IBPSA Project 2: BOPTEST
Tasks 2 and 3
Virtual Progress Meeting

10/29/2026
10:00 AM – 11:00 AM U.S. Eastern Time

Participants

Jaap Neven	KU Leuven
Javier Arroyo	WEDOCO / Dnergy
David Blum	LBNL
Harald Taxt Walnum	SINTEF
Iago Cupeiro	Dnergy
Lasse Ahrendsen	Aalborg University
Shiva Sreenivasan	Nanyang Technological University (NTU)
Ettore Zanetti	LBNL

Notes

1. Updates to Test Case Modelica Libraries and Compilation [Dave]
    - Updates to Modelica v4 completed.
    - Still confirming can distribute Dymola FMUs. Will explore options with Impact.
    - OpenModelica ME FMU export is better than CS, but ME export is still limited for complex models.
    - Ongoing Pyfmi PR to fix the event handling bug in ME FMUs. Dave tested the Pyfmi development branch within BOPTEST with an ME FMU and it indeed fixes the issue. This would be a path for BOPTEST to use ME or CS FMUs.
2. Compilation of Signal Exchange Blocks with Arrays [Dave/Ettore]
    - Updated parser workflow to allow for signal exchange blocks used in/as array components. Flattens the arrayed components into numerically indexed names for inputs and outputs. Allows test case developers to use read/write Modelica signal exchange blocks for specifying test case I/O points instantiated as arrays or within arrayed components.
    - Tested compilation and simulation with Dymola 2025x and OpenModelica v1.26. OpenModelica has issues with properly exporting parameter arrays used to serve arrayed components.
    - Updates being finalized on a development branch for inclusion in CI testing (issue190_instantiateIOblocksAsArrays).
3. Other Software Updates [Dave]
    - MinIO
        i. Issue: MinIO is an open-source database used for object storage in the BOPTEST deployment architecture (test case FMUs, simulation result files, /results passing if a lot of data). It is S3-compatible, making it easy

to replace with AWS storage on AWS deployments. In the last year, the maintainers changed to commercial model, removed docker images from dockerhub, and archived the open-source github repository (no longer maintained). New builds and deployments of BOPTEST failed when trying to pull the docker images

ii. Patch: Merged PR #878, which downloads MinIO from github source code and building docker images locally.

iii. Long-term: need to find and implement a maintained alternative, such as SeaweedFS or RustFS or others.

iv. Shiva used https://hub.docker.com/r/pgsty/minio to patch locally

- Kyle's packages update
- Release 1.0 (delay until test case FMU compilation sorted out)
- Funding outlook from DOE for this year
    i. AI in BOPTEST:
        1. Skills in repo
        2. https://modexai.io/

4. Sensor Uncertainty [Jaap]
    - Dave, Jaap, and Harald to meet to discuss architecture of implementation before moving forward too far with code implementation.
5. Supply temperature control in bestest_hydronic_heat_pump [Jaap]
    - No time.
6. New KPI – Actuator Travel [Dave, Xing]
    - No update.
7. Any Other Topics [All]
    - Lasse and Shiva are working on a project to develop advanced control strategies for water-based cooling in buildings. They would like to use BOPTEST and/or develop a test case specifically for their project, which might be of interest to contribute to BOPTEST.