



PROCESS SYSTEMS

SPECIALTY TRAINING CONFERENCE

26-28 MARCH 2013 | MGM GRAND DETROIT, DETROIT, MICH., USA

MONDAY 25 MARCH 2013

4 p.m.
Registration

TUESDAY 26 MARCH 2013

7 a.m.
Registration and Continental Breakfast

8 a.m.
WELCOME, INTRODUCTION AND OVERVIEW
Ron Tessendorf, TMEIC Corp.

Discussion of the traditional L0, L1, L2 and L3 hierarchies and how the lines have blurred.

8:30 a.m.
SPEED AND POSITION SENSORS
Brian Winter, Avtron Industrial Automation
Application aspects of current sensor technology for steel mill speed and position sensors are highlighted.

9 a.m.
VISION SYSTEMS — SURFACE INSPECTION
Christopher Turner, ArcelorMittal Dofasco Inc.
With the increased demands of quality from customers, along with the need to reduce internal costs due to poor quality, re-applies and unscheduled downtime, the ability to ascertain the quality of material in real time is necessary. Automated surface inspection systems (ASIS) provide a means to perform this necessary task. Understanding the fundamental operation, capabilities and limitations of these systems is critical to achieve maximum utility of these assets. This presentation will present a basic outline of the fundamental operation of modern-day ASIS, along with an explanation of the inner workings of the various components. The presentation will also examine the necessary infrastructural components that interface to the systems.

Finally, a brief outline of some of the uses of the data obtained from these systems will be given.

9:30 a.m.
STRIP WIDTH MEASUREMENT
Rob Ricciatti, George Kelk Corp.

This presentation will focus on width gauging, how the usage and capabilities of width gauges have been developed and improved over the years, what options are available to users, and which factors should be considered in order to make the best choice for various applications.

10 a.m.
Break

10:15 a.m.
SHAPE ROLLS AND FLATNESS MEASUREMENT
Mark Zipf, Tenova I2S

This presentation will provide an overview of the fundamental concepts and methods of strip shape and flatness measurement, in both closed-loop control and process performance/quality monitoring applications. Emphasis will be placed on the measurement systems and understanding their primary components, theory of operation and system architectures. The sources of shape distortions and the methods of actuating shape corrections will be presented and discussed. Strategies for analytically characterizing on-line and off-line performance and quality will be introduced. Where possible, historic relevance and technology trends will be intertwined within the discussion. The presentation will conclude with a case study involving shape measurement, targeting and actuation in a closed-loop control system.

11 a.m.
STRIP THICKNESS MEASUREMENT SYSTEMS
Chris Burnett, Thermo Fisher Scientific

An overview of thickness gauges and their roles in the process line is given.

11:30 a.m.
STRIP COATING WEIGHT MEASUREMENT TECHNOLOGY
Chris Burnett, Thermo Fisher Scientific

An overview of coating weight gauges for paint and galvanizing lines is given.

Noon
Lunch

1 p.m.

FEEDBACK — WHAT WOULD YOU LIKE TO MEASURE?

Rob Ricciatti, George Kelk Corp.

The traditional dimensional properties of material that contemporary measuring/sensor systems provide are well known. This discussion provides attendees with a chance to voice, beyond this, what other data and properties they would like to measure.

2 p.m.

DRIVES — HOW THEY FIT IN THE SYSTEM

Tony Dean, GE Energy Power Conversion

2:30 p.m.

L1 CONTROLLERS — PROGRAMMABLE LOGIC CONTROLLERS IN CONTROL SYSTEMS

Reg Snyder, TMEIC Corp.

Included in this discussion are a brief history and evolution of the industrial PLC, PLC applications issues from single machines to networked systems, the effects of standards for programming language (IEC 61131.3) and future possibilities — where will the control go?

3:15 p.m.

Break

3:30 p.m.

L2 SYSTEMS

Paul Jackson, TMEIC Corp.

This presentation will provide a high-level overview of the functional scope and design approach of modern level 2 systems on metals applications.

4:15 p.m.

CONTROL NETWORK INFRASTRUCTURE

Reg Snyder, TMEIC Corp.

This discussion will highlight the system network topologies, control levels and selection of network types, basic Ethernet and Internet protocol principles and network security issues.

5:30 p.m.

Reception

WEDNESDAY 27 MARCH 2013

7 a.m.

Continental Breakfast

8 a.m.

PROCESS CONTROL SIGNAL REQUIREMENTS

Paul Slater, GE Energy Power Conversion

8:45 a.m.

PROCESS MODELS AND SIMULATION

Mark Zipf, Tenova I2S

This presentation will provide an introduction to the varied concepts and strategies of mathematical modeling and simulation. The discussion begins by gaining an understanding of what models are, what simulation is, and how they are combined to provide insight into and predictions of the process and control system behavior. The focus then progresses to a review, classification and comparison of the different types of mathematical modeling techniques, and their applicability to certain circumstances and interests. This is followed by an examination of the various forms of model evaluation and system simulation. Strategies of model development are considered, along with model implementation, validation and tuning. Comments on model/simulation capabilities, predictive

accuracy and confidence, and practical assessment of results are intertwined throughout the discussion. Incremental case studies are contained within the presentation to illustrate the various concepts and methods. The presentation content is purposefully broad and doesn't attempt to be overly analytic.

9:30 a.m.

COMPUTER SYSTEMS AND TECHNOLOGY FOR L1 AND L2 APPLICATIONS

Brian Allgaier, Automated Control Concepts Inc.

Architecture considerations are provided for designing L1 and L2 computer systems. Topics will include: fault tolerance/reliability, thin client technology, virtual machine technology, backup/archiving (test machines), maintenance considerations and obsolescence planning.

10:15 a.m.

Break

10:30 a.m.

OPERATING SYSTEMS

Włodzimierz Filipczyk, TMEIC Corp.

The history and development of various operating systems are reviewed. The major operating systems used in steel industry control applications are compared and discussed, including special features of real-time operating systems. Some trends for the functionality of future systems are also presented.

11:15 a.m.

COUPLING PROCESS MONITORING WITH MACHINE CONDITION MONITORING

Scott Bouchillon, IBA America LLC, and Robert Miller, IVC Technologies

Process data acquisition and monitoring has led to many efficiency improvements over the last decade. Plants have gone from a basic monitoring strategy of evaluating only key variables to recording practically every input/output point as well as many internally calculated control variables. An explosion of tools and technologies has made this possible. In addition to process monitoring, now automated, on-line machine condition monitoring is entering the mix. Again, new tools and technologies are being implemented to advance this field. This presentation will explain recent experiences in coupling process monitoring with machine condition monitoring and the effect it has on enhancing production efficiency.

Noon

Lunch



1 p.m.

INTERFACING THIRD-PARTY SYSTEMS

Pat Gallagher, Management Science Associates Inc.

The days of providing “islands of automation” are long past, and the most effective and efficient systems are those that seamlessly integrate information from the sensors to the enterprise computers. This presentation will address the evolution and current state of interfacing process control systems with third-party systems. Techniques, protocols, options, and current and future trends of integrating all levels of automation will be covered.

1:30 p.m.

REPOWER OF THE NUCOR DECATUR TANDEM COLD MILL

Tom Richards, TMEIC Corp., and J.C. Fernandez, Nucor Steel-Decatur LLC

The Nucor Decatur tandem cold mill recently completed a project to replace the existing DC main drives on all four stands and the tension reel. The mill has been repowered with new AC induction motors and TMdrive-70 medium voltage IEGT drives. This presentation will discuss the reasons for the repower, the alternatives considered, the selected configuration and the results to date.

2 p.m.

AUTOMATION UPGRADE

Timothy Riley, Siemens Industry Inc.

2:30 p.m.

MELTSHOP TOPOLOGIES

Tom Carr, Siemens Industry Inc.

This session focuses on modern process systems for electrical arc furnaces. Specific topics include an overview of the EAF process and a comprehensive look at the sensors, actuators, level 1 controls, level 2 functions, process models, communication links and data flows that constitute a typical hierarchical EAF process system.

3:15 p.m.

Break

3:30 p.m.

REHEAT FURNACE PROCESS OPTIMIZATION

Bob Robison, Siemens Industry Inc.

This session focuses on advanced supervisory control of reheat furnaces for delivering optimally heated pieces to hot rolling operations while minimizing energy consumption, scale formation and decarburization. Specific topics include process system architecture, piece tracking, thermal modeling, temperature setpoint determination, furnace/mill pacing and production delay management.

4:15 p.m.

CONVENTIONAL HOT MILL APPLICATIONS

Wlodzimierz Filipczyk, TMEIC Corp.

The hot rolling process of flat products is shown by presenting each of the individual sections of the rolling mill. For each of the sections, the process sensors and actuators, control functions as well as application features, process merits and control trends are reviewed. Finally the “global” control system applications and challenges for the future are outlined.

THURSDAY 28 MARCH 2013

7 a.m.

Continental Breakfast

8 a.m.

PROCESS LINE TOPOLOGIES

Paul Slater, GE Energy Power Conversion

9 a.m.

GLOBAL ENTERPRISE SCHEDULING OF INDIVIDUAL STEEL PLANTS

Perry Zalevsky, SAP America

Steel companies today are faced with ever-increasing demands to satisfy customers while maximizing the efficiency of their operations. With continued consolidation of the steel industry and the growth of many producers into multi-plant companies, the need to plan and schedule across plants has dramatically increased. This presentation will discuss the issues of single and multi-plant planning and scheduling, the various types of solutions in use and some practical examples based on existing steel companies.

10 a.m.

Break

10:15 a.m.

ROUNDTABLE: PROCESS SYSTEM SECURITY

Brian Allgaier, Automated Control Concepts Inc.

Noon

Lunch

1 p.m.

PLANT TOUR OF SEVERSTAL DEARBORN

4:30 p.m.

Return From Plant Tour and Adjoin

