



China's Container Rail-Water Transport Development

中国集装箱铁水联运发展





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试运行期（20世纪50年代—1977年）

- 1956年5月，我国首次利用铁路箱试办了铁路与水路的集装箱联运
- 1956年7月，因故告停

创业期（1978-1985年）

- 探索发展中国集装箱运输的途径，对发展集装箱多式联运统一了思想
- 1984年9月，上海至东北间正式开通集装箱水陆联运线，这是我国第一条经由铁路—海运—公路—铁路的集装箱水陆联运线

Shakedown period
(1950s—1977)

- In May 1956, China first use rail box to run container rail-water transport
- In July 1956, it was stopped for some reason.

Start-up period
(1978-1985)

- Explored the development route of China's container transport, and unified the thinking of the development of container multimodal transport
- In September 1984, the first container rail-sea-road-rail transport route was run from shanghai to the Northeast



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规范期 (1986-
2000年)

- 1988年12月，国际集装箱多式联运“工业性试验项目”立项
- 1990年4月，《国际集装箱多式联运管理办法（试行）》等相关规定发布，体系建设逐渐规范化
- 1992年发布亚欧大陆桥运输的第一个法规性文件并正式开始国际集装箱铁水联运
- 1997年3月，《国际集装箱多式联运管理规则》发布，规范操作层面，后被废除

成长期 (2001
至今)

- 2011年，交通运输部、原铁道部发布了《《关于开展集装箱铁水联运示范项目的通知》，首批选定了6条集装箱铁水联运通道开展示范项目
- 2012年，国家集装箱海铁联运物联网应用示范工程正式启动

Normative period
(1986-2000)

- In December 1988, international container multimodal transport "industrial pilot project" was projected
- In April 1990, the < international container multimodal transport management approach (Trial) > and other relevant provisions were issued, and the system construction was gradually standardized
- In 1992, the first regulatory documents of the Eurasian Continental Bridge transport was issued and the international container rail-water transport was officially started
- In March 1997, <the International container multimodal transport management rules > was issued, the standard operation level, however being abolished later

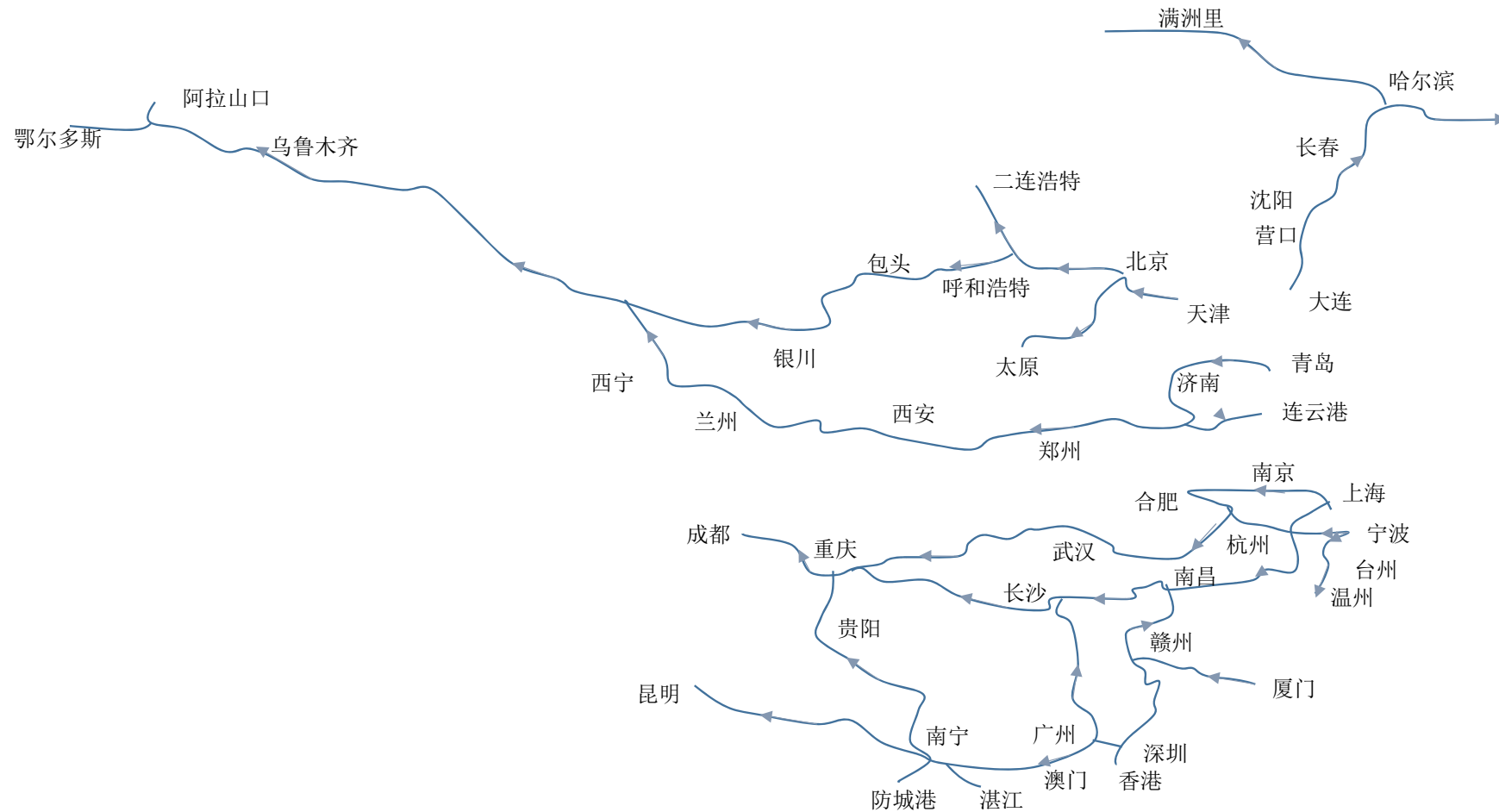
Growing period
(2001 to now)

- In 2011, the Ministry of transport, the Ministry of Railways issued a notice on the development of container rail-water transport demonstration project, which chose the first batch of 6 container rail-water transport channels to carry out demonstration projects
- In 2012, the national container sea-rail transport networking application demonstration project was officially launched



8 Container Rail-Water Transport Channels

八条集装箱铁水联运通道



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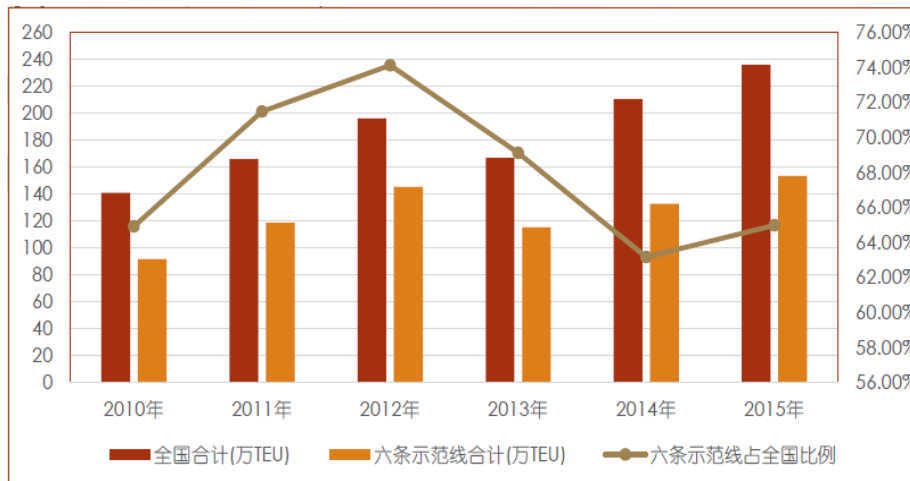
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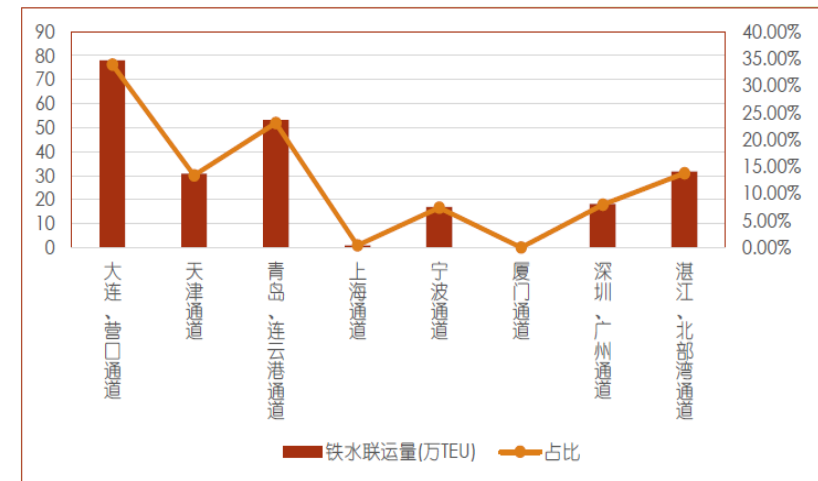
The volume

Now, China has initially formed a certain size of eight container rail-water transport channels, and the volume grew into 2.366 million TEU in 2015 from 1.41 million TEU in 2010, on an average annual growth of 10.9%. In 2015, 6 container rail-water transport lines completed a volume of 1.534 million TEU, accounting for 65% of the country's total.



运量情况

目前, 中国国内已初步形成了具有一定规模的八条集装箱铁水联运通道, 集装箱铁水联运量从2010年的141万TEU增长到2015年的236.6万TEU, 年均增长10.9%。2015年6条集装箱铁水联运示范线完成集装箱铁水联运量153.45万TEU, 占全国总量的65%。





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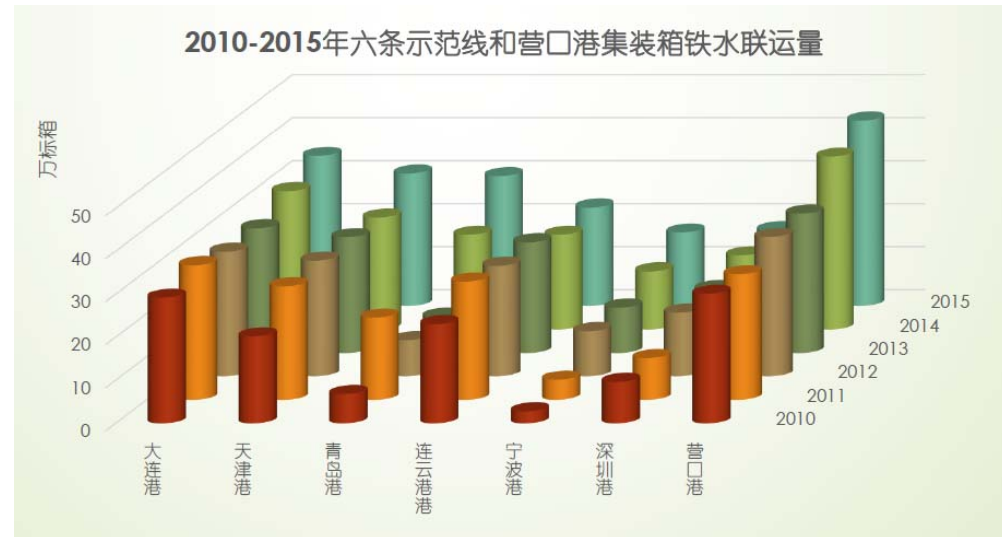
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The container rail-water transport volume of 6 demonstration lines to Yingkou Port from 2010 to 2015



7 ports container rail-water transport status:

- ❑ The container sea-rail transport volume before the end of 2011 kept increasing obviously;
- ❑ From 2012 to 2015, NE area's container sea-rail transport kept steadily, while Qingdao port and Lianyungang port from middle area dropped sharply in the volume;
- ❑ Ningbo port and Shenzhen port in middle-south area kept rising stably in the volume.

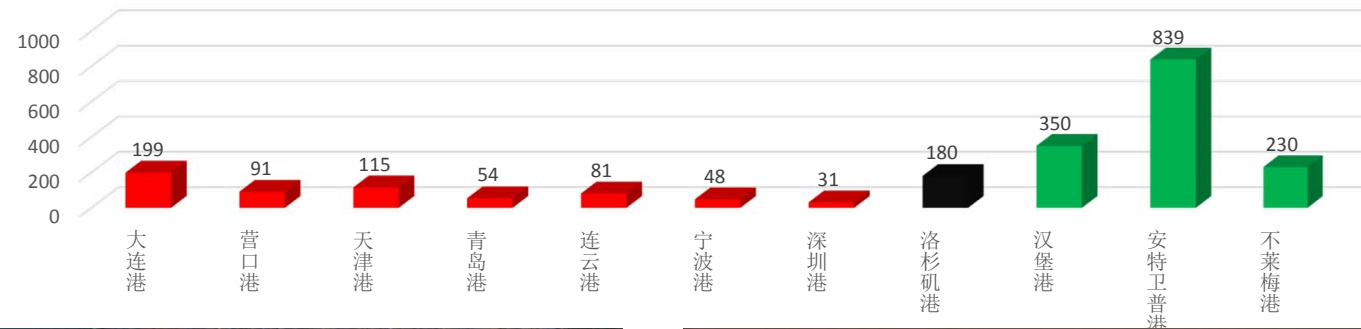
7个港口集装箱铁水联运情况:

- ❑ 2010-2011年底主要港口海铁联运集装箱量都处于明显的上升态势
- ❑ 从2012年到去年底，东北地区海铁联运集装箱发展比较稳定，而中部沿海的连云港和青岛则处于明显的下降或大幅波动态势。
- ❑ 中南部港口宁波和深圳港海铁联运集装箱一直处于稳步的上升态势。



基础设施情况 (Infrastructure conditions)

我国开展集装箱海铁联运港口进港铁路长度
China container sea-rail transport port railway length
单位: 公里(km)



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装备情况 (Equipment conditions)

中国



国外



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经营人情况 (Operator situation)

围绕集装箱海铁联运业务，中国已经形成大致四种类型的多式联运经营人。
Surrounding the container sea-rail transport services, China has formed roughly four types of the multimodal transport operator.

- 以航运为主营业务的海铁联运经营人——中国远洋海运集团有限公司
➤ Such sea-rail transport operators who take shipping as main business——China cosco shipping group
- 以货运代理和无船承运为主营业务的海铁联运经营人——中国外运长航集团有限公司
➤ Such sea-rail transport operators who take cargo agent & NVOCC as main business——SINOTRANS&CSC
- 以港口为主营业务的海铁联运经营人——大连港集益物流有限公司
➤ Such sea-rail transport operators who take port as main business——Dalian Jiyi Logistics Co., LTD
- 以铁路为主营业务的海铁联运经营人——中铁集装箱运输有限责任公司
➤ Such sea-rail transport operators who take railway as main business——China Railway Container Transport Co., Ltd.

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政策情况（Policy situation）

- 各地根据各自情况和特点，出台不同政策和措施，促进铁水联运发展。
- 宁波市人民政府出台了加快宁波市海铁联运发展财政扶持政策实施办法-每年1000万元
- Ningbo government issued the measures for speeding up the implementation of the financial support policy for the development of Ningbo sea-rail transport- annually 10 million
- 义乌市出台了关于加快发展现代物流业的若干意见
- Yiwu government issued the several opinions on accelerating the development of modern logistics industry
- 上饶市政府从2014年开始，对上饶—宁波“海铁联运天天班”每年给予补贴，连续支持三年-每年100万元
- From the beginning of 2014, Shangrao municipal government gives subsidies to the “sea-rail transport day-day train” from Shangrao– Ningbo for three consecutive years- annually 1 million
- 江西省商务厅对上饶-宁波“海铁联运天天班”给予资金补助-每年不超过300万
- Jiangxi Provincial Department of Commerce gives subsidies to the “sea-rail transport day-day train” from Shangrao to Ningbo- Less than 3 million annually
- 深圳港航产业发展财政资助资金管理办法
- Shenzhen port industry development finance fund subsidizing management approach
- . . .

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Existing Problems

- 1、Transport prices lack of comparative advantage
- 2、Container rail-water transport is weak in fundamental infrastructure
- 3、Local government's support policy cannot continue
- 4、Container rail-water transport needs to integrate standards and norms
- 5、Container rail-water transport's operation modal needs further improvement

存在的问题

- 1、运输价格缺乏比较优势
- 2、集装箱铁水联运基础设施相对薄弱
- 3、地方政府扶持政策难以延续
- 4、集装箱铁水联运标准、规则尚不统一
- 5、集装箱铁水联运经营模式有待进一步完善



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General evaluation

- 1、 Container rail-water transport volume increases steadily
- 2、 Container rail-water transport infrastructure being improved gradually
- 3、 Container rail-water transport service level increases steadily
- 4、 Container rail-water transport information technology construction continues to accelerate

总体评价

- 1、 集装箱铁水联运量稳步提升。
- 2、 集装箱海铁联运基础设施正在逐步改善。
- 3、 集装箱海铁联运服务水平稳步提升。
- 4、 集装箱海铁联运信息化建设不断加快。



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1、State key industrial experiment project - "international container transportation system (multimodal transport) industrial test"
国家重点工业性试验项目——“国际集装箱运输系统（多式联运）工业性试验”

Chaired by the Ministry of Transportation, cooperated by the WTI and Shanghai government office, with more than 50 organizations of about 2000 people, for 2 years of preparation, then carried out formally in March 1989, finally identified in September 1991.

由交通部主持，交通部水运科学研究所和上海市人民政府办公室承担，50多个单位2000余人，历经2年前期准备，89年3月正式执行，91年9月国家鉴定验收。

➤ Meaning and function

- The international container transportation in our country had been on a new step.
- It brought the opportunity and hope for our country to solve the normalization and modernization problem of international container transportation.
- Although there were still problems to be solved, but finally found out the crux of the problem and the solution

➤ 意义和作用

- 表明我国的国际集装箱运输已跨上一个新台阶
- 为我国从全局上解决国际集装箱运输的正规化现代化带来了契机和希望
- 虽然还有问题未能全部解决，但也摸清了症结所在和解决途径



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2、Container rail-water demonstration project 集装箱铁水联运示范项目

In 2011, the Ministry of Transport, the former Ministry of Railways jointly issued a notice on the development of container rail-water transport demonstration project, and firstly chose 6 container rail-water transport channels to carry out demonstration projects.

2011年，交通运输部、原铁道部共同发布了《关于开展集装箱铁水联运示范项目的通知》，首批选定6条集装箱铁水联运通道开展示范项目。

Main purpose

Innovative container rail-water transport operation
management mode

Improve the efficiency and benefit of container rail-water
transport

Enhance the "door to door" service quality of container
transportation

Promote the comprehensive and rapid development of
container rail-water transport

总体目标

创新集装箱铁水联运运营管理模式

提高集装箱铁水联运运输效率和效益

提升集装箱运输“门到门”服务质量

促进集装箱铁水联运全面快速发展



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- The first 6 container rail-water transport channels:
- 项目所选首批集装箱铁水联运通道:

大连—东北地区

天津—华北、西北地区

青岛—郑州及陇海线沿线地区

连云港—阿拉山口沿线地区

宁波—华东地区

深圳—华南、西南地区



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➤ **The main demonstration includes :**
➤ **主要示范内容包括:**

- Form cooperation mechanism of Rail-Water transport
- Improve infrastructure planning and construction
- Realize the sharing of the information of Rail-Water transport
- Cultivate and develop the main body of the Rail- Water transport market
- Apply for local government support policies
- Realize the standardization of operation process and related technology
- 形成铁水联运合作机制
- 完善基础设施规划与建设
- 实现铁水联运信息共享
- 培育和发展铁水联运市场主体
- 争取地方政府扶持政策
- 实现操作流程和相关技术标准化

In September. 2011, the Ministry of transportation and the Ministry of Railways held a meeting in Lianyungang. In May.2016, the Ministry of transport and Railway Corporation held an advance meeting of rail-water & intermodal transport in Dalian.

2011年9月，交通运输部和原铁道部在连云港召开了现场推进会；2016年5月，交通运输部和铁路总公司在大连召开了铁水联运暨多式联运现场推进会



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3、National major applied demonstration project of “Internet of things” 国家物联网重大应用示范工程

- In 2012, the National Development and Reform Commission and the Ministry of Finance jointly issued a replied document about “National Development and Reform Commission General Office and the Ministry of Finance General Office agreed to carry out the National major applied demonstration project of “Internet of things” in 7 areas which included the rail-water transport.”
- 2012年国家发改委和财政部联合下发“国家发展改革委办公厅、财政部办公厅关于同意在海铁联运等七个领域开展国家物联网重大应用示范工程的复函”
- The Ministry of transport in the same year on August 13 issued the "General Office of the Ministry of transport regarding the announcement of the demonstration project's construction of container sea-rail transport with the application of “Internet of Things” ", which indicated the official start of national container sea-rail transport demonstration project with the application of “Internet of Things” .
- 交通运输部于同年8月13日下发了“交通运输部办公厅关于开展集装箱海铁联运物联网应用示范工程建设的通知”，国家集装箱海铁联运物联网应用示范工程正式启动



中国集装箱铁水联运发展历程
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➤ Main task

- Construct the perception system of container sea-rail transport Internet of things
- Explore a new model of information coordination in container sea-rail transport
- Strengthen the mechanism innovation of container sea-rail transport
- Speed up the establishment of the standard specification system for the container rail-water transport Internet of things

➤ 主要任务

- 构建集装箱海铁联运物联网感知体系
- 探索集装箱海铁联运信息协同新模式
- 加强集装箱海铁联运机制创新
- 加快建立海铁联运物联网标准规范体系

➤ Major progress

- Study and work out 32 data message standards
- Lianyungang port and Ningbo port basically realized the dynamic tracking and inquiry of the transit information, and the electronic of requiring、loading and unloading vehicle and so on, and improved the planning of the operation of the port railway box
- The 6 ports has basically completed the main work of demonstration project of the Internet of things

➤ 主要进展

- 研究和编制了32项数据报文标准
- 连云港港和宁波港基本实现了班列集装箱在途信息的动态跟踪和查询，请车、装卸车作业的电子化等，提高了港口铁路箱操作的计划性
- 6港已基本完成了物联网示范工程的主要工作

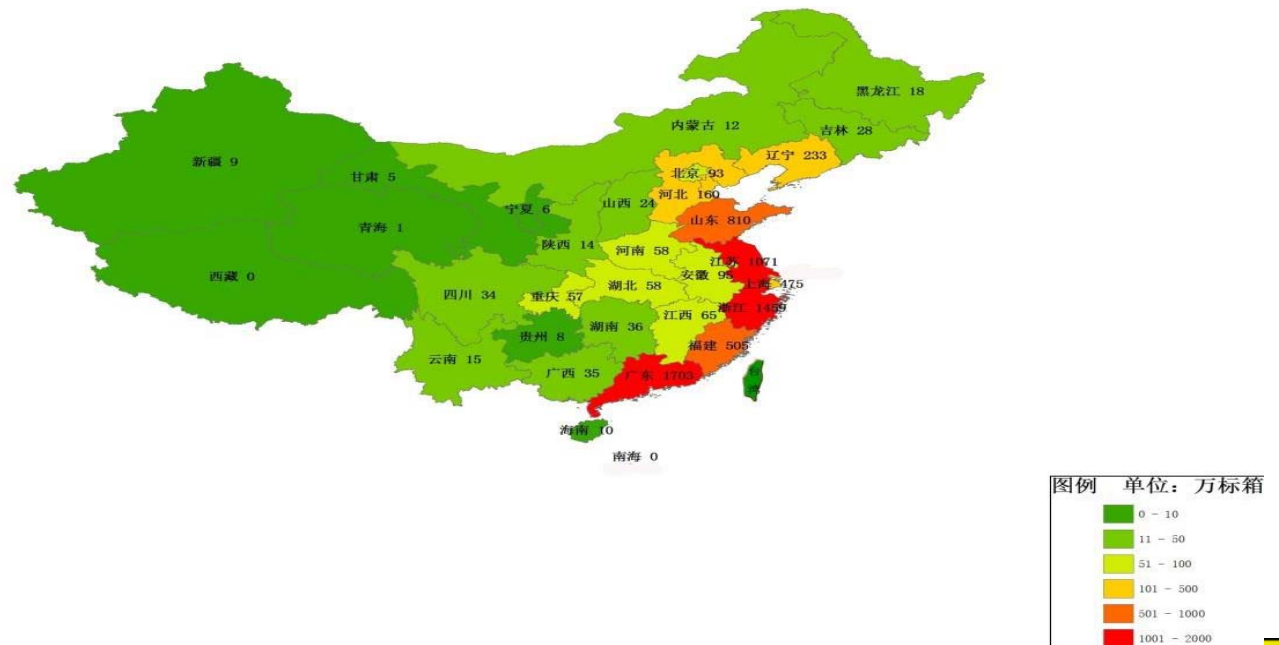


Demand analysis
需求分析

Waterway foreign trade's heavy container's import and export volume was 73 million TEUs. Among them, twelve coastal provinces accounted for 67.7 million TEUs, accounting for 92.6%; the central and Western Provinces only had 5.4 million TEUs, accounting for 7.4%. Of the Green Zone, 1.17 million TEUs, accounting for 1.6%.

2013年全国水运外贸7323万标箱。其中，沿海十二个省市占6779万标箱，92.6%；中西部省份仅有544万标箱，占7.4%。绿色区域，117万，1.6%。

2013年我国水运外贸集装箱重箱分布情况



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The distribution characteristics of the source of the foreign trade's heavy container of rail-water transport in China
中国集装箱铁水联运外贸重箱箱源分布特点

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与沿海港口距离(公里)	生成量 (万TEU)	比重	发展海铁联运
总计	7323	100%	
<100	5550	75.8%	没有优势 (no advantage)
100-300	1100	15.0%	有政府补贴 · 有优势 (advantage with government subsidies)
300-500	125	1.7%	有政府补贴 · 有优势 (advantage with government subsidies)
>500	548	7.5%	非常有优势 (advantage)





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Demand forecast 需求预测

- (1) 基于当前市场环境保守预测**2020**年我国集装箱铁水联运市场需求约为**260万TEU**。
Based on the current market environment, from a conservative prediction view, the demand of container rail-water transport market of China in 2020 is about 2 million 600 thousand TEU.
- (2) 市场环境重大改善后乐观预测**2020**年我国集装箱铁水联运市场需求约为**850万TEU**。
After a significant improvement for the market environment, from an optimistic forecast view, in 2020 China's container rail-sea transport market demand is about 8 million 500 thousand TEU.



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Trend

Container sea-rail transport volume will still increase steadily

1

Middle and short distance container sea-rail transport will be a bright spot of development

2

Multi joint and win-win cooperation will guide sea-rail transport operator to develop better

3

趋势

• 集装箱海铁联运量仍将稳步增长

• 中短途集装箱海铁联运将是发展亮点

• 多方联手、合作共赢将引领海铁联运经营人做大做强

中国集装箱铁水联运将伴随着国家多式联运体系的建设而快速发展



交通运输部水运科学研究院
China Waterborne Transport Research Institute



Thank you!

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