# IBPSA Project 2: BOPTEST
## Task 2
## Virtual Progress Meeting

02/27/2024
9:00 AM – 10:00 AM U.S. Eastern Time

## Participation

| Present | Name | Affiliation |
|---|---|---|
| 1 | Javier Arroyo | WEDOCO, dnergy |
| 1 | David Blum | LBNL |
| 1 | Ettore Zanetti | |
| 1 | Laura Zabala | R2M |
| 1 | Harald Taxt Walnum | SINTEF |
| 1 | Kyle Benne | NREL |
| 1 | Matt Robinson | University of Colorado-Boulder |
| 1 | Mingzhe Liu | Texas A&M University |
| 1 | Matthias Van Hove | DTU |
| 1 | David Wolfle | FZI |

Total: 10

## Minutes
Generally, updates to ongoing initiatives and discussion of possible new initiatives.

1. Weather forecast uncertainty [Laura and Zhe]
   - Wanfu working on implementing solar irradiation in software and developing unit tests for that and temperature uncertainty. Laura reviewing his work, left some comments already. Will ask Dave/Javier for review once initial review iterations complete.
   - Paper rejected from Applied Energy, updated, and re-submitted to Energy and Buildings. David Wolfle interested in reading draft. Dave to ask Zhe to send copy of paper.
2. Repo Refactor [Dave]
   - Dave starting with migrating BOPTEST-Service architecture into core boptest repo and eliminating use of api.py. In this way, local deployment also uses Service architecture and API (i.e. using the /select endpoint and supplying the provided testid with all future requests). PR with working version made (https://github.com/ibpsa/project1-boptest/pull/622) with most unit tests passing, and under review by Javier and Kyle. Javascript controller example being updated by Sen. Dave to continue on updating documentation etc. while reviews.
     i. Matt asks about provisioning of test cases – it will be same as currently in BOPTEST-Service (e.g. using `$ docker compose up web worker provision`) where `provision` uploads all test cases to Service). We could probably document that provision takes an argument to specific a test case path for custom implementations.

- Related effort by Dave and Kyle is to align API and resources where it makes sense with the NREL/Alfalfa project. Previous version of Alfalfa formed basis for Service. Effort is to streamline deployment resources and base architecture maintenance within NREL and DOE. Migrating to using Service architecture as described above will help with this. Already, a first common API for reading/writing points has been developed and can be presented by Dave at a future meeting.

3. Online Dashboard [Dave/Kyle/Harald]
    - Kyle, Dave, and Harald have been testing updates to dashboard and Service for improved test case access, where users can register account with dashboard and use API key to submit own test cases or create namespaces (collection of test cases) if given elevated account access. This is needed for ADRENALINE competition and likely needed for future competitions.
    - Kyle finishing fixing issues that were found.
    - Harald proposing additional edits to store results and KPIs (and other things to be proposed) in working directory of test case, which can be downloaded from Service by a competition administrator to verify if testid known.
        i. Do we need to save from multiple scenarios? Suggestion is to only save last scenario run. Harald to make PR.
        ii. Should we stop the testcase at end of scenario? No, not now.

4. DOPTEST [Javier]
    - Javier to address Dave comments on KPI disaggregation PR (https://github.com/ibpsa/project1-boptest/pull/606). Javier not working on as much as transitions to new affiliations, but good to see progress on LBNL-OpenModelica compiler developments. Will be good for future DOPTEST model development.

5. OpenModelica compilation testing and library updates [Ettore]
    - Ettore set up environment with latest version of OpenModelica and test that test cases compile, simulate, compile into FMU, and FMUs run, and compare that results are the same as Dymola results. Also updating test case model dependencies to MSL 4 and latest Buildings and IDEAS libraries. Ettore will report outcomes/progress over coming months.
    - Dave mentions also as part of merging of dnergy test case, added option to parser.py "compile_fmu" function to specify a tool, which by default is "JModelica" but also takes "OCT" as argument, so can be used for developers who have access to OCT installation.

6. Semantic modeling [Ettore]
    - Prototyping workflow for integrating semantic models in test cases. Collaborating with OpenBuildingControl and SemanticInterop projects. Expect in the next months to have first prototype implementation for one of the test cases.
    - Related paper: https://doi.org/10.1016/j.jobe.2024.108645

7. Ideas for new initiatives (no time to discuss further – to start with this next time).
    - New KPI - Actuator travel
    - Sensor/measurement uncertainty
    - Other ideas people are welcome to bring forward