

IoT & Blockchain by Samsung SDS

Overview & PoC Result

'17.12.07

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- I. Overview of Samsung SDS
- II. Introduction to IoT & Blockchain
- III. Blockchain Consortium
- IV. Result of PoC
- V. Discussion



Agenda



I. Overview of Samsung SDS

2016 Revenue

7.0 \$B

Global Presence

57 Global Offices
in **32** countries

No. of Employees

21,900

Employee Breakdown

Overseas **25%**
Korea **75%**



Note : All figures as of December 31, 2016

1st

in domestic IT services

24st

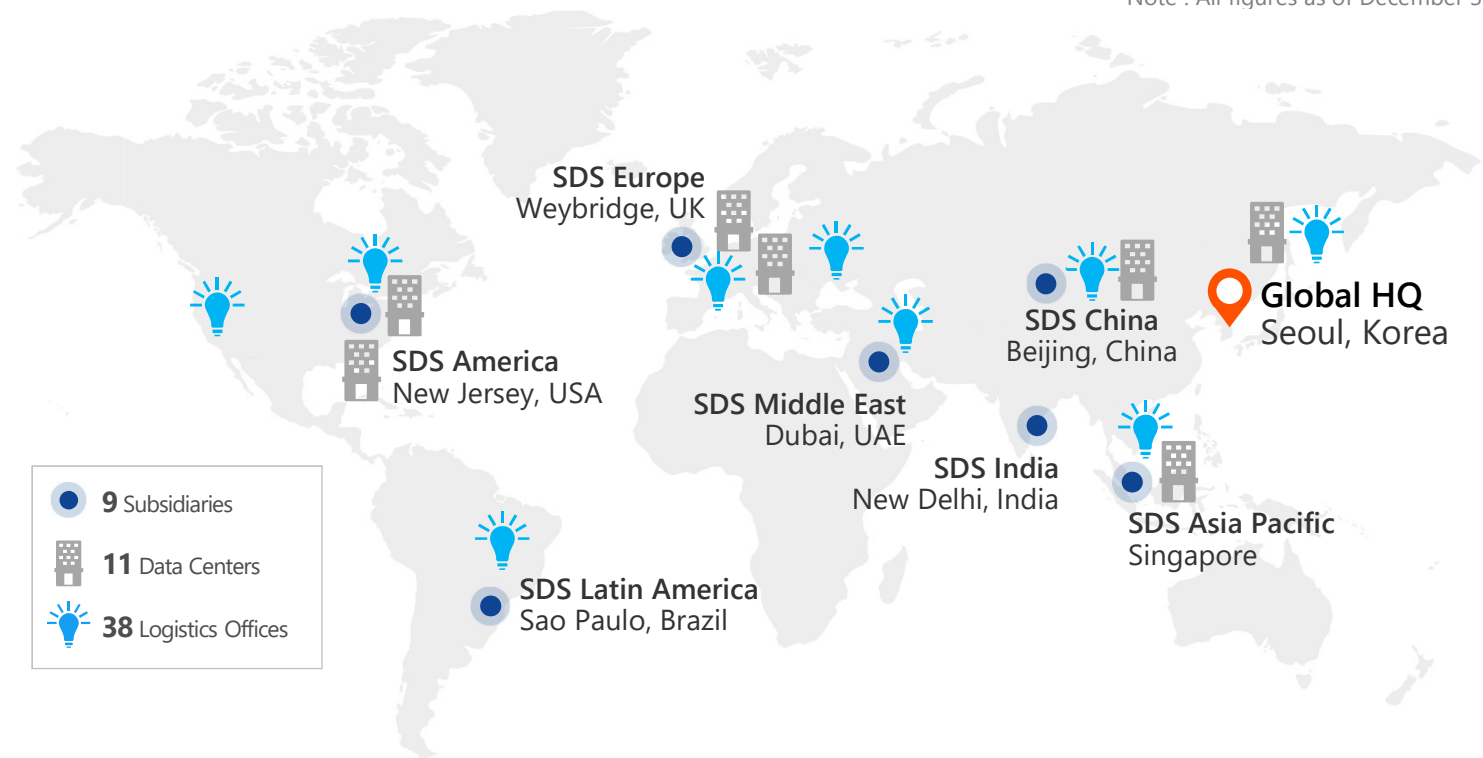
in global IT services

3rd

in manufacturing IT services

* Source : Gartner, 2016

Market Position



Global Footprint

Samsung SDS has gone on to broaden its portfolio in IT Outsourcing, Business Solutions and Logistics.

1

IT Services

Leverage a broad range of domain expertise to deliver IT system operation services and provides secure Infrastructure Services



Consulting / SI¹

Application Outsourcing

Infrastructure Outsourcing

2

Business Solutions

Enable customers' successful business with differentiated IT solutions by capturing complex behaviors, and redefining experiences



Enterprise Applications

Enterprise Mobility

Enterprise Analytics

3

Logistics BPO

Provides services encompassing whole areas from SCM planning to logistics execution with the foundation of global logistics operation know-how



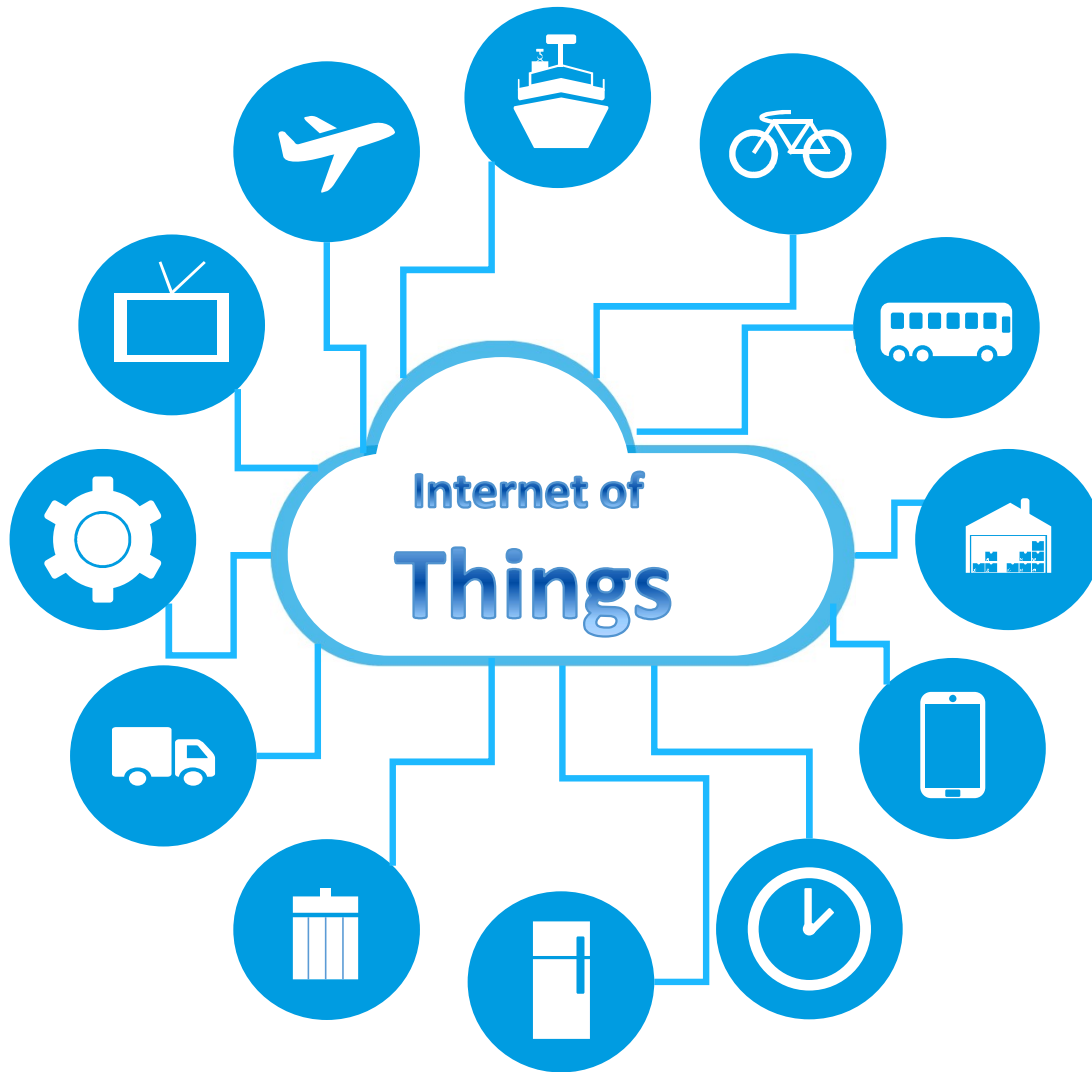
Logistics BPO²

Supply Chain & Logistics

¹SI : Systems Integration

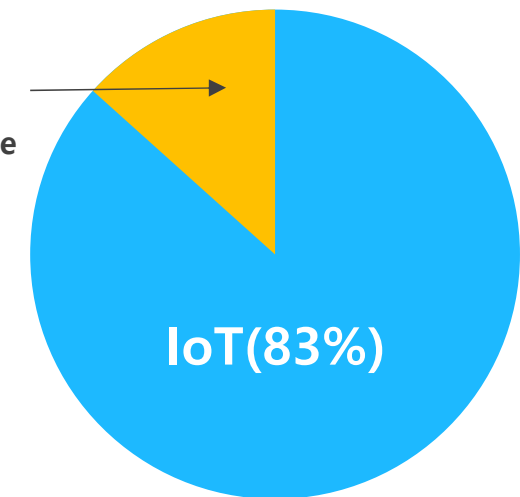
²BPO : Business Process Outsourcing

II. Introduction to IoT & Blockchain



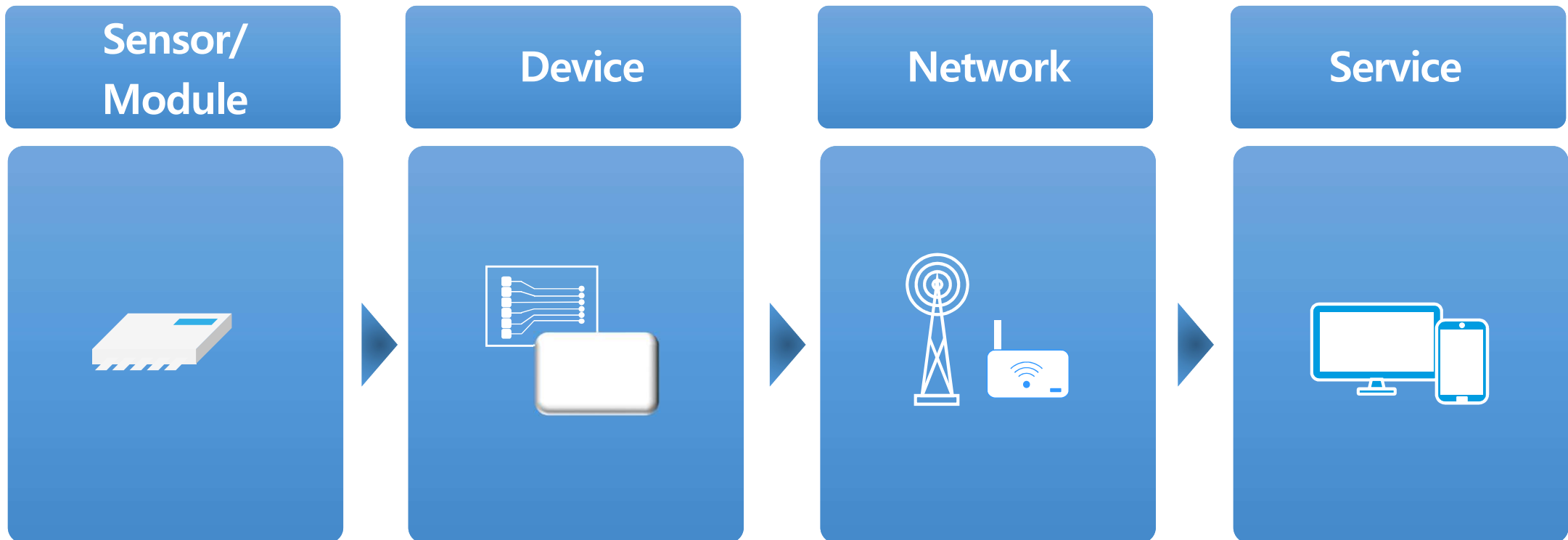
- ❑ Today, about 15 billion IoT devices are connected to internet
 - 1.5 trillion things are supposed to be valuable to connect internet
- ❑ 50 billion IoT devices are estimated to be connected to internet by 2020

Computers(17%)
PC, Tablet, Smartphone

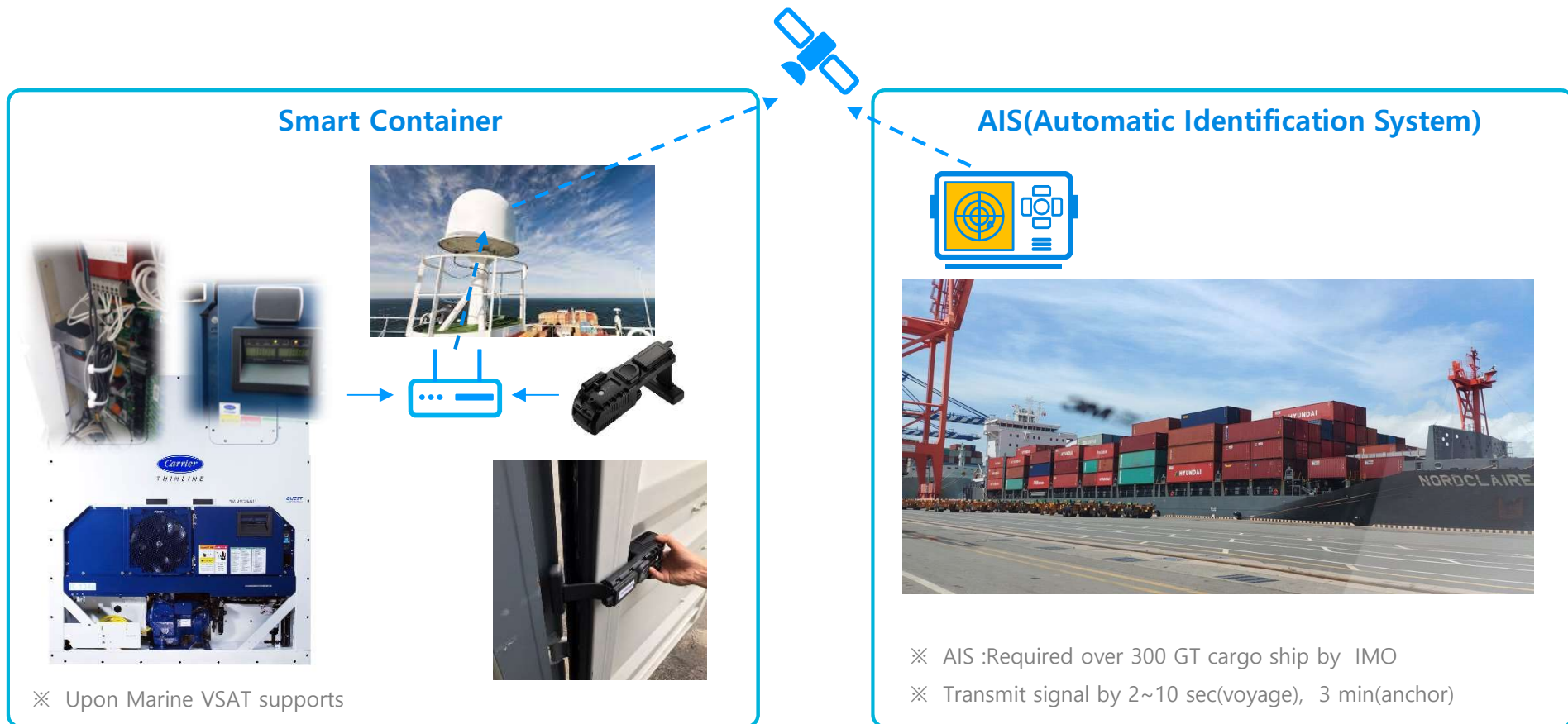


※ Source : "IoT in Logistics" by Cisco

IoT device is composed of several sensor module and it can provide uncovered new value by connecting with internet



Not only built-in type IoT device for reefer container, but also detachable IoT device for dry container has installed. We also communicate with AIS(automatic identification system) signal



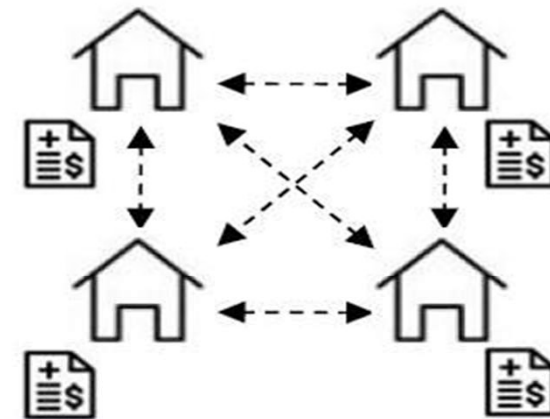
Blockchain is a **distributed** ledger so it is less vulnerable than centralized ledger

Centralized Ledger

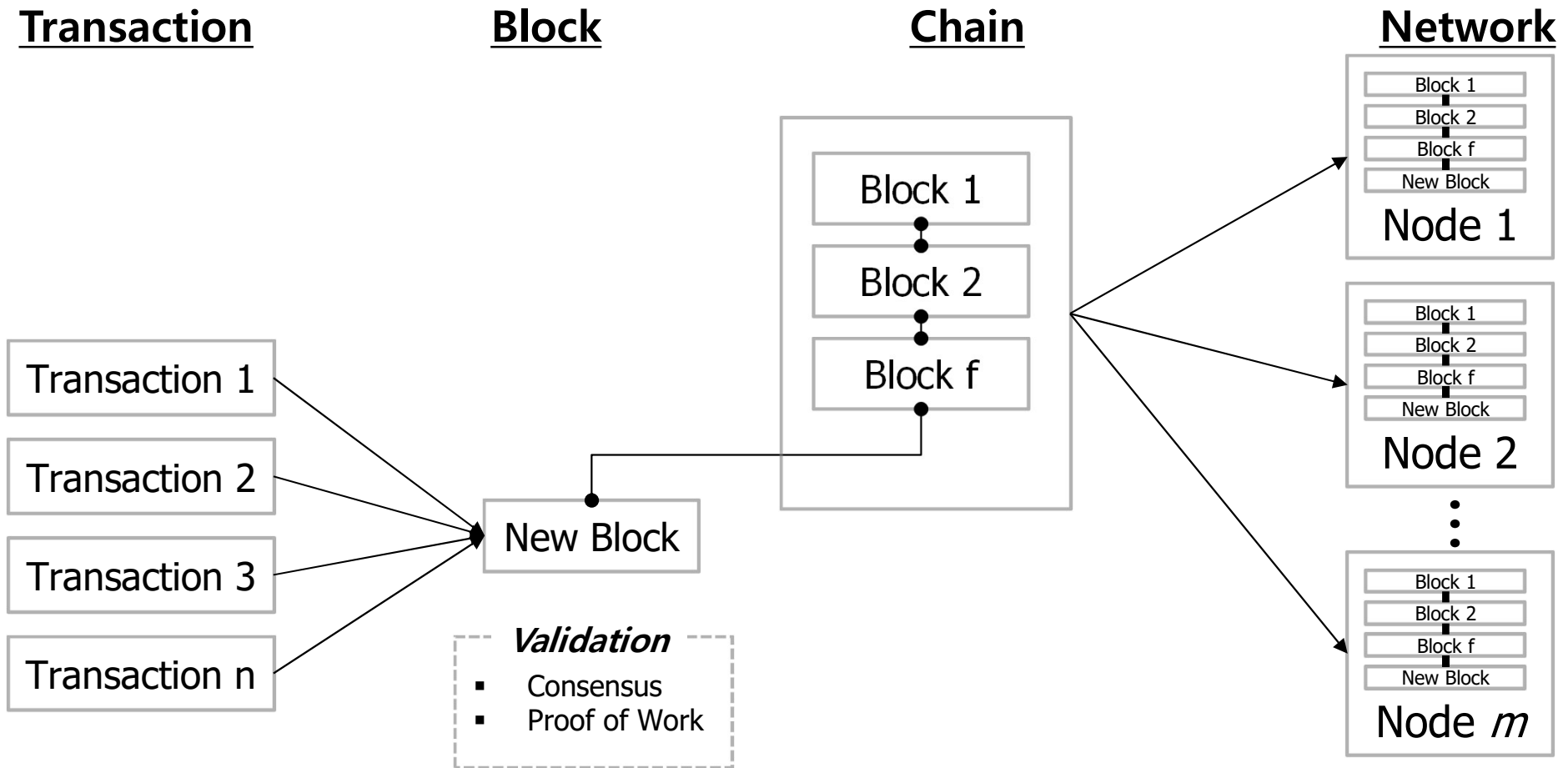


- All transactions are recorded into centralized server belonged to specific entity
- **Single point of weakness**

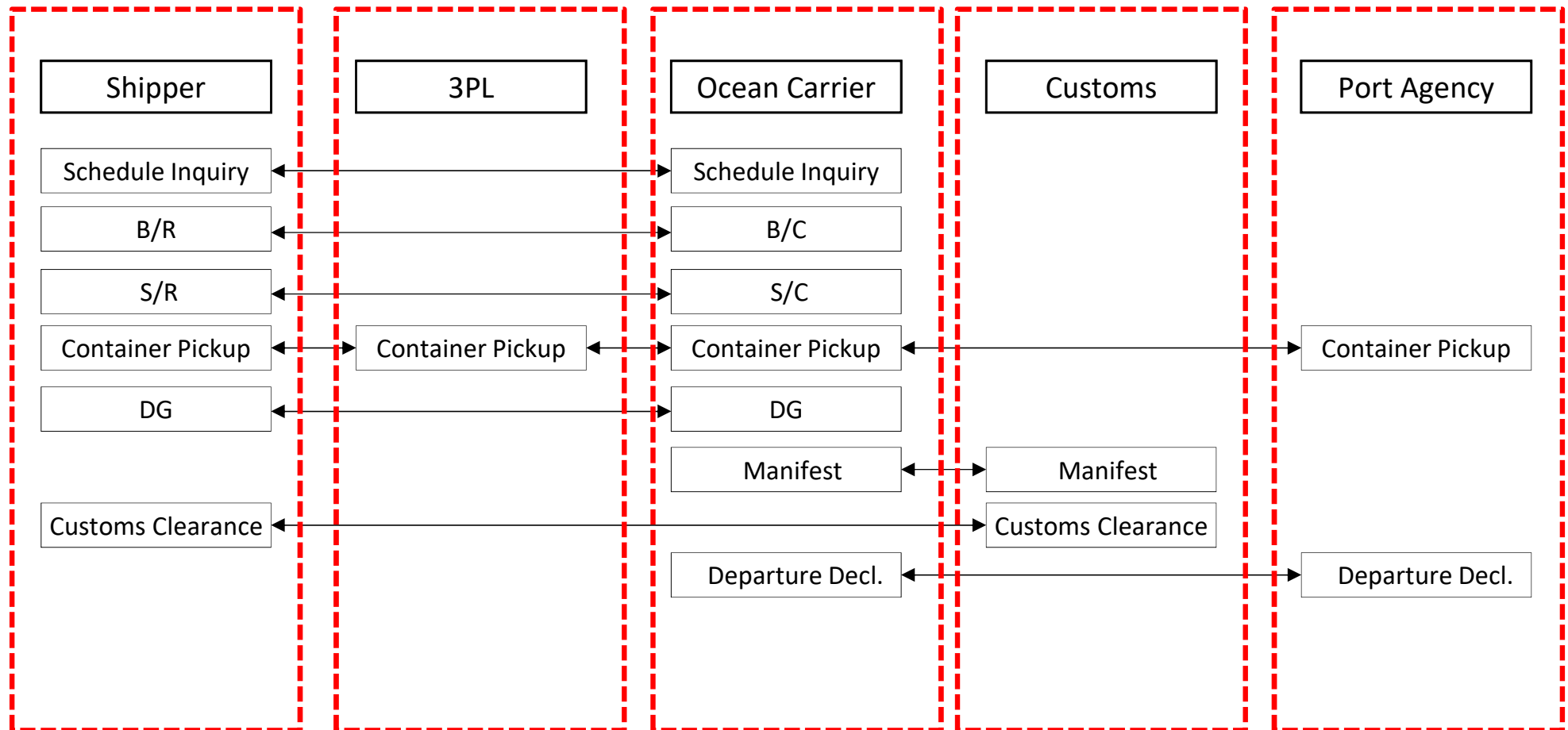
Distributed Ledger



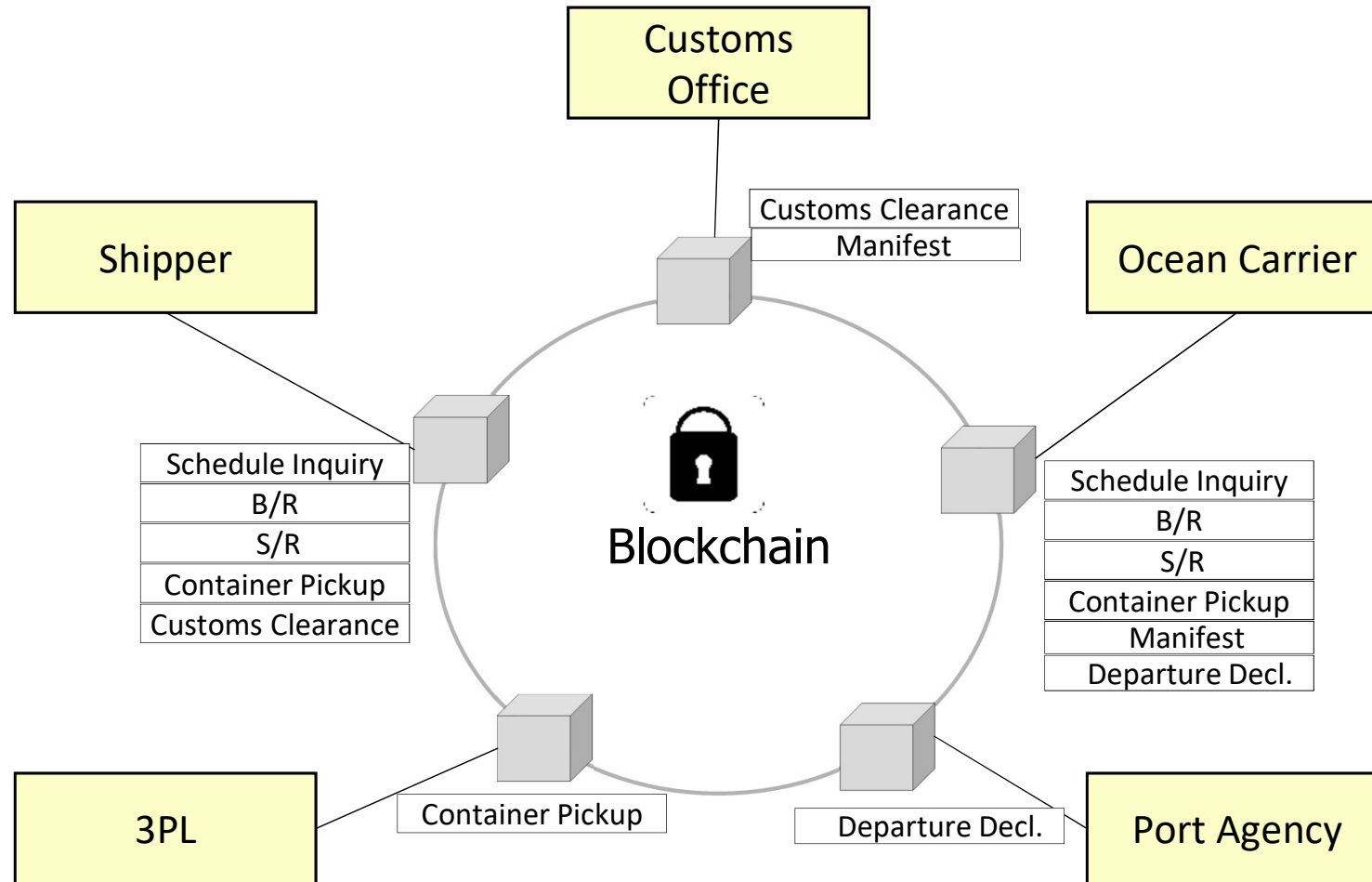
- Each node has an identical ledger that contains transaction after "consensus"
- Network effect holds transaction immutability



EDI only exchanges information, and does not allow to sharing information



Blockchain not only exchanges information but also share information with trust



III. Ocean Shipping Blockchain Consortium

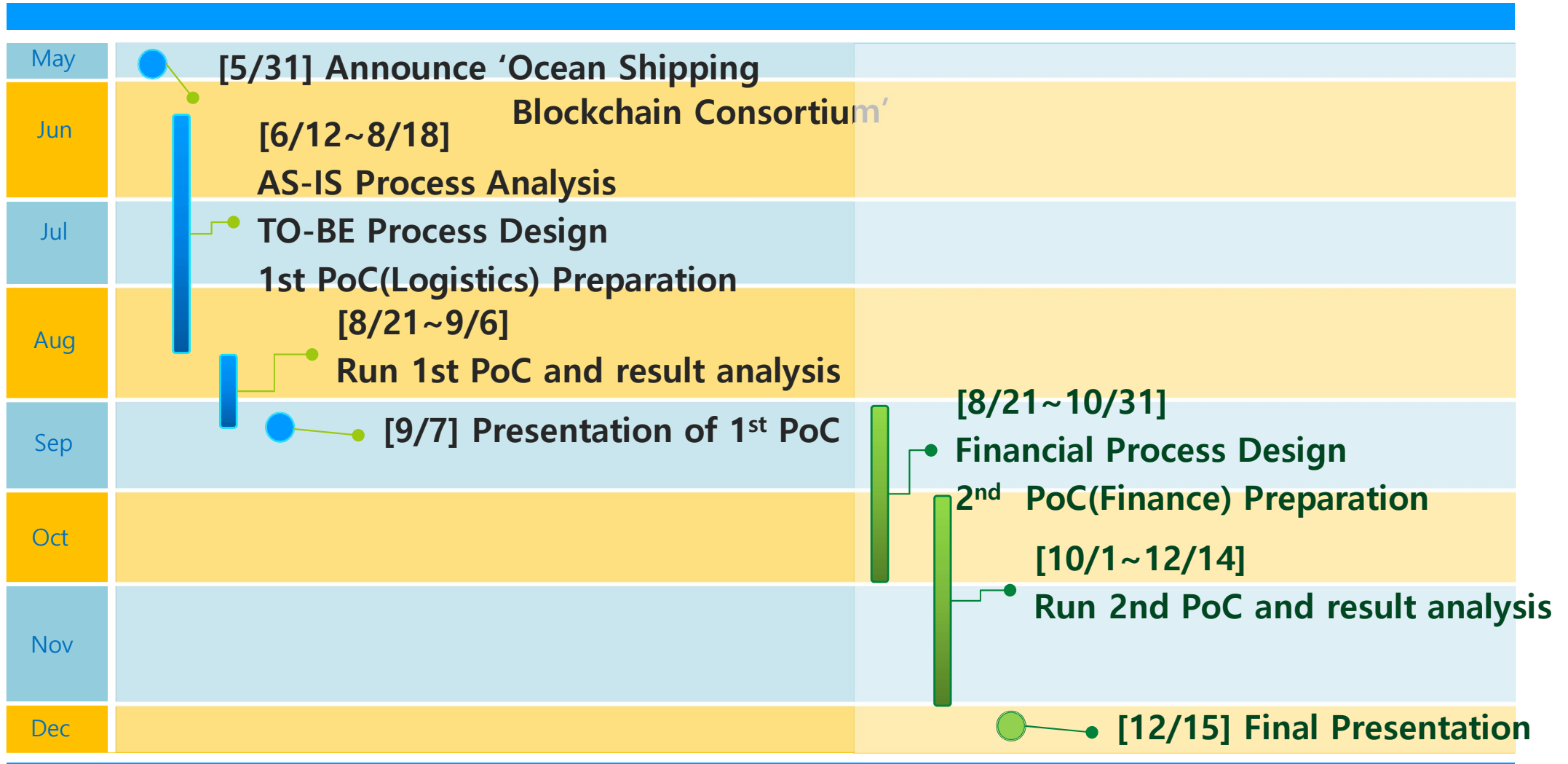
Under participation of major parties of ocean shipping industry, the consortium will review and measure the potential influence of blockchain technology. The consortium will suggest the most efficient and effective direction for future ocean shipping information network.



Consortium Participants

15 participants announced foundation of consortium, now 35 members are enrolled

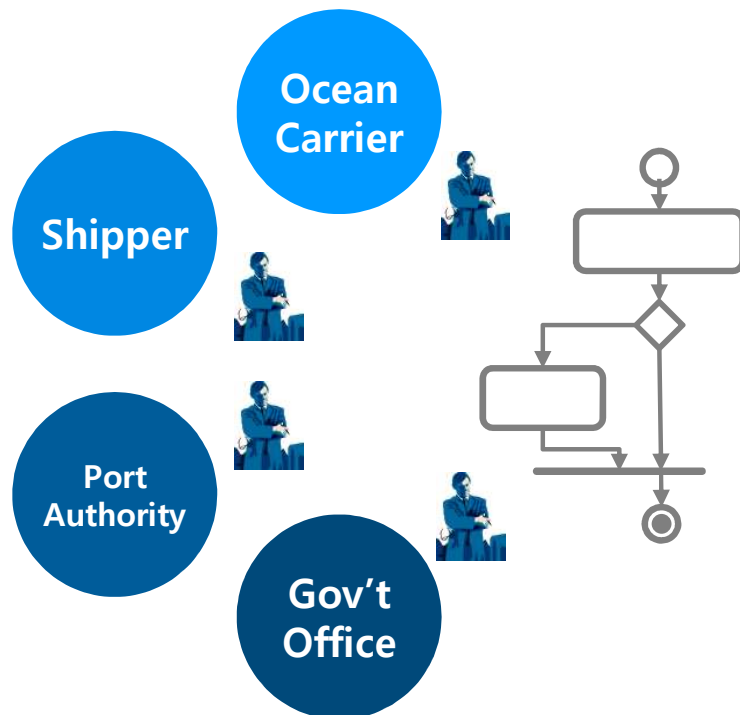




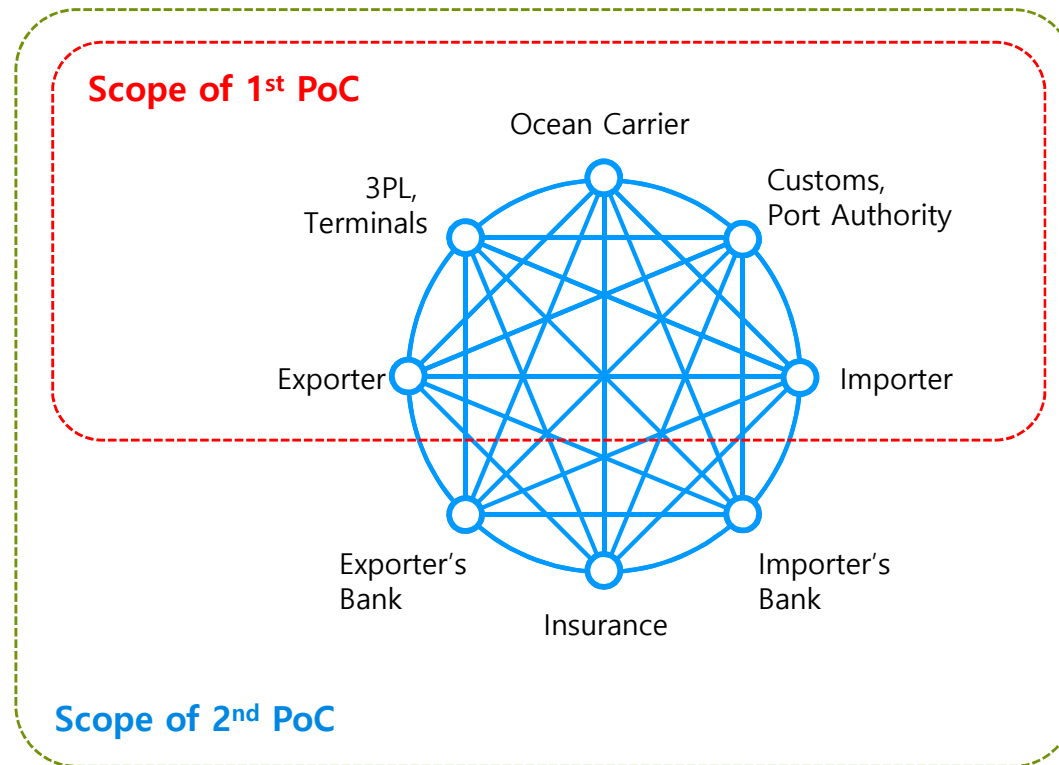
IV. Result of PoC

Ocean Carrier, Shipper, Port Authority and Gov't Office discuss and design blockchain based To-BE ocean shipping process

※ Financial process will be included in the 2nd PoC



1st PoC focused on ocean shipping logistics process, and at the 2nd PoC financial process of banking and insurance will be covered



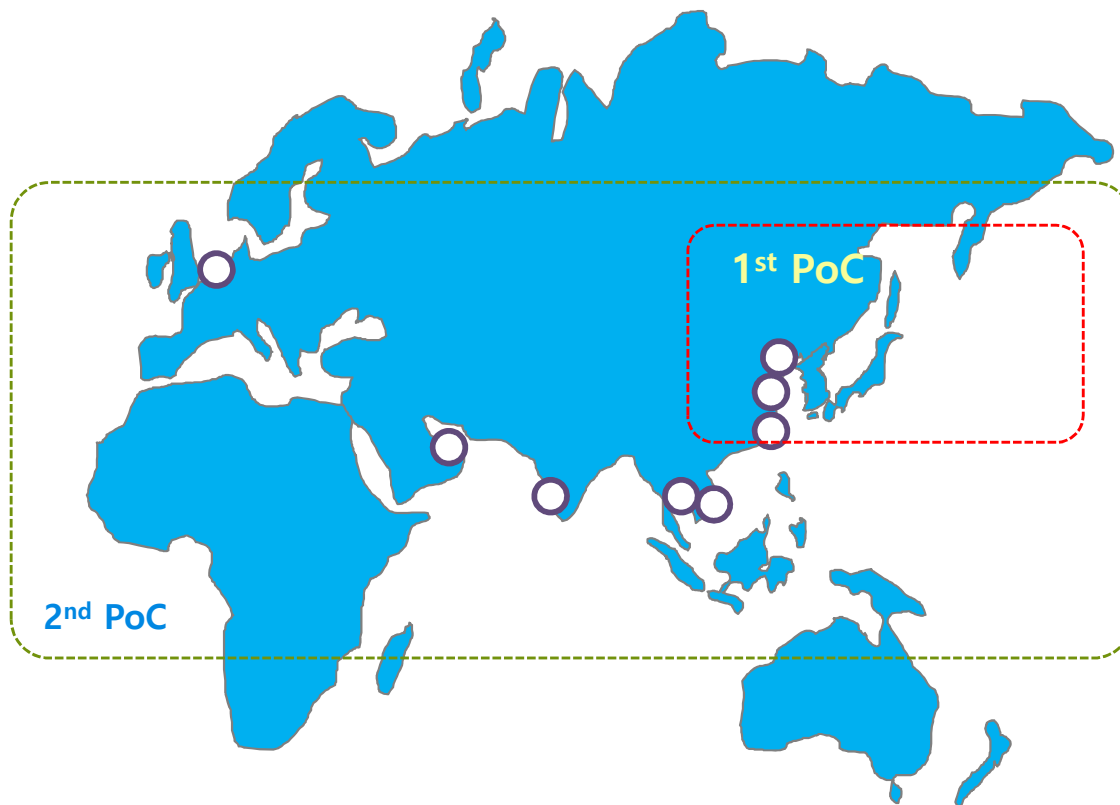
[Scope of 1st PoC]

- Booking Request
- Booking Confirmation
- Inland Transportation
- Shipping Instruction
- Bill of Lading
- Customs Clearance
- Container Terminal Gate In/Out
- Container Tracking using IoT Devices

[Scope of 2nd PoC]

- Letter of Credit
- NEGOTIATION
- Settlement
- Insurance Policy

The 1st PoC has been done by Korea/China route. The analysis of the 1st PoC will contribute to improve SDS's blockchain platform, and it will be applied to the 2nd PoC that covers Thailand, Vietnam, India, Dubai and European routes



[1st PoC]

- **Departure: Busan/Inchon, Korea**
- **Arrival: Dalian/Qingdao, China**

[2nd PoC]

- **Vietnam Cat Lai**
- **Thailand Laem Chabang**
- **India Pipavav, Nhava Sheva**
- **Dubai**
- **Rotterdam**

Logistics Blockchain Consortium for Shipping Logout

SAMSUNG SDS My Cargo Schedule POC2

Home > Test > Commercial Invoice

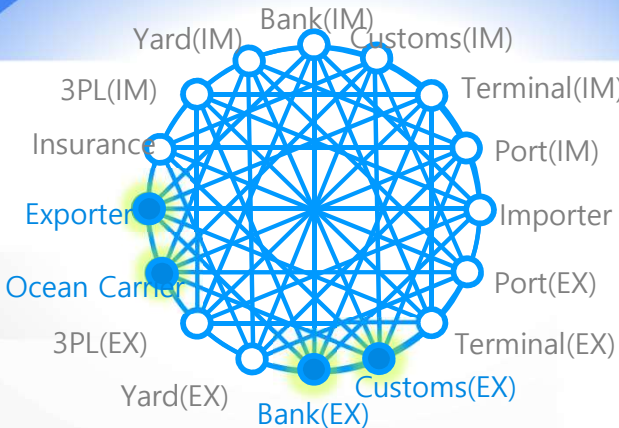
Commercial Invoice

Invoice No. INV1711151002024 **Invoice Date** 2017-11-15

Shipper/Exporter

Company *	Samsung Display Co.,Ltd	Person in Charge *	Raymond
Address *	1, Samsung ro, Giheung gu,Yongin si 17113		
Email Address *	seller@samsung.com	Phone Number *	+64-12-345-6789
Preferred way to contact *	<input checked="" type="radio"/> E-mail <input type="radio"/> Phone		

Consignee



Logistics Blockchain Consortium for Shipping Logout

AIG My Cargo POC2

Home > Insurance Mgmt > Insurance Detail

← Insurance Detail

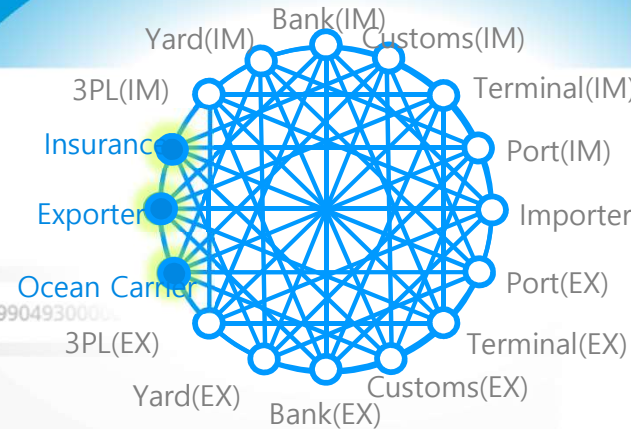
Invoice No. INV1711131313508 **Certificate No.** 20990493006510 **Policy No.** 209904930000

Assured/Claim Representative Company

Company Code *	Samsung Display Co.,Ltd	Company Name *	Raymond
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Settling Agent

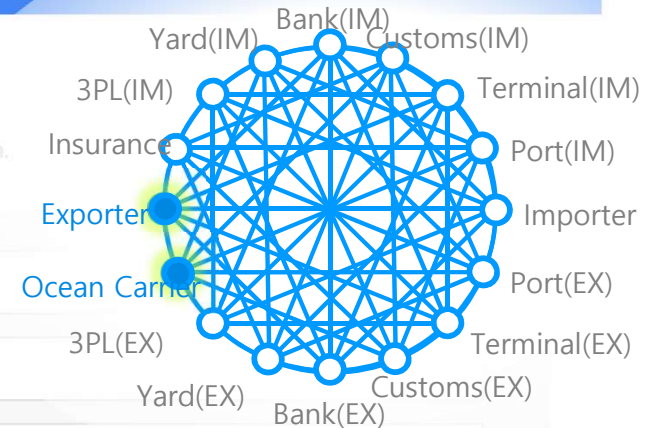
Company *	ETNAM INSURANCE COMPANY LTD	Person in Charge *	TESTER
Address *	9 TH FLOOR, SAIGON CENTER 65, LE LOI STREET, DISTRICT 1 HOCHOIMINH CITY, VIETNAM		
Email Address *	vietnam.marinerlm@aig.com	Phone Number *	848 3 914 0065



SAMSUNG SDS
My Cargo
Schedule
Booking
Transportation
Log Out

Home > My Cargo > Best Match > Booking Request

← Booking Request Please find our booking details below, and confirm our booking in return.



Shipper	Company *	<input type="text" value="Samsung SDS"/>
	Person in Charge *	<input type="text" value="Tony Yang"/>
	Email Address *	<input type="text" value="yyt1996.yang@samsung.com"/>
	Phone Number *	<input type="text" value="+82-2-6484-1694"/>
	Preferred way to contact *	<input checked="" type="radio"/> E-mail <input type="radio"/> Phone

Vessel Information	Carrier	Hyundai Merchant Marine
	Vessel/Voyage	NORDCLAIRE / 001N

Route	Port of Receipt	<input type="text" value="YANGSU"/>	<input type="text" value="YANGSU"/>
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PoC Review: Bill of Lading

IV. Result of PoC

Logistics Blockchain Consortium for Shipping Logout

HMM My Cargo Schedule

Home > Booking > Bill of Lading

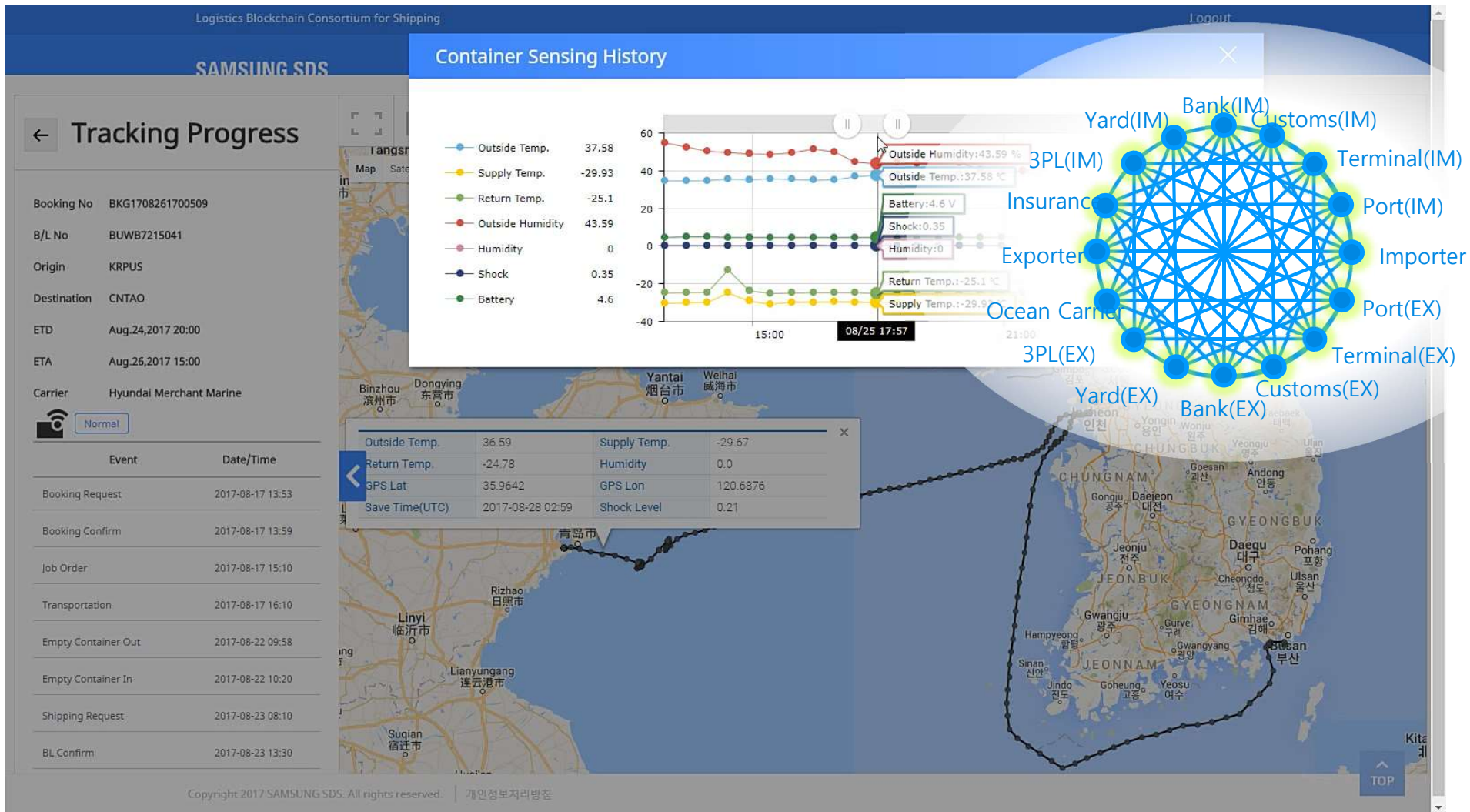
← **Bill of Lading**

Booking Request | Booking Confirmation | Shipping Instruction

Booking No. BKG1708261700509	B/L No. BUWB7215041	On Board Date 2017-08-24
-------------------------------------	----------------------------	---------------------------------

Yard(IM) Bank(IM) Customs(IM) Terminal(IM)
3PL(IM) Insurance Port(IM)
Exporter Importer
Ocean Carrier Port(EX)
3PL(EX) Terminal(EX)
Yard(EX) Bank(EX) Customs(EX)

Shipper	Company Name	Samsung SDS
	Person in Charge	Tony Yang
	Email Address	yyt1996.yang@samsung.com
	Phone Number	+82-2-6484-1694
	Preferred way to contact	E-Mail



Logistics Blockchain Consortium for Shipping
Logout

My Cargo
POC2

← Nego Detail

Summary

Purchase Order

Commercial Invoice

Export Declaration

Summary

Exporter	Samsung Display Co.,Ltd	Consignee	SAMSUNG DIS
Total P/O Amount	USD 35,360.00	Total Assignment proceeds	USD 0.00
Consent of Assignment	Y	Payment Term	T/T 45 DAYS
Port of Loading	KRINC(Incheon, Korea, Republic of)	Final Destination	VNSGN

Document Status

No.	Doc Type	Doc No.	Receive Y/N	Amount	Recv Date	Status
1	Purchase Order	CTNR20171101	Y	USD 35,360.00	2017-11-13	OK
2	Commercial Invoice	INV1711131313508	Y	USD 35,360.00	2017-11-10	OK
3	Export Declaration	4418217730486X	Y	-	2017-11-13	OK
4	B/L	BLC1711131340963	Y	-	2017-11-13	OK

Reject

Confirm

V. Discussion

Several core concepts of blockchain have examined, and our findings can be summarized as follows

Digitized Shipping

- All PoC process have initiate and completed by digitized way.
- The process status has shared within related party in real time

Automated Confirmation

- Without interruption of specified confirmation process such as "booking confirm", all process have immediately finalized by predetermined rules

Simplified Process

- Smart contract leads whole shipping process "SMART" and efficient.
- The more detailed and well-defined rule, the better productivity

Thank You very much

감사합니다

insight to!nspiration  SAMSUNG SDS

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