

ASHRAE TC1.5 Computer Applications
Meeting Minutes
Quebec City Annual Meeting
June 26, 2006

These minutes have been approved by this committee and are the official, approved record.

ASHRAE TC1.5 ACTIVITIES SHEET

TC NO. TC 1.5TC TITLE: Computer ApplicationsCHAIR: Rob HitchcockVICE CHAIR/SECRETARY: Krishnan GowriDATE: June 26, 2006TC Web Site: <http://tc15.ashraetcs.org/index.html>

TC MEETING SCHEDULE

Location, past 12 mo.	Date	Location, next 12 mo.	Date
Denver	Jun 2005	Dallas	Jan 2007
Chicago	Jan 2006	Long Beach	Jun 2007

TC SUBCOMMITTEES

Subcommittee	Chair
Emerging Applications	Nick Rajkovich
Handbook	Mike Galler
Internet	Bruce Billedeaux
Program	Pornsak Songkakul
Research	Mike Pouchak
Standards	Alison Kwok

TC 1.5 MEETING ATTENDANCE

	Number Present	Total Number on Committee
Voting Members	8	12
International Members	1	2
Corresponding Members	12	35
Visitors and Guests	3	

Name	Affiliation	Email	TC	Research	Program	Emerging Applications	Handbook	Internet
Vikrant Aute	CEEE, University of Maryland	vikrant@wam.umd.edu	X	X	X	X		X
Matt Biesterveld	Trane	mbiesterveld@trane.com	X					
Bruce Billedeaux		bruce.billedeaux@yahoo.com	X					
David Branson	Compliance Services Group, Inc.	djbranson@csg.net	X	X	X	X	X	X
Tim Dwyer	London South Bank University	timdwyer@lsbu.ac.uk	X	X	X	X	X	X
Mike Galler	NIST	mikeg@nist.gov	X	X	X	X	X	X

Name	Affiliation	Email	TC	Research	Program	Emerging Applications	Handbook	Internet
Ken Gillespie	Pacific Gas & Electric	klg2@pge.com						
Krishnan Gowri	PNNL	krishnan.gowri@pnl.gov	X	X	X	X	X	X
Walter Grondzik	Florida A&M University	gzik@polaris.net	X	X	X	X		X
Jeff Haberl	Texas A&M University	jhaberl@tamu.edu		X	X			
Rob Hitchcock	Lawrence Berkeley National Laboratory	rjhitchcock@lbl.gov						
Mark Hydeman	Taylor Engineering	mhydeman@taylor-engineering.com			X			
Alison Kwok	University of Oregon	akwok@aaa.uoregon.edu						
Rick Larson	Trane	rlarson@trane.com						
Ron Nelson	Iowa State University	ronn@iastate.edu	X	X	X	X	X	X
Bob Old	Siemens Building Technologies	bob.old@siemens.com	X	X	X	X	X	X
Vernon Peppers	Peppers Engineering	vernon@procompcomputer.com	X					
Michael Pouchak	Honeywell, Inc.	mike.pouchak@honeywell.com	X	X	X	X	X	X
Stephen Roth	Carmel Software	sroth@carmelsoft.com	X	X	X	X	X	X
Mick Schwedler	Trane	mschwedler@trane.com	X					
Pornsak Songkakul	Siemens Building Technologies	pornsak.songkakul@siemens.com						
Kris Subbarao	Texas A&M	ksubbarao@tamu.edu						
Martha Brook	California Energy Commission	mbrook@energy.state.ca.us						
Rahul L. Navale	IOWA State Univ.	rnavale@iastate.edu						
Som Shrestha	IOWA State Univ.	som@iastate.edu						
Martha Hewitt	Minnesota Energy Office		X	X			X	
Nick Rajkovich	Cornell		X	X	X	X		X
Dennis Landsberg	Landsberg Engineering	dlandsberg@landsbergeng.com	X					
Denis Bourgeois	National Research Council	Denis.bourgeois@nrc-cnrc.gc.ca	X					
John Kennedy	Green Building Services	jfk@greenbuildingstudio.com	X	X				
Patrick Carpenter	Vanderweil Engineers	pcarpenter@vanderweil.com	X					
Xiaohui Zhou	Iowa Energy Center	xhzhou@energy.iastate.edu	X					

RESEARCH PROJECTS

Project Title	Contractor	Monitoring Committee Chair	Report Made at Meeting?
RP-1354 Generic Common Interoperable Data for the HVAC & R industry	GARD Analytics Principal Investigator: Jason Glazer	Krishnan Gowri	N.A. Contractor could not attend Quebec City meeting.

LONG RANGE RESEARCH PLAN

Priority	Project	Champion	Status: Chicago Jan 2006
1	Development of reference building information model (BIM) for thermal model compliance testing.	John Kennedy, Dave Branson, Nick Rajkovich	RTAR completed. Voted Priority 1 on 6/25/06. Potential co-sponsor with TC 4.7 energy calc and TC 4.1 load calc
2	Retooling the HVAC&R Design process to Better use Computer aided design and simulation software	Dave Branson, Ron Nelson	RTAR 1355 rejected by RAC 11/4/4. Dave & Ron to review for Dallas.
3	Human computer interactions - Combined effect of thermal and visual environment on human computer interaction.	Nick Rajkovich, Allison Kwok	Working on RTAR – possible co-sponsor with TC 2.1

HANDBOOK RESPONSIBILITIES

Year & Volume	Chapter Title	No.	Deadline	Approval	Handbook Committee Liaison
2007 HVAC Applications	Computer Applications	39	07/31/06	Approved	David Meredith dxm15@psu.edu

TECHNICAL PAPERS FROM SPONSORED RESEARCH (PAST 3 YRS, PRESENT, PLANNED)

Title	When Presented
1017 RP (Akleman and Haberl) – Jim Watts	Chicago (1/03)
1032 TRP - Interoperable Computer Applications – Dave Branson	Chicago (1/03)

TC SPONSORED SYMPOSIA (PAST 3 YRS, PRESENT, PLANNED)

Title	When Presented
Symposium: Interoperable Computer Applications – Branson	Chicago (1/03)

TC SPONSORED SEMINARS (PAST 3 YRS, PRESENT, PLANNED)

Title	When Presented
The Big Yellow Bus for Academics	Dallas'07

Emerging Applications from the HVAC&R Classroom	Dallas'07
Web-Based Simulation – Give me a minute and it's done	Quebec' 06
ASHRAE HQ: Extreme Makeover	Chicago'06
Designing Building Automation Systems with IT Security in Mind	Chicago'06
Miss the plane, make the meeting and cut the cost – Dwyer	Denver (6/05)
HVAC Unplugged - the Wireless Approach - Branson	Orlando (2/05)
A Vision of eASHRAE: or How to Give a Seminar in your Pajamas - Hydeman	Nashville (6/04)
XML Guidelines for the HVAC Industry - Gowri	Nashville (6/04)
Computer Tools for Sustainable Design – Dwyer	Anaheim (1/04)
Emerging Web Applications for HVAC and Energy Industries - Hitchcock	Anaheim (1/04)
Establishing Cost Effective Energy Baseline for Measurement and Verification – Songkakul	Kansas City (6/03)
Computer Security - Pouchak	Chicago (1/03)
Experiences in Distance Learning: Leveraging Curriculum through Media - Pouchak	Chicago (1/03)

TC SPONSORED FORUMS (PAST 3 YRS, PRESENT, PLANNED)

Title	When Presented
What can ASHRAE do to electronically convey Information to Students and Faculty	Dallas'07
Emerging from the trenches: What should mature HVAC/R industry look like	Dallas'07
RFID Tags for the HVAC industry	Dallas'07
How can proposed Guideline 20 Help the ASHRAE Membership? - Barnaby	Nashville (6/04)
How Secure is Your Wireless Office Place - Culp	Kansas City (6/03)

SUBMITTED BY: Krishnan Gowri -- TC 1.5 Vice-Chairman/Secretary

TC 1.5 Computer Applications

TC Web Site: <http://tc15.ashraetcs.org/index.html>

Main Committee Meeting Chicago, Jan 23, 2006

Committee Meeting Schedule

- | | | |
|----------------------------------|-------------------|-----------|
| • Main TC 1.5: 6:30-9:00p.m. | Monday 6:30-9:00p | H/Plaines |
| • Internet/Emerging Applications | Sunday 5:00-6:30p | CC/205C |
| • Program/Research | Sunday 6:30-8:30p | CC/205C |
| • Handbook | Monday 6:00-6:30p | H/Plaines |

Seminar Sponsored:

- Seminar 7. Web-based Simulation for Design: Give me a minute and your analysis is done!
Sunday, June 25, 2006 7:45 a.m.-9:15 a.m.

Seminar Co-sponsored (with TC 2.8):

- Seminar 13: Greening the HQ Building
Sunday, June 25, 2006 10:45 a.m.-12:15 p.m.

Main Committee Agenda

General

• Call to order

Meeting called to order at 6:35 p.m.

Krishnan Gowri chaired the meeting for Rob Hitchcock who could not attend.

This is our fourth paperless meeting. Kudos to Vikram Aute, Bruce Billedeaux and Mike Galler for facilitating this.

• Introductions/Sign up sheet/Welcome

Web-based sign-up sheet was made accessible through wireless connection to local server. In order to record the attendance of those without the laptop computer, the sign-up sheet was circulated.

• Agenda Review

*• Roll Call: **Quorum: 8** voting members present.*

MEMBER	PRESENT?
Vikrant Aute	Yes
Piotr Bartkiewicz (International)	
Bruce Billedeaux	Yes
Dave Branson	Yes
Wayne Dunn	
Mike Galler	Yes
Krishnan Gowri	Yes
Rob Hitchcock	
Alison Kwok	
Ron Nelson	Yes
Mike Pouchak	Yes
Nick Rajkovich	Yes

· *Chicago Meeting Minutes Approval*

Motion to approve Chicago Meeting Minutes: Moved by **Branson**, Seconded by **Pouchak**.

Discussion: **None**

Motion **Passed 7-0-1** CNV (Chair Not Voting).

Chair's Report

· *Dinner Plans*: Denis Bourgeois (NSERC) volunteered to lead the group to a water front restaurant. (Chair's note - A long walk through the town which never ended until midnight!!)

· *Step Up to the Plate Awards*

- To **Mike Pouchak**, **Tim Dwyer** for providing input to the Management by Objective ideas. Below are the suggestions by Mike and Tim.

Mike: Publish and distribute e-meeting best practices to other TC or article.

Tim: TC 1.5 shall propose at least 1 program item per year that has particular relevance to the application of IT to HVAC&R in countries outside North America. (*This could be extended to focus particularly on those least wealthy countries as defined by the World Bank.*)

· *Chair's Breakfast Meeting Report – Mike Pouchak*

- Jim Newman, the current Section 1 Chair term ends with this meeting.
- Chuck Wilson is the incoming Section Head.
- ECC reported that a new ASHRAE Database has been developed and members are asked to update their Bio online.
- TC 1.5 commended for Paperless meeting and Website updates.
- Program theme for Long Beach is "Energy Efficient Designs".
- Seminar/Symposium speakers are required to limit the size of ppt files to less than 90 MB.
- CD with Handbook becoming popular and paper copies are used less and less.
- Future research needs to align with the ASHRAE Strategic Plan available from ASHRAE web site.

Special Recognition:

Mike Pouchak for covering the Program Subcommittee, Chair's breakfast and Research Chair's training and reporting on all this in addition to the Research Subcommittee work.

Action Item Review

Action Items

Note yellow highlight indicates that action item is more than 1 meeting old

- Action item: Billedeaux send electronic copy of SPC 134P Symbols, "Graphics symbols for HVAC" to Hitchcock for distribution to committee members.

Status: Closed. Since none of the members present needed to review a copy of this document, no further action will be taken on this item.

- Action item: RTAR 1355 – rejected, but will be rewritten.

Status: Closed. Jeff Haberl indicated that he does not want to pursue this any further. Further action reported in the Research Subcommittee report.

- **Action item All:** Review current Handbook Chapter by February 2006. Copy of current document will be posted on TC1.5 web site for controlled access by reviewers.

Status: Completed. Mike Galler and Steve Rosen contributed to the reviews.

- **Action item Galler:** Send copy of current Handbook Chapter document to Nelson for posting on TC1.5 web site for controlled access by reviewers.

Status: Completed.

- **Action item Nelson:** Post copy of current document on TC1.5 web site for controlled access by reviewers. Ron to post final version on Jan 30th after sending to ASHRAE Handbook subcommittee. In the mean time members are asked to track change and send in copies of the document to Mike by Monday.

Status: Completed.

- **Action item All:** Email Hitchcock one new Objective for TC1.5 Management By Objective (MBO) exercise. Choose objective accomplishment by next meeting, one year, or long term.

Status: Mike Pouchak and Tim Dwyer have provided suggestions. These are listed under chair's report.

New Action Items

- **Action item Nelson:**

• Committee Membership Update

Roster will be submitted after each Winter Meeting. All people interested in becoming members should discuss this with incoming Chair.

Krishnan Gowri and Mike Galler rolling off after the Quebec city meeting.

Research Liaison Report:

Martha Hewitt, Research Liaison

- ASHRAE has a revised strategic plan with four major strategic direction.
- All new research proposals should indicate their relevance in meeting the research goals identified in the Strategic Research Plan. New strategic plan needs to be referred to in the RTAR submission.
- Next RTAR deadline is Aug 15, 2006 RTAR deadlines are Aug., Dec. and May 15th.
- Marth is rolling off with this meeting and TC 1.5 new research liaison will be Jim Braun.
- The e-mail address for the research liaison is: r11@ashrae.org
- Tech Council is looking for candidates for Research Advisory panel for 2007.

Past Research Projects/Proposals Status :

1228RP – Henri Amistadi – Project no longer active, but needs closure (Action: Martha to contact Charlie Culp) . Contractor not responsive and PMS is inactive. Requested a motion to terminate the project.

Motion: TC 1.5 withdraws support for RP-1228
 Moved: Mike Pouchak Seconded: Dave Branson
 Vote: 8-0-0 (chair voting) Motion Passed.

Subcommittee Reports

Program - Pornsak Songkakul, Chair

Program Subcommittee report was made by Mike Pouchak filling-in for Mark Hydeman who filled-in for Pornsak at the subcommittee meeting.

- Seminar 7 and 13 program presentations were summarized by respective program chairs.
- All presentations need to be submitted electronically two weeks before the meeting.
- If you specify that the program was submitted earlier, then there will be additional consideration.
- The theme for Dallas is ‘Sustainability’.

1	The Big Yellow Bus for Academics	Tim Dwyer	3 Speakers
2	What can ASHRAE do to electronically convey information to students and faculty	Charlie Culp	Forum
3	Emerging Applications from the HVAC&R Classroom	Walter Gronzik	3 Speakers
4	RFID Tags for HVAC Industry	Bruce Billedaux	Forum
5	Emerging from the trenches: What should the mature E-HVAC/R industry look like	Dave Branson	Forum

Motion:

To accept the program as prioritized and proposed by the program subcommittee for Dallas meeting. –

Moved – Branson; Seconded – Galler

Vote: 7-0-1 (chair not voting)

Motion Passed.

Action: Program Chairs to submit programs by Aug. 4, 2006 using the ASHRAE web forms

Motion:

To include the Transactions/Symposium on emerging apps for HVAC. –

Moved – Branson; Seconded – Galler

Vote: 7-0-1 (chair not voting)

Motion Passed.

Action: Symposium Chair to complete reviews and submit program by Aug. 4, 2006.

Research – Mike Pouchak**Motion:**

To accept the proposal of prioritized list of research plan as proposed in the attached minutes of the Research subcommittee.

Moved - Pouchak; Second - Bruce Billedeaux

Discussion: Priority #1 title needs to be modified. Bruce – use word ‘reference’ and not ‘standard’.

Krishnan – suggested removing reference to SP-140 from title. New title proposed – “Development of reference building information model (BIM) for thermal model compliance testing”.

Vote: 8-0-0 (chair voting)

Action: RTAR Authors to provide the completed RTARS to Mike Pouchak by Aug. 1, 2006

Mike Pouchak solicits further input from all regarding development of RTARS for new research topics.

See attached Research Subcommittee Meeting Minutes below for more details.

Internet/Emerging Applications – Nick Rajkovich & Bruce Billedeaux

- Program proposals and discussions were forwarded to the program subcommittee.
- Future subcommittee meetings will be paperless. All members are encouraged to bring laptops.
- Proposed to combine

Motion:

To combine the Internet/Emerging Applications subcommittees and rename it as 'Emerging Computer Applications'.

Moved – Nick Rajkovich ; Second - Dave Branson

Discussion: Suggested to rename this along with the roster change at the Dallas meeting. Nick nominated as the Chair of the newly combined subcommittee

Vote: 8-0-0 (chair voting)

Action: Chair to communicate this change along with the new roster after the Dallas meeting.

Handbook - Mike Galler

- A web version of the handbook is being developed.
- Proposed a new section 3 for 'Emerging New Technologies'
- Opportunities exist for annual update with CD+
- Requests review of the Chapter 39 by TC members for CD+ update before Dallas meeting.
- Quality and usefulness of the handbook is declining. The HB asks each TC to review and revise the content of the chapter.

Motion:

Stand of TC 1.5 is that the Hand Book should remain as it is - technically complete.

Moved – Dave Branson ; Second - Steve Rosen

Discussion: Vernon read the proposed revision for definition on relative humidity which was written in easy to read layman language, but had no engineering significance, thus rendering it useless as a reference material for engineering calculation which should be the main focus of the Handbook.

Vote: 7-0-1 (Bruce abstains)

Action: None.

Standards – Alison Kwok

None.

Web Page - Ron Nelson

Web page is up to date.

T&P – Dave Branson

See T&P Subcommittee Meeting Minutes not included below.

Meeting Times for Dallas

No changes from Quebec days and times.

Liaisons

TAC Chairman – Bill Bahnfleth
Section 01 Head – Jim Norman
Program Liaison – James Lutz
CTTC Liaison – Monte Troutman
Standards Liaison – TBD
PDC Liaison – Mark Hydeman
Special Pubs Liaison – Kimball E Ferguson
Handbook Liaisons – David Meredith (2007), John W. Wells III (2009)
RAC Research Liaison – Martha Hewett
Staff Liaison (Standards) – Claire Ramspeck
Staff Liaison - Mike Vaughn

· GPC-20 – Krishnan Gowri: Reported on the lack of progress and discussed concerns with RP-1354 contractor. Expects better progress to report by the Dallas meeting.

· International Alliance for Interoperability - Rob Hitchcock
· New SPC-189 Standard for Green Buildings – Mike Schwedler reported on the first meeting of this new standard development which is coordinated with LEED, AIA and GSA. The intent of this standard is to provide a document for adoption by local jurisdictions if they want to promote green buildings.

Old Business

· _____

New Business

· None

Adjournment

Time: 9:00 p.m.

Motion: Adjourn: Moved by **Krishnan**, Seconded by **Billedeaux**.

Discussion: **None**

Motion **Passed** Unanimous (Chair Voting).

TC 1.5 Program Subcommittee: Prioritized Programs

Submitted by: Mark Hydeman (Filling-in for Pornsak Songakul)

TC 1.5: Program Subcommitte - Proposed Programs List (Updated 06/25/06: Quebec City)					
Rank	Venue	Type	Title	Chair	Speakers Committed
Current Program List					
3	Dallas	Seminar	Emerging applications from the HVAC&R classroom	Grondzik, Walter	3 speakers
1	Dallas	Seminar	The big yellow bus for academics	Tim Dwyer	3 speakers
4	Dallas	Forum	RFID tags for HVAC/R industry	Bruce Billedeaux	
5	Dallas	Forum	Emerging from the trenches: What should the mature E-HVAC/R industry look like	Dave Branson	
2	Dallas	Forum	What can ASHRAE do to electronically convey information to students and faculty	Charlie Culp	
N/A	Dallas	Symposium	Emerging Applications for the HVAC Industry	Branson	Yes
	Future	Seminar	X-Tech: Extreme technologies for HVAC and R industry	Dave Branson	3 speakers
	Future	Seminar	Impact of Nanotechnology on HVAC industry	Peng Xu	3 speakers
	Future	Forum	What does ASHRAE Membership want from Electronic Manufacturer's Product Information	Grondzik, Walter	Yes
	Future	Seminar	Software quality assurance	Krishnan	3 speakers
	Future	Short Course	Electronic Information Exchange - (how to)	Hydeman	
	Future	Forum	AHSRAE 20/20 - Is the HVAC Engineer Endangered from the Research done in 2000-2005 ?	Schwedler	Yes
	Long Beach	Seminar	On-line code compliance	Norm Borassa	3 speakers

TC 1.5, Computer Applications Research Subcommittee Meeting Minutes

Sunday, June 25, 2006

Quebec Convention Center 205

TC 1.5 Program/Research Sunday 6:30-8:30p

1. Call to Order/Introductions
2. Review of ASHRAE Strategic plan for research.
 - Research themes include 1) Energy and Resources, 2) Indoor Environmental Quality 3) Tools and Applications , and 4) Equipment, Components, and Materials.
 - weighted criteria: 1) supports strategic plan 45% 2) co-funding support 10% 3) anticipated application 10% 4) TC vote 10% 5) RAC vote 20% 6) Tech Council Preview Feedback 5%.
 - RAC will review RTARS at all meetings (3 / yr) – need 45 days advance – May 15, Dec 15, Aug 15. This will start after Denver.
 - Limited time for RTARs in Implementation Plan (4 meeting shelf life)
 - Intent is to minimize delays in initiating research projects
3. Martha Hewett , research liaison for section 1.

This is Martha's last meeting as research liaison for section 1.

The new research liaison for section 1 will be Jim Braun from Purdue, effective after Quebec. It is important for all research proposals including RTARs and WS to be reviewed and discussed with the Research Liaison before submitted to the committee for vote and forwarded to RAC for consideration. The research liaison takes the role of representing the RTAR and WS before RAC and support of the liaison is essential to its success.

Martha gave an status update on the RP-1228 "Case Studies of Software Research" using "The Software Guide". is on file with Research Administration Committee (RAC) as an active project. Multiple attempts to contact the Principal Investigator (PI) Henry Amistadi from Scientific Computing have been unsuccessful. Charlie Culp is listed as the PMSC Chair. 1228-TRP - "Case Studies of ASHRAE Software Projects Using" The Software Guide" - It is the recommendation of RAC to terminate RP-1228, which will require a vote of TC 1.5. –

Action – Need vote from TC 1.5 to terminate RP-1228

4. RP #1354 update – PMS review.
1354-RP, "Common Data Definitions for HVAC&R Industry Applications;" Responsible TC/TG: **TC 1.5** (Computer Applications); Co-Sponsor (s): GPC-20; Contractor: GARD Analytics; Duration: 18 months; Cost to ASHRAE: \$127,500; Supports Strategic Goals: A.7, C.4 (Energy & Resources Goal #7, and Tools & Applications Goal #4).

Krishnan gave an update on RP-1354. Krishnan is the chair of the Project Monitoring Committee (PMS). The PMS meeting scheduled for June 26 is being cancelled due to several key members who are unable to attend.

There will be a telecom in July. The contract for the RP is signed. They have had 3 telecons so far. They did a walk-through in May.

5. The following Research activities for TC 1.5 were discussed, voted and Prioritized:

Priority	Project	Champion	Status: Chicago Jan 2006
Funded 1354-RP	Generic Common Interoperable Data for the HVAC & R industry	Chip Barnaby, Krishnan Gowri (PMS chair), Ken Gillespie	RTAR approved 7/27/4. WS submitted 5/12/5 WS approved PES selection 1/23/06 PMS mtg 6/26/06
1	Development of reference building information model (BIM) for thermal model compliance testing. 9 votes –voting ID “F”	John Kennedy, Dave Branson, Nick Rajkovich	RTAR completed. Voted Priority 1 on 6/25/06. Potential co-sponsor with TC 4.7 energy calc and TC 4.1 load calc
2	Retooling the HVAC&R Design process to Better use Computer aided design and simulation software- 7 votes –voting ID “B”	Dave Branson, Ron Nelson	RTAR 1355 rejected by RAC 11/4/4. Returned to Author 11/11/4. Action: Jeff to review with Steve Rosen for Quebec mtg. Jeff no longer available. Action: Dave & Ron to review for Dallas.
3	Human computer interactions - Combined effect of thermal and visual environment on human computer interaction.- 6 votes – voting id “C”. 2 nd vote 8 votes.	Nick Rajkovich, Allison Kwok	Working on RTAR – possible co-sponsor with tc 2.1
4	Study of personal preference control behavior. 6 votes – voting id “E”. 2 nd vote 6 votes.	Bruce Billedeaux	New Topic. Needs RTAR
5	Develop a expert system front end to 90.1 Std. Benefit to ASHRAE – 3 votes – voting ID “A”	Ron Nelson, Krishnan Gowri, (formerly 90.1 rep. David Weitz)	David Weitz is no longer available to work on this RTAR. Per vote of subcommittee, this Research is to be placed in lower priority. Need work statement.
Not prioritized- (ID 6)	Requirements for diagnostics and optimization for deployment in a large scale – removed from voting for support. – ID “D”	Kris Subbarao	New Topic Needs RTAR – Jeff to work on RTAR by next meeting.
Not prioritized- (ID 7)	Methods to validate and ensure quality of data from the Controls systems		New Topic. Needs RTAR
Not prioritized-	Methods to collaborate the controls decision of the set point		New Topic. Needs RTAR

(ID 8)			
Not prioritized- (ID 9)	Handbook filter – for advanced filtering - if you view the handbook from an architecture perspective, from a chiller manufacture perspective- make xml data in handbook- tabled – former priority 5	Jeff Haberl	
Not prioritized- (ID 10)	Demonstration of Development of advanced visualization method for viewing results from computer simulation- tabled. Former priority 6	Jeff Haberl	
Not prioritized- (ID 11)	Methods for the development of drive by simulations- Generate 3D model from drive by video- tabled. Former priority 7	Jeff Haberl	Jeff to work on RTAR by next meeting.