



## Agenda

### TC 7.5 Building Operations Dynamics

2:00-2:45 pm (ET), Jan 16, 2020

Prepared by Donghun Kim

**Subcommittee Scope:** • The Building Operations Dynamics Subcommittee of TC 7.5 is concerned with the dynamic characteristics and interactions of comfort conditions, the active components of HVAC systems, the passive components of HVAC systems, control systems and operation strategies and the building. The committee is concerned with the methods of building system operation which minimize energy used through the consideration of dynamics and interactions. It is also concerned with methods which consider dynamic and interactive characteristics in the design or comfort conditioning systems.

- Meeting Attendance

[https://docs.google.com/spreadsheets/d/1So01zAkZoHpLSqFek0fOPBBvcFsv71DkssBgNF\\_OXcs/edit#gid=0](https://docs.google.com/spreadsheets/d/1So01zAkZoHpLSqFek0fOPBBvcFsv71DkssBgNF_OXcs/edit#gid=0)

Agenda:

5 min	<b>Call to Order</b>	
	Self-introduction, announce the subcommittee scope and other announcements.	
15 min	<b>Program</b>	
	Current meeting status and new ideas proposals	See below for more information
15 min	<b>Update/Discussion of Active project/RTARs/Work Statement</b>	See below for more information
10 min	<b>New ideas and discussions</b>	
Adjourn		

### Program Discussion:

Program	Title	Lead	Previous talks
	What to do with optimal control?	Peter Armstrong	Orlando: Peter is not in the meeting. No discussions. <b>Virtual Conf (Austin): Peter is not in the meeting. Park this idea</b>
	Model accuracy impact study on model predictive control	Andreas Athienitis	KC: Complete, conference paper, Plan to organize seminar. Orlando: Dave Blum from LBNL is willing to participate in this seminar (Chicago). Zheng O'Neill will connect them with Andreas. Zheng will connect them with Andreas. <b>Virtual Conf (Austin): David &amp; Jose will contribute to this seminar (Chicago)</b>
	Training plan for facilities	Zhou Joe	Bach to follow up Orlando: No discussions. Park this idea. Park this idea

			Virtual Conf (Austin): No discussions. Park this idea
	Building Operations for Grow Applications?	Glen/Bach Tsan	Orlando: No discussions. Park this idea. Reach out to TC 9.12 (?) Virtual Conf (Austin): Liping, Li, Glen and Carol will have a following talk
	Refrigeration Thermal Storage - locating thermal storage specifically in refrigeration systems (TC 6.9, 7.5, refrigeration, others?)	Scott Hackell (Slipstream) - chair	Orlando: Will propose to <u>2021</u> . (TC 6.9, 7.5, refrigeration, others?) Zheng suggested to talk with 10.7 Virtual Conf (Austin): Joe will follow up with Scott.
	New programs		

### Research Proposals Discussions:

Research	Title	Lead	Previous talks (~ Feb/2020, Orlando)
RP-1661	RP- 1661: Development and Validation of Dynamic Models for the Evaluation of Chilled-Water System Control Strategies in the ASHRAE Handbook	TBD	Orlando: Li (PMS): need to tune the model, scopes need to be changed. May need another extension. Wangda (contractor): provides updates. Submit 60 pages of documentation to move forward for modeling. Finish implementation, debug controllers. Try to finish the debugging within 1-2 months. Asked for another one year NCE to April 2021. Virtual Conf (Austin): Asked for another one year no cost extension. Made a good progress.
WS	WS- 1809: Updating reference guide for dynamic models of HVAC equipment	Heejin Cho	Send out to RAC before the RTAR rules changed PTAR (Publication TAR). Co-Sponsored by 1.4 Has been reviewed by all voting members. 1/15/2019 – Approved by all. RAC provided comments back to the author Orlando: no updates from Heejin Cho. Zheng will follow up with Heejin Li and Zheng iterated with Heejin and Virtual Conf (Austin): Zheng will follow up with Heejin.

RTAR <sup>1</sup>	If you had “perfect information” on occupant’s comfort preferences and their location within a conditioned space then how would you optimize control and how much value would you be able to realize	Rich Hackner? Li Song?	RTAR completed but did not submit. Internal TC review, and started to award, but search for co-sponsorship. Should check with occupant behavior group. Coordinate with TC 1.4? Circulate the document again via e-mail and repost by Li Song. Wen to communicate with Rich Hackner Voting Members to review on this RTAR and posted on BaseCamp. Organize electronic voting. Voted in KC Orlando: Not submitted yet. Will submitted by Li <b>Virtual Conf (Austin): Bill asked to get vote from MTG.OBB. No feedback yet. Li will iterate with Bing Dong.</b>
RTAR?	How IoT impacts operators	Joe Carol Liping Wang Scott Hackel	Carol working on outline. How to quantify impact – Li Song Dovetailing with enabling technologies. Update the title Orlando: Carol: No updates Li: should include Residentia application. We will need to have another idea/RTAR and Zheng will help Li Carol: does the new idea include homes or multi-family homes. Need to consider privacy, multi-stories,etc. <b>Virtual Conf (Austin): Carol, Joe and Li will have a following meeting.</b>
RTAR?	Link the productivity with occupancy-based control; Occupant in the loop controls	Ivo Martinac	Ivo Martinac – professor developing idea. The idea but need to develop the team. Park this idea at this time Orlando: No updates. Park this idea, Zheng will follow up with Ivo. <b>Virtual Conf (Austin): No updates. Park this idea.</b>
RTAR?	Open Source tool for integrating building and grid simulations	Donghun Kim, Jie Cai, Qun Zhou	Orlando: First, we will need to define the scope. Qun Zhou from University of Central Florida talked about her perspectives from grid side. <b>Virtual Conf (Austin): Donghun, QZ, Jie Cai and Bing Dong will have the</b>

<sup>1</sup> RTAR: Research Topic Acceptance Request

			following talk to narrow down the scope of research.
	new ideas?		