

Operation and Power Supply (Simulation) for China Railways

- by experience -

IT10 RAIL

International Railway Conference

January 21st – 23rd 2010

Institut für Bahntechnik GmbH
Berlin - Dresden

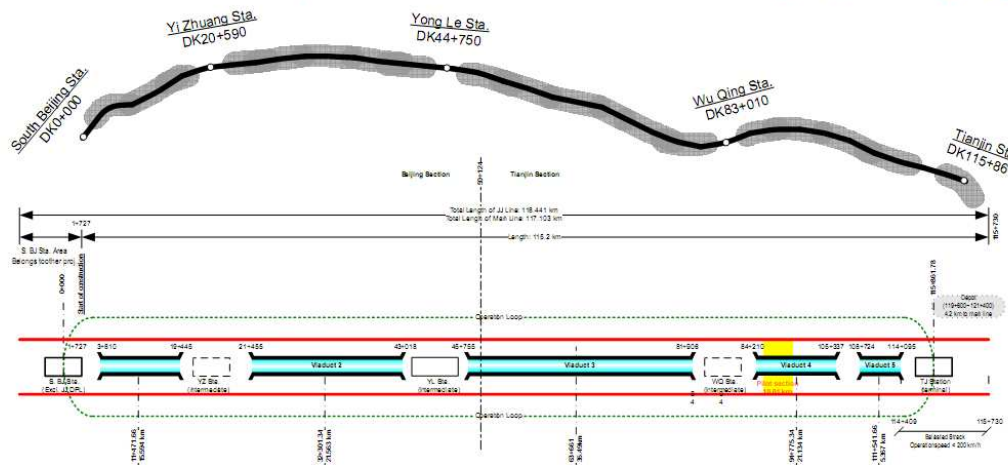


Eine Expertenrunde für das Gesamtsystem Bahn

The Expert Team for the Complete Railway System

BeiJing – TianJing Dedicated Passenger Line

General Overview



BeiJing – TianJing Dedicated Passenger Line

Key Features

- 25kV 50Hz 2AC Power Supply System,
- 2 TSS,
- 7 ATS,
- Minimum 3 minutes headway,
- Operation speed is 350km/h,
- Nonstop travel time is 30min,
- Opening day August 1st 2008 (parallel commercial operation was immediately suspended),
- 115km main line length,
- 3 intermediate Stations,
- ~87% bridge structure,

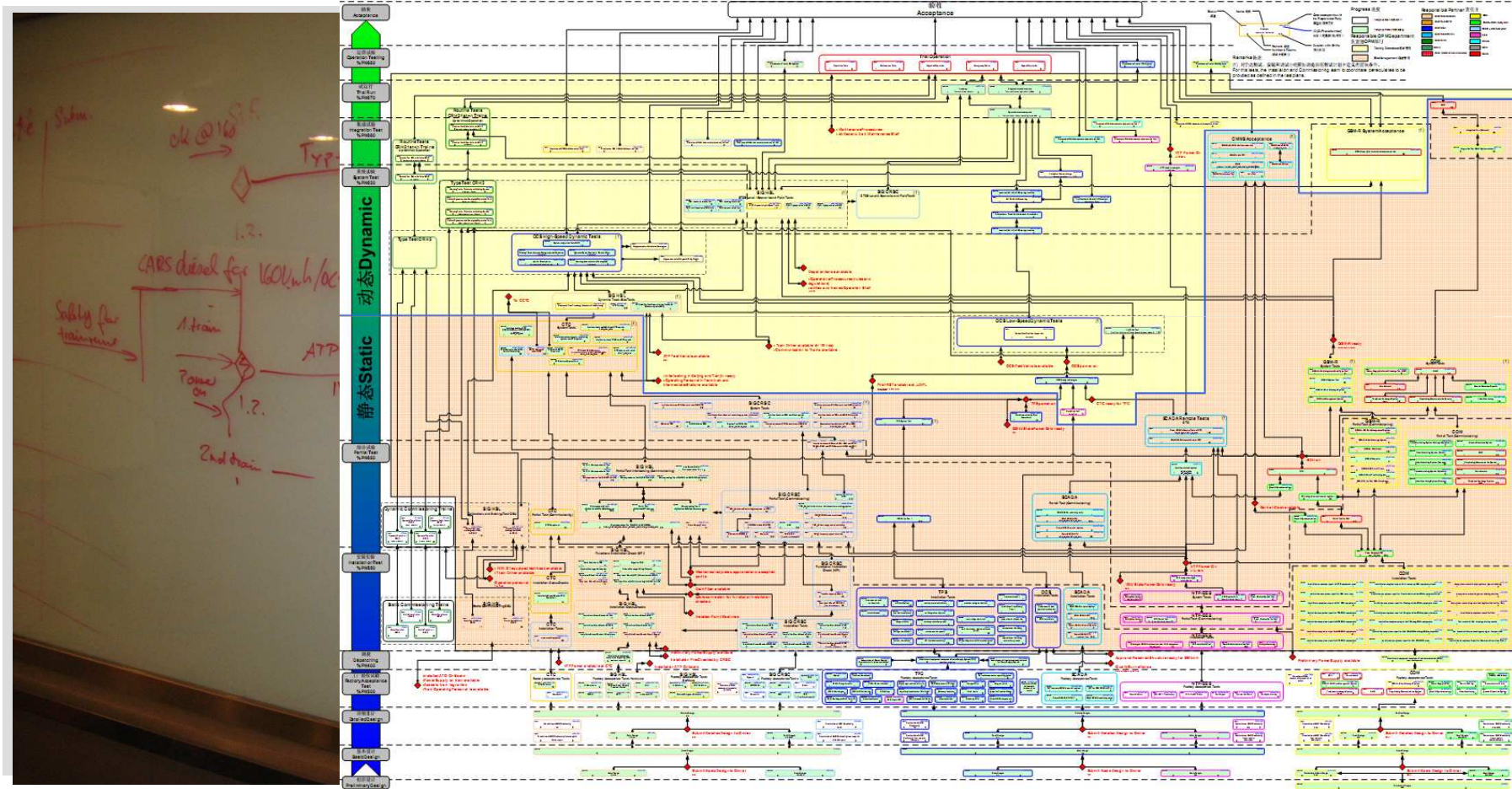
BeiJing – TianJing Dedicated Passenger Line

Bridge Construction



BeiJing – TianJing Dedicated Passenger Line

Test & Commissioning Planning



BeiJing – TianJing Dedicated Passenger Line

Opening day August 1st 2008



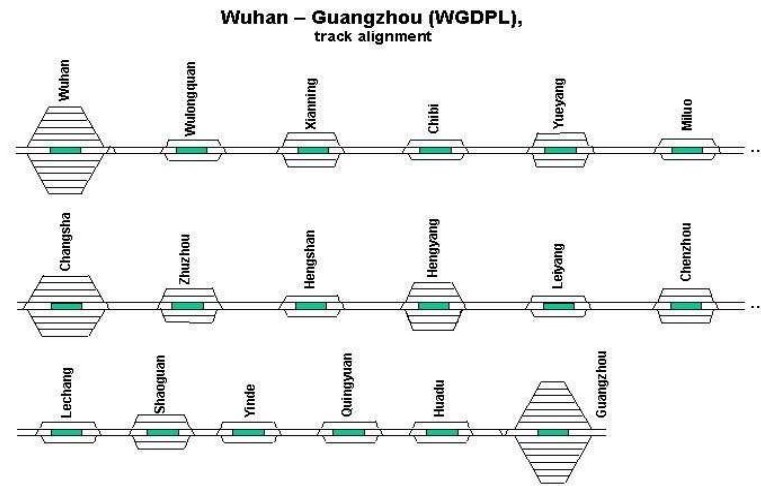
WuHan – GuangZhou Passenger Dedicated Line

Key Features

- 25kV 50Hz 2AC Power Supply System,
- 20 TSS,
- 38 ATS / SP,
- Minimum 3 minutes headway,
- Operation speed is 350km/h,
- Nonstop travel time is 3h,
- Opening day December 26th 2009 (parallel commercial operation was immediately suspended),
- 963km main line length,

Wuhan – GuangZhou Passenger Dedicated Line

Operation Simulation by IFB using **OPEN TRACK**



新岳阳

新汨罗

新长沙

株洲北联线路所

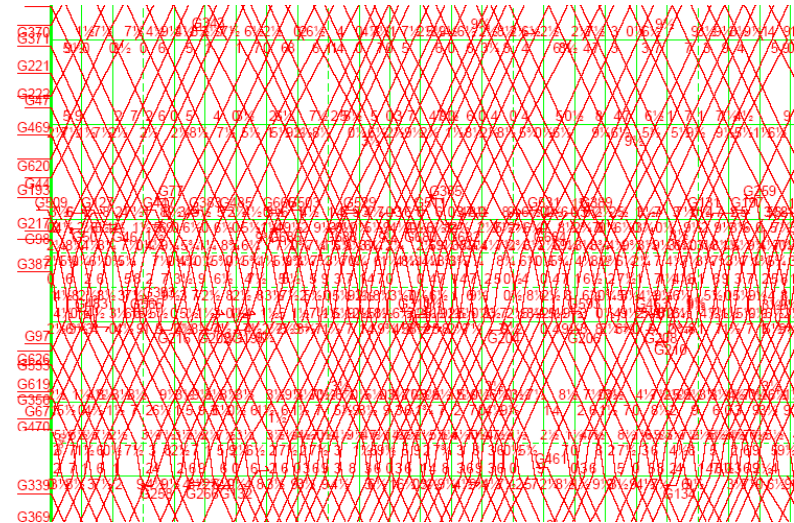
株洲南联线路所

新株洲

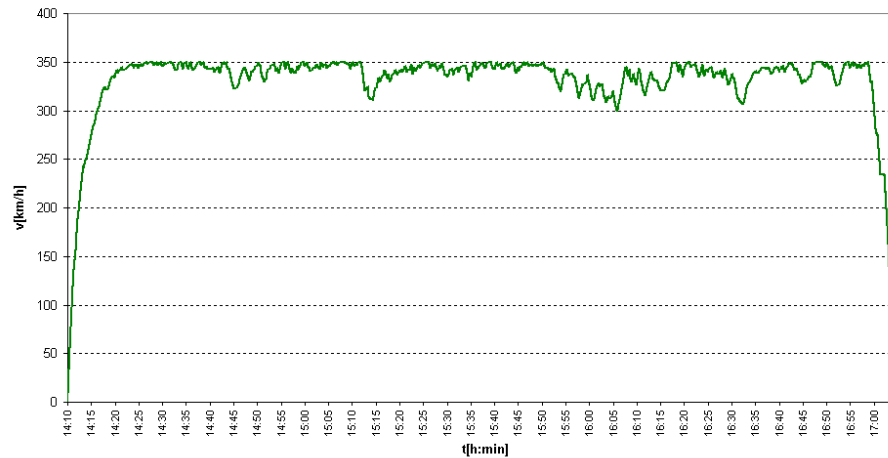
新衡山

衡阳北线路所

新衡阳

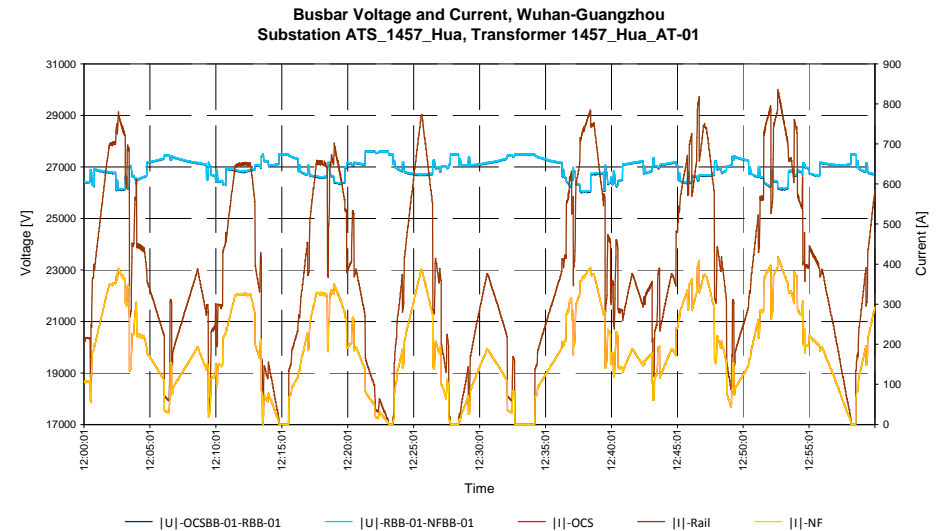
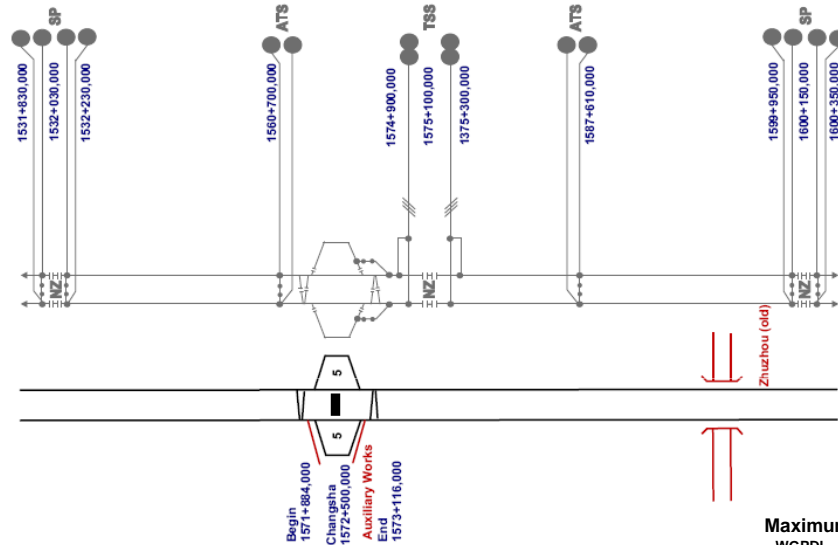


Train Speed $v = f(t)$
Guangzhou direction non-stop, CRH 3

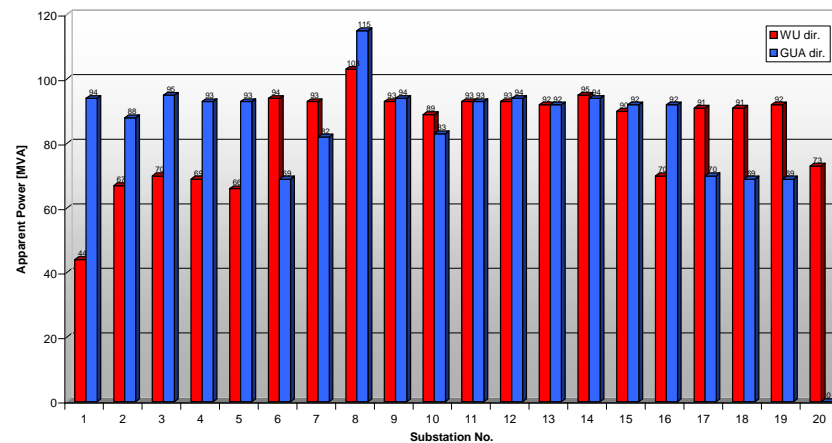


WuHan – GuangZhou Passenger Dedicated Line

Power Supply Simulation by IFB using OpenPowerNet



Maximum Substation Power
WGPDL - Operation Program 2028



China Railways High Speed Network

Future Planning



Operation- and Power Supply- Simulation Training

China Railway SIYUAN Survey and Design Group Co. Ltd

- One OpenTrack License for Route & Station Design Department
 - 11 days intensive training provided by IFB & OpenTrack Technology
- One OpenPowerNet & OpenTrack License for the Electrification Department
 - 15 days intensive training provided by IFB
 - 5 days technical intercommunication to discuss detailed problems of the electrical power supply provided by IFB

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