

Minutes of the I²SL Benchmarking Working Group conference call held on 27 Oct 2014

Attendees: Brad Cochran (CPP), Erica Cochran (Carnegie Mellon), Brian Donovan (BR+A), Alison Farmer (Andelman & Lelek Engineering), Kyle Hawkins (NIH), David Landman (Cimetrics), Paul Mathew (LBNL), James Root (Air Force Research Lab), Michelle Ruda (BR+A), Vikram Sami (ZGF), Phil Wirdzek (I²SL), Craig Wray (LBNL)

- 1) Alison Farmer gave an overview of the origin of the group, the purpose of the call, and the meeting agenda (appended to this document).
- 2) Introductions were made by all in attendance.
- 3) Paul Mathew gave an overview of the history and current usage of the Labs21 benchmarking tool.

Brief summary:

- a. The tool was developed by LBNL (funded by Labs21) and became public in August 2002. The first data was obtained from case studies and federal labs.
 - b. No major changes have been made to the tool since its first release.
 - c. In the last 5 years the tool has been in maintenance/big-fix mode only; funding has been limited.
 - d. In 2005-2006 there was interest in creating an Energy Star rating for labs but this effort was not fruitful. Potential for future work. Energy Star rating requires regression-based model using ~400-500 buildings' usage data.
 - e. LEED for existing buildings requires benchmarking; many use the Labs21 tool to benchmark labs. Accepted protocol for using the tool for this purpose is available on the tool's website.
 - f. The Labs21 tool database is the best around. CBECS dataset is more limited (42 or 43 lab buildings, only 19 with real measured data).
 - g. 200+ buildings have been added via the Labs21 tool in the last 4 years.
 - h. Usage metrics: appended to this document.
- 4) Alison outlined (and the group discussed) the criteria that must be met by any worthwhile projects to be undertaken by the working group:
 - a. Strong use case (business-driven)
 - b. Feasibility – can it be done?
 - c. Must have measurable and significant impact
 - d. Must meet a real need of the community (consider owners, financiers, facilities staff, consultants, researchers, etc.)
 - e. Must maintain anonymity of contributors and buildings
 - 5) The group generated a list of potential project ideas for further consideration. Ideas were not restricted to modifications of the current tool. The list included:
 - a. Incorporating ability to compare multiple metrics simultaneously
 - b. Longitudinal/temporal benchmarking, tracking retrofits over time
 - c. Acquisition of more granular data on building systems and lab types
 - d. Developing an API to allow incorporation into commercial software platforms
 - e. Incorporating data harvested from building energy disclosure programs
 - f. Creating alternate metrics (e.g. ACH) to augment EUI

- g. Incorporating BMS data into existing or new tool
 - h. Importing “live” submetering data
 - i. Using utility company leverage to obtain data for more buildings
 - j. Improving the interface to the existing tool
 - k. Incorporating energy model data
 - l. Improving characterization of lab types and hazards
 - m. Marketing outreach to increase participation
 - n. Making benchmarking actionable
 - o. Pursuing Energy Star rating for labs
- 6) Alison outlined the group’s “**homework**” exercise:
- a. The ideas list was posted as a Google sheet after the meeting at https://docs.google.com/spreadsheets/d/1_GsXKzbCTVC06ye3CdNgoY5nJcONU66rv4q4BiYd4bA/edit?pli=1#gid=809636526
 - b. Members should add to the “ideas” list before end of day Wednesday 29 Oct.
 - c. Members should select two “ideas” to explore further (also by end of Wednesday 29 Oct).
 - d. Template form for “homework” will be posted as a Google sheet on Thursday 30 Oct.
 - e. Questions to be included in the template include e.g.
 - o What is the use case for this enhancement?
 - o Who needs this?
 - o What data would be needed and how would it be collected?
 - o What kind of analysis would be required?
 - o What would the output look like?
 - o What are the potential benefits and drawbacks of undertaking this project?
 - o What is the magnitude of financial commitment required?
 - f. Members who do not choose topics will be assigned topics on Thursday 30 Oct.
 - g. The “homework” is expected to take 20-30 minutes per topic.
 - h. Members who do not wish to participate in the exercise must contact Alison by the end of Wednesday 29 Oct.
 - i. “Homework” will be due Thursday 13 Nov, and the collected write-ups will be distributed to the group shortly afterwards.
- 7) The next conference call (where the write-ups will be reviewed and used to narrow the field of potential projects) will be held the week of Nov 17. A Doodle poll will be taken to determine the best day and time for the group’s call.
- 8) Craig Wray outlined a potential DOE funding opportunity with possible ties to benchmarking (DE-FOA-0001168, “advancing solutions to improve the energy efficiency of US commercial buildings”). I²SL is investigating the possibility of applying for a grant and may incorporate benchmarking in the proposed project. Concept papers are due Nov 22.

Submitted by Alison Farmer
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 28 Oct 2014

Appendix 1: meeting agenda

Purpose of Call: to kick off the process of generation and assessment of ideas in support of the group's goal to enhance, augment, and/or expand lab benchmarking capabilities.

Call Agenda:

- 1) Meeting context, goals, and outline (Alison - 5 mins)
- 2) Introductions (5 mins)
- 3) History and current usage of the Labs21 Benchmarking Tool (Paul Mathew - 10 mins)
- 4) Discussion of strengths and drawbacks of currently available tool(s) and benchmarking data (5 mins)
- 5) Outline and discussion of criteria that must be met by any worthwhile new projects or enhancements (5 mins)
- 6) Assemble list of candidate project ideas (15 mins)
- 7) Description of homework assignment and working group timeline (Alison - 5 mins)
- 8) Outline of potential DOE funding opportunity (Paul Mathew / Craig Wray - 5 mins)
- 9) Wrap up (Alison)

Appendix 2: usage stats and plots (courtesy of LBNL)

Labs21 User Statistics					
Downloaded: 10-24-14					
Edited: 10-24-14					
Number of Users:	1916	Percent of active users:	30%	Number of Peer Group Buildings	570
Number of Users with their own Building	582	Average number of building per total users:	0.47	Number of Organizations	1269
Number of Buildings:	903	Average number of buildings per active user:	1.55		
Total Area in User Buildings (sq.ft.):	162,324,355	Average building size:	179,761		



