



Global Business Services

Container Management

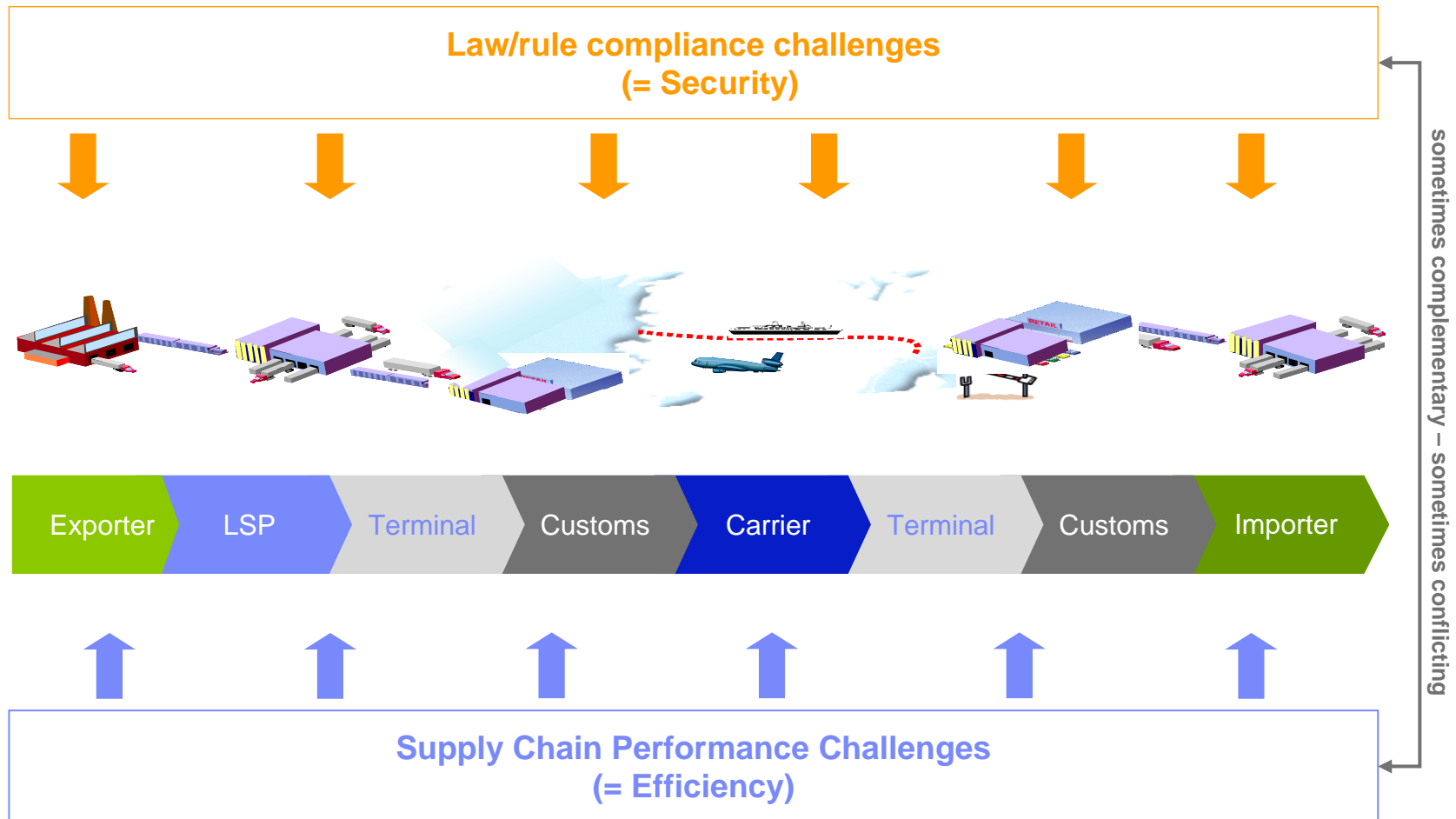
Secure Trade Lane

- a visible, secure and reliable end-to-end supply chain -

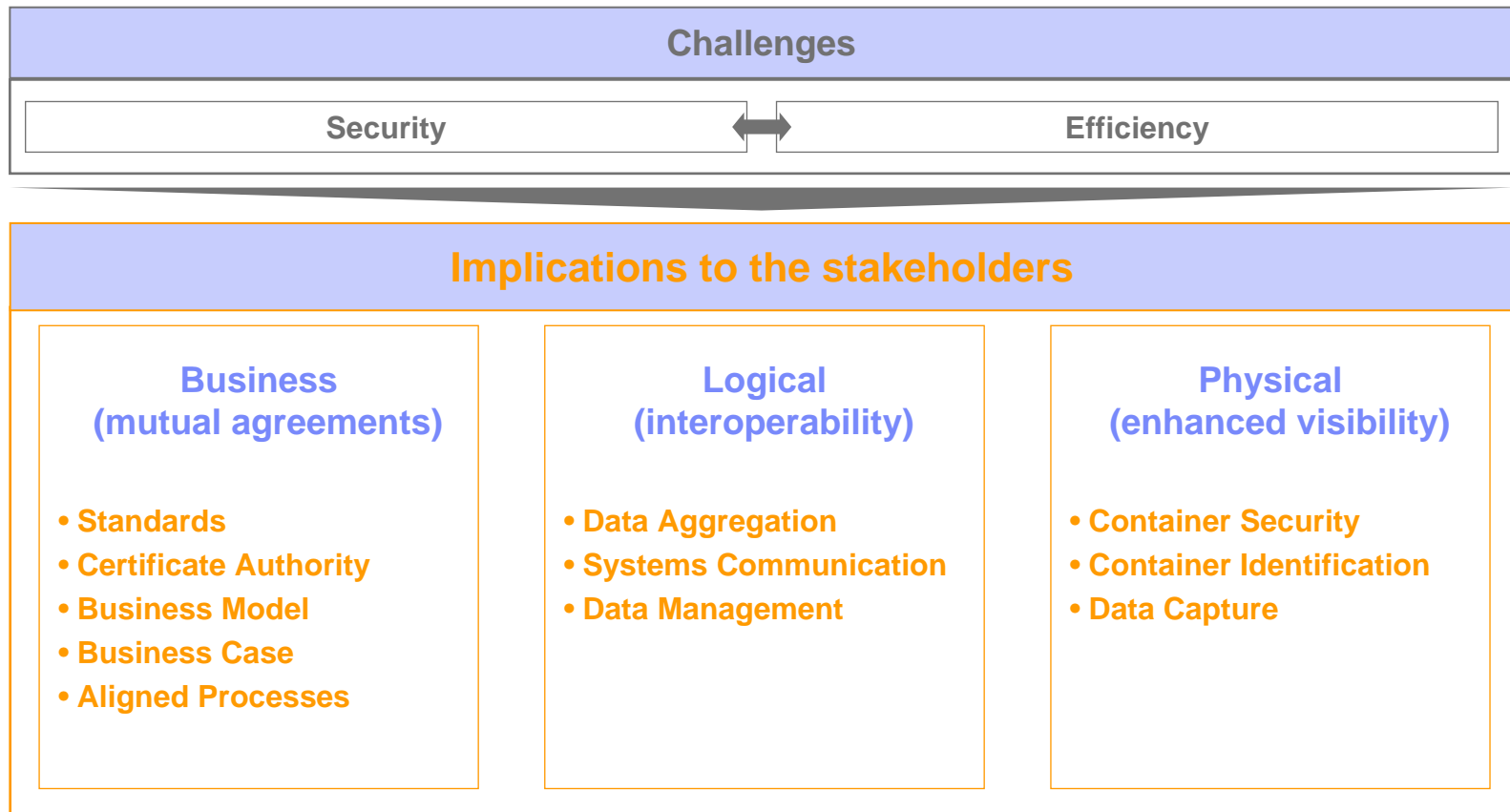
Espen Braathe
IBM



Compliance challenges as well as supply chain challenges are affecting all parties in the trade lane urging them to undertake aligned actions for an efficient and secured end-to-end trade lane

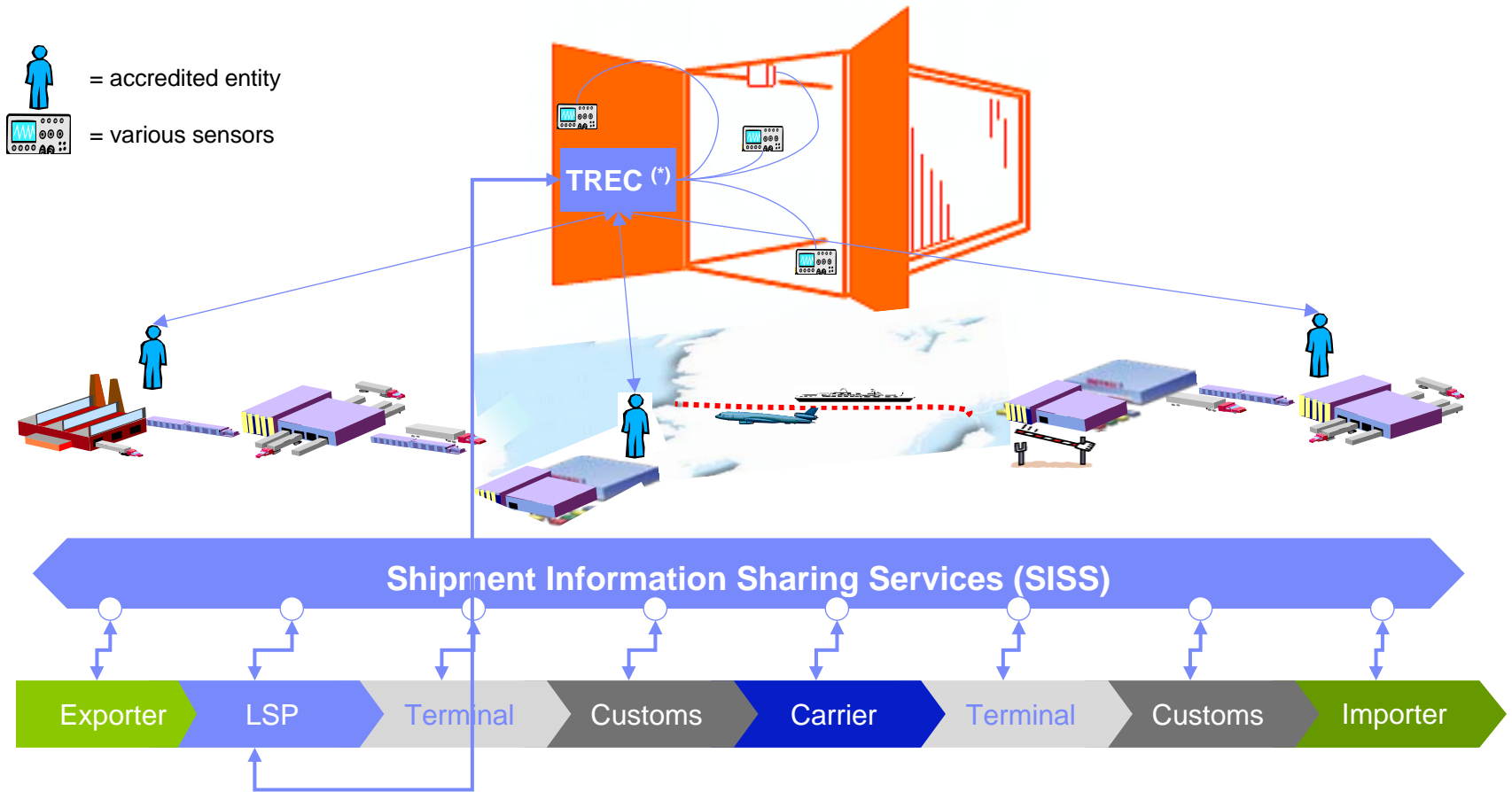


To the public and private stakeholders these challenges will determine implications which can be grouped around business, logical and physical aspects



Actual solutions on the market are addressing some of these implications but none of them are covering the entire supply chain

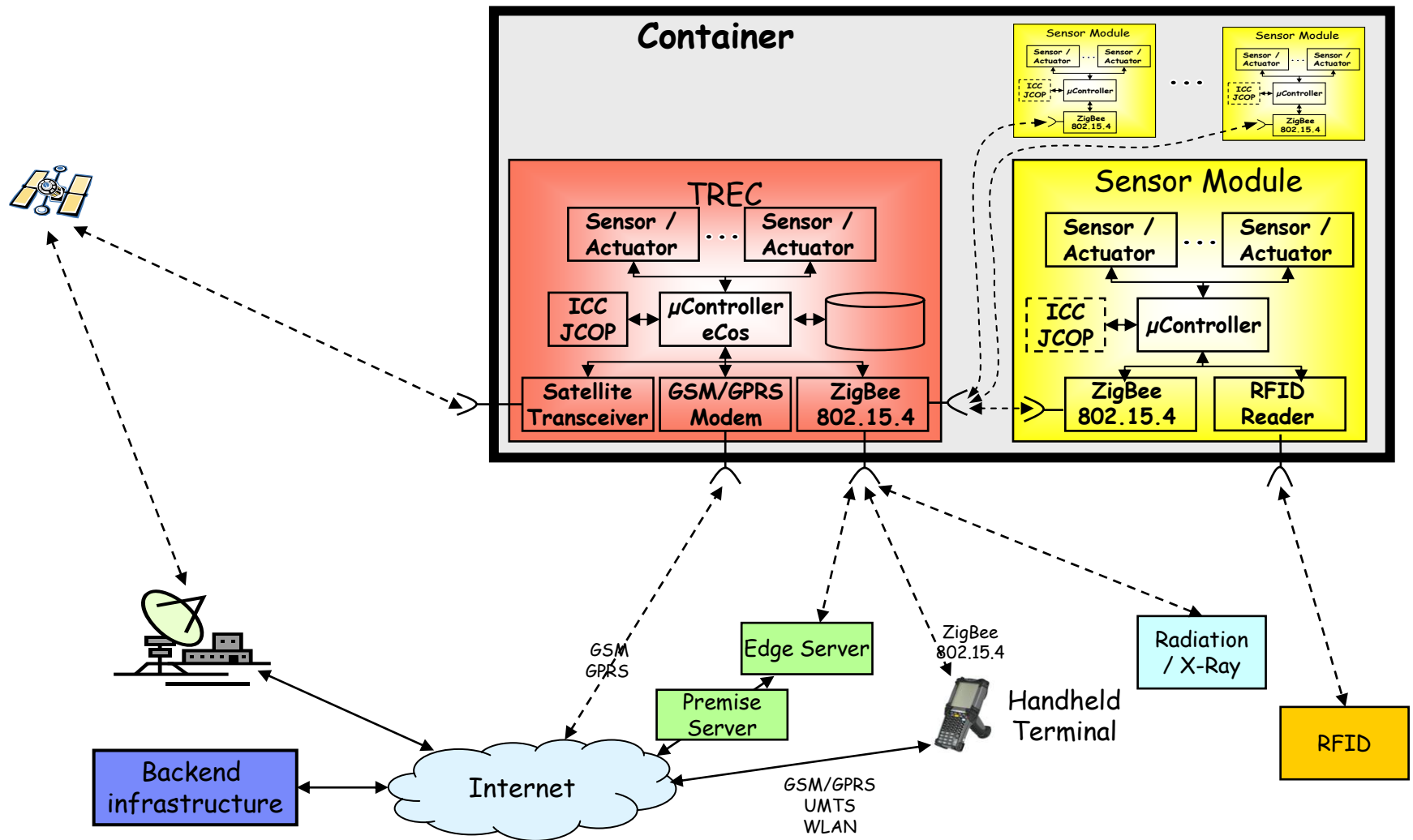
The IBM Secure Trade Lane solution integrates state of the art technologies in an end-to-end vision, implemented in a modular, open, non-proprietary and pragmatic way



(*) TREC= Tamper-Resistant Embedded Controller

❖ *The highest possible visibility and interoperability can only be achieved through an end-to-end approach*

The TREC acts as a central point of control that can authenticate the source of evidence and implement access control to the evidence



Pictures of current device



Movie on how to mount the device

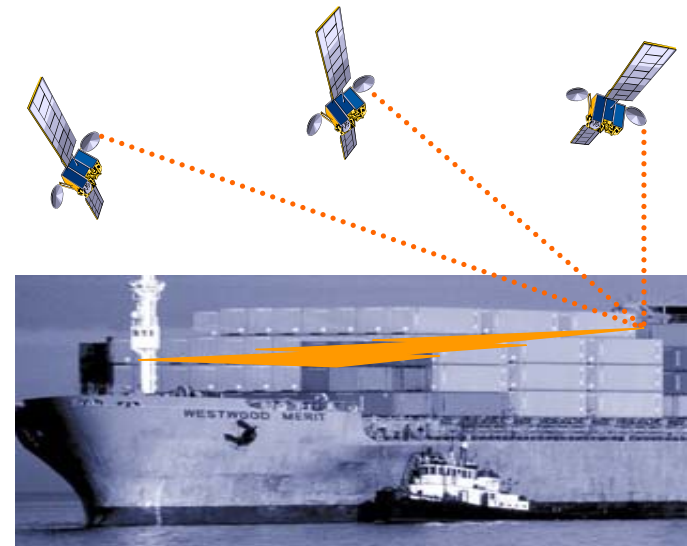
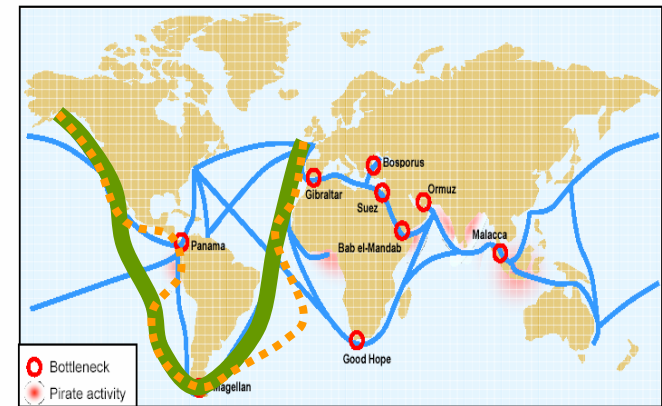


Geo-fencing is an additional positive aspect of intelligent data monitoring

- Nominal container itinerary
 - Computed from origin and destination
 - Location and time-window
 - Stored in TREC

- Reliable GPS-based container track
 - Tamper-proof GPS receiver on vessel receives GPS signals
 - Tamper-proof receiver transmits authenticated GPS position fixes to TRECs

- Real-time monitoring of container track vis-à-vis nominal itinerary
 - TREC continually compares track and itinerary
 - TREC records violations and/or sends out notifications

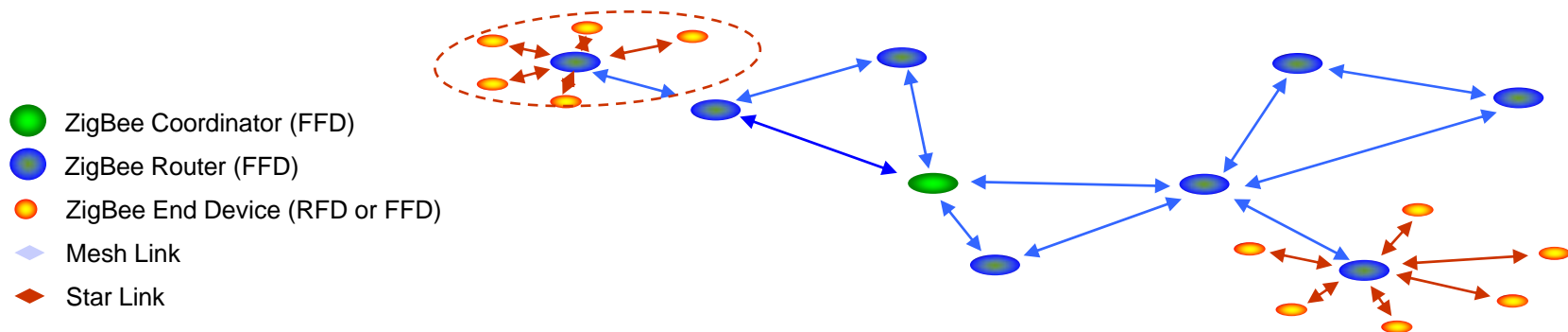


ZigBee is designed for low to very low duty cycles in static and dynamic environments with many active nodes

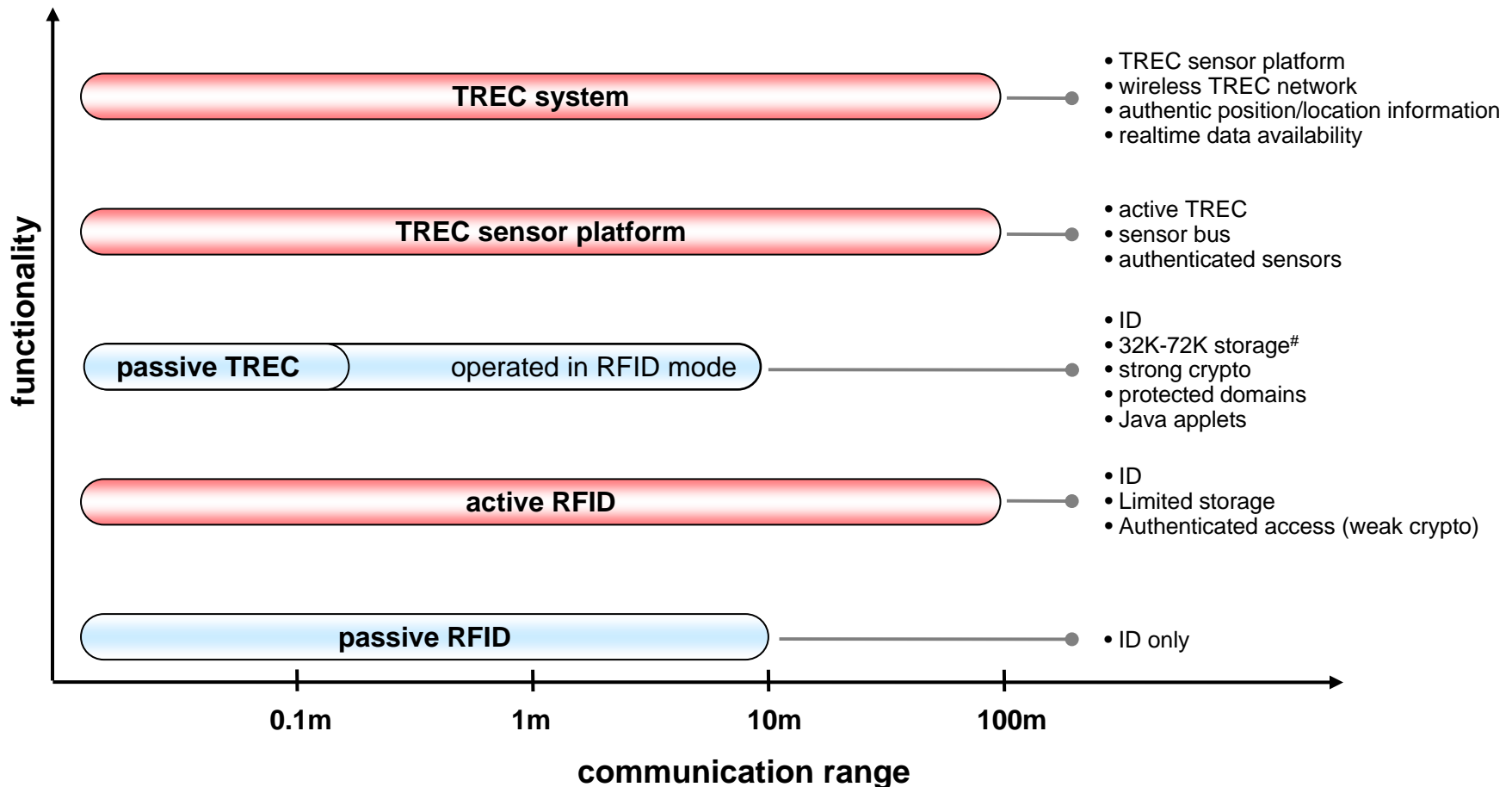
- Flexible link-in of nearly any amount of sensors

Feature(s)	IEEE 802.11b	Bluetooth	IEEE 802.15.4
Power Profile	Hours	1 Week	1Year+
BOM	\$9	\$6	\$5
Complexity	Complex	Very Complex	Simple
Nodes/Master	32	7	64000
Latency	Enumeration upto 3 seconds	Enumeration upto 10 seconds	Enumeration 30ms
Range	100 m	10m	70m
Extendability	Roaming possible	No	YES
Data Rate	11Mbps	1Mbps	250Kbps
Security	Authentication Service Set ID (SSID)	64 bit, 128 bit	128 bit AES and Application Layer user defined

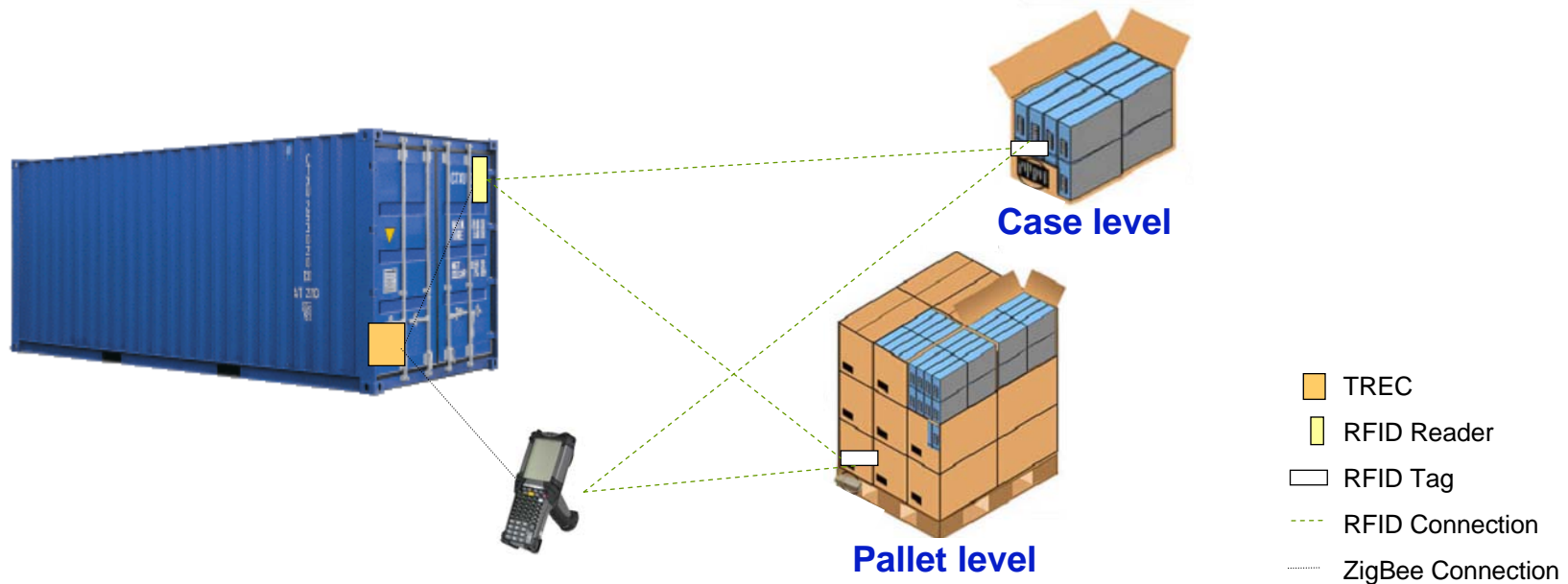
- Adhoc Mesh network at any place (e.g. port or vessel)



Overview and Comparison of passive RFID, active RFID, passive TREC, and active TREC technologies



RFID and TREC (Secure Trade Lane) can complement each other by connecting an RFID reader or a handheld to the TREC as a sensor

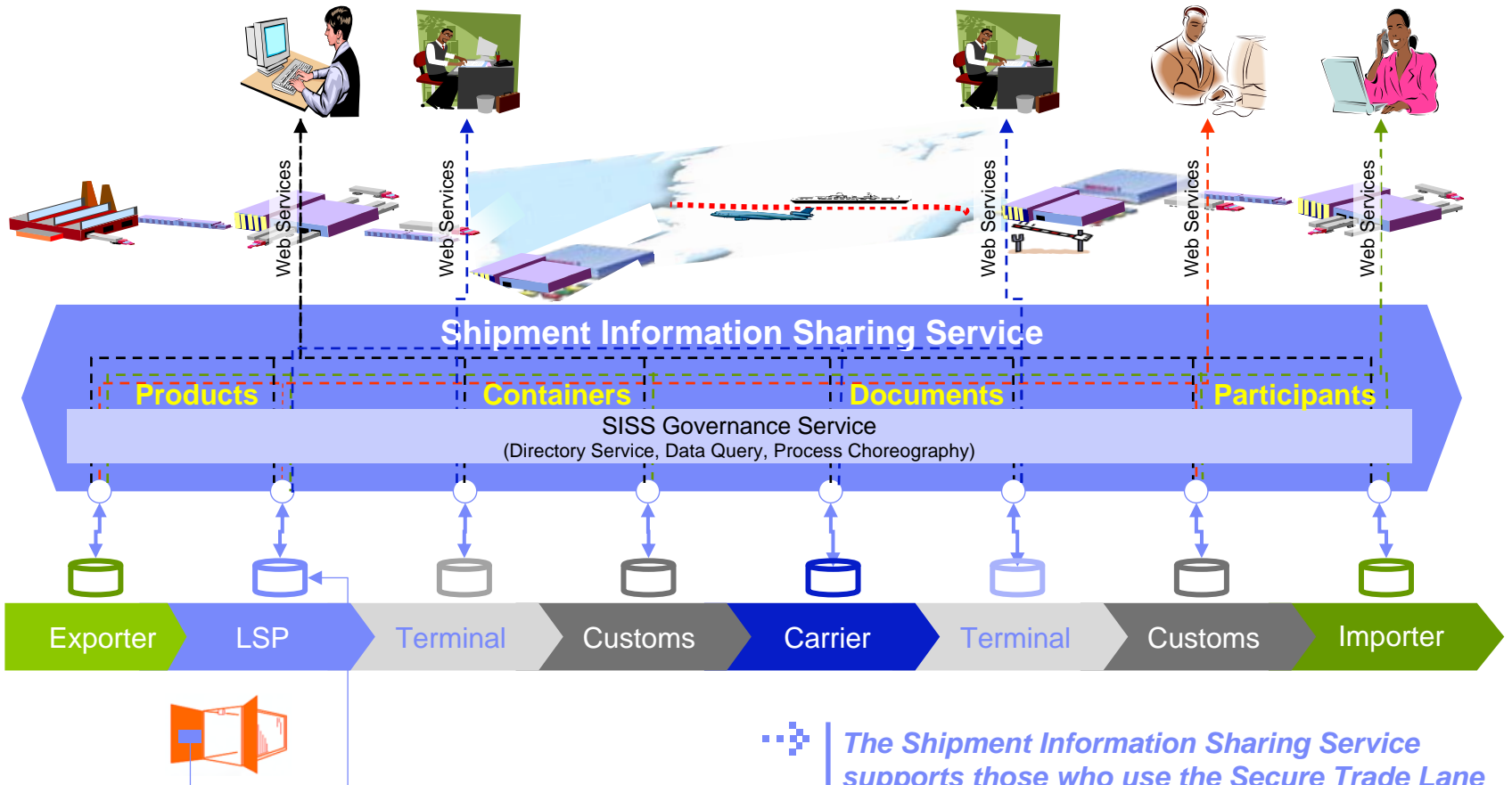


- Container level tracking can be expanded to pallet level, case level, and even item level tracking
- As a result, the exact content of a container will be known

DEMO: IBM real-time Shipment Monitoring Service (SMS)

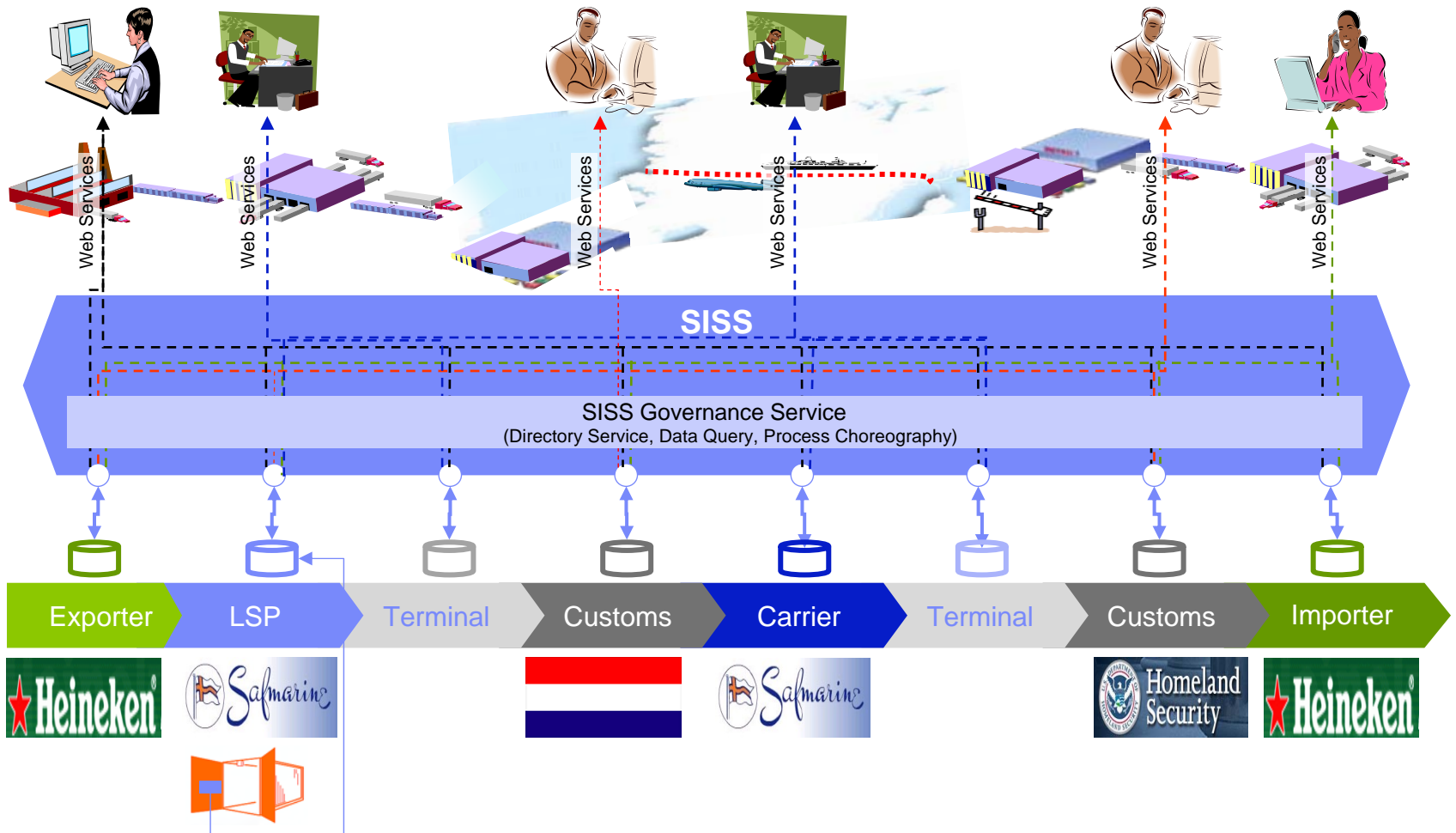


Integration across supply chain participants is performed through the Shipment Information Sharing Service which facilitates information sharing between authorized parties



❖ The Shipment Information Sharing Service supports those who use the Secure Trade Lane Shipment Monitoring Service, as well as those who do not, such as Customs and terminal operators

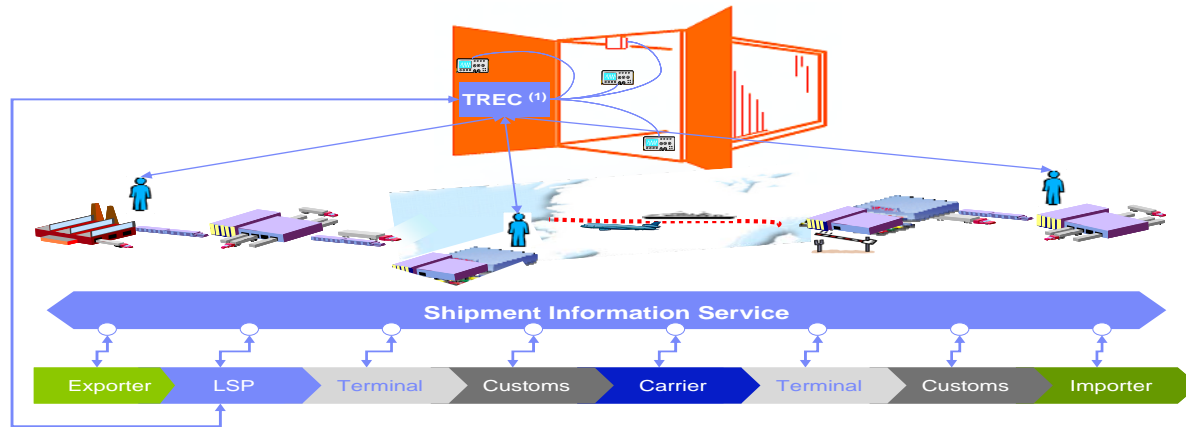
The EU ITAIDE will, for the first time ever, test a cross-industry international service oriented architecture



The benefits of the integrated end-to-end IBM solution can be grouped around strategic, operational and financial benefits



IBM is already working with parties from industry and government on the Shipment Monitoring Service and the Shipment Information Sharing Service



Ongoing Projects

<p>Shipment Monitoring Service</p>			
---	--	--	--

<p>Shipment Information Sharing Service</p>				
--	--	--	--	--

Is there any question, I can answer for you?

