

# 上海轨道交通 2 号线车辆 PIS 报站广播功能升级与优化

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**摘 要** 上海轨道交通 2 号线信号系统升级改造为 CBTC (基于通信的列车控制)系统后,同时考虑实现 DTO(有人值守的全自动运行)功能。为提升运营服务质量,需升级与优化 PIS(乘客信息系统)报站广播功能。介绍了 CBTC 系统和 PIS 的基本功能;介绍了 2 号线不同车型列车 PIS 全自动报站广播功能的实现方式,以及 PIS 半自动报站广播功能优化后的报站模式切换逻辑。PIS 报站广播功能升级与优化后,降低了人工操作失误造成的无广播或报错站的概率,规避了站间停车时提前广播的问题及报站不准确的问题,提高了运营服务质量。

**关键词** 城市轨道交通;乘客信息系统;全自动报站广播;半自动报站广播

**中图分类号** U29-39

**DOI:**10.16037/j.1007-869x.2023.S1.026

## Upgrade and Optimization of Vehicle PIS Station Broadcasting Function of Shanghai Rail Transit Line 2

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**Abstract** After the signaling system of Shanghai Rail Transit Line 2 is upgraded to CBTC (communication-based train control) system, DTO (unattended train operation) function is considered for implementation. To improve operation and service quality, the PIS (passenger information system) station broadcasting function is optimized. The

basic functions of CBTC system and PIS are introduced, and the methods of fully automatic station broadcasting for different train models on Line 2 and the broadcasting mode switching logic after PIS semi-automatic broadcasting are introduced. The optimized PIS station broadcasting function reduces the probability of manual errors causing no broadcasting or incorrect station information. It also addresses issues related to premature broadcasting during station stops and inaccurate station broadcasting, thereby improving the operation and service quality.

**Keywords** rail transit; PIS; automatic station broad-

casting; semi-automatic station broadcast

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上海轨道交通 2 号线于 2000 年开通,部分设计已不太适合当前发展需求,有必要立足城市轨道交通实际,对 2 号线系统功能进行升级改造,优化提升乘客乘车体验,为上海轨道交通高效稳定运行提供可靠保障。2 号线信号系统升级为 CBTC(基于通信列车控制)系统后,为提升运营服务质量,需对 PIS(乘客信息系统)进行升级改造。

## 1 CBTC 系统

上海轨道交通 2 号线既有信号系统采用的是基于数字轨道电路的准移动闭塞 ATC(列车自动控制)系统,该系统设备已不符合信号系统技术发展的趋势。ATC 系统是采用音频无绝缘数字轨道电路,车载设备根据数字轨道电路传来的信息,结合车辆性能数据计算出适合于本列车运行的速度曲线,保证列车在该曲线下运行。

目前,CBTC 系统是城市轨道交通信号系统的主流制式。CBTC 系统的突出优点是用通信网络来

实现列车定位和移动授权的移动闭塞代替固定的轨道区段闭塞实现列车运行控制。CBTC 系统可根据列车自身的性能计算出最佳的运行曲线。

## 2 PIS

PIS 是乘客最直接接触的系统,通过显示及声音向乘客发布列车运行信息及紧急情况信息,提醒乘客到站上下车及紧急情况下的告知与安抚。

PIS 功能主要包含:OCC(运营控制中心)广播、报站广播、司机广播、紧急广播、乘客紧急报警、司机

basic functions of CBTC the implementation of station broadcasting for different train models and the broadcasting mode switching logic after PIS semi-automatic broadcasting function optimization and the broadcasting function optimization resulting in no broadcasting or incorrect station information. It also addresses issues related to premature broadcasting during station stops and inaccurate station broadcasting, thereby improving the operation and service quality.

**Key words** urban r







