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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.___TC7.5_____DATE___8/21/2018_____

TC/TG/MTG/TRG TITLE_____Smart Building Systems_____

DATE OF MEETING 6/26/2018_____LOCATION_____George R. Brown 370CF_____

Members Present	Appt	Members Absent	Appt	Ex-Officio Members and Additional Attendance
Rich Hackner, Chair, (V)	2017	Haorong Li, FDD Subc. (V)	2017	Jia Chang Huang
Jin Wen, Vice Chair. (V)	2017	Hiroei Mikami, Member Non-Quorum (V)	2015	John F Gibbermeyer
David Yuill, Research Subc(V)	2017	Zheng O'Neill (V)	2017	Gregory S, Pavlak
Li Song, Secretary (V)	2017	Glenn Remington (V)	2014	Juojun Yang
Carol Lomonaco, Subc (V)	2015	Robert Sonderegger, (V)	2017	Parasto Delgoshge
Eric Young Subc (CM)	2017	Vern Smith, Handbook Subc., (CM)	2015	Durak Gunay
Mike Galler, Webmaster (NV)	2011	Jerine Ahmed, (CM)	2007	Vance Rayne
Mike Brambley (CM)	2002	Hashem Akbari	2013	Chanda Gollapudi
Barry B Bridges (CM)	2017	Osman Ahmed, (CM)	2006	Vinay Ananthachar
Tao Cao (P. CM)	2018	Narendra Amarnani, (CM)	2004	Austin Kim
Dane Christensen (CM)	2012	Don Bailey, (CM)	2008	Wayne Webster
Curtis Fong (P.CM)	2018	Fred Bauman, (CM)	2009	Cedric Truemar
Mohammad Heidarinjad (P.CM)	2018	Christopher Benson, (CM)	2011	
Robert Kraft (P.CM)	2018	David Blum	2012	
Glenn T Remington (CM)	2012	David Bornside, (CM)	2004	
Zixiao Shi (P.CM)	2018	Michael Bobker, (CM)	2008	

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Members Present	Appt	Members Absent	Appt	Ex-Officio Members and Additional Attendance
David F Shipley (CM)	2017	Michael Brandemuehl,	2010	
Edward Ka Cheung Tsui (CM)	2011	Dave Branson, (CM)	2007	
Daniel A Veronica (CM)	2012	Yuebin Yu, FDD Subc (V)	2017	
Liping Wang (CM)	2012	Martha Brook, (CM)	2002	
John Wallace (P.CM)	2017	James Butler, (CM)	2006	
Chariti Young, (CM)	2002	Brian Coffey, (CM)	2011	
Xiaohui Zhou, (NV)	2017	Robert Coleman, (CM)	2009	
Wangda Zuo (CM)	2015	Maria Corsi, (CM)	2008	
		Charles Culp, (CM)	2003	
		Arthur Dexter, (CM)	2000	
		Sharon Dinges, (CM)	2005	
		Piotr Domanski, (CM)	2006	
		Kirk Drees, (CM)	2005	
		Jay Eldridge, (CM)	2008	
		Mohsen Farzad, (CM)	2011	
		Clifford Federspiel, (CM)	2005	
		James Gartner, (CM)	2006	
		Nick Gayeski, (CM)	2011	
		Krishnan Gowri	2007	
		Eunice Hameyie, (CM)	2013	
		Kristin Heinemeier, (CM)	2011	
		David Heinzerling (PCM)	2014	
		David Holmberg, (CM)	2005	
		Ahmad Husaunndee, (CM)	2011	
		Mark Johnson, (CM)	2006	
		Samuel Anthony Jasinski	2004	
		Ashok Kadakia, (CM)	2013	
		David Kahn, (CM)	2006	

		George Kelly, (CM)	2005	
		Michael Kintner-Meyer,	2001	
		Curtis Klaassen, (CM)	2007	
		Jan Kreider, (CM)	2008	
		James Kummer, (CM)	2008	
		Jean Lebrun, (CM)	2008	
		Scott LeClair, (CM)	2008	
		Kuei-Peng Lee, (CM)	2008	
		Hui Li, (CM)	2008	
		Mingsheng Liu, (CM)	2010	
		Darrell Massie, (CM)	2003	
		Itzhak Maor	2003	
		Hung Manh Pham, (CM)	2012	
		John Mitchell, (CM)	2001	
		Ram Narayanamurthy,	2000	
		Ian Nelson (PCM)	2010	
		Ron Nelson, (CM)	2014	
		Richard Ng, (CM)	1998	
		Leslie Norford, (CM)	2008	
		Robert Old (CM)	2006	
		Xiufeng Pang, (CM)	2011	
		William Pienta, (CM)	2011	
		Kinga Porst, (CM)	2006	
		Michael Pouchak, (CM)	2002	
		Andrew Price, (CM)	2003	
		Barry Reardon, (CM)	2003	
		Agami Reddy (CM)	2006	
		Michael Rosenberg (P.CM)	2018	
		Jeffrey Schein, (CM)	1999	

		Russell Secor, (CM)	2007	
		John Seem, (CM)	2008	
		Reinhard Seidl	2012	
		Peter Simmonds, (CM)	2003	
		Pornsak Songkakul, (CM)	2011	
		Gene Strehelow, (CM)	2002	
		Meli Stylianou, (V)	2014	
		James Sweeney (PCM)	2013	
		Stephen Treado (CM)	2006	
		Matthew Tyler, (CM)	2012	
		Dan Veronica, (CM)	2011	
		Arun Vohra, (CM)	2011	
		Paul Wacker, (CM)	2006	
		Stuart Waterbury, (CM)	2011	
		Thomas Webster, (CM)	2011	
		Allen Weidman, (CM)	2009	
		Jonathan West, (CM)	2011	
		James Winston, (CM)	2013	
		Jonathan Wright, (CM)	1996	
		Peng Xu, (CM)	2008	
		Daihong Yu	2011	
		Tea Zakula		
		Li Zhang, (CM)	2012	
		Carlos Haiad, (V)	2015	
		Adrienne Thomle, Section Head		
		Kimberly Barker		
		James Braun, (CM)	2001	
		Barry Bridges		
		Joon Ho Choi	2002	

		Sukru Erisgen, (CM)	2011	
		Phil Haves (CM)	2010	
		John House (CM)	2008	
		Xin (Sherry) Hu	2015	
		Brian James	2018	
		Srinivas Katipamula, (CM)	1996	
		Thomas Lawrence	2014	
		Guanjing Lin	2013	
		Ran Liu	2017	
		David Quirk	2015	
		Mayumi Miura	2013	
		Dave Shipley (CM)	2012	
		Vernon Smith, (CM)	2008	
		Andrew Windham	2008	

(V) = voting member

(CM) = corresponding member

(PCM) = provisional corresponding member

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

DATE: June 26,2018

TC NO. 7.5   TC TITLE: Smart Building Systems

CHAIR: Rich Hackner   VICE CHAIR: Jin Wen

TC7.5 (Smart Buildings) Main Meeting Minutes
ASHRAE 2018 Summer Meeting
George R. Brown, 3rd floor, 370 CF
Houston, TX
Draft

1. The meeting started at 3:30 on time and Chair started with greetings, signups, quorum calling. Not enough quorum so any needed votes will be done via e-ballot with the 2018-2019 voting members.
2. ASHRAE guest: Sonya Pouncy, Member of CEC, the Chair of TC7.3, updated that Atlanta conference had a track for facility maintenance and she was calling for program participations and volunteers for paper reviews.
3. The Chair read the scope of the TC7.5 and ASHRAE code of ethics and introduced the TC structure of different subcommittees.
4. The Chair called for the Chicago minutes discussion for changes and Carol mentioned there was a few typos. Carol will send the comments to Li Song.
5. Announcements from the Chair:
    a. "Thank you" letter for volunteers is available on basecamp.
    b. ASHRAE 125th anniversary celebration will be in Atlanta in January 2019. Glenn provided updates on the history review meeting including the notions for special publications, special art works for the celebration preparation. Interviews were filmed. All kinds of stuff are ongoing. It is going to be exciting.

<li value="3" type="c">ASHRAE does have the remote participation meetings to allow voting members to call in. If you cannot show up in our next January meeting, please let us know earlier so that we can request RPM capability and let you participate remotely.
<li type="d">CEC calls for paper reviewers. Please sign up on the ASHRAE website for volunteering if interested.
<li type="e">Congratulations to Li Song for the paper award.

6. Self-introduction around the table.
7. Liaison reports:
   a. TC1.4: The liaison report by Chariti Young is attached at the end of this minutes.
   b. TC1.5: Mike webmaster mentioned that there were two program ideas for co-sponsorship. Cyber security subcommittee was requesting a liaison from TC7.5.
   c. TC1.6: no updates
   d. TC7.3: Sonya was here a few minutes ago. Jin added that TC7.3 has a small section about FDD in the handbook to seek help from TC7.5.
   e. SPC207P: David Yuill and Glenn Remington reported that the SPC 207P committee met and voted to release the current draft for an Advisory Public Review (APR). This review will allow non-committee members to access the standard draft and provides an opportunity to give feedback. The feedback on an APR is advisory, meaning that the SPC is not required to address all comments. However, they are keen to get the feedback from TC members and others, to strengthen the draft Standard.
   f. TG2 (HVAC security): Carol updated that TG2 was looking to become TC2.10. TG2 has sponsored several seminars in the past and responsible for GPC29, which is in a need for revisions.
8. FDD Subcommittee Updates by Dave Yuill (substitute for Yuebin):
   a. The research and program will be discussed in later subcommittees.
   b. A new subcommittee chair is needed.
9. Enabling technology updates by Carol:
   a. A report was posted on the basecamp while missing a couple of names.
   b. Had a good group of people and reviewed a few RTARs suggested by Nick.
   c. A lot talk about FDD and WS submission for the virtual flow meter RTAR.
   d. Some research ideas about DEMOSS.
   e. New ideas: Uber HVAC service technician. Jin suggested to host a seminar regarding the development of smart sensors. Vance was asked to share the information about NIST FDD data logger, using UDP that was behind the NIST firewall for cyber security. A program is targeted for Atlanta.
   f. John from Emerson was interested in serving as the subcommittee chair.
10. Smart Grid updates by Liping Wang (substitute for Kristen):
    a. The subcommittee had three successful co-sponsored seminars and Joe will have one on Wednesday 8:00am.
    b. Program discussion for the microgrid, battery, thermal storage and such will be continuously pursued.
    c. Glen will take over Carlos' program ideas of the big data, cyber security for smart devices.
    d. Transactive control was proposed by Jin for a research summit. 3-page extended abstract format was suggested by Jin. It can be presented in ASHRAE conferences, will be indexed and extended to STDE.
    e. Joe made a good summary about the future smart buildings.
    f. Introduced RTAR ideas.
11. BOD updates by Li Song (substitute for Zheng):
    a. Skipped the discussions for program and research ideas because they would be discussed in the later sections.

b. Called for new ideas, but no inputs received.
12. Research updates by David:
    a. WS1783: Method for evaluating AHU FDD (Jin is the lead) will come along. Jin added that the WS was submitted a year ago and comments were provided to Jin. Srinivas is helping get support from 90.1.
    b. Occupancy sensing RTAR idea. Sensor research meeting and Multitasking group are cosponsoring it.
    c. WS1812: Water pipe leakage no updates because the leads did not come.
    d. RP1661: Wangda, the PI, updated that the project started last October. Task 1 was completed and approved. Task 2 was finished 70% and will have a second PMS meeting to review it.
    e. RP1756: Liping, a PMS member, updated that the title of the project was Evaluation of low cost particular sensors for buildings. Project was moving along. Two TC7.5 members served in PMS.
    f. A presentation was given by David Blum, LBNL, to introduce a 5-year project by multiple national labs. The ppt is uploaded on the basecamp. They are seeking additional technical advisory group members.
    g. No time for programs.
13. The chair (Rich) called for speakers for TC6.9, regarding to the thermal storage application with smart grids. Title is "building energy storage – the future of the smart grids". Glen volunteered.
14. Program updates by Rich (substitute)
    a. 10 seminars were proposed and 9 of them were selected for Houston.
    b. One forum was not accepted.
    c. Next track – something related to smart grids by Joe
    d. The Cyber security program by Carol for Atlanta. She has three speakers. Carol proposed another one for BACNet.
    e. MPG occupancy behavior is looking for co-sponsorship for the program "Human in the loop control".
    f. Glen asked the seminar review process and criteria: "whether the consistency matters among the speakers and the themes of the speakers". Chariti thought it is positive. Carol suggested to contact track chair for a clear answer to the question.
    g. Listed sponsoring seminar2, 8, 11, 18, 27, 29, 43, 50, 60
    h. Existing building behavior, seeking TC7.6 for co-sponsrohip.
    i. Glen suggested split the program into commercial and residential buildings for two different ones within the context of utilities. Targeting for Atlanta.
    j. For future: Rich suggested Jin to finalize the list with Eric.
15. Standard update: no updates.
16. Webpage:
    a. How to add other people to the basecamp? The chair and the webmaster are the people to send the invitation link to the people who are interested.
    b. How to update the basecamp to V.3? The chair needs to send a request first. David Yuill mentioned that we did not need to upgrade to V.3 because we would have a chance to lose the data.
    c. Mike added if the documents need to be shared with public, they need to be uploaded to ASHRAE website.
17. Handbook: Chapter 42 needs to go through a final approval from handbook committee. Chapter 61 need to be reviewed and voted, due July 15th (Maybe). The drafts of the chapters can be found on Authoring portal.
18. Old business: none
19. New business:
    a. MTG: effective building operations - one voting member is needed from TC7.5. Interested volunteers can contact Jin and Rich.

     b. Jin proposed two ideas by following what has been done by TC1.4. 1) Jin promoted to have a volunteer to promote service awards for TC7.5 members. Carol has volunteered; 2) Jin promoted to have a YEA volunteer to promote YEA award. Rich has volunteered.

20. Adjourned at 5:20pm

Appendix:

ASHRAE TC 1.4 Liaison Report
Chariti Young

<u>Proposal for new Guideline, or extension of Guideline 36</u>
TC 1.4 is soliciting feedback on a proposal for the creation of a new Guideline or an extension of Guideline 36, to provide detailed descriptions of the subsystems for which Guideline 36 provides sequences of operations. Each subsystem specification should at least include:

- Minimum requirement specifications for all the equipment, including accessories (e.g. valves, water treatment, strainers)
- Equipment connection diagram (P&ID), with all accessories, sensors location, and ducts and piping sizing guidelines (or pointers to those guidelines).
- Controls equipment minimum specifications, detailed sequences of operations (or pointers to sections of Guideline 36)
- Options (e.g. optional geothermal field in parallel with cooling towers)
- All interfaces required for interactions with other subsystems, from piping connection ports, to network points, and related functions (e.g. how the boiler plant will use the load valves position to optimize the supply temperature and distribution pumps speed), to make them as plug-and-play as possible.
- All sensors and routines required for automatic fault detection, diagnostics, and ongoing commissioning.

They may also include:

- EnergyPlus model which can take the models of the specific equipment used.
- Commissioning and maintenance recommendations.
- Sensors and logic to verify the equipment performance. This should be accompanied with a requirement for equipment suppliers to provide an efficiency map at the time of submittal, which will be part of what's covered by their warranty, as well as the "as-built" efficiency map measured before shipping.

The development of these specifications should involve expertise from most ASHRAE technical groups, so the proposal was sent to many groups' chairs for discussion at the Houston meeting. If you have questions or feedback, please contact the TC1.4 Chair, Marcelo Acosta.
<u>Guideline 13 update</u>
SGPC 13 is pursuing a 2019 update of G13 – Specifying a Building Automation System with focus on content in the following areas:

- Fault Detection and Diagnostics
- IT security
- Network architecture extension to include communicating and non-communicating sensors
- Terminology

If you would like to participate in ongoing web conferences to further these areas, please watch for meeting announcements in the Standards Actions or contact SGPC13 chair, Todd Gottshall.

<u>Guideline 36 update</u>

Guideline 36 – High Performance Sequences of Operations, is published and available in the ASHRAE bookstore. The 3-year period from formation of the GPC to first publication of the Guideline may be an ASHRAE record.

<u>Handbook update</u>
TC 1.4 is currently reviewing Chapter 7 of the Fundamentals Handbook. Please review. If you identify any information that is outdated, incorrect, or missing, please contact the TC 1.4 Handbook Chair, James DelMonaco.

<u>Program and research update</u>
Thanks for co-sponsorship of three successful programs in Houston. TC 1.4 and TC 7.5 contributions made up nearly 20% of the technical program for the 2018 Annual Meeting. We are looking forward to co-sponsorship of several programs in Atlanta.
TC 1.4 and TC 7.5 have several co-sponsored research projects ongoing and RTARs under development. All covered in Research reports from TC 7.5.