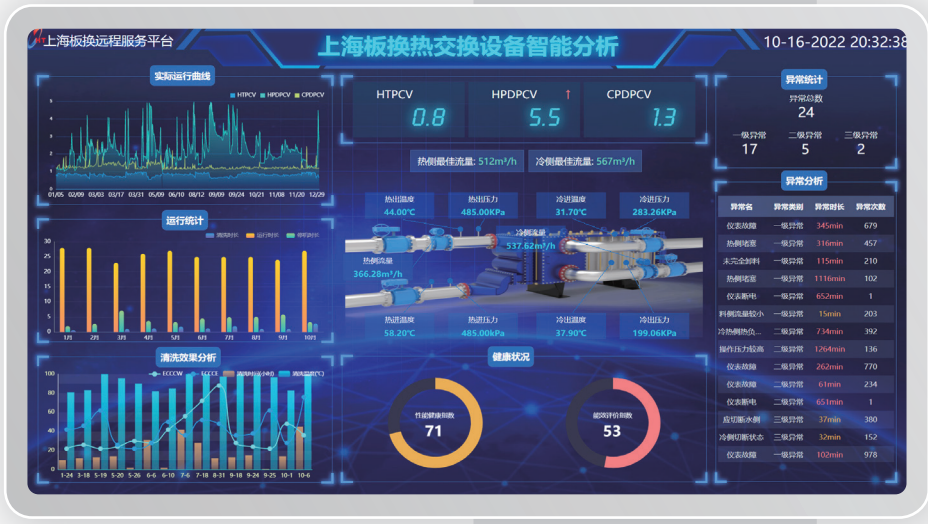


Remote service platform

上海板换远程服务平台



平台介绍

上海板换远程服务平台利用先进的互联网、物联网、人工智能、大数据、云计算等技术，凭借多年来在各个行业中积累的基础物性数据库、运行大数据，结合热源、管网、热交换器、智能阀门、仪表等设备，将综合影响双碳指标的各项数据，科学的分析计算、合理的平衡调度，使得系统处于安全运行、耗能最低状态。

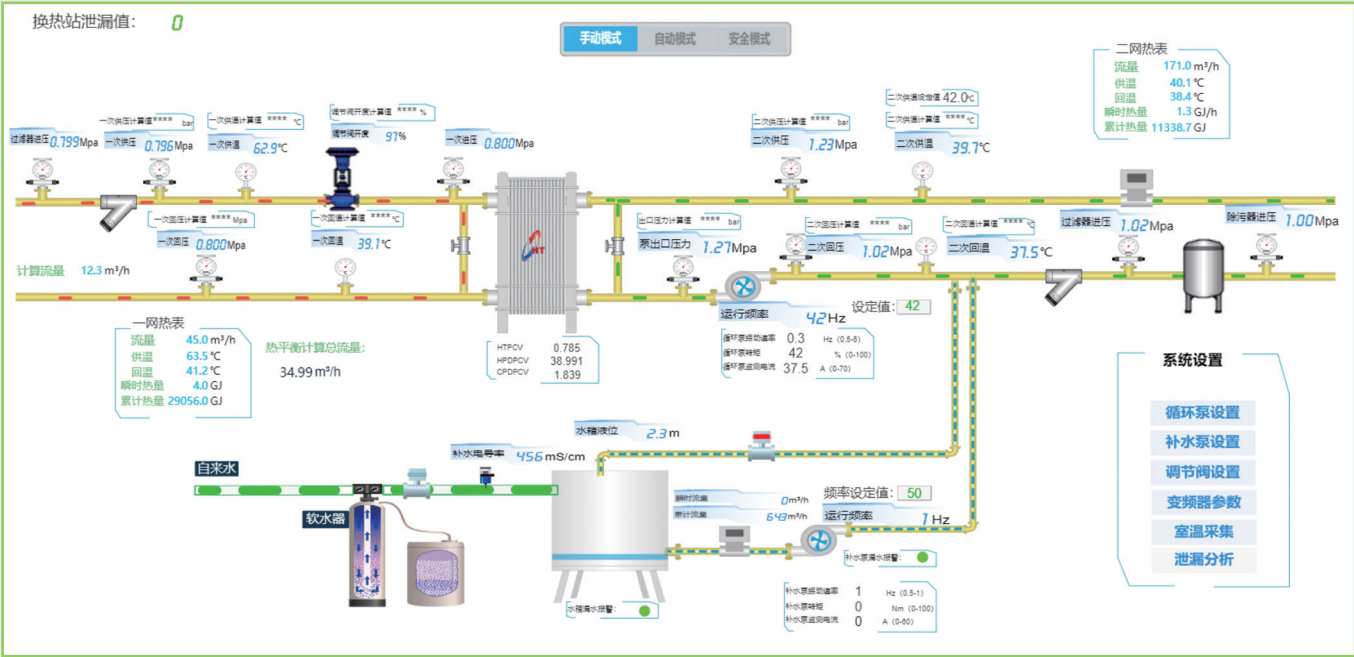
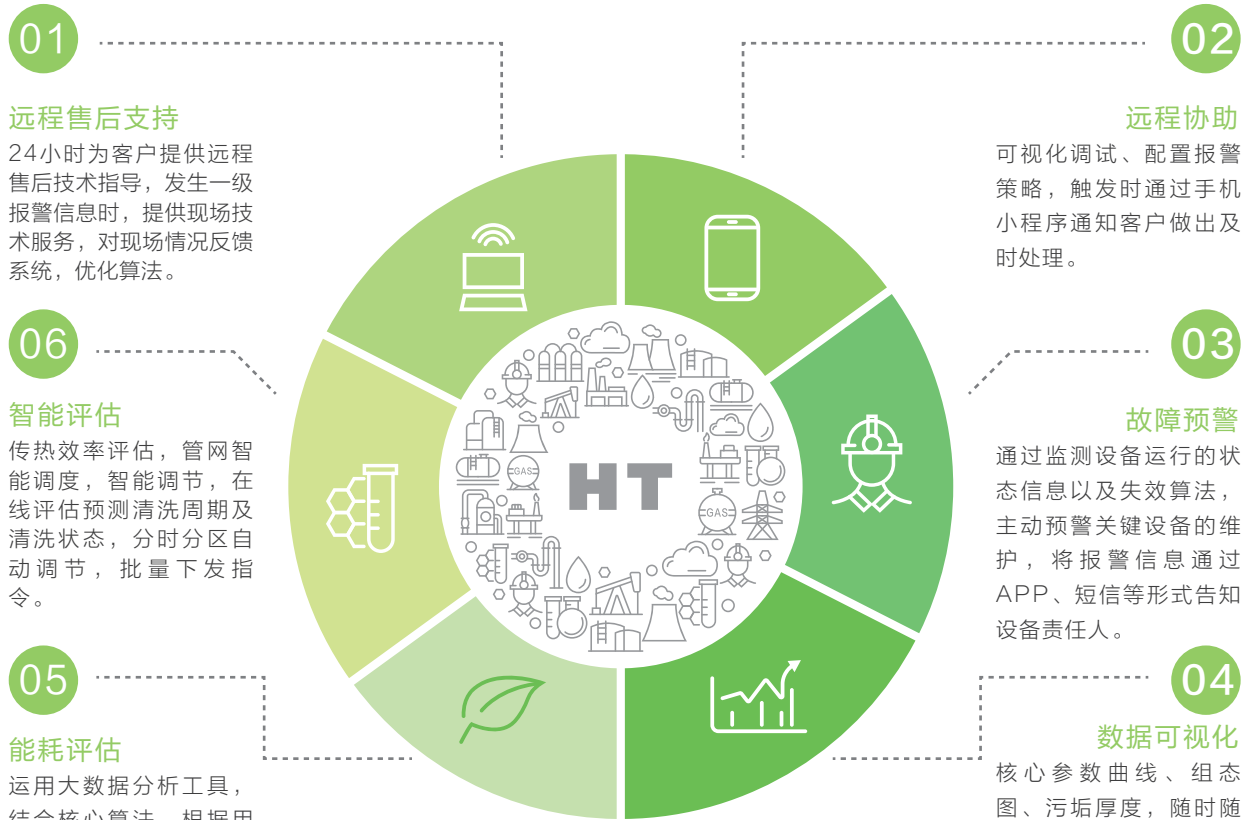
Remote Service Platform developed by SHPHE integrated Internet, IoT, AI, big data, cloud computing technology, coupled with physical properties, operating data in different process over the years, and taking consideration of heat source, pipe networks, heat exchangers, intelligent valves, instruments, etc., the platform can analyze and calculate the data and propose best practice instruction, enabling the system in a safe operation with min. energy consumption.

技术及应用

上海板换远程服务平台在城市供热领域拥有两项核心算法模型，一是基于气象数据、室内反馈、站内反馈数据研发一套能够在保障室内温度的前提下自主调节、能耗最低的自适应算法模型；二是能够对关键零部件进行故障预警，运行过程中在偏离最佳运行工况或核心元件需要更换时提醒运维人员，在威胁运行安全时，系统自动发出保护指令，防止事故发生。

There are two algorithm for city district heating system in the service platform, one is a set of self-adaptive algorithm model which can automatically adjust and minimize energy consumption while ensuring indoor temperature based on meteorological data, indoor feedback and station feedback data. Another is to provide fault warning for key equipment, and reminding operator when deviation from optimal operating conditions occurs or main components need to be replaced.

Remote service platform



同时上海板换在冶金、石油化工、食品医药、船舶、电力等多个领域借助行业底层大数据可快速迭代行业解决方案，为设备安全运行、故障预警、节能降耗、维护提醒、清洗建议、备件更换、最佳工艺方案等提供专家指导。

平台架构：

平台采用B/S架构设计，可实现可视化数据、资料信息的高效共享，能接入百万设备，响应时间毫秒级，物联网收发的数据会与传热平台进行算法交互，计算结果实时推送至用户侧或者边缘计算网关。

平台特点：

1. 实际工况运行数据库；
2. 热交换器核心预警算法；
3. 实时推送最佳运行方案；
4. 健康及清洗维护效果评估；
5. 离线分析及驾驶舱集成。

Meanwhile, relying on big data of process industry such as metallurgy, petrochemical, food and pharmacy, marine, power plant, etc, SHPHE can iterate total solutions in time, and provide guidance for equipment safe operation, fault warning, energy saving and consumption reduction, maintenance reminding, cleaning suggestion, spare parts replacement and the best practice.

Platform architecture:

The platform adopts B/S structure, where visual data and information can be shared. The data received from IoT will interact with the heat transfer sizing platform, and the calculation will be sent to the user or computing gateway.

Platform features:

1. operating data on site;
2. Heat exchanger warning algorithm;
3. Provide real time optimal operation scheme;
4. Cleaning and maintenance effect evaluation;
5. Offline data analysis.

Remote After-Sales Support 01

Provide remote technical assistance round-the-clock. In case of level 1 alert circumstance, provide field technical service, sending feedback to the cloud platform to optimize the algorithm.

Remote assistance 02

Visualized commissioning assistance and setting precaution strategy. Users will be informed via mobile app to take timely action when the alerts triggered.

Fault Alerts 03

By monitoring operating status of the equipment and failure algorithm, sending prescriptive info. about maintenance of key equipment, and the information can be sent to responsible person through APP, SMS.

Visualized Data 04

Core parameter graph, configuration diagram, fouling thickness, etc. Operating status of the equipment can be monitored real time.

Energy Consumption Assessment 05

Help user to set energy indicators by big data analysis and core algorithms, improving energy performance.

Intelligent Assessment 06

Heat transfer efficiency assessment; intelligent scheduling/regulation of network; online evaluation and prediction of cleaning cycle and cleaning effect.