



## Agenda

### TC 7.5 Handbook Subcommittee

4:45 - 5:30 pm, Sunday, 26 June 2016  
America's Convention Center Complex  
Room 276, Level 2  
St. Louis, Missouri

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4:45 Call to order / introductions / changes to the agenda

Liaison Comments

TC 1.4 Control Theory and Application

TC 1.5 Computer Applications (wireless communications subsection starting at page 40.19)

TC 7.3 Operation and Maintenance Management (AFDD subsection starting at page 39.5)

**Objective for this Meeting: Ask for topic volunteers to review subsections in the 2015 Chapters and generate ideas for updates or new subsections.**

4:50 **Smart Building Systems (Chapter 61 in 2015 Handbook),**

Chapter Focus: Smart building systems are building components that exhibit characteristics analogous to human intelligence. These characteristics include drawing conclusions from data or analyses of data rather than simply generating more data or plots of data, interpreting information or data to reach new conclusions, and making decisions and/or taking action autonomously without being explicitly instructed or programmed to take the specific action. These capabilities are usually associated with software, but they can also be possessed by hardware with embedded software code, or firmware. The line between systems that are "smart" and "not smart" is blurry, and, for purposes of this chapter, does not need to be absolutely defined. The purpose of this chapter is to introduce readers to emerging technologies that possess some of these smart characteristics.

#### **Current Subsections**

AFDD

Sensing and Actuating Systems

Smart Grid Basics

5:40 **Supervisory Control Strategies and Optimization Chapter (Chapter 42 in 2015 Handbook)**

Computerized building and energy management and control systems provide a variety of effective ways to reduce utility costs and energy consumption associated with maintaining environmental conditions and thermal comfort in buildings. These systems can incorporate advanced control strategies that respond to inputs including changing weather, building conditions, occupancy levels and utility rates to minimize operating costs, energy consumption and greenhouse gas emissions while also enhancing occupant comfort. This chapter focuses on the opportunities and control strategies associated with using supervisory control strategies and optimization methods applied to cooling systems, heating systems, air-handling units, and zone equipment.

#### **Current Subsections**

Terminology

Methods (Control Variables, Supervisory Control Strategies, Static and Dynamic Optimization)

Control Strategies and Optimization for Cooling Systems

Control Strategies for Cooling Tower Fans

Chilled-Water Reset with Fixed-Speed Pumping

Chilled-Water Reset with Variable-Speed Pumping

Sequencing and Loading Multiple Chillers

Simplified Static Optimization of Cooling Plants

Dynamic Optimization for Cooling Using Discrete Storage

Dynamic Optimization for Cooling Using Thermal Mass or Tabs

Forecasting Diurnal Cooling and Whole-Building Demand Profiles

Black-Box Predictive Cooling Control Strategies

Control Strategies for Heating Systems

Control Strategies for Air-Handling Units

Control Strategies for Building Zones

6:00 **Adjourn**

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**Next Meeting: ASHRAE Winter Conference Sunday January 29<sup>th</sup>, Las Vegas, Nevada**