

MELTSHOP AUTOMATION



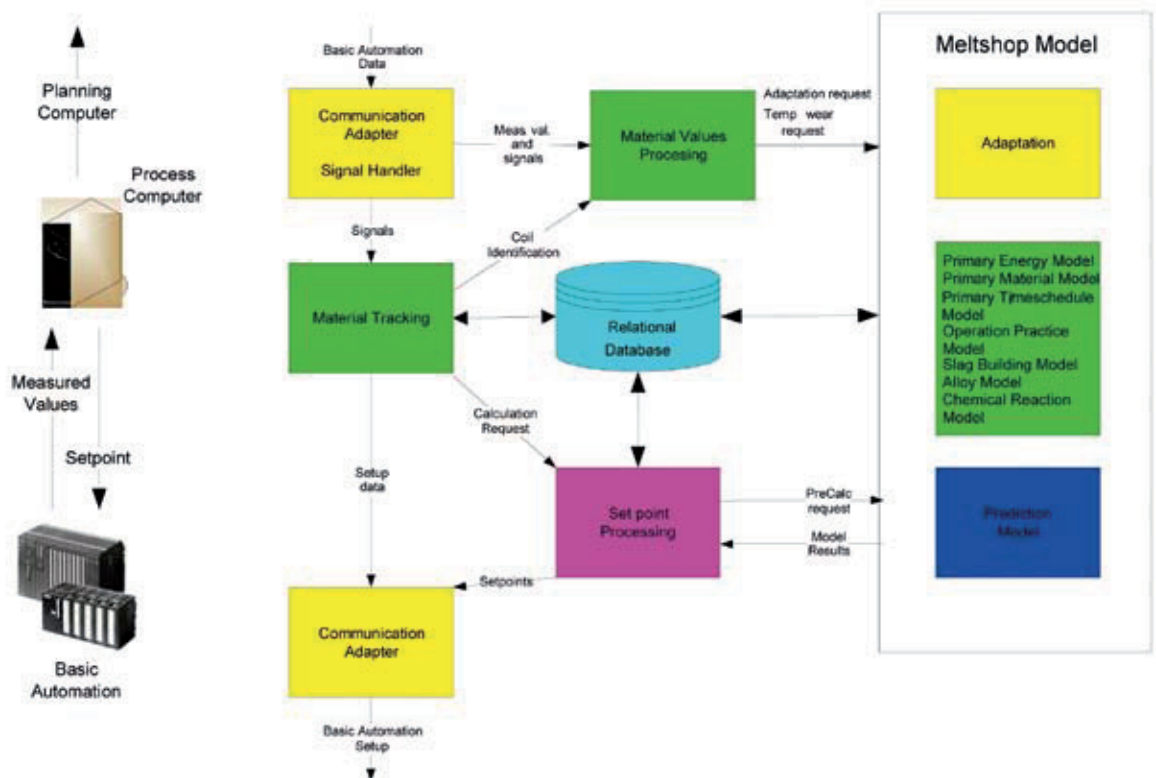
INTRODUCTION

PIKE ELECTRONIC has long-term experience with design, development, implementation, testing and commissioning of extensive melt shop automation projects for customers around the world.

Generally, we have know-how to deliver automation systems for electric arc furnaces (EAF) and secondary metallurgy, especially ladle furnaces (LF) and vacuum stations (VD). PIKE offers delivery of level 1 basic automation and level 2 process automation in one package as one integrated complex system. The goal of the delivery is to support the customer to produce steel with required aim parameters – amount, temperature and chemical composition spending minimum cost and time.

PIKE Electronic real-time systems are running 24 hours a day 365 days a year with 24 hours remote support. Our experience can be proved by our Process Automation reference list.

Pike Electronic is vendor independent; we have no association or general agreement with any supplier or contractor of equipment. This ensures that our clients get the most technically suitable and cost-effective solution within the project.





BASIC AUTOMATION

On the basis of the specification and analysis we develop (using the standard tools) the control programs for the PLCs. We have also the experience with the commissioning of the programs developed by other parties. The part of the control systems is also the visualization. Our employees have the ability to implement the visualization sub-systems using the standard systems (depending on the customer request).

The main goal of Meltshop Basic Automation system is automatic operation and control of the steel plant.

Basic Systems

- Tracking system
- Weighing systems
- Scrap preparation system
- Material addition preparation system
- Electric arc control system
- Cooling water system
- Heating system
- Media control system
- Alloy preparation system



PIKE uses the following hardware and software instruments for basic automation:

- | | | |
|-------------------|------------|----------------|
| • Simatic S7, TDC | • ProfiBus | • DotView |
| • PCS 7 | • ProfiNet | • WinCC |
| • GeFanuc | • TCP/IP | • InTouch |
| • Logicad | • ISO/OSI | • Citect |
| • IBALogic | | • Factory Link |



PROCESS CONTROL

Main goal of process control is process tracking, measured values acquisition and processing, melt shop mathematical models calculation and setup values distribution. Our Process Control solutions are based on our own platform PIKE Process Framework (PPF).

Our employees have wide-range experience in Process Control. According to the customer needs, PIKE can implement complete Level 2 systems, mathematical models or encapsulate the models supplied by the technology supplier (or even the customer), customize melt shop models and implement HMI for Level 2 systems.



We offer a complex know-how in the following function units:

- Treatment Patterns
- Grade Definition
- Oxygen blowing model
- Material Addition – Alloying model
- Material mass model
- Chemical reactions model
- Temperature/Energy model
- Charge Material Calculation (for EAF)
- Power Demand Control

General

- Application Framework
- Communication to L1, L2, L3,
- Melt Shop management etc.
- Primary data handling
- Event Handler
- Process Tracking
- Measured Values Processing
- Production data handling (Quality Evaluation)
- Reports (heat report, shift report, etc.)
- Setpoint Handling
- Mathematical models