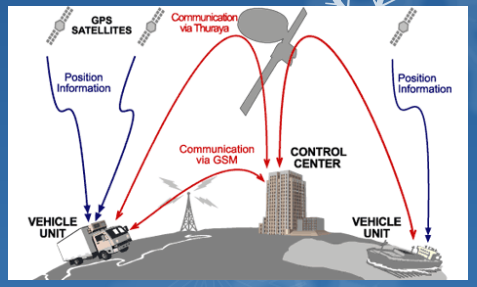
MARITIME ROUTES
and Shipping Pattern

A wide variety of vessels moves around the world



Tracking Vessels?

- Safety Network
- Risk Assessments
- Environmental Protection
- Validate Compliance
- Emergency Response
- Improve Efficiency
- Maritime Security

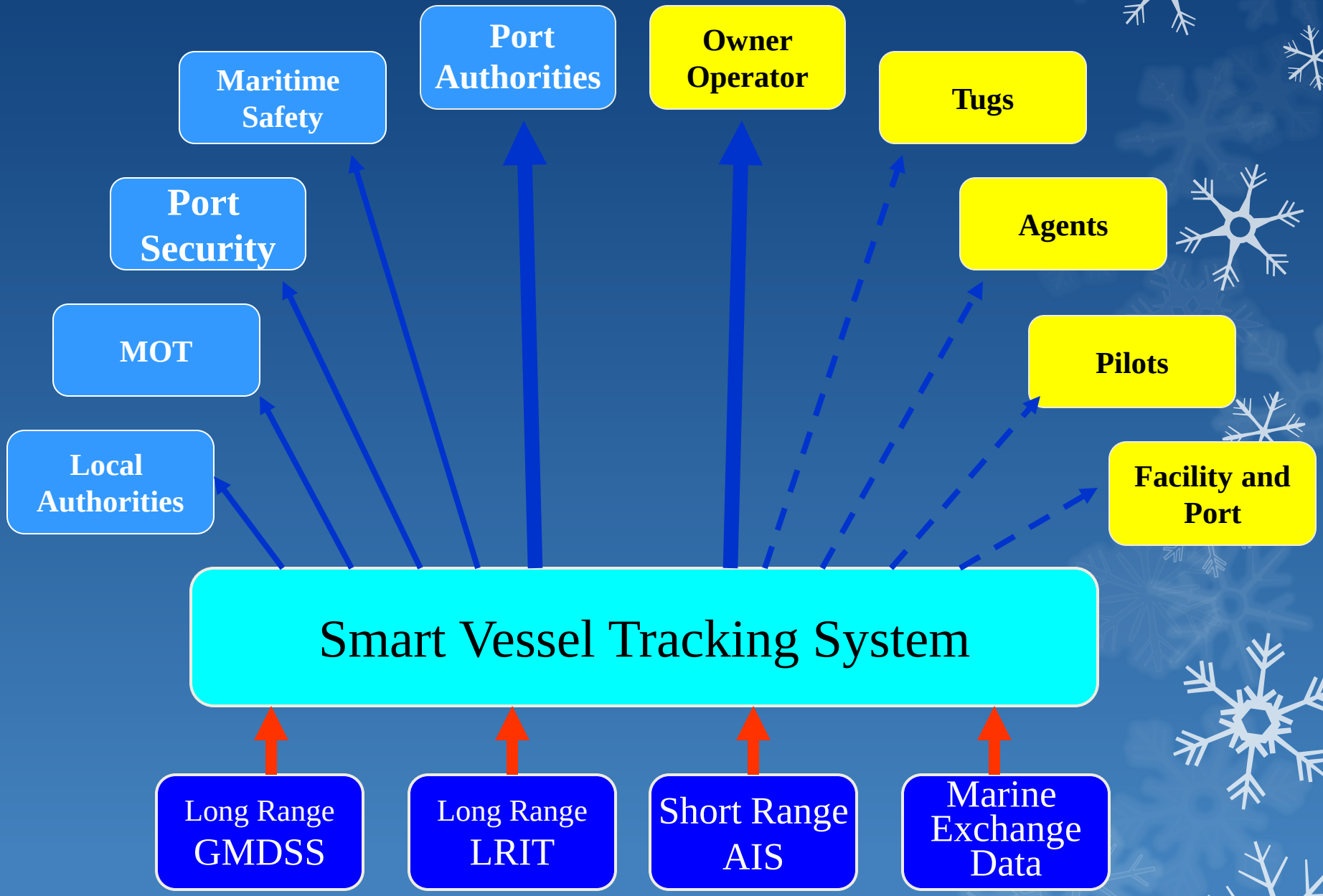


TRACKING REQUIRIMENTS

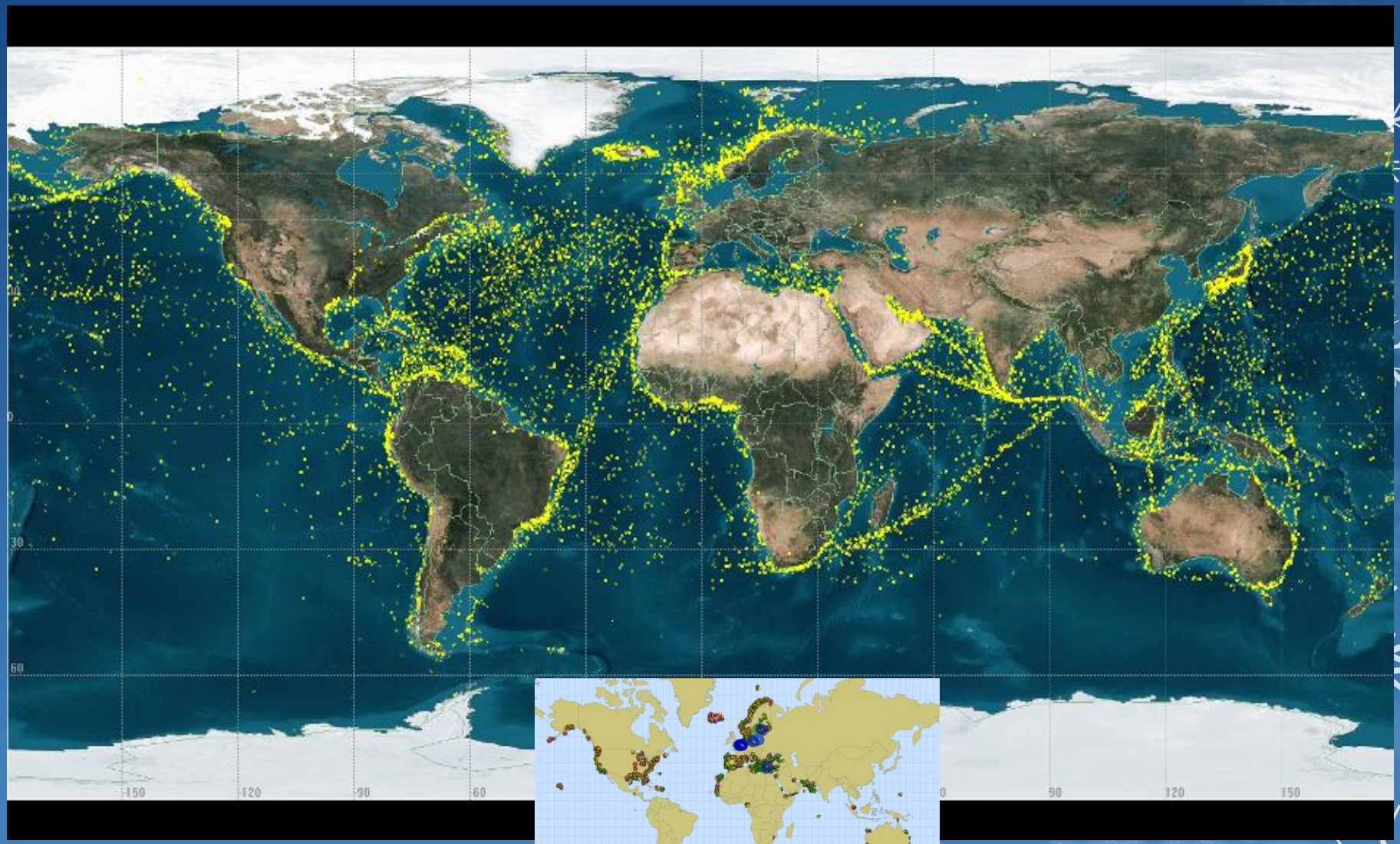
- Availability
- Accuracy
- Reliability
- Continuity
- Accessibility
- Integrity
- Trust-ability
- *A Vessel Tracking System employs satellite and AIS as well as other information sources to provide Security, Safety, Efficiency and Environmental Protection*

These requirements can be provided by GNSS

Vessel Information Flow



LRIT: Long Range Identification



Smart Container Terminal

Smart Containers

- Containers can equipped with sensors and systems to track and report data.
- Location, Historic and Real Time Tracking Shared with Partners
- End to end Supply chain visibility
- Temperature
- Humidity
- Motion
- Electronic Seal Breaches
- Inventory and e Seal Integrity

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 safety and security of transportation

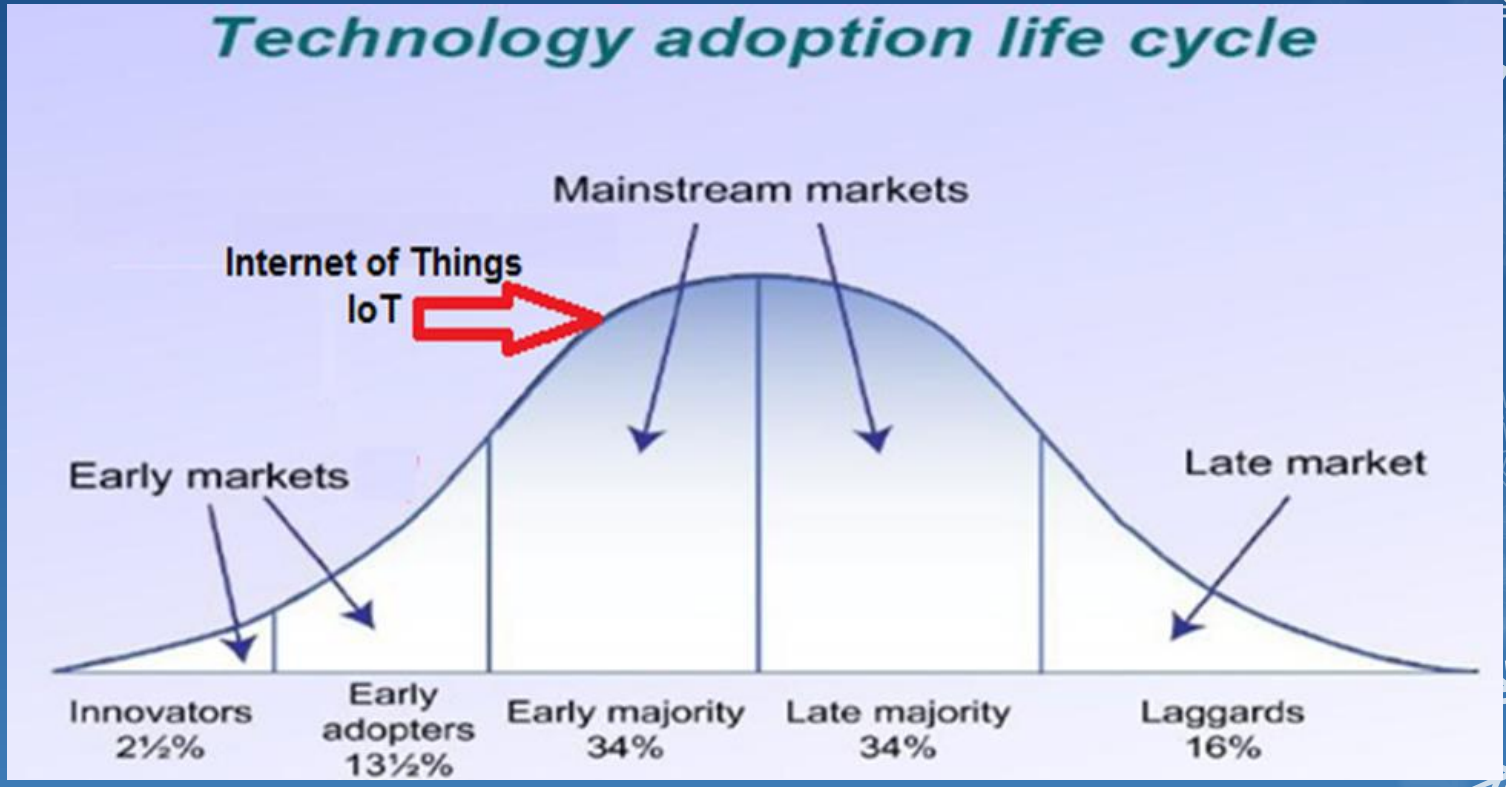
Smart Ports And Internet Of Things (IOT)

- **The Internet of Things (IOT) is the network of physical objects, containers, vehicles, buildings and other items embedded with software, sensors and network connectivity enables these objects to collect and exchange data.**

- ***IOT* allows objects to be remotely controlled across connectivity infrastructure, creating opportunities for improved efficiency, accuracy and economic benefit.**

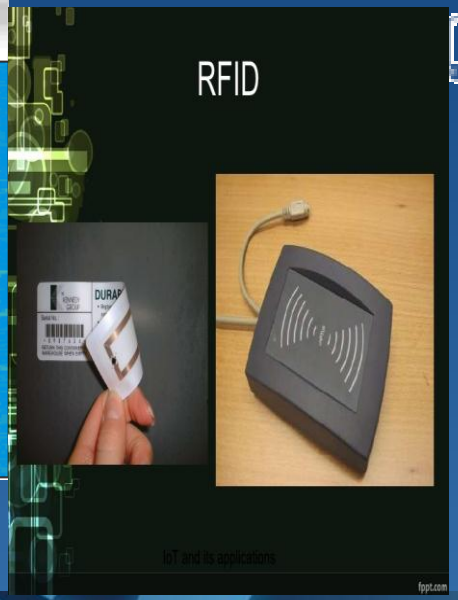
- Interaction between components of transport systems enables, smart traffic and navigation control and smart logistic and for port management.

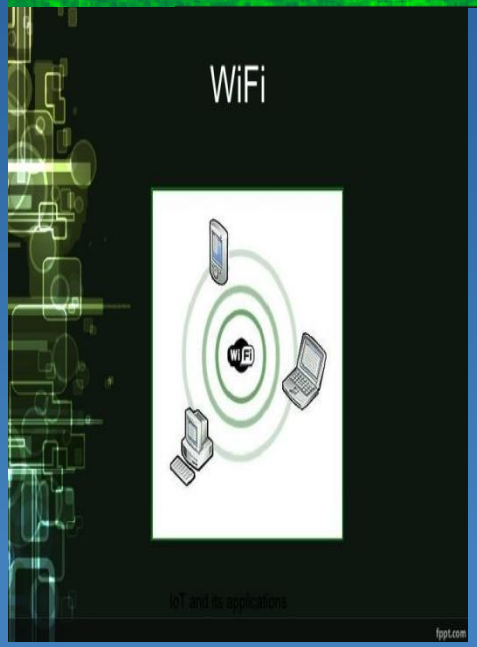
The Future of IOT

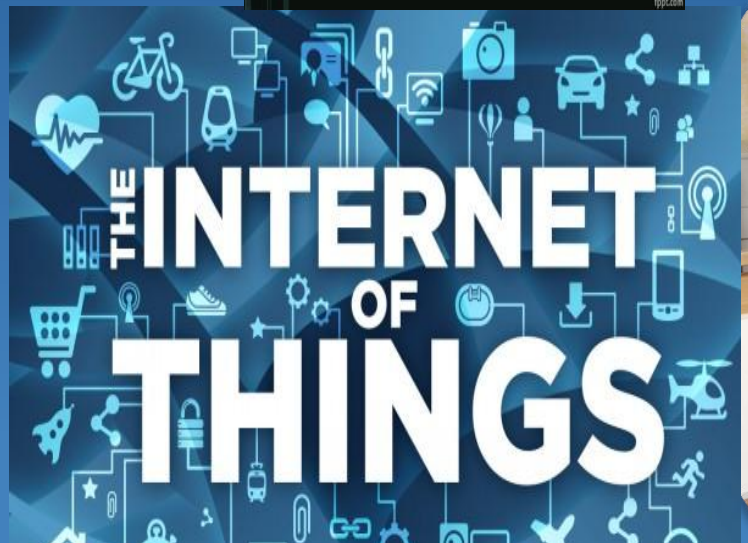


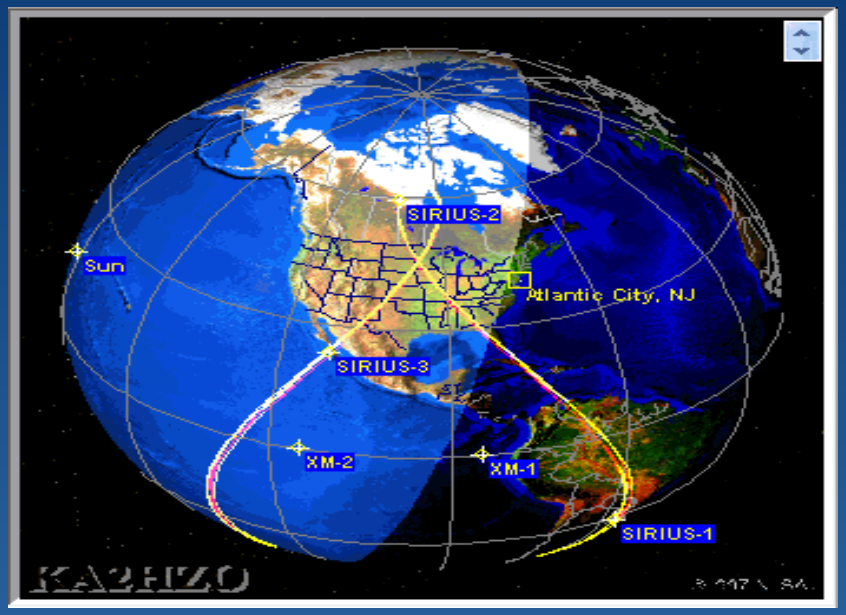
Tracking Systems

Online monitoring via internet

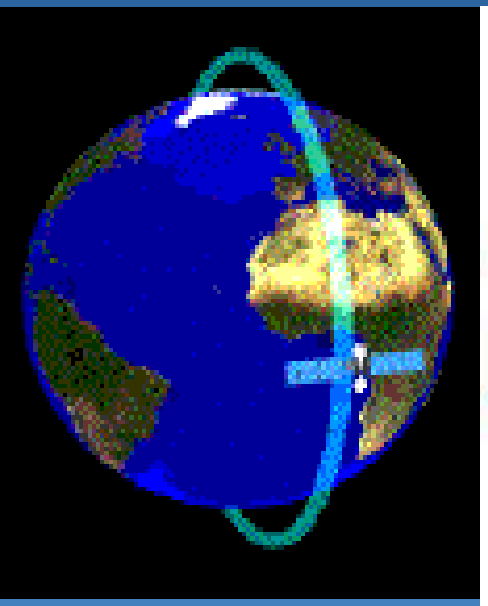


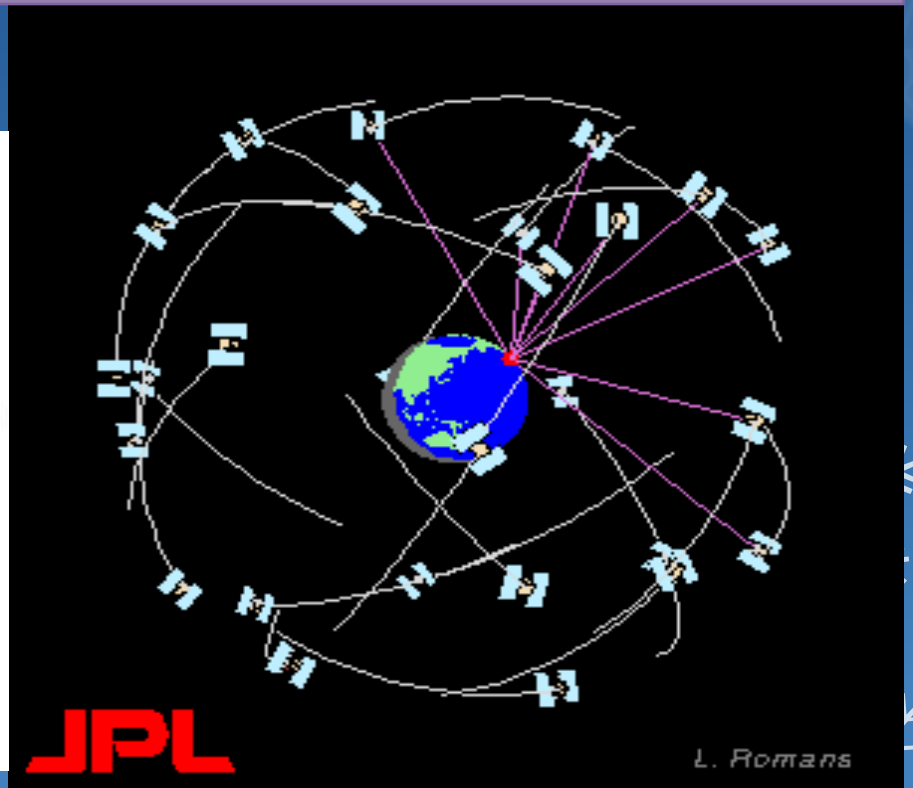






With GNSS and Communication Networks Every thing on the Earth can possibly be Monitored and Tracking for effective management





CONCLUSIONS

- In Tracking and Monitoring Operations, the precise location of a target and its precise dimensions are critical.
- The human element, including training, competency, language skills, workload and motivation are essential to operate smart ports.
- Application of the IOT extends to all aspects of transportation systems, i.e. the ships vehicles, the infrastructures, and the users.
- EGYPT has Unprecedented Opportunities to Capitalize on its Geographic location for Smart Ports Innovation.


thank you!