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> Tel:+86(10)-58981000 Fax:+86(10)-58981000 Web:www.hollysys.com



Customers in mind with sincerity

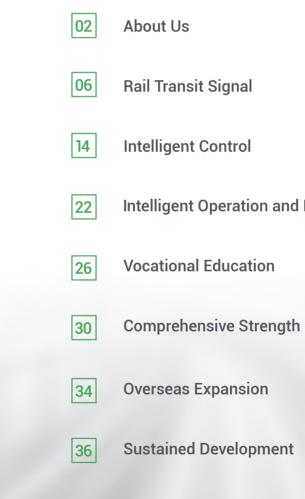
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TRANSPORTATION INTELLIGENCE

www.hollysys.com



CONTENTS





Intelligent Operation and Maintenance

BEIJING HOLLYSYS CO., LTD. 1

ABOUT US

Founded in 1993, HollySys is a leading supplier of intelligence solutions in China and abroad. HollySys is headquartered in Beijing with R&D, production, and service bases in Beijing, Hangzhou, Xi'an, and Singapore, and local branches in major cities in China, as well as offices in India, Malaysia and Indonesia. HollySys business consists of industrial intelligence, transportation intelligence, and food and pharmaceutical intelligence, covering the main industries for the global economy and the people's livelihood. HollySys has always been pursuing continued innovation and R&D since the inception. By offering more reliable, secure, and intelligent products, as well as the full cycle services and customized solutions for our customers, we help our customers to improve their market competitiveness.

In transportation intelligence, HollySys, as the world provider for traffic control system solution and service, has provided solutions and products of train control, intelligent control, intelligent operation and maintenance, and vocational education for users in mainline railway, suburban railway, urban rail transit, etc. HollySys has won many awards or honors from national, provincial and national industry associations. It has presided over or participated in dozens of major scientific research projects of National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, China State Railway Group Co., Ltd. (CHINA RAILWAY), National Railway Administration and Beijing Municipal Government, and formulated a number of national standards in the field of rail transit.

By the end of June 2024, 3,116 sets of HollySys' ATP have been installed on various Hexie (Harmony) and Fuxing EMU trains "running in the vast land of China", while 1,253 sets of HollySys' ground train control system have been applied to 76 main-line railways, including Zhengzhou-Xi'an, Guangzhou-Shenzhen-Hong Kong, Beijing-Shijiazhuang-Wuhan and Beijing-Zhangjiakou high-speed railways, with a total length of more than 15,000 km.

Relying on its intelligent control technology advantages and accumulated practical experience, HollySys adheres to independent innovation, and focuses on developing the new technology for industry developments, so as to provide users with more reliable, safer and more intelligent technologies and products to satisfy the requirement of various application scenarios and to upgrade the intelligent control experience. Its performance covers 59 urban rail transit lines in 17 cities, including Beijing, Shenzhen, Guangzhou, Hong Kong, Singapore and etc.

HollySys continues to empower the industry by introducing intelligent operation & maintenance, and vocational education solutions based on its industry advantages, technology accumulation and research capability, with an aim to transform advanced industry technologies into resources for operation and maintenance and education, and to constantly explore innovative technologies in practice.

Over **35,000 Customers Worldwide**

Over **45,000** Sets of Control System



Rail Transit Signal

→ Railway Basic Signalling System Solution

- \rightarrow ETCS LEVEL 1 Solution
- \rightarrow ETCS LEVEL 2 Solution
- \rightarrow PTC System Solution
- \rightarrow Train Control System Solution for High-speed Railway (up to 250km/h)
- \rightarrow Train Control System Solution for High-speed Railway (up to 350km/h)
- \rightarrow Next Generation Train Control System Solution for High-Speed Railway
- ightarrow ATO Solution For High-Speed Railway
- \rightarrow Signalling Solution For Industrial Railway
- \rightarrow Medium and Low Traffic Capacity Signal System Solution
- \rightarrow CBTC Solution
- ightarrow Train Autonomous Circumambulate System Solution

Intelligent Operation and Maintenance

→ Intelligent Ground Signal Workshop
 → Intelligent On-board Workshop
 → Intelligent Overhaul Solution

 \rightarrow

Customers In Mind With Sincerity

Intelligent Control

\rightarrow SCADA System Solution

- \rightarrow Electromechanical Intelligent Control Solution
- → Integrated Management and Control Solution for Integrated
 - Automation and Patrol Inspection in Intelligent Substation
- → Medium and Low Traffic Capacity Weak Current Integrated
 - Intelligent Management and Control Solution
 - Green Intelligence Integration Management and Control Solution
 - for Large-scale Comprehensive Transportation Hub
- → Traffic Incident Detection Solution
- → Airport Baggage Sorting System Solution
 - Airport Boarding Bridge System Solution
 - Passenger Security Check Passage System Solution

Vocational Education

 \rightarrow Industry College \rightarrow Training Base \rightarrow Vocational Training



RAIL TRANSIT SIGNAL

Train control system is one of the core technical equipment of high-speed railway, and HollySys has mastered core technology of train control system with full independent intellectual property rights through introduction, digestion, absorption and independent research and development, and relevant systems and products developed and designed by the company have passed the highest safety level certification (SIL4) of European authoritative institutions. The assembly of train control on-board system on Fuxing EMU and the application of train control ground system on Beijing-Zhangjiakou high-speed railway mark that the industrial application of HollySys railway signal equipment has reached the world leading level.

The computer based interlocking system, track circuit system and balise transmission system, researched and developed by HollySys for years, have been successfully used in multiple railways at home and abroad. At the same time, HollySys has launched innovation schemes on the railway control system, in order to meet diversified demands of railway transportation and to fit various operation scenarios, through which HollySys improves the operation efficiency to a greater extent and boosts the integrated innovation of new technology and rail transit industry, thus promoting the high-quality development on the railway.



→ The first 250km/h high-speed rail train control system engineering project in China: Hefei-Nanjing Line



→ One of the first two 350km/h high-speed rail train control system engineering projects in China: Zhengzhou-Xi'an Line



→ Research and development of ZPW-2000S track circuit system, which was applied to Chengdu-Ya'an Section Project of Sichuan-Tibet Railway



→ ZPW-2000S jointless track circuit system is developed and applied in Guiyang Loop Line Railway (southwestern loop)



→ Initially developed the intercity rail ATO System, successfully applied to Foshan-Zhaoqing Intercity Line



→ As the signalling system integrator, has completed Guangzhou-Shenzhen-Hong Kong Express Rail Link (Hong Kong section) signalling project and won the MTR gold quality award



→ Construction Of the flrst domestic signal system project of Kunming Airport Rapid Transit Line adopting CBTC system



→ Initially developed 350km/h high-speed rail ATO System, successfully applied to Beijing-Zhangjiakou Line



→ The first batch participating in the research and development of new generation train control system, which was successfully applied in Ruoqiang-Hetian Railway



→ GOA4 automatic unmanned (FAO) system that is independently researched and developed was applied to Chongqing Airport Rail Link project

RAIL TRANSIT SIGNAL PRODUCTS

ONBOARD ATP+ATO















3316 sets of ATP **Over 50%** market share in China

1253 sets of Trackside Train Control Systems applied to 76 mainline railways, with an operating mileage of more than 15000 km Over 30% market share in China

196 sets of Computer Interlocking Systems widely applied to mainline railways and industrial and mining railways

ZPW-2000S Track Circuit products applied to **22** railways worldwide

Serving 59 metro lines across 17 cities worldwide

CTCS-2 Trackside Train Control System
 CTCS-3 Trackside Train Control System
 Track Circuit System
 Balise





INTELLIGENT CONTROL

In order to meet customers' needs for better travel experience and low operating cost, HollySys has formed a complete intelligent





 \rightarrow The first Traffic Integrated Automation System(TIAS), was applied to China's first fully-automatic unmanned subway, Beijing Yan-Fang Line



→ Implemented overall solution of intelligent urban rail to Taipinggiao Demonstrative Station of Beijing Subway Line 19 for the first time and pioneered in iBAS smart mechanical and electrical management platform based on EIC



→ The first ISCS platform software in China, MACS-SCADA, applied to Beijing Subway Line 13



→ Completed the main control system project of Hong Kong Express Rail Link(XRL) of the Mass Transit Railway(MTR)



→ The LK series domestically produced large-scale PLC has been successfully applied to the BAS system of the entire Beijing Metro Line 14



ightarrow The first domestic comprehensive monitoring system for urban rail transit based on a network level "integrated cloud platform" has been successfully applied in Hohhot Metro Lines 1 and 2



 \rightarrow Integrated automation and inspection control system for intelligent substations based on EIC, applied to Dalian Metro Line 1



→ Undertaking the construction of the main control system software and PLC project of the first ART (Autonomous Rail Rapid Transit) line in Sarawak, Malaysia

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INTELLIGENT CONTROL PRODUCTS

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SCADA SYSTEM

EDGE INTELLIGENCE CONTROLLER



LK SERIES LARGE SCALE PLC



LX/LXS SERIES NEW GENERATION OF HIGH-END PLC



TRANSIT OPERATING SYSTEM (TOS)

 Contract
 Contract

EDGE INTELLIGENCE AGENT



LE SERIES COMPACT PLC



LARGE COMPUTING POWER MODULE



MollySys

SCADA and Signalling System serving 59 subway lines

in **17** cities worldwide

EIC and PLC serving **35+** projects in subway, highway and civil aviation

Beijing Subway

Line 13 Line 10 (Phase1) Yizhuang Line Changping Line (Signalling) Line 10 (Phase2) Line 8 (Phase2) Line 14 Link line of Changping Line and Line 8 Yanfang Line Line 8 (Phase3) New Airport Express Line 17 Line 19

Tianjin Metro

TianJin Railway Station Tianjin West Railway Station Yujiapu Railway Station Line 5 Fast track of Binhai New Area(PSCADA)

Lanzhou Subway

Line 1 (Phase1) Line 2

Qingda

Line 13

Dalian Metro

Line 3 (PSCADA) Jinzhou-Pulandian Puwan New Area thtercity (PSCADA)

Chengdu Metro

Line 10 Line 5 Line 30 (Communication) Ziyane Line (Communication)

Wuhan Metro

Dijiao - Hankou North (PSCADA) Line 1 (PSCADA) Line 4 (PSCADA) Line 8 (PSCADA) Line 21 (PSCADA)

Kunming Subway

Line 3 Line 5 Kunming Changshui International Airport (Signalling)

Guangzhou Metro Line 3 Line 5

Line 4 Line 3 (North Extension)

Hohhot Metro Line 1 Line 2

G

Chongqing Subway Airport Rail Link

Shenzhen Metro

Line 1 (Phase1) Line 1 (Continued Construction) Line 2 (Phase1) Line 2 (East Extension) Line 2 (Phase 3) Line 4 (Phase2) Line 6 Branch Line 6 Line 8 Line 11 Line 14 Gangxia North Transportation hub

Hong Kong MTR

8

SMRT

Guangzhou - Shenzhen - Hong Kong XRL Hong Kong East Rail Line, Tuen Ma Line, and Tung Chung Line Extension

Singapore Metro

Singapore Thomson-East Coast Line

Malaysia Metro

The Kuching Urban Transportation System's Blue and Red Line in Sarawak

SCADA, Signalling Solution Edge Intelligent Controller (EIC), Programmable Logic Controlle (PLC)

Malaysia 😳

Lanzhour

Chengdu 🥥 🖲

EIC Traffic Reference

Demonstration Zone

Beijing Subway Line 19 iBAS Intelligent Patrol Inspection System for Substation of Dalian Metro Line 1 Electromechanical Intelligent Control System of Chongqing Rapid Transit Project Vehicle Intelligent Operation and Maintenance System of Chongqing Rapid Transit Project Chongqing Airport Boarding Bridge System Chongqing Airport Baggage Sorting System Intelligent Operation and Maintenance System of Kunming Metro Line 5 Shenzhen Airport Line Smart Station System Lanzhou Subway Line 2 Smart Station Demonstration Project Zhejiang Gaoshuwu Tunnel Management and Control Project Zhejiang Gaoxin Experimental Simulation Tunnel Management and Control Project Xuegongling Tunnel Management and Control Project of Luliang South Expressway Real-time Monitoring and Collaborative Control Project of Guizhou Huitong Highway Tunnel Electromechanical Equipment Video Incident Detection Project of Guizhou Kaili Tunnel Vehicle-road Collaboration Project of Yizhuang National Self-driving

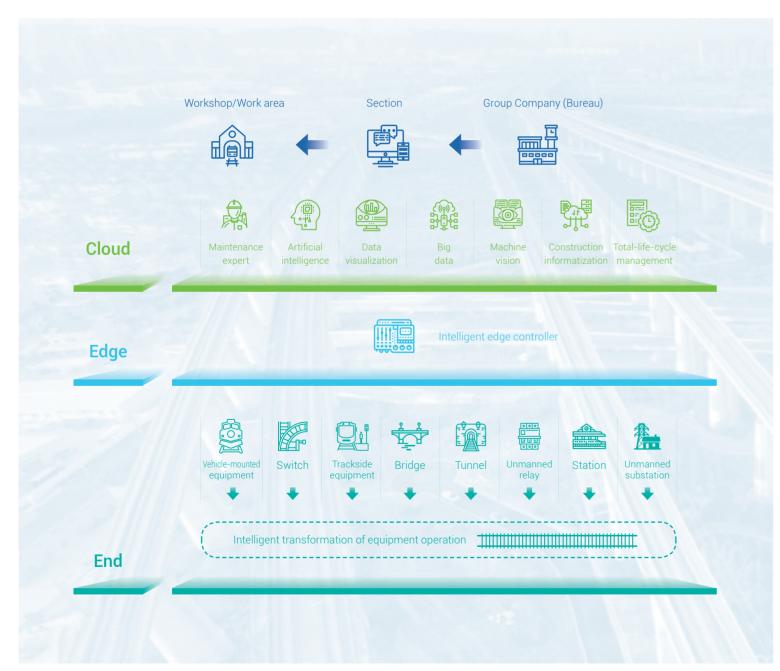
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PLG Traffic Reference	
PLC Traffic Reference	
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Intelligent **Operation and** Maintenance

Create intelligent overall operation and maintenance solution integrating communication & signalling works, track maintenance and power supply based on "cloud-edge-end"

FOR reducing operating costs, improving efficiency, and ensuring operation safety, HollySys, combining its own operation and maintenance experience in industrial intelligent factory projects and rail transit industry, has built "cloud-edge-end" based solutions for the intelligent ground signal workshop,intelligent on-board workshop,and intelligent overhaul solution. The solution puts the industrial internet platform and edge computing platform as its core, while integrating advanced technologies such as cloud computing, IoT, big data, BDS, 5G and AI, etc, which makes railway operation and maintenance safer, more efficient, and more environmentally friendly, and helps the intelligent transformation of railway operation and maintenance work.

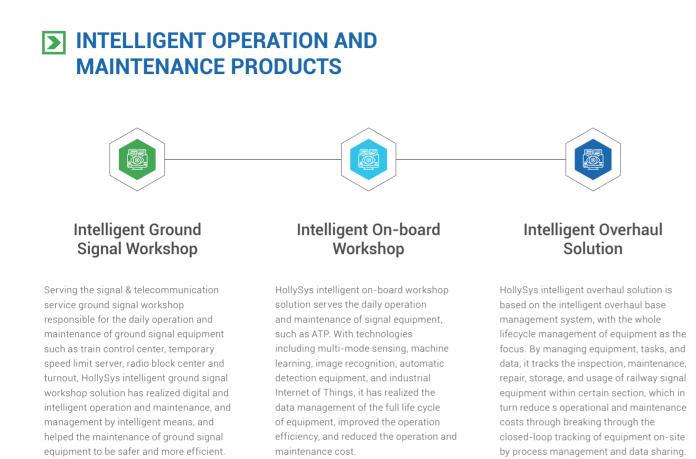
> 51 application cases of Railway intelligent operation and maintenance products in China





- On-board signal monitoring product
- Intelligent machine room product
- Auxiliary monitoring products of traction substation
- Material management product

- Ground signal equipment monitoring product
- Intelligent test platform products
- Production management product
- Intelligent maintenance base product



> Smart logistics



Roller AGV

Top up traction AGV

> Intelligent operation





Wheel diameter programming

> Intelligent detection







Microcomputer test table for power supply panel

Full lifecycle management

system

Intelligent test platform for high-voltage pulse equipment

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Intelligent workshop production management system





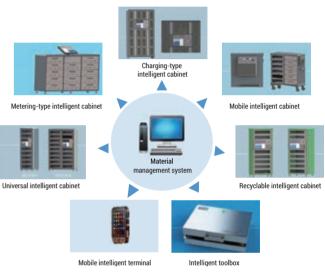




Drum type assembly line

Intelligent suspension conveyor line

> Intelligent warehousing



Elevated warehouse Compact cabinet Material cabinet



Auxiliary monitoring system



Unmanned robots



Intelligent detection station



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Material management system

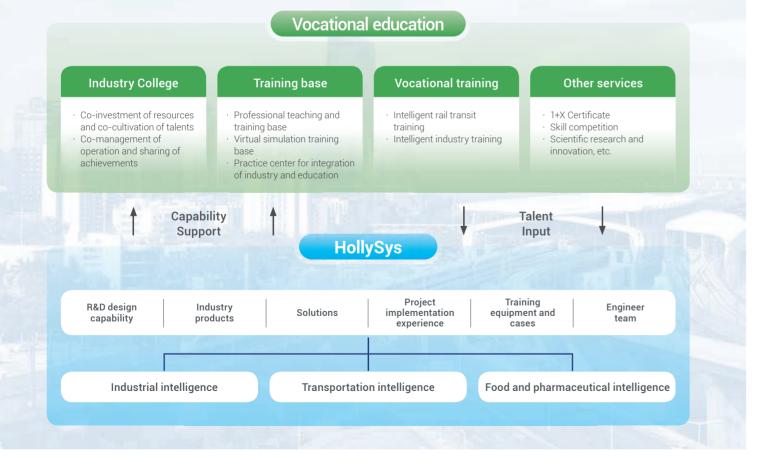
Vocational **Education**

DEEPLY CULTIVATES THE INDUSTRY, **EMPOWERS EDUCATION ECOLOGY**

introduces advanced application experience of the industry and enterprise advantage resources into the education field, and promotes the rapid development of rail transit vocational education.

Relying on more than 30 years of industry technology and experience accumulation, HollySys introduces advanced application experience and enterprise advantage resources into the education field to respond to the national call to deepen the integration of industry and education and actively support the development of vocational education, and constructs a new business mode of rail transit vocational education.

At present, more than 20 professional colleges nationwide has established strategic cooperation with HollySys, it has built more than 30 practical training bases for railway bureaus and colleges, and provided professional skill training for more than 5,000 people. In the near future, HollySys will focus on the fields of industry colleges construction, practical training base construction and vocational training, to explore new modes on industry-university cooperation.



TYPICAL CASES

Industry college



On December 17, 2020, Nanjing ocational Institute of Railway Technology, the first HollySys Rail Transit Industry College, was established, marking a new level in the integration of industry and education in the field of rail transit for HollySys.

Hebei Vocational College of Rail Transportation

- Xi'an Railway Vocational & **Technical Institute** → Rail Transit Industry College
- Manufacturing Industry

→ College of Intelligent

- → Rail Transit Industry College → College of Field Engineers

Performance of colleges

- → Training Center of Xi'an Railway Vocational & Technical Institute → Hebei Rail Transport Signal Training
- Center
- → Training Center of Luoyang Railway Information Engineering School
- → Training Center of Liuzhou Railway Vocational Technical College
- → Signal Training Center of Xinjiang Railway Vocational and Technical College

Achievements of railway bureau

- → Wuhan High-speed Railway Vocational Skill Training Section
- → Fuzhou Training Base
- → Kunming On-board Training Base → Yangang Training Section
- → Urumqi Training Base
- Bureau → Huizhou Simulation Base
- → Zhengzhou Yellow River

→ Training Base of Taiyuan

South Bank Training Base → Xi'an North Training Base

Vocational training

On March 7, 2023, the "Factory Training Course for Train Control Equipment Maintenance Personnel" jointly held with China Railway Beijing Group Co., Ltd. was grandly started in Beijing Base of HollySys.





Wuhan Railway Vocational College of Technology → Rail Transit Industry College On December 25, 2020, HollySys signed joint construction of the Industry College between the school and the enterprise with Wuhan Railway Vocational College of Technology. President CHENG Shixing awarded the Distinguished Professor Certificate to the Dean of the Industry College of HollySys.

Nanjing Vocational Institute of Railway Technology → Rail Transit Industry College

Training base

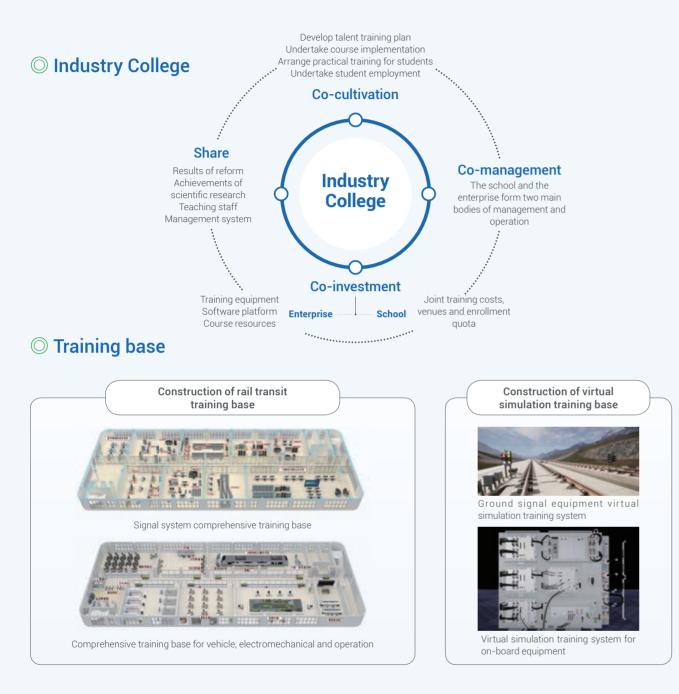
- → Signal Training Center of Nanjing Vocational Institute of Railway Technology
- → RSignal Training Center of Jilin Railway Technology College
- → Dujiangyan Training Base
- → Dazhou Training Base
- → Chongging Training Base
- → Zibo Training Base





HollySys

VOCATIONAL EDUCATION PRODUCTS AND SERVICES



◎ Various types of practical training products



On-board practical training system

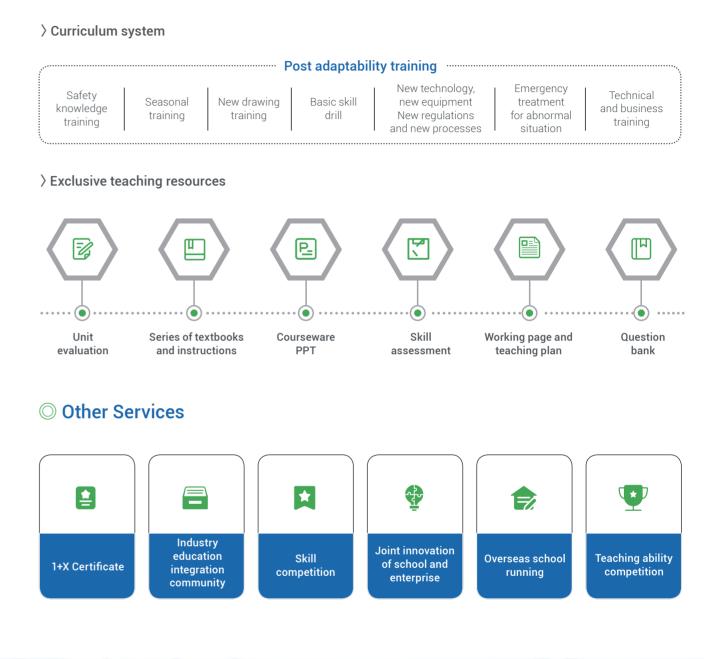


Track circuit training platform



Various basic signal training platforms

○ Vocational training





COMPREHENSIVE STRENGTH

PRODUCTION & MANUFACTURING

HollySys has set up professional R&D, test and production teams, established scientific and systematic management systems, all systems and products have passed safety authentications by third party authorities. HollySys also established rail transit

TEST & CERTIFICATION

• CMMI 3

ATKINS

• ISO 14001:2015

• ISO/IEC 20000

• ISO 9001:2015

• ISO/IEC 27001

• ISO/TS 22163

IRIS,



3 R&D Centers in China: Xi'an, Beijing and Hangzhou

1500More than 1500 R&D engineers and continue growing

155**Owning 155 authorized patents** and 123 software copyrights

10%

10% of annual revenue invested on R&D

• ISO 45001:2018

• ISO/IEC 17025

IT MALCERTIFER

IRIS

TUV



Comprehensive Experimental Center is a large-scale comprehensive rail transit laboratory established independently by HollySys.The experimental center is Beijing Key Laboratory of high-speed railway Signalling system. With a net area of about 4200m² square meters, the experimental center consists of laboratories of hardware environment, R&D test, and engineering test environment.

The business of the multifunctional experimental center covers national, intercity, and urban railway, as well as local dedicated railway lines, including verification and validation (V&V) of signalling, integrated supervision and control, information security, intelligence operation and maintenance, practical training system and other related products. Combining software, hardware and system integration, it provides technical and environmental support for the whole life cycle of products and the whole process quality assurance of engineering.





HollySys Reliability Test Center





Temperature Shock and Temperature Variation Test

Electromagnetic Compatibility Test



сммі

YSTEM

30 BEIJING HOLLYSYS CO., LTD.

ISO

Stepping Cyclic Damp Heat Test



Device Screening and Aging Test





Electric Vibration Test

PRODUCTION & MANUFACTURING

HollySys was included in China's first batch of intelligent manufacturing pilot model enterprises (intelligent control system) and enterprises in the Recommended Catalog of Intelligent Manufacturing System Solution Providers. HollySys's automated product factory has achieved lean, automatic, and information-based management, and its production capacity has reached an advanced level in the automation field.



Panoramic view of intelligent manufacturing workshop



Internal automatic logistics system



Automatic SMT system



Flexible assembly and testing line



Assembly line



Intelligent warehousing management system

SERVICES

HollySys provides not only products and systems but also engineering services such as project design, electrical installation and field debugging, as well as whole life cycle operation and maintenance and optimization services with tens of R&D, production or service bases worldwide.



CUSTOMERS IN MIND WITH SINCERITY





7*24h hotline Offer on-site technical support



Professional engineering expert team

Professional

Rich service experience





Three-level service response Impeccable service process

Overseas Expansion

With technology advantages and practice experience in rail signalling, HollySys can provide global users with top-class, safety-first control products, solutions and engineering services. The extensive applicability of HollySys control solutions contributes to the traffic safety and intelligence at home and abroad. Guided by technological innovation, HollySys brings people travel convenience, which expands the influence of China's high-speed railway.



 \rightarrow Undertaking the construction of the main control system software and PLC project of the first ART (Autonomous Rail Rapid Transit) line in Sarawak, Malaysia



 \rightarrow MCS for Hong Kong East Rail Line, Tuen Ma Line, and Tung Chung Line Extension



 \rightarrow As a system integrator, the company adopted international standards to undertake the construction of signal system and main control system engineering and maintenance service of Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Highspeed Railway, and won the MTR Gold Award for Quality



 \rightarrow Undertook multiple overseas ISCS projects, including SCADA project of Singapore Thomson-East Coast Line



 \rightarrow PTC system certified by U. S. Federal Railroad Agency (FRA), and was adopted in U. S. LVRR Line

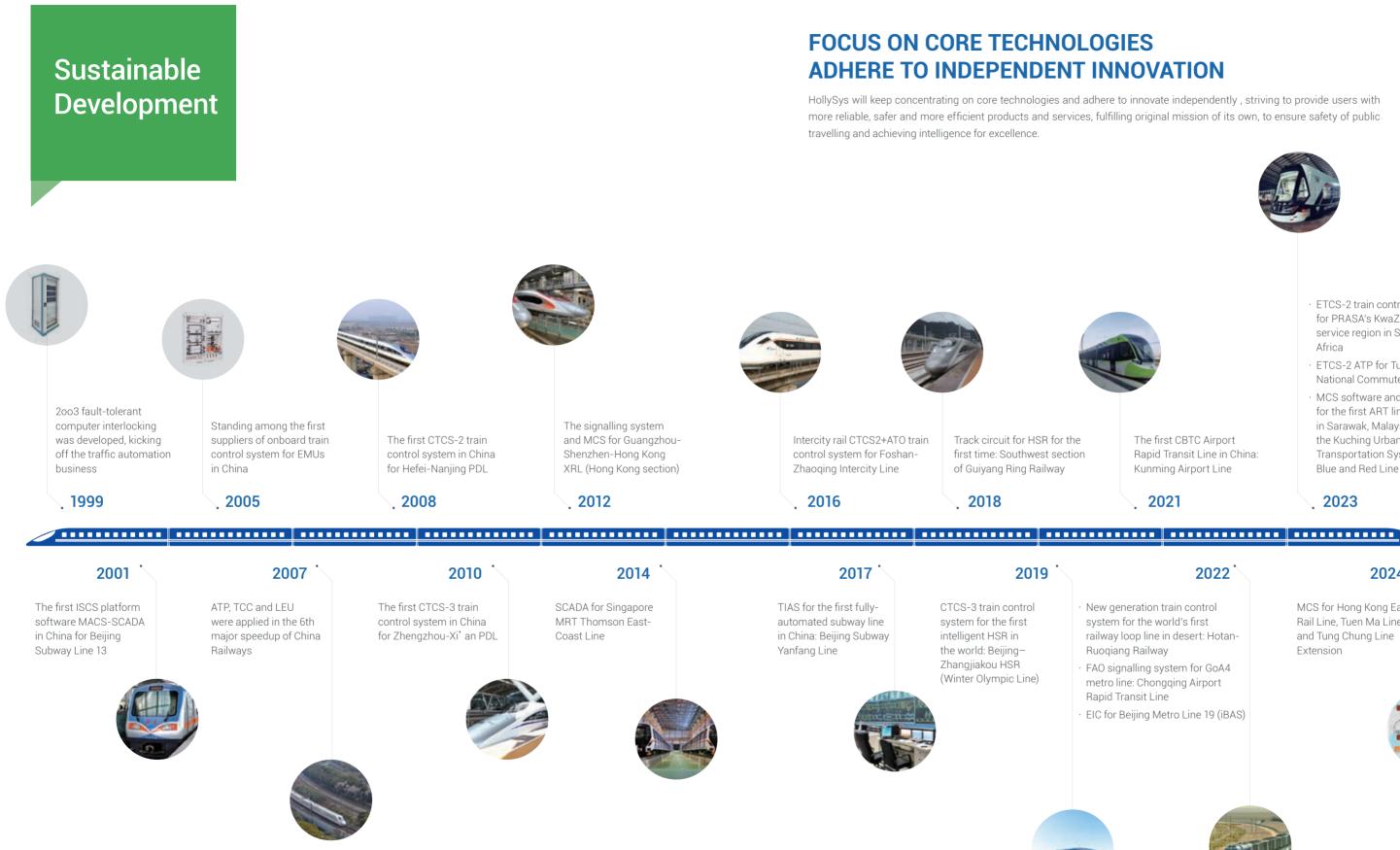


→ Turkish National Commuter Railway ETCS Level 2 On-board System Supply Project



 \rightarrow ETCS-2 train control system for PRASA's KwaZulu-Natal service region in South Africa

HollySys





The first CBTC Airport Rapid Transit Line in China: Kunming Airport Line

2021

- ETCS-2 train control system for PRASA's KwaZulu-Natal service region in South Africa
- ETCS-2 ATP for Turkish National Commuter Railway
- MCS software and PLC for the first ART line in Sarawak, Malaysia: the Kuching Urban Transportation System's Blue and Red Line

2023

2022

- New generation train control system for the world's first railway loop line in desert: Hotan-
- FAO signalling system for GoA4 metro line: Chongging Airport



MCS for Hong Kong East Rail Line, Tuen Ma Line, and Tung Chung Line Extension



