

Minutes of the Main Meeting
ASHRAE 2010 Winter Meeting – Orlando, FL
TC 1.5 Computer Applications

TC 1.5 Computer Applications (25/25)(Screen)

Monday 6:30-9:00p Gatlin E2 (1)

Sponsoring: Seminar 13: Using the Web to Improve Learning and Working for Building Professionals; Seminar 24: BIM to SIM: Technology Update; Seminar 36: Which BIM Interoperability Schemas Are Most Appropriate for Different Types of Building Energy Design

TC 1.5 Emerging Applications (6/10)	Sunday	5:00-6:00p	Panzacola G2 (1)
TC 1.5 Research (15)	Sunday	6:00-7:00p	Panzacola G2
TC 1.5 Program (15)	Sunday	7:00-8:00p	Panzacola G2
TC 1.5 Handbook (15)	Monday	6:00-6:30p	Gatlin E2 (1)

Main Committee Meeting

Monday 6:30-9:00 p.m. Gatlin E2 (1)

1. **Call to Order** – Meeting called to order at 6:30 P.M.
2. **Welcome – Introductions, Signup and Paperless meeting details** – Sharepoint server provided by Peppers
3. **Roll Call**
4. **Review of Agenda** – Agenda approved. Moved by Branson, seconded by Nelson.
5. **Executive Session on Contractor Selection for RP-1468**
6. **Approval Of Minutes from 2009 Summer Meeting**
 - a. agenda approved motion Branson second Nelson 6-0-0
7. **Review Action Items from 2009 Summer Meeting**
 - a. Chair will forward motion from PES
 - b. Gowri set up Google group- completed
 - c. Submit program information for session chairs- done
 - d. Request for volunteers to work with rap to provide liaison reports- complete
 - e. Schaeffer- wiki topic update
 - i. Looked at what 1.6 has done with their wiki
 - ii. Wiki almost running
 - iii. Site selected within ASHRAE
 - iv. Bruce- ASHRAE staff may want to offload WIKI to other org (IFMA ??)- this is viewed as bad- currently looking for someone like NIST to hold wiki instead, so we can maintain control of wiki.
 - v. Pouchak comments this is an important issue
 - f. Web Site Update
 - i. Pouchak- There is a new webinar for webmasters
 - g. Google groups list- list distributed for members to check
 - h. Victor Penar-
 - i. In the past group was allowed two international members, if they didn't show up it didn't count against voting. Now, we can have any number of international members if they're approved by section head.

- ii. Roster changes delivered to section head by tomorrow night

8. Chair's Report

- a. Dinner plans
 - i. Restaurant on first floor- 9 members going
- b. Announcements
 - i. Pouchak has announcements from the TC chair breakfast.
 1. 2009-2010 Hightower award- won by Dharam V. Punwani
 2. 2010-2015 strategic plan available at (PDF):
http://www.ashrae.org/docLib/200641713376_347.pdf
 3. 2010-2011 roster updates- those interested in becoming members or corresponding members should indicate on sign-in sheet
 4. Hitchcock- looking for volunteer to chair research subcommittee as he will be unable to attend next meeting
 5. Pouchak attended TC chair training workshop
 - a. Two new initiatives discussed later?
 6. Pouchak welcomes new members, invites them to subcommittee
 7. There is useful info on TC website, tc15.ashraetcs.org
 8. TC manual of procedures updated
 9. Tech council steering committee- technical focus of society
 10. CEC conference and Expositions committee recently implemented technical program changes.
 11. Publications committee has identified 8 pubs which need revision
 12. TC websites- request to keep them up to date
 13. ECC initiative- with TAC- webinar training to set up and maintain TC websites
 14. To all TC's- ECC has solicited and asked for new TC's to participate in Google groups instead of "members only" section of TC website. Pouchak is leading initiative. Pouchak asks all members of TC to sign up for Google group.
 15. Upcoming program deadline dates,
 - a. Albuquerque due Jun 26-Jun 30,2010, Raising Efficiency to New Levels
 - b. Las Vegas Jan 29-Feb 2 2011, Zero energy design
 - c. Montreal, Jun 25-Jun 29 2011, Net zero energy building
 - ii. Steve Rosen- for taking over handbook chair
 - iii. Larry Schaeffer- for contributions to program committee
 - iii. Rob Hitchcock- For many research proposals

9. Subcommittee Reports

- a. Handbook – *Steve Rosen*
 - i. Will post chapter on Google groups.
 - ii. Will solicit new subjects for chapter.
 - iii. Next version of chapter must be approved by Albuquerque.
 - iv. Branson says we should lead the pack in adding to the electronic handbook.
 1. seconded by Grondzak.
 - v. Peppers mentions the handbook is going to be released on the web, and would be more open to adding applications.
- b. Research – *Rob Hitchcock*

- i. 1468 PMS meeting was held last night, but meeting location was not distributed. There is an action item to check that the location is listed. PMS is planning on holding monthly web based meetings. Dates not set yet, and it's not clear how many people can attend. Contact PMS chair, Branson, for info. Start date moved to Jan 1. No progress so far, too new.
 - 1. Branson- targeting first web meeting last week of February. Branson will send info on listserv. Meeting time is at 3:30 on Sundays, before other TC meetings.
 - 2. Hitchcock adds PMS reports will be posted to Google groups.
 - 3. Hitchcock announces contractor- Texas A&M university, Mark Clayton is PI
 - 4. Hitchcock- (*sec will fill out this section*)
 - a. Goal 1-
 - b. Goal 2 walter, Krishnan
 - c. Goal 3 rob
 - d. Feb 22nd is deadline for comments....
 - e. There is a cash flow problem for funding, but stuff in pipeline would get funding, they anticipate funding will continue in future
 - f. Potential research topics- you can submit topics outside goals listed for ASHRAE- talk to Rob if you have ideas for RTAR outside ASHRAE topics
- c. Emerging Applications – *Xiaohui Zhou*
 - i. Committee met on Sunday at 6 PM, 7 people attending.
 - ii. New areas of interest-
 - 1. Google groups
 - 2. BIM
 - 3. Wireless developments in HVAC
 - a. sensors and mesh networks, adoption is slow
 - 4. Smart sensors, IEEE 1451?
 - 5. Data mining and modeling.
 - 6. Energy harvesting wireless sensors.
 - 7. Wireless for lighting controls.
 - 8. California is considering code change to require disclosure of utility data to new owner when building is sold.
 - 9. How can TC15 help educate ASHRAE members on current topics?
 - a. Go to ASHRAE expo and find new tech.
 - b. “Google news alert” to find keywords- search google news for updates on keywords.
 - 10. Emerging apps website, not updated since 2004. EA chair will update.
 - iii. Branson asks- wikis are emerging app to ASHRAE- do we need to educate members?
- d. Program – *Larry Schaefer*
 - i. Met Sunday night
 - ii. 3 programs on docket in Orlando
 - 1. BIM goes boom
 - 2. seminar 24 BIM to SIM
 - a. raj- talk well received
 - 3. seminar 36
 - iii. The BIM track is continuing in Albuquerque.
 - iv. There are 6 slots for BIMs.
 - v. The CEC replaces the Programs committee, CEC, BIM committee, etc., are looking for BIM content
 - 1. Schaefer has been trying to contact chairs.
 - 2. Program submittals don't need to be approved by full committee anymore
 - a. Schaeffer would still like committee to approve direction of subcommittee.
 - b. Programs are submitted to a track and timeslot?
 - vi. Description of submitted programs
 - vii. Question- do we have in the pipeline, papers which would be (appropriate?) for Albuquerque?

- viii. Ideas from last night
 - 1. Garbage in, garbage out-
 - 2. Why do I want a BIM?- What are the drivers?
 - 3. BIM perspectives- what I wanted, what I got.
 - 4. Seminar- What your phone knows about your building- Don't be such a smartapp.
 - 5. Emerging Applications – similar to wireless topic submitted previously, but with updates
- ix. Branson- possible topic for program- How BIM models are being used outside A&E area.
 - 1. Schaeffer- “Emerging BIM apps outside standard AE practice”
- x. Branson motions we accept list of programs for submission,
 - 1. Second by Peppers
 - 2. Vote 7-0-0 chair not voting
- xi. Seminar chair must line up speakers, submit seminar by Feb 12.
- e. Web Page – *Steve Rosen- no updates*
- f. Standards- Alison Kwok- requests standards committee be scheduled for next meeting
- g. T&P – *Dave Branson-* meeting was held, consensus that there should be a room scheduled for the next meeting.

10. Liaison Reports

- a. GPC-20 – *Rob Hitchcock*
 - i. GPC 20 met this morning,
 - 1. In a mere 7 years of writing, we have almost reached a public review draft
 - 2. Making final push to get that done by next meeting
 - 3. The TPS have been changed:

- TITLE: Documenting HVAC&R Work Processes and Data Exchange Requirements
- PURPOSE: To define a systematic procedure for documenting work processes (Use Cases) and data exchange requirements for specific HVAC&R activities.
- SCOPE: This guideline:
 - 1. Defines methods for documenting use cases and data exchange requirements related to HVAC&R activities involving equipment, systems, design services, and other services over the life cycle of capital facilities. Use Case documentation will employ domain expert terminology and a consistent format to facilitate review and adoption by industry participants.
 - 2. Outlines procedures for web-based management of Use Cases to support development of formal data definitions and implementation in HVAC&R industry software.

a.

- b. Others- No other liaisons present

11. Old Business

12. New Business

- a. Bornside- requests chair to request rooms with adequate power outlets.
- b. Branson asks chair to write letter to ASHRAE meeting and events requesting projectors under ADA requirements- passed 7-0-0 chair not voting.
 - i. 20 members claim to be visually impaired.
- c. Discussion on seminar 13- received good reviews.
- d. Bim interoperability Tuesday, Steve Roth gives summary.

13. Next Meeting Times – Albuquerque, NM (June 26-30, 2010)

14. Adjournment motion by Peppers, seconds by Joe

Action Item Date	Actor	Description
Before Alb.	Chair	Request rooms with adequate power outlets.
Before Alb.	Chair	Write letter to ASHRAE meeting and events requesting projectors under ADA requirements
Before Alb.	Chair	Check that location of PMS meeting is distributed.

Attendance

Name TC 1.5 Main

Voting Members

Krishnan Gowri x – (hb)

Walter Grondzik x

Tim Dwyer x

Mike Galler x

Ron Nelson x

Vernon Peppers x

David Branson x

Steve Rosen x

Stephen Roth x

Non-Voting/Corresponding Members

Bruce Billedeaux x

Michael Pouchak x

John Crosby x

Rob Hitchcock x

John Kennedy x

Larry Schaefer x

Xiaohui (Joe) Zhou x

Alison Kwok x

David Bornside x

Pat Carpenter x

Brian Moura x

Benjamin Welle x

William Healy x

Rodney Butler x

Zheng O'Neill x

Other meetings

Mike Pouchak – handbook

Mike galler – handbook

Rosen – handbook

Larry Schaefer – handbook

Rob Hitchcock – handbook

Vernon Peppers – hb

Bruce Billedeaux – hb

John Crosby – hb

Brian Moura hb,

Krishnan gowri – hb

Handbook Subcommittee Meeting Minutes

1. Made self-introductions.
2. Set up wireless network.
3. Action item: Handbook chair will determine the deadline for submission of the handbook chapter.
4. Possible improvement to the handbook.
 - a. More data in CD plus.
 - b. Wireless applications are in CD plus. Can it go into paper?
Action item: Chair will get this put in.
 - c. Smart grid.
 - d. Start Google Groups discussion on handbook improvements.

Meeting minutes submitted by Steven Rosen

TC 1.5 program subcommittee met 7:00 to 8:00 on 1/24/2010.

Orlando Programs

Seminar 13 – Using the Web to Improve Learning and Working for Building Professionals

Seminar 24 – BIM to SIM: Technology Update

Seminar 36 – Which BIM Interoperability Schemas Are Most Appropriate for Different Types of Building Energy Design

Minutes

Larry Sun (BIM Program Track champion) had contacted Larry Schaefer regarding the continuation of the BIM Program Track concept from the Orlando meeting on to the Albuquerque meeting. Overall, three 1.5 hour and three 1.0 hour slots are available for BIM related topics. The primary cognizant TC's are 1.5, 4.1, and 7.1, plus the BIM steering committee. Larry will contact the other program chairs to try to meet on Wednesday to coordinate program submittals accordingly. The program submittal deadline is Feb. 12.

Program submittals do not need to be prioritized or approved by the TC. However, the sub-committee still thought it best to limit submittals to a reasonable number to ensure better chance of acceptance. Finding program chairs may be the ultimate limit in any case.

Steven Roth reported that TC4.1 was considering submitting a mini BIM Shootout, where 2 or 3 engineering firms would each pick a particular BIM software, model a particular building, do an extract to an energy analysis program, and evaluate the “goodness” of the results and the process. (product names omitted to protect the innocent)

Chris Wilkins had earlier mentioned at least one BIM related seminar possibility (from out of 7.1) and possibly a forum– not exactly sure what, but will coordinate.

Question from Larry to TC – do we have any papers coming up from out of RP's that we need to be considering for program soon?

Proposals for TC1.5 program submittals for Orlando:

Forum on “Garbage In, Gospel Out” like-concept. (Lots of name suggestions)

Moderator Dave Branson. Start with a 15-30 minute presentation of the problems of BIM-associated data exchange from upstream parties and to downstream parties. Outline examples of the problems, and ask for input on other problems, and approaches to address the problems.

Seminar: “Why Do I Want a BIM?”

Chair: Krisnan Gowri

2-4 presentors, each focus on a different rationale from a consulting engineer's perspective. For instance, “Productivity”, “Reducing Errors”, “Marketability”, “Because my Architect Told Me I Did”, etc. Could possibly focus on both the drivers and the real world experience?

Seminar: “BIM Perspectives: What I Wanted, What I Got”

Chair: Larry Schaefer

3 presenters from other disciplines, talking their expectations as to what they expected of BIM in collaborations – i.e. what did I expect to be getting out of BIM from my “upstream” and “downstream” partners. Contrast expectations with actual experience. For instance, architects talk about expectations of engineers, contractors talk about owners, owners talk about everyone. Purposefully exclude engineers – there are plenty of seminars about engineers viewpoints. Other players to consider – manufacturers, quasi-government agencies, developers, etc.

Seminar: “What Your Phone Knows About Your Building (or, Don’t Be Such a Smart App!)”

Chair Stephen Roth

Find a way (by discipline? By company?) to have 3 or 4 presenters go over “Smart Phone” Apps available that are directly applicable to the HVAC industry. The general consensus is that there exists a plethora of apps that are really cool, but their existence is not at all widely known in the HVAC industry.

Seminar: “Emerging Applications”

Chair: Joe Zhou

Somewhat of a repackaging of the June submittal. Addressable Lighting Controls (but be sure to stress Daylighting application in the title.) Tridium small devices. (not sure I have this recorded correctly.) Self-powered wireless sensors.

Other concepts from prior meetings were not discussed, but are included below for further future reference. (Contact Larry if you’d like to have them withdrawn, or if you know that another TC is going to sponsor for Albuquerque)

BIM for Lifecycle Business Processes chair: Rob Hitchcock 90% chance of firming TC7.1 Cosponsor

BIMmers Beware (B is for Babel?) Krishnan

Beyond BIM TBD

BIM from Build to Boom, Lifecycle of a File to a Structure Mike Galler

- Planning
- Construction
- Operation
- Deconstruction

DDC as a Web-based Service Mike Pouchak

Remote Load Control of Your Home Steve Roth & Raj Setty

Are All BIM’s Created Equal or “Can’t We All Just Get Along?” Krishnan Gowri

So Your Architect Just Gave You a BIM, What Now? Raj Setty

A Breath of Fresh Air - BIM Applied to Natural Ventilation Energy Analysis John Crosby

Minutes submitted by Larry Schaefer, Program Subcommittee Chair

TC 1.5 Research Subcommittee Meeting Minutes

Panzacola (G2), Sunday January 24th, 2010, 6:00 - 7:00 p.m.

1. Welcome and Introductions
2. Report on 1468-RP “Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing”
 - Note that PMS meetings should be announced to the listserv and scheduled so as not to conflict with other TC1.5 subcommittee meetings.
 - Dave Branson (PMS Chair) and Mark Clayton (Project PI) recapped PMS meeting #1.
 - Attended by PMS members and some other interested parties. PMS meetings are open.
 - Project start date rolled forward to January 1, 2010
 - Discussion of proposed methodology. Good round robin discussion of key areas to focus on while not consuming time on unnecessary areas. Talked about test case identification. Focus on geometry met with consensus.
 - Will be holding monthly web-based meetings hosted by Bentley. Dates to be set. **ACTION: Interested people contact Dave Branson to be invited.**
 - **ACTION: PMS reports to be posted to TC1.5 Google Groups site by Dave Branson.**
 - Announcements will be made on semi-annual PMS meetings to TC1.5, BIM SC, GPC-20, TC4.1, TC4.7
 - **ACTION: Announcement made by Mike Pouchak**
3. Discussion of follow on RTARs to 1468
 - **ACTION: Hitchcock to initiate new round of RTAR development between semi-annual meetings.**
4. Discussion of RAP 2010-2015 Research Plan
 - Draft Review 1 available for download and comment from the ASHRAE website.
 - Per Louisville Main Meeting minutes TC1.5 liaisons:
 - Goal #2 Progress toward Advanced Energy Design Guide (AEDG) and cost effective net-zero energy (NZE) buildings: Grondzik and Gowri
 - Goal #6 Building Information Modeling of energy efficient, high performing buildings: Roth
 - **ACTION: Liaisons to contact RAP Goal Champions (#2 Jim Brodrick, #6 Hywel Davies)**
5. Research project topic suggestions:
 - BIM: ASHRAE BIM Roadmap, Use Case Development, Tool Survey, Best Practices Guide, Assessment of BIM Benefits to ASHRAE Members (Hitchcock)
 - Cloud-based BIM Servers and Web Services (Branson)
 - Create BIM model of ASHRAE HQ for various Life-Cycle applications, such as performance metrics case study (Gowri)
 - Build two BIM models for comparing design alternatives (Xiaohui Zhou)
 - BIM Workflow/Process Guidelines (Gowri/Branson)
 - RP1017 Follow-on: Handbook Toolkit for developing multi-media Handbook content (Haberl)

- RP1468 Follow-on: Equipment performance data content, HVAC system modeling, lighting, IEQ, CFD, etc. (Roth)
6. Reminder that Mike Pouchak set up a Google Group for TC1.5, possible use for developing RTAR and Work Statements.
 7. Adjourn
Meeting minutes submitted by Rob Hitchcock

Minutes – Emerging Applications Subcommittee

Orlando, FL
January 25, 2010
SUNDAY 5:00 – 6:00pm
PANZACOLA G2 (1)

1. The meeting was called to order at 5:07pm
2. Introductions
 - 7 attendees
3. Announcements and Old Business
 - How do you feel about the TC1.5 Google group?
 - Recommend TC 1.5 member to join, contact Mike Poucheck, good way to share/modify/keep the latest version of documents.
 - Discussion, update and brainstorming:
 - BIM: no update
 - Wireless: Bruce mentioned wireless technologies/applications are hot in industrial applications (SCADA), the wireless sensor and network technologies is good enough for real world.
 - Smart sensors: still very little adoption in HVAC area, due to communication protocol compatibility with common building automation control systems, and limited knowledge of the IEEE 1451 smart sensor
 - Data mining, modeling, and its application on HVAC: there are researchers using data mining approach to model AHU and try to minimize / optimize the total energy use of the system by adjusting supply air temperature and supply air static pressure setpoint hourly.
 - Other emerging technologies,
 - Smart applications for HVAC
 - Wireless sensor without batteries (Enocean Alliance)
 - Wireless for lighting controls: company “Adura”?
 - Human sensor? Smart dust? Use occupancy sensor estimate load instead of CO2 sensors?
 - Building data disclose requirement
 - How could TC 1.5 help educating ASHRAE member on these technologies in a timely manner?
 - Submit “Emerging application update” seminar
 - How could TC 1.5 help ASHRAE keep track of these bleeding-edge and leading edge technologies?
 - Find out the new technologies from ASHRE expo
 - Sign up Google news alert
4. New Business/Issues/Initiatives:
 - Emerging application subcommittee website update

- Joe will rewrite / reorganize TC 1.5 Emerging Application subcommittee website. Put selected content from TC 1.5 google group. May solicit comments from TC 1.5 members

5. Meeting was adjourn 6:00pm

<Current TC 1.5 Emerging Application subcommittee website>

CHARTER

This subcommittee of TC 1.5 will focus on new and emerging computer technologies, and its primary mission will be to educate the society on emerging technologies with potential for significant impact on ASHRAE and, where appropriate, to demonstrate their application to the needs of the HVAC industry. The range of activities of this subcommittee are expected to be quite broad and are expected to continually evolve as technologies change and as member interests change. The Emerging Applications Subcommittee will be responsible for developing and taking program and research proposals forward to the Program and Research subcommittees. This subcommittee will serve as successor to the KBS and Computer-Aided Design Subcommittees and will inherit responsibility for ongoing research and program activities of those two subcommittees.

SCOPE

Application areas that are of interest to this subcommittee as they apply to the HVAC industry include

- advanced design tools
- contracting and business
- education and training.
- engineering design productivity
- operating procedures and diagnostics.

Examples of current computer technologies that are of interest to this subcommittee include

- case-based reasoning
- data exchange and interoperability
- data mining and knowledge discovery
- evolutionary computation
- fuzzy logic
- genetic algorithms
- knowledge-based systems
- multimedia
- neural networks
- virtual reality.