



180 Technology Parkway, Peachtree Corners, GA 30092  
404-636-8400

**DRAFT**

**TC/TG/MTG/TRG MINUTES COVER SHEET**

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No. TC-1.4 DATE 06/22/2021

TC/TG/MTG/TRG TITLE Control Theory and Application

DATE OF MEETING Tuesday June 22, 2021 LOCATION Virtual

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
James Del Monaco	2019	Jin Wen	2017	Corresponding –
Chariti Young	2019			Provisional –
Brandon Gill	2018			Guests –
Larry Fisher	2018			
Chris Benson	2019			
Lotfi Nemat	2019			
Amanda Pertzborn	2019			

**DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:**

TAC Section Head: Jennifer Leach, PE	<a href="mailto:SH1@ashrae.net">SH1@ashrae.net</a>
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	<a href="mailto:jkohler9@comcast.net">jkohler9@comcast.net</a> ; <a href="mailto:ahmed.kashef@nrc-cnrc.gc.ca">ahmed.kashef@nrc-cnrc.gc.ca</a> ; <a href="mailto:jatkisson@aeieng.com">jatkisson@aeieng.com</a> ; <a href="mailto:pharmeng@shaw.ca">pharmeng@shaw.ca</a> ; <a href="mailto:shammerling@ashrae.org">shammerling@ashrae.org</a>
Steve Hammerling, Manager Of Research & Technical Services	<a href="mailto:MORTS@ashrae.net">MORTS@ashrae.net</a>

Note: These draft minutes have not been approved and not the official, approved record until approved by the TC.



## ASHRAE Technical Committee 1.4

### Meeting Agenda

TC 1.4 Control Theory and Application

<http://tc14.ashraetcs.org/>

Tuesday, June 22, 2021 1:00 – 3:30 pm EST Virtual Conference

*“Commitment to the ASHRAE Code of Ethics – In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)”*

TC 1.4 Control Theory and Application	6/22/2021 1:00 PM
TC 1.4 YEA/Education	6/17/2021 1:00 PM
TC 1.4 Control Components and Applications	6/17/2021 2:00 PM
TC 1.4 Programs	6/17/2021 3:00 PM
TC 1.4 Research	6/18/2021 12:30 PM
TC 1.4 Handbook	6/18/2021 2:30 PM

Seminar 4	Solvin BACnet/SC Management Challenges with Managed BACnet
Seminar 5	Impact of IoT on Building Controls
Seminar 17	Grid-Interactive Buildings: Impacts on Energy Use and Comfort
Seminar 22	Smoother Workflow for Controls Sequence Delivery: Standardizing and Digitizing the Process of Controls Sequences
Seminar 28	Application of Machine Learning in Future Proofing Building Operation
Seminar 29	Applying Machine Learning and AI Data-Driven Controls: Case Studies, Challenges and Lessons Learned
Seminar 49	Hands-On Demonstration: Automating Control Sequence Selection and Evaluation
Seminar 69	Strategies to Optimize Critical Exhaust Systems
Panel 1	Maintaining Control during a Pandemic: Lessons Learned from Adapting Building Automation Systems to Meet Changing Recommendations

#### 1) Call to Order

#### 2) Introduce Members, Guests, and Liaisons

### 3) Roll Call (Quorum)

James Del Monaco, 6/30/21  
 Christopher Benson, 6/30/23  
 Jin Wen, 6/30/21  
 Larry Fisher, 6/30/22  
 Brandon Gill, 6/30/22

Chariti Young, 6/30/21  
 Nemat Lotfi, 6/30/23  
 Amanda Pertzborn, 6/30/23

### 4) TC 1.4 Scope

- a) ASHRAE Technical Committee 1.4 is concerned with control theory, systems, and components (excluding refrigerant flow controls) for heating, ventilating, air conditioning, and refrigeration uses.

### 5) Approve agenda

- a) X motions to approve. Y seconds. Approved -0-0

### 6) Group Discussion point

- a) **TC 1.4 Cybersecurity Subcommittee**
  - i) Chris Benson to provide a proposition for a new subcommittee within TC 1.4 to focus on Cyber Security.
  - ii) New MTG on Cybersecurity for HVAC Systems and Related Infrastructure was formed in Orlando.

### 7) New business

- i) Executive Committee to Propose New Subcommittee for Consideration
  - (1) Refer to open discussion.
- ii) Executive Committee to Propose 3 New Voting Members
- iii) Open forum
- iv) Open discussion/feedback on hybrid meetings in the future.

### 8) Announcements

- a) **TAC – Technical Activities Committee**
  - i) Update on TAC initiative to reduce the number of technical groups
    - (1) TC ReOrg committee issued a final report.
    - (2) So far, TAC has approved 4 TC mergers – 3.2&3.3, 8.10&8.12, 9.4 & 9.8, 7.3&7.8. TC's 10.1 and 10.3 have approved a merger as well.
    - (3) More being considered.
    - (4) Annual reaffirmation process being performed.
  - ii) Decarbonization Task Force Created
  - iii) ASHRAE Strategic Plan Extended Through 2025
    - (1) Existing strategy was scheduled from 2019-2024
- b) **CEC – Conferences and Expositions Committee**
  - i) Technical Program Statistics for Virtual Conference: Conference Papers and Extended Abstracts  
**The following information was not provided by ASHRAE for this conference.**
    - X conference paper abstracts submitted, X approved
    - X conference papers presented
    - X Conference Paper SessionsTechnical Papers
    - X Technical papers received

- X Technical papers presented
- X Technical Paper Sessions

#### Seminars

- X submitted
- X presented

#### Panels

- X submitted
- X scheduled

#### Workshops

- X submitted
- X scheduled

#### Forums

- X submitted
- X scheduled

#### Debates

- X submitted
- X scheduled

#### ii) Upcoming conferences

- 2022 Winter – Las Vegas, Nevada, Jan. 29 – Feb. 2
- 2022 Annual – Toronto, ON, June 25-29

#### c) **RAC – Research Activities Committee**

i)

### 9) **OLD BUSINESS**

#### a) PROJECT COMMITTEE AND ONGOING RESEARCH REPORTS

- i) SSPC 135 (BACnet) – Michael Osborne / Carol Lomonaco
- ii) SGPC 13 (Specifying Building Automation Systems) – Ron Bernstein
- iii) SGPC 36 (High-Performance Sequences of Operation for HVAC Systems) – Steve Taylor

#### b) SUB-COMMITTEE REPORTS

- i) **Executive** – James Del Monaco
- ii) **Education/YEA** – Michelle Shadpour
- iii) **Control Components and Applications** – Chad Moore
- iv) **Program** – Frank Shadpour
- v) **Research** – Kim Barker
- vi) **Handbook** – Charlotte Dean

##### (1) Handbook central:

<https://www.ashrae.org/technical-resources/ashrae-handbook/ashrae-handbook-central>

vii) **Standards** – Steve Taylor

viii) **Webmaster** – Elise Backstrom/Joseph Kilcoyne

#### c) COMMITTEE LIASION REPORTS

- i) TC 1.5 (Computer Applications) – Mike Pouchak
- ii) TC 2.10 HVAC Security – Kim Barker
- iii) TC 5.6 (Control of Fire & Smoke)
- iv) TC 6.1 (Hydronic Systems)

- v) TC 6.7 (Solar Energy Utilization) – Gaylen Atkinson
- vi) TC 7.3 (Operations & Maintenance Management)
- vii) TC 7.5 (Smart Building Systems) – Jin Wen
- viii) TC 7.6 (Systems Energy Utilization)
- ix) TC 9.10 (Laboratory Systems) – Jim Coogan
- x) TC 9.11 (Clean Rooms) – Phil Naughton
- xi) SSPC 62.1 (Ventilation and Acceptable IAQ) – Steve Taylor
- xii) SSPC 90.1 (Energy Efficient Design of New Buildings) – Steve Taylor
- xiii) SSPC 202 (Commissioning Process for Buildings and Systems) – TBD
- xiv) SPC231P, CDL – A Control Description Language for Building Environmental Control Sequences – Paul Erlich
- xv) TC 1.6 (Terminology) – Phil Naughton
- xvi) SPC 189.1 Design of High-Performance Building – Bogi Setty
- xvii) MTG Occupant Behavior in Buildings – Kim Barker
- xviii) MTG Cybersecurity – Kim Barker/Ron Bernstein

d) SOCIETY COMMITTEES

**10) Upcoming Deadlines**

- Las Vegas Winter Conference – January 29 – February 2, 2022
- Seminar, Forums, Workshops, Panels and Debates proposals for Las Vegas are due by August 2, 2021
- RTARs & Work Statements **Confirm with Kim**
- Conference Website: <https://www.ashrae.org/conferences/2022-winter-conference-las-vegas>
- Program Focus at Las Vegas Winter Conference
  - i. Track 1: HVAC&R Systems and Equipment
  - ii. Track 2: Fundamentals and Applications
  - iii. Track 3: Refrigerants and Refrigeration
  - iv. Track 4: Buildings at 360°: Buildings use a large share of a country's final energy, in particular for heating, cooling and various services. Papers and presentations explaining methods, equipment, systems and solutions to satisfy occupants' needs, to guarantee buildings' performances and resilience, and to save resources (energy, water, etc.) will fit this track.
  - v. Track 5: Energy System Integration
  - vi. Track 6: Environmental Health and IEQ in the International Arena
  - vii. Track 7: HVAC for Industrial and Commercial Purposes – Challenges and Opportunities
  - viii. Track 8: Refrigerants, Safety, Performances

**11) Next Meeting – Las Vegas, NV | January 29 – February 2, 2022**

**12) Adjourn**