IBPSA Project 2: BOPTEST
Task 2
Virtual Progress Meeting

2/27/2025
9:00 AM – 10:00 AM U.S. Eastern Time

Participants

	Name	Affiliation
1	Lieve Helsen	KU Leuven
	Jaap Neven	
	Jelger Jansen	
	Javier Arroyo	WEDOCO, dnergy
	Filip Jorissen	Builtwins
1	David Blum	LBNL
	Michael Wetter	
	Christoph Gehbauer	
1	Ettore Zanetti	
	Zhe (Walter) Wang	Hong Kong University of Science and Technology
	Dan Wang	
	Wanfu Zheng	
	Piljae Im	ORNL
	Yeonjin Bae	
	Yan Chen	PNNL
	Xing Lu	
1	Laura Zabala	R2M
	Vadim Liventsev	
	Roel De Coninck	dnergy
1	Iago Cuepero	
1	Harald Taxt Walnum	SINTEF
	Esther Borkowski	ETH Zurich
	Kyle Benne	NREL
	Peder Bacher	DTU
	Matthias Van Hove	
	Sicheng (James) Zhan	National University Singapore
	Davide Fop	Politecnico di Torino
	Xu Han	Harvard University, University of Kansas
	Zheng Oneill	Texas A&M University
1	Guowen Li	
	Mingzhe Liu	
	Kun Zhang	École de Technologie Supérieure (ÉTS)
	David Wolfle	FZI
	Jan Marco Ruiz de Vargas	Technical University of Munich
1	Bertrand Kerres	Terion

Total: 8

Agenda and Notes

1. Weather forecast uncertainty [Laura and Zhe]
    - Paper accepted and now published at https://doi.org/10.1080/19401493.2025.2453537.
    - PR almost complete. Laura to add implementation description into design doc. Harald to beta test implementation.
2. Repo Refactor [Dave]
    - Merged Service architecture to ibpsa repo, included in 0.7.0 release.
3. Online Dashboard and Service [Dave/Kyle/Harald]
    - Updated workflow for publishing images for public web-service deployment on AWS, required new tag, so v0.7.1 released to finalize workflow moving forward.
    - LBNL and NREL will be migrating web-service hosting to LBNL's AWS, will reduce hosting costs.
    - Work on getting Dashboard ready for deployment to continue by LBNL and NREL in coming months.
    - Issue report – if run out of workers or test case crashes, would be nice to have ability to retrieve running testids so can shut down without shutting down whole Service, a functionality with admin privileges only. Dave will open issue.
    - Swagger documentation of API - Bertrand willing to help with this. Dave to connect what's already been done.
4. DOPTEST [Javier]
    - No update
5. OpenModelica compilation testing and library updates [Ettore]
    - No update
6. Semantic modeling [Ettore]
    - Dave and LBNL team will wrap up in coming months with first versions of bestest_air and multizone_office_simple_air semantic models.
7. New KPI – Actuator Travel [Xing and Jan]
    - Use of "displacement" – easy to interpret and calculate. Integral of derivative of actuator movement. e.g. if an actuator moves up 1 and down 1, displacement is 2. First version of calculation shown in BS25 paper.
    - Collection of all actuators of test case into single KPI will be an average of all with equal weighting. It is hard to come up with good weights.
        i. Might want to consider runtime as a different KPI.
        ii. Get data on how movement affects degradation from manufacturers in order to provide weights for different actuators? Could be difficult because manufacturers may not want to share and also be different for each manufacturer.
            1. Keep average, make capable of adding weights later if warranted. Read block spec of actuator type should enable this.
8. Sensor Uncertainty [Jaap and Harald]
    - Jaap and Lieve proposed Masters thesis for 2025-2026.
    - Collect stories of calibration to ground truth any implementations? But how generalize and also keep narrow range for BOPTEST benchmarking focus.

- Harald doing testing to compare MPC performance with emulator model compared to real building, and seeing emulator gives optimistic performance since does not include stochastic processes within building. Want to look at stochastic processes affecting this, e.g. occ behavior (blinds, lights, equipment).
    i. Hard to have all scenarios. Do two extremes?
    ii. Dave mentions also feedback from many presentations and reviews about including more uncertainty, also including e.g. ow occupancy scenarios.
    iii. Perhaps build on Annex 66 work, or work by Northeastern Professor.
    iv. How compare if have many KPIs and too many scenarios? This is a common BOPTEST question.

9. Ideas for new initiatives [All]
    - Docker image is very big, consider if/how to reduce size.