



Enable a Smarter Port

Huawei Digital Port Solution

Zhan Caihua (James), Chief Engineer of EBG Traffic

LEADING NEW ICT

Huawei at a Glance



80,000
R&D employees



14
R&D institutes /
labs/centers



No. 72 in the
Fortune Global 500



180,000
Employees



170+
Countries

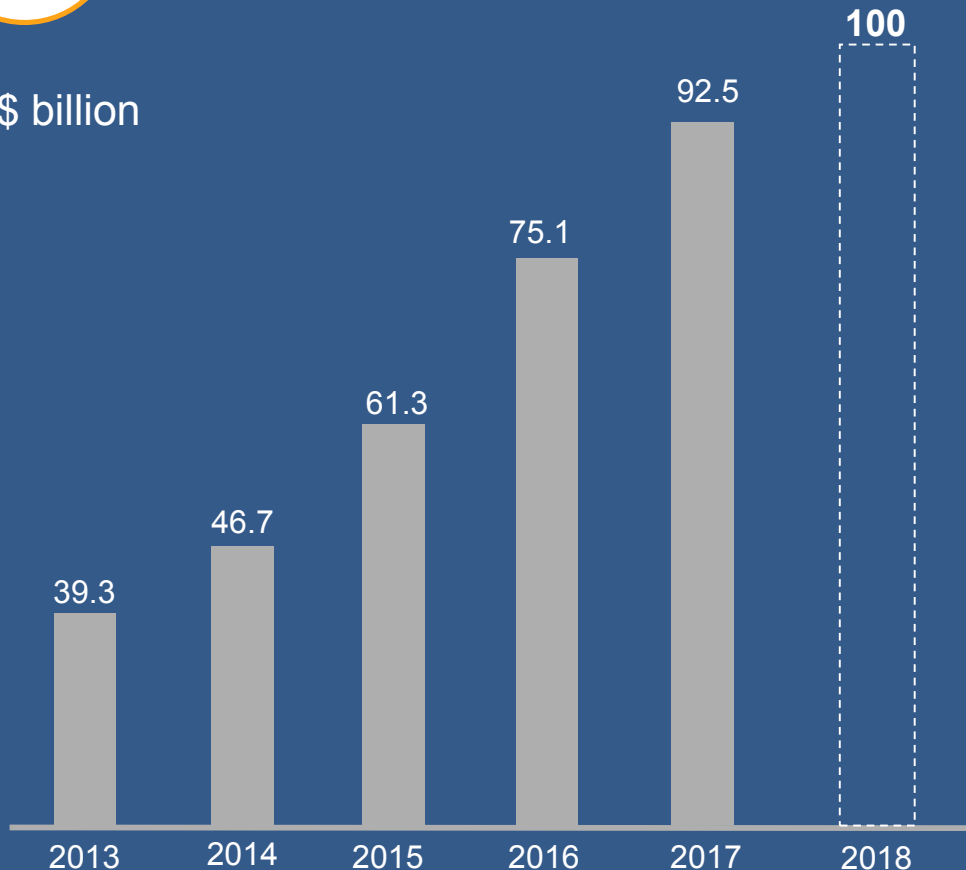
No. 70 in
Interbrand's Top 100
Best Global Brands

Continuous R&D Investment and Effective Growth



Sales Revenue

US\$ billion



R&D Investment

USD 64 billion over 11 years (from 2007 to 2017)

10%+ percentage of R&D investment to total sales revenue

80,000 employees: **45%** are R&D engineers



Standards

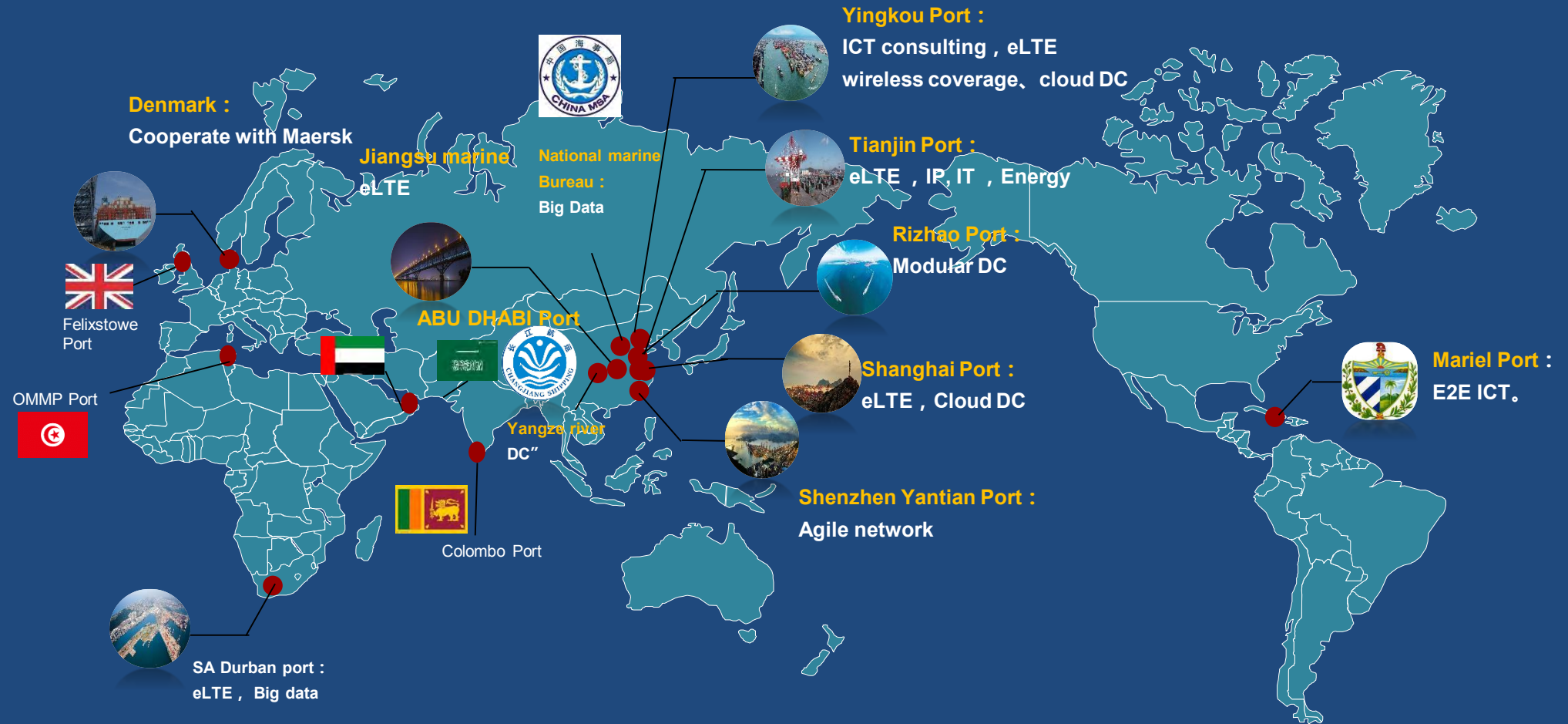
360+ international standards organizations, industry alliances, open-source communities

300+ important positions in standards organizations

54,000 accumulated proposals

Huawei Footprints in Global Ports

20+ Cases in Consulting, eLTE, IP network, Big Data, Cloud, Modular DC and UPS



Cooperate with Partners to Build Industry Ecosystem

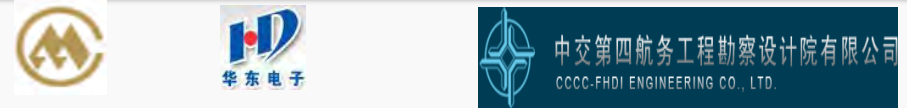
100+ Partners in Global



Industry Partners



Consultant/Design Partners



ICT Partners(100+)



Microsoft

THALES

ORACLE



CITRIX

IBM

ALSTOM

SIEMENS



Telefonica



ICT Drives Port Business Smarter

Management Intelligence



Monitoring Control Operation Planning

Operation Intelligence

- Intelligent TOS
- Intelligent Equipment Dispatching
- Intelligent Gate
- Intelligent Weighing
- Intelligent Lighting



Commerce Collaboration

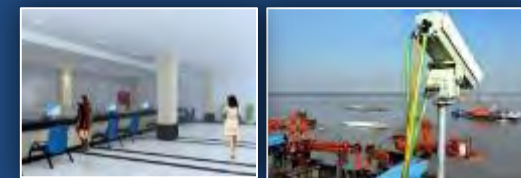
Sharing data with :

- Shipping Company,
- Importer/Exporter,
- Customs,
- Immigration
- Quarantine ...

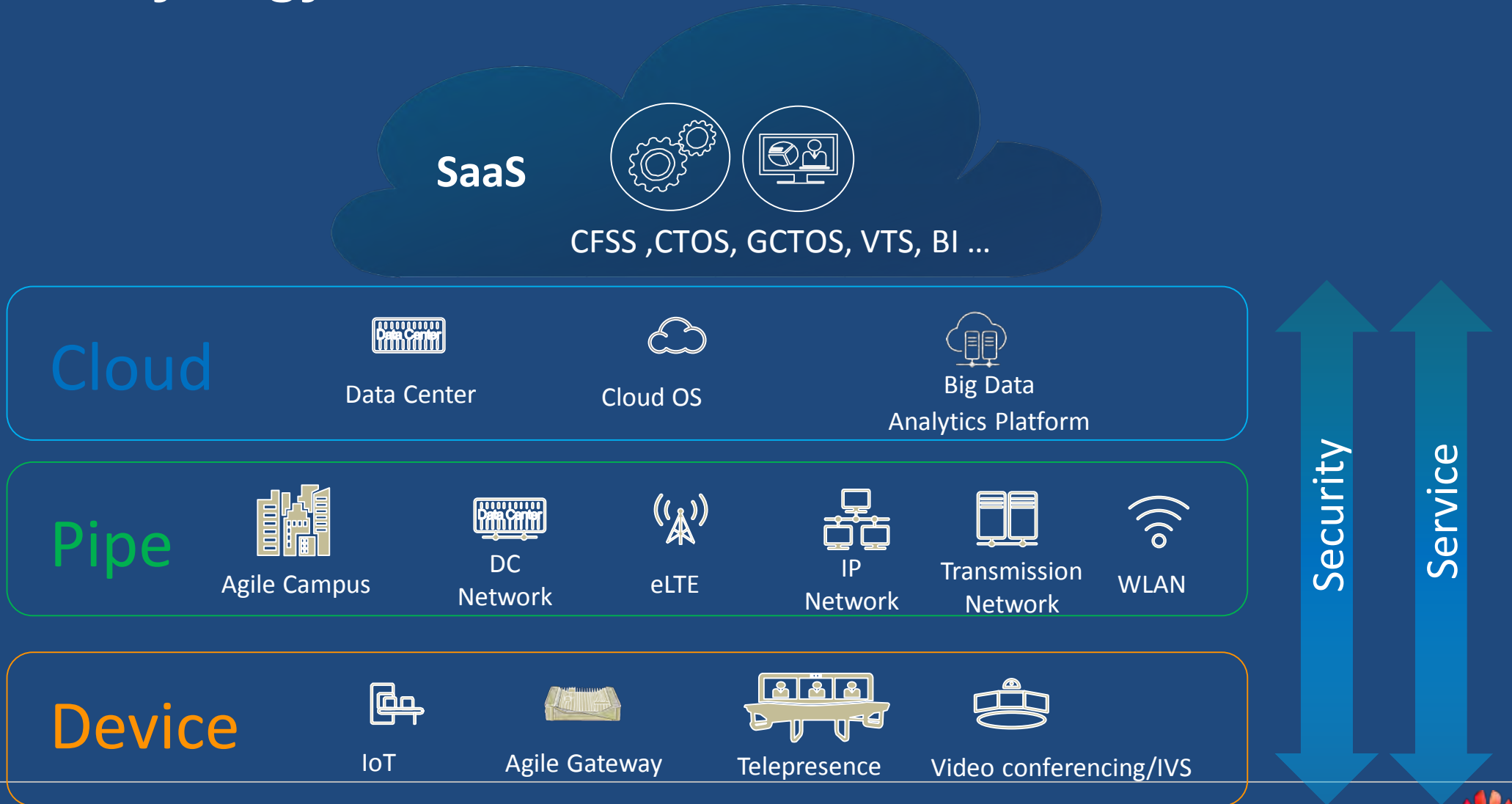


Production Security

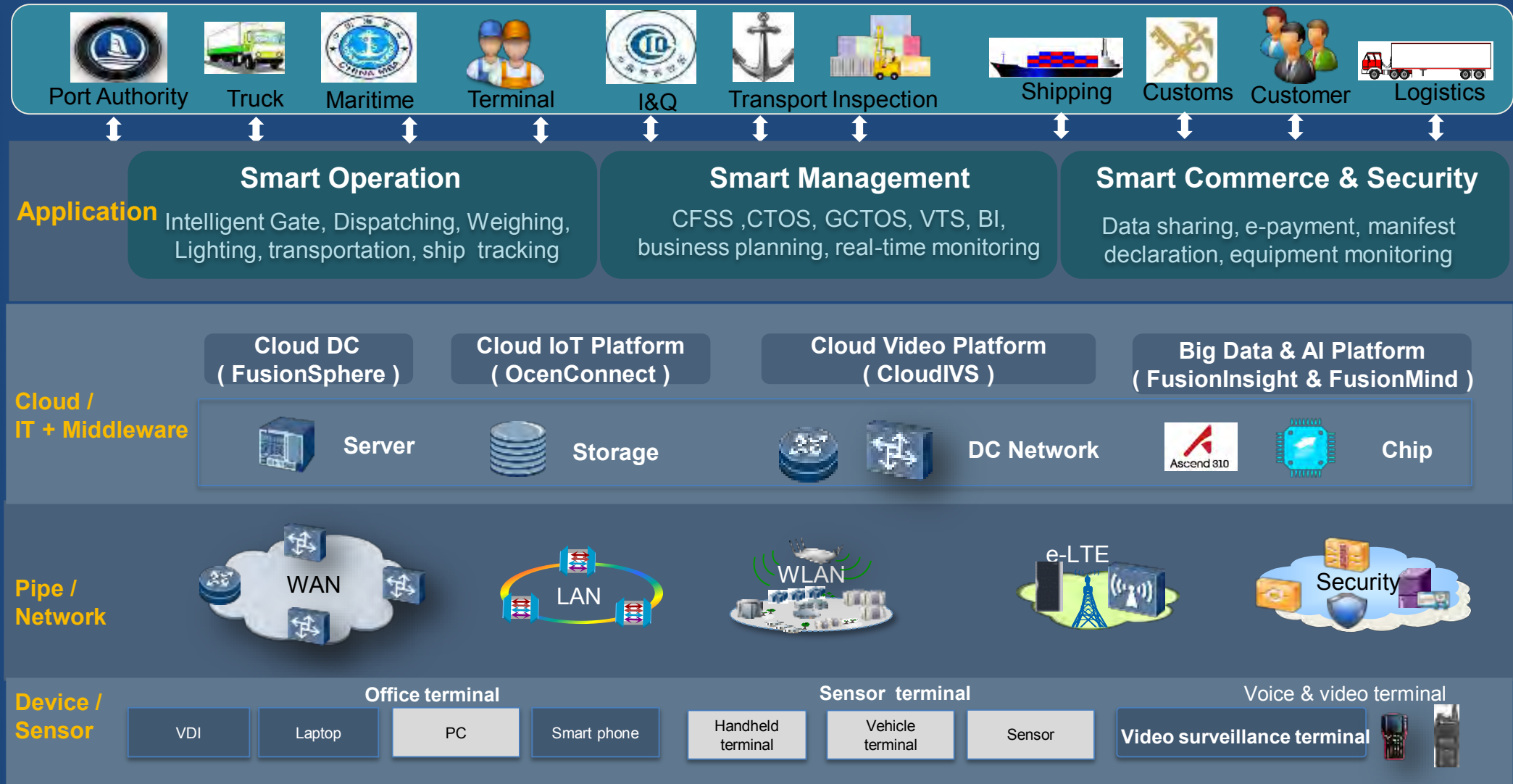
- Networking video monitoring
- Intelligence analysis
- Video sharing



Huawei One-stop New ICT Architecture Featuring Cloud-Pipe-Device Synergy for Port



Architecture of Huawei Digital Port Solution



Planning & Consulting

System integration

Information security

Delivery

Huawei IoT Solution (1121) for Various Business Scenarios:

1 Chip set + 1 IoT OS + 2 Access Modes + 1 Platform

Application



Operation condition at terminal



Asset/freight/vehicle tracking



Container tracking



Intrusion Detection



IoT Platform
1 Platform

Cloud O/S
(FusionSphere)

Big Data Platform
(FusionInsight)

Device Management
(FusionConnet)

eSDK

IoT Access Network
2 Access Modes

Zigbee, RF, BlueTooth

RS248, RS232, DI/DO

Edge computing/storage



Wired



Wireless

eLTE-Licensed

eLTE-Unlicensed

eLTE-IoT



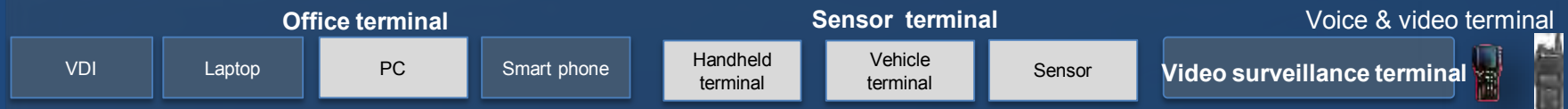
CPE
(eA300-8a)

Sensor Control Layer

IoT Module
(eM300-8a)



Huawei LiteOS
1 IoT OS



Huawei eLTE Solution:

One network for voice, video surveillance, and TOS/RCMS services



Voice, video, and broadband data service for operation & maintenance @ **single network**



Enhance trunking and data service, enables **effective** situation awareness and resource allocation



Integrated information and visual command, supports **collaborative decision-making**

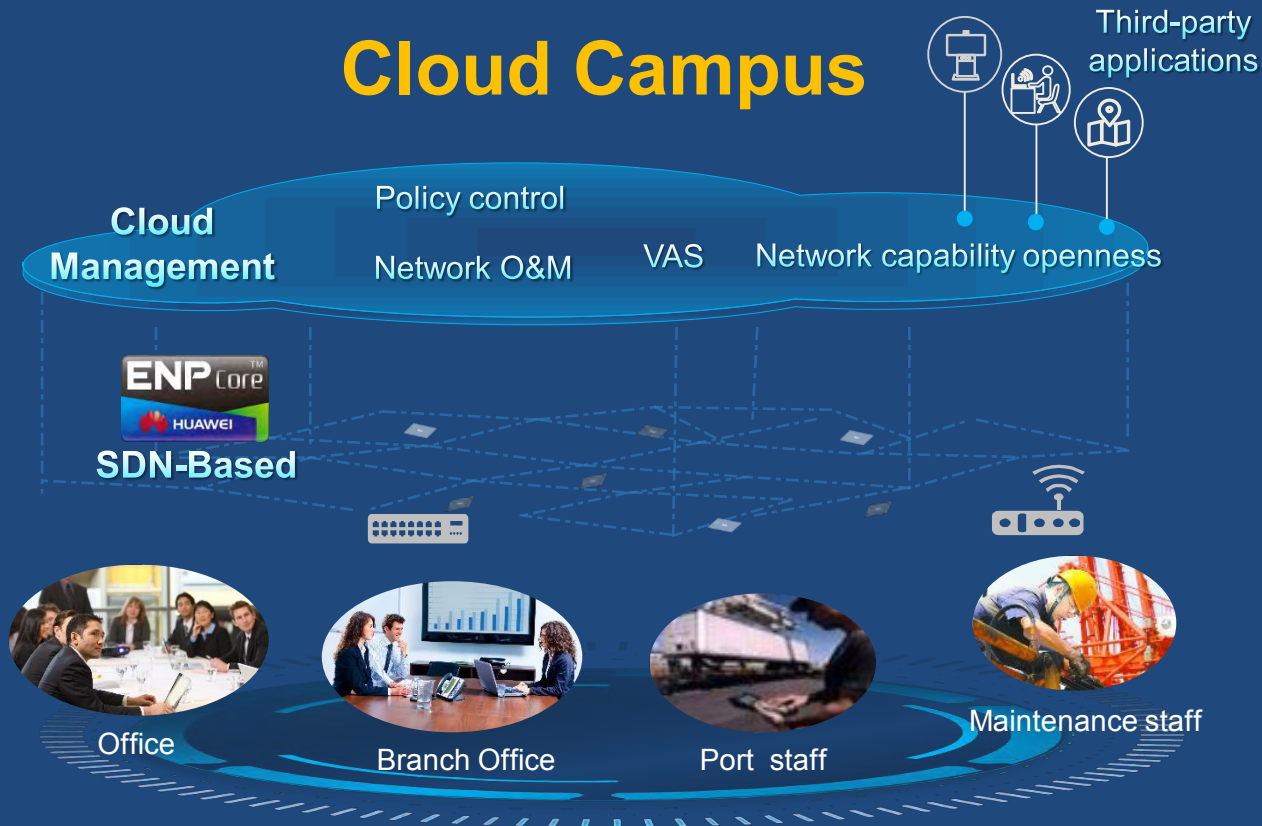
Huawei Campus Network Solution: ENP, SDN, Convergent, Automated O&M

Smart Operation

Smart Management

Smart Commerce &
Security

Cloud Campus



Self-development **ENP**, new features can be easy to add through software **upgrade**



Convergent Wired and wireless network providing consistent connect experiences



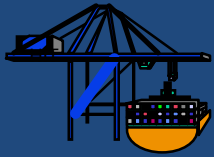
Automated O&M with real-time network quality awareness

Huawei Cloud Data Center Solution:

Hybrid and One-stop Cloud DC for on-demand scalability



Video



RCMS



TOS



PTT



OA/VDI

Cloud O/S
(FusionSphere)

Big Data Platform
(FusionInsight)

IoT Platform
(OceanConnet)



Public Cloud VDC

vmware



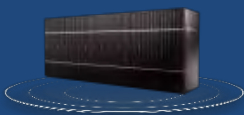
SAP

ONF

onos
Open Network Operating System



Computing



Storage



DC Network



DC Facility
(modular DC)



Public and Private Cloud , SLA assurance and meet online bursting of promotion sales



Supporting **big data** application in optimizing resource management



Multi-Cloud Management
Unified Image Management
Unified operating, maintenance and management of resources

Huawei Video Cloud Solution:

Intelligent, 4K high definition, reliable for port security



Intrusion detection



Container & Yard



Gate Surveillance



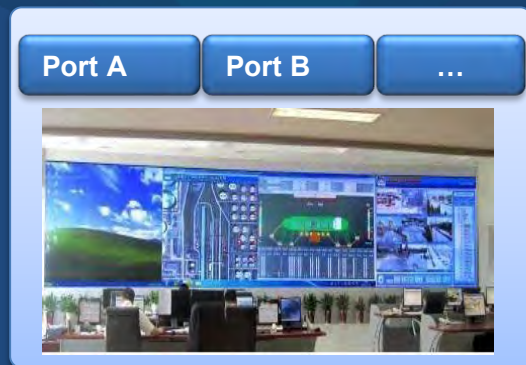
Storage & Berth



Customs



Emergency Command



Video Cloud Platform



Inspection & Quarantine



Alarm Linkage



360-degree protection in terminal, container yard, and off shore, realizes **complete security coverage**



Intelligent, reliable and open platform, provides effective support on public security and operation safety



Convergent command and visualized dispatching to support efficient emergence response

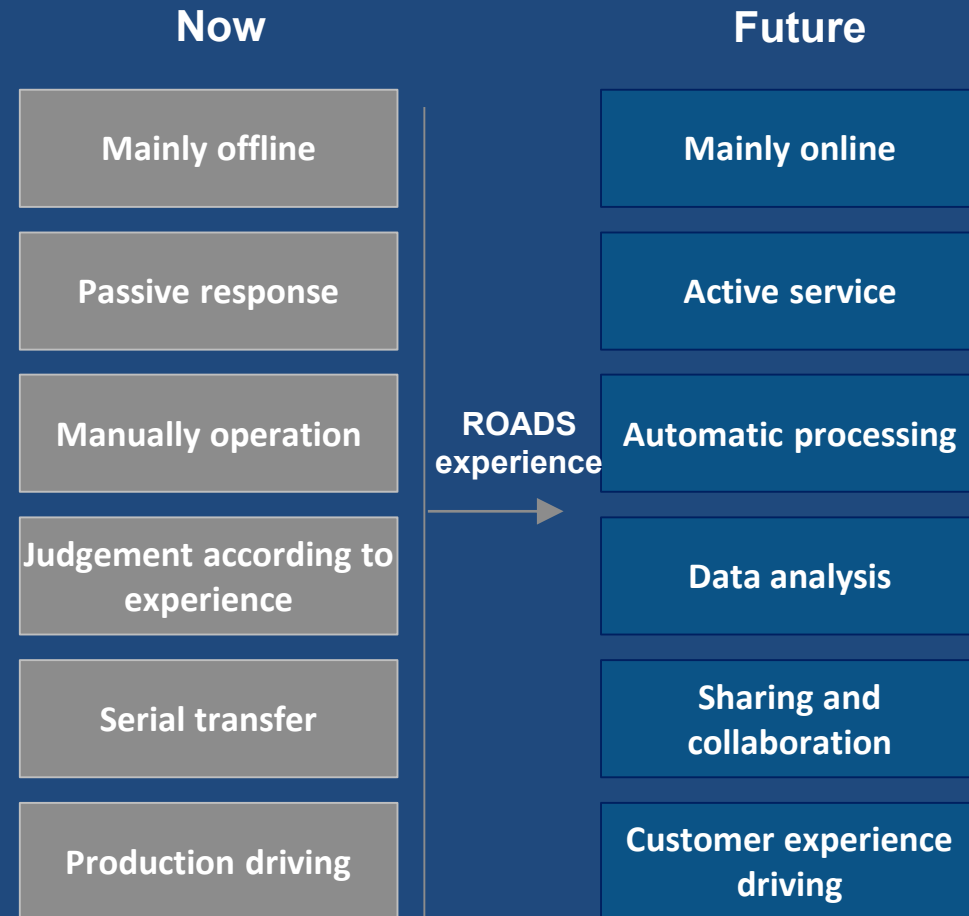


Campus Network

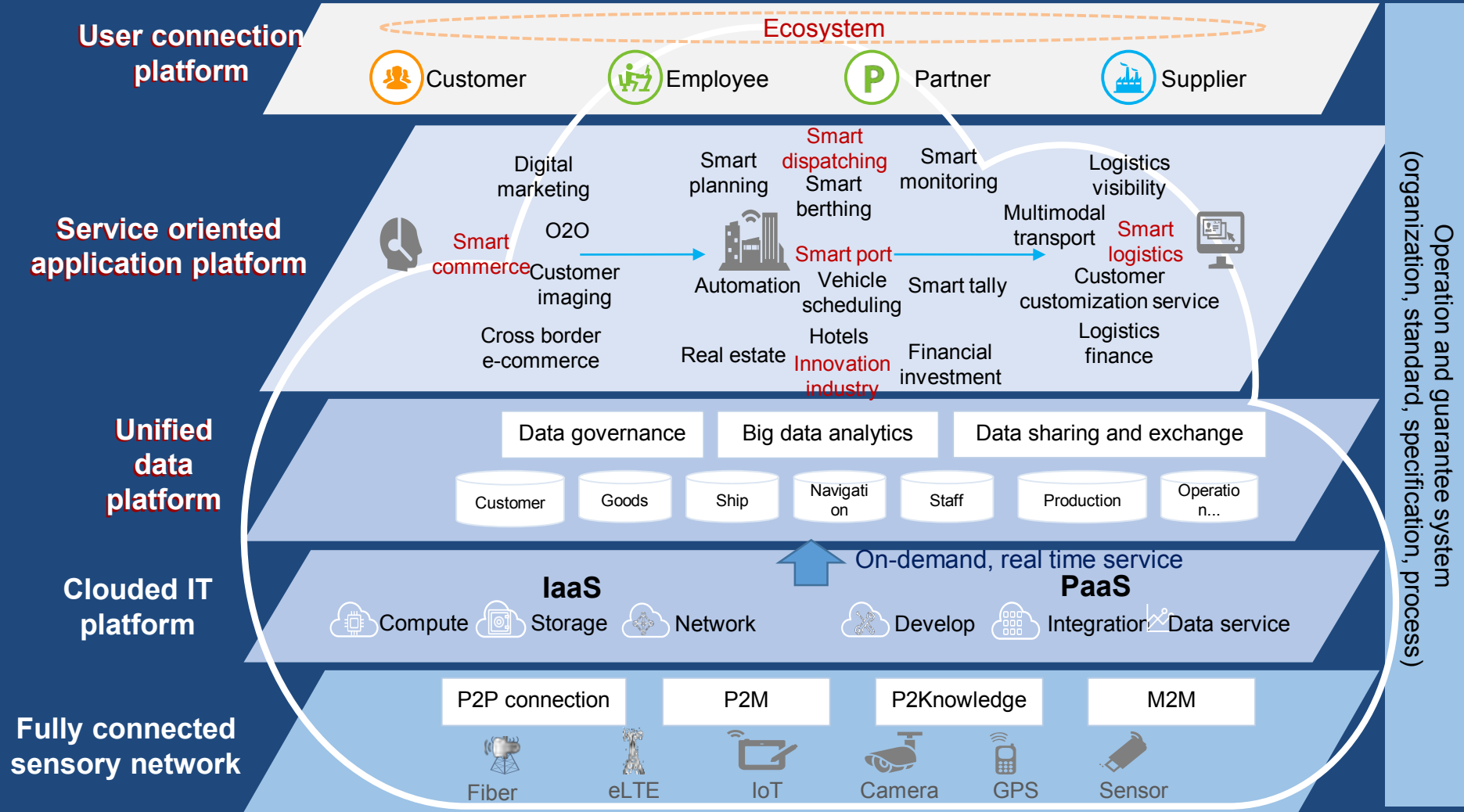
IP Cameras

Consulting & Planning for Smart Yingkou Port in China

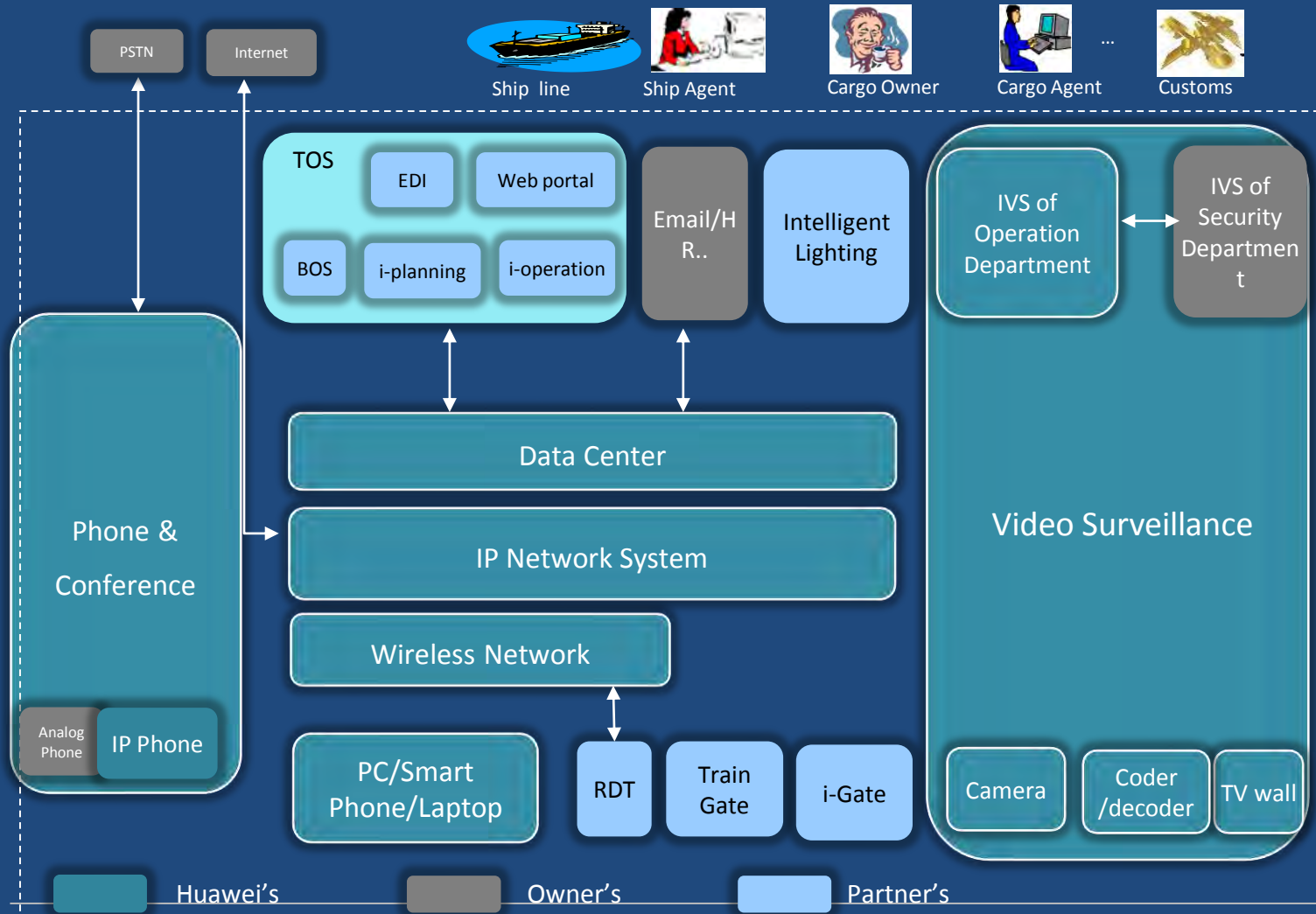
- Rank 23rd worldwide(TEU) , 9th in China mainland.
- 5 port areas, 112 square kilometers
- 370 million tons cargo throughput(5.7% increase YoY), 6.2 million TEUs(3.2%) in 2017.



IT Architecture Blueprint Design for Yingkou Port



Huawei E2E ICT Solution for Mariel Port in Latin America



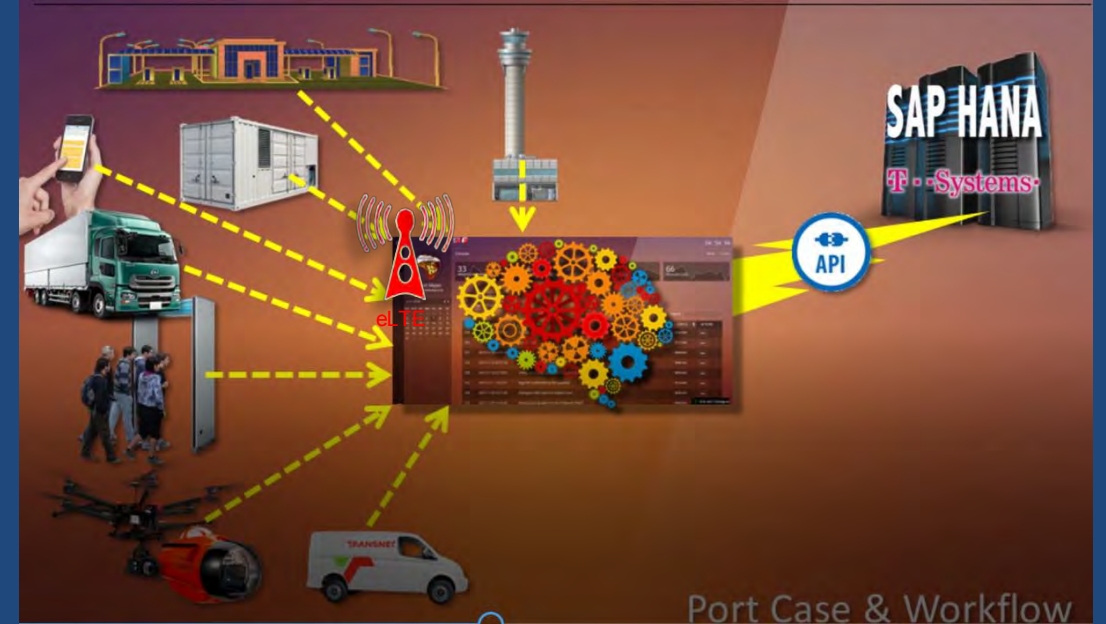
Remarkable Delivery

- **4 Weeks:** Data center implementation
- **1 Month:** Port hardware installation
- **3 Months:** All system implementation
- **2 Months:** Port opening ceremony was held in advance



Everything went perfect! Should be soon on World news. Thank you for all your support.
-Charles, CEO of the Cuba Mariel Port

Huawei eLTE for Durban Port, the Largest Port in Africa



“It (eLTE smart port) allows us to **be much smarter with capacity planning, giving everyone the same information**, and allows us to **predict and create alerts whenever there are any disruptions in the value chain**”

-- By CIO of TNPA: Lentle Mmutle

*3 eLTE site @1.8GHz TDD in Phase1, Phase2 is on going to expanded to other ports

Benefit :

- More efficient :
- Tuck turnaround time from **days to hours**.
- Operational insights from a **24-hour lag time to real-time**,
- Shifting Port Asset Identification **from hours to minutes**.
- More safety: Fault detection and incident management **from manual to Automate**

Huawei Cloud support Shanghai Port for Automatization



- The world's largest unmanned port operates 24 hours a day.
- Seven container berths are located along the 2350-meter shore, delivering a capacity of 6.3 million standard containers per year.
- Huawei eLTE helps Shanghai Port Group to build a world-class automation port
- Based on Huawei cloud, GangHangZhongHeng is the public service of Wechat service for Shanghai & Changjiang public customers, provides "one-stop" service for global real-time tracking of container ships, containers and cargoes in Shanghai. At present, registered enterprises Nearly a thousand real-name users, the number of individual users over million



THANK YOU

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