



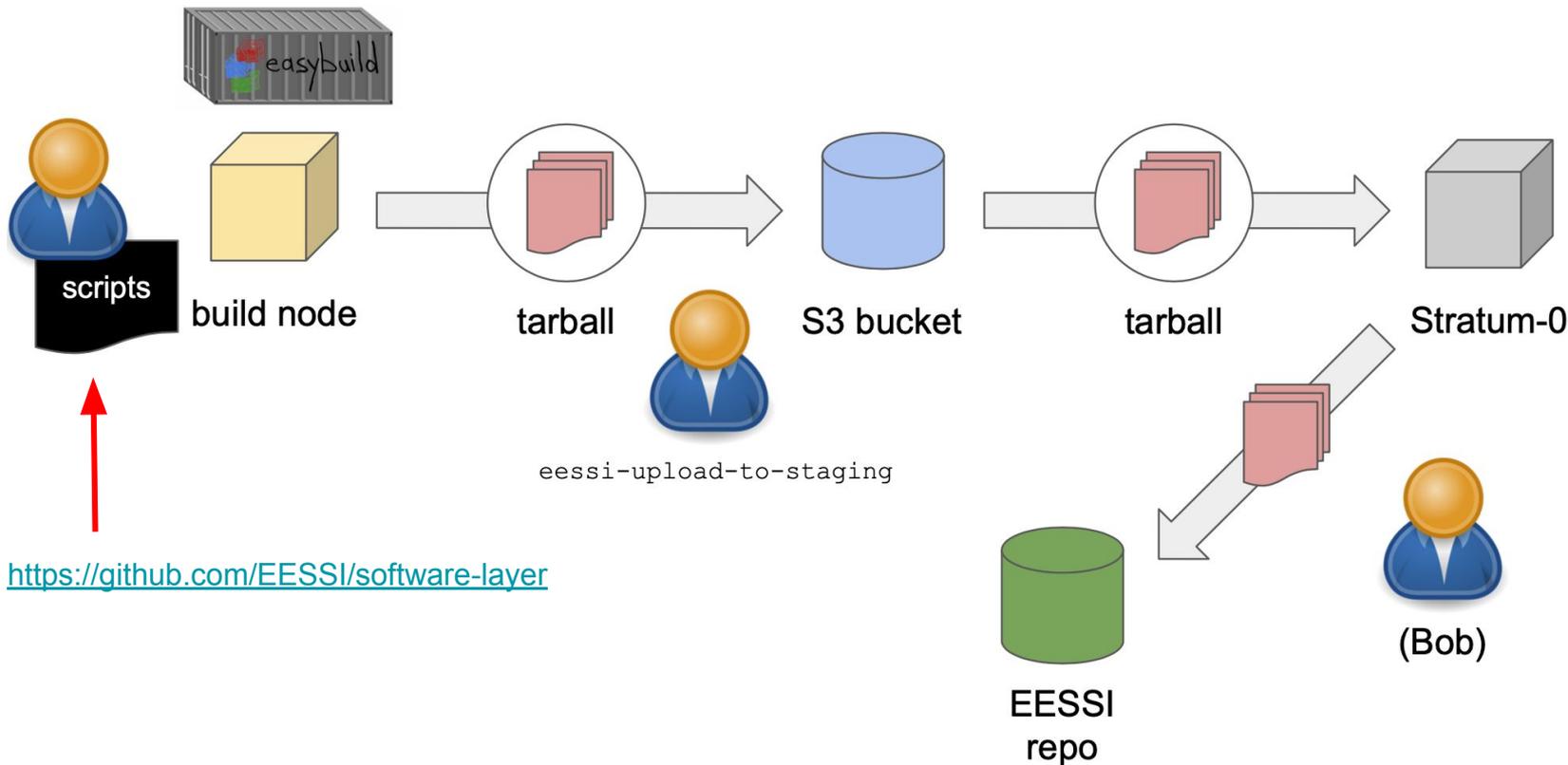
Status on build-and-deploy bot

EESSI Community Meeting @ Amsterdam

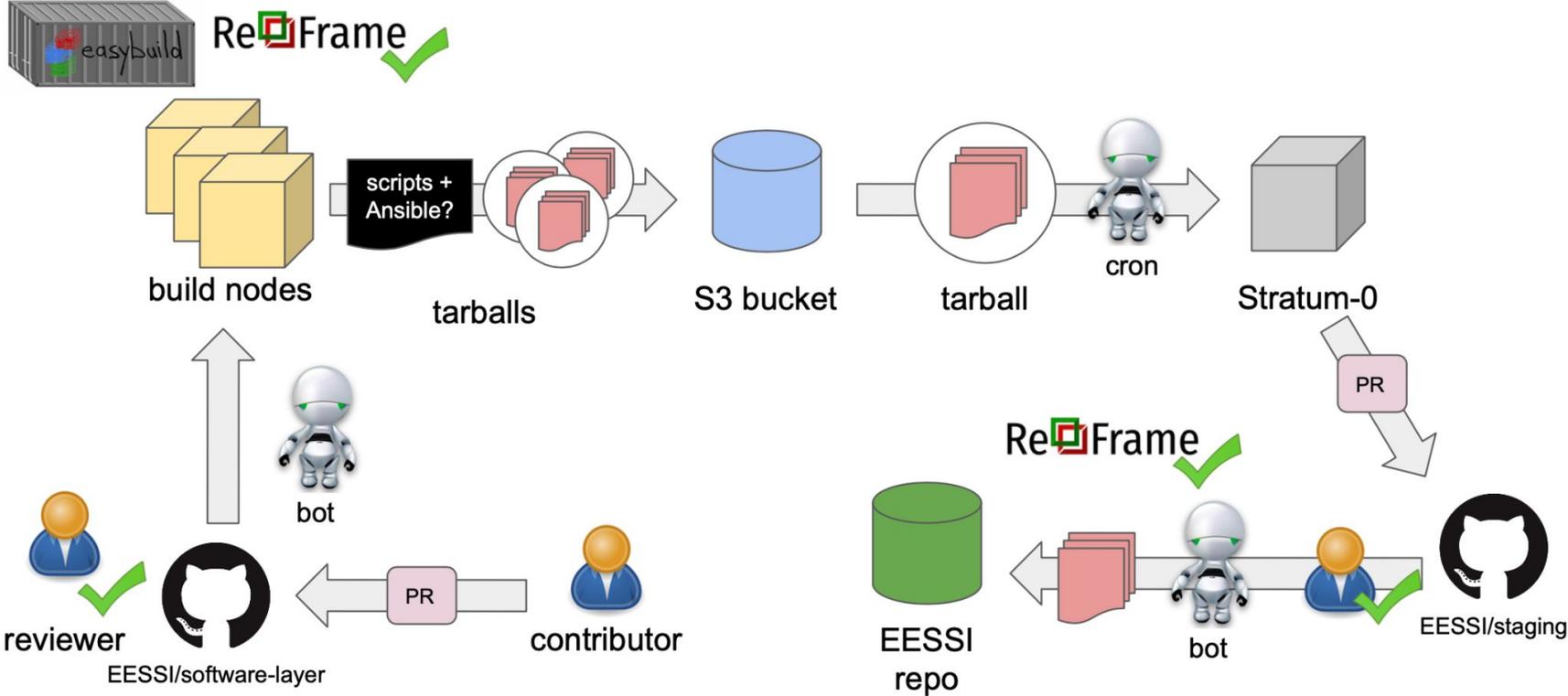
16 Sept 2022

Thomas Röblitz (Univ. of Bergen) + Kenneth Hoste (HPC-UGent)

Software layer: current build & deploy procedure



Goal: automated procedure with human oversight



Current status (1/2)

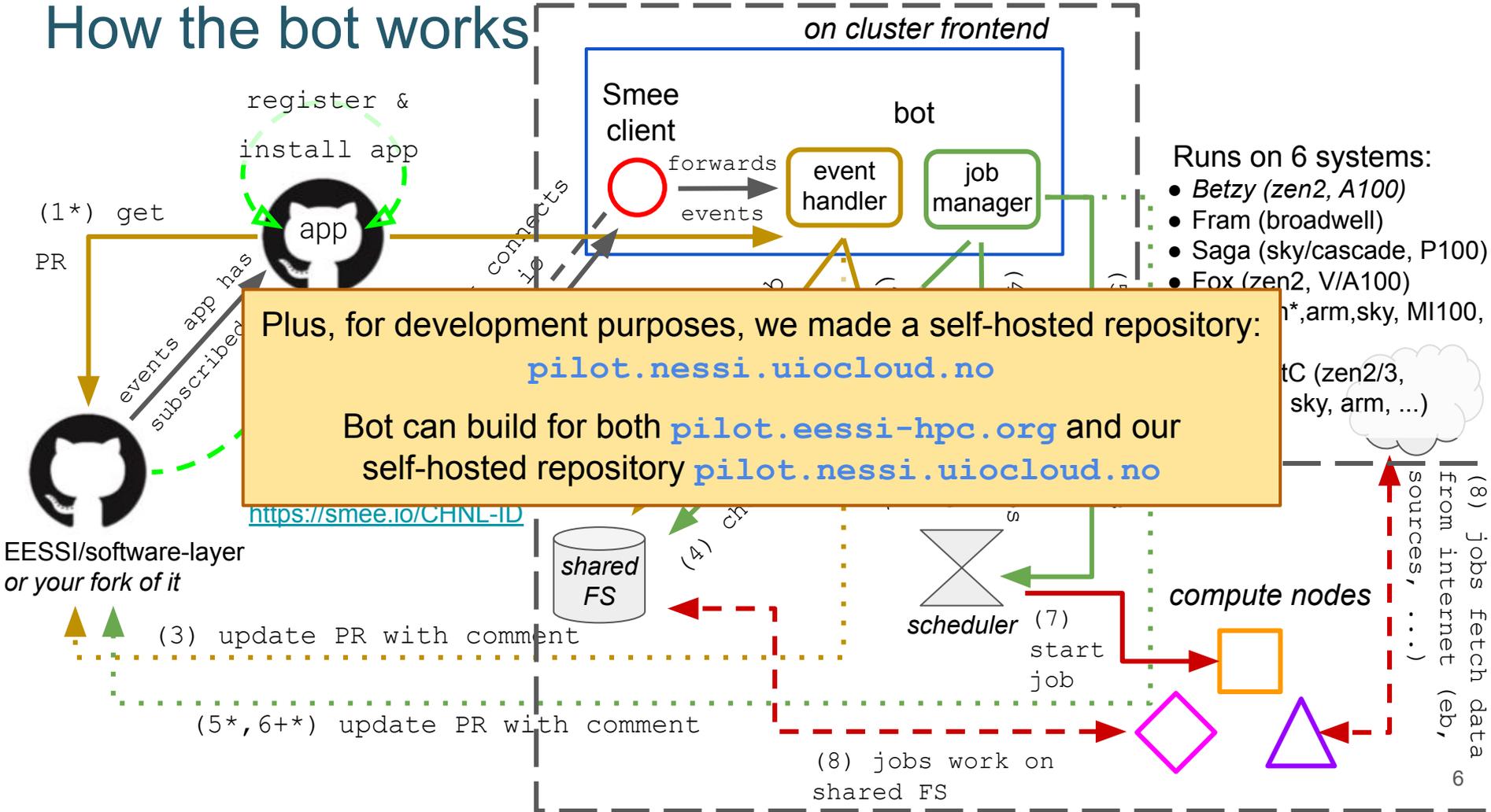
- Work during hackathons Dec'21 & Jan'22 (cfr. [hackathons repo](#))
- PyGHee base library for handling GitHub events (March'22)
 - See <https://github.com/boegel/PyGHee>
 - Python library that facilitates implementing a GitHub App (bot) in Python
 - Takes care of stuff like receiving events, parsing event data, triggering handlers, ...
 - Cleans up the implementation of a build-and-deploy bot for EESSI quite a bit

=> Good basis for resuming work in May'22

Current status (2/2)

- <https://github.com/EESSI/eessi-bot-software-layer>
- Bot (WIP, see [PR#24](#)) can
 - Receive events
 - Submit jobs
 - Monitor jobs
 - Update PR with comments
- Bot can be configured to work in various environments

How the bot works



Some random thoughts ... reflections/ideas

- It's a lot of fun, but also a lot of work ... some frustration ... but mostly fun!
- Need more testing ... ideally from non-developers ... possibly automate some testing to detect regressions early.
- Good to have some well-defined GitHub setup & procedures (particularly for amateurs like me, experts may deviate)
- Unit testing ... we wanted to do test-driven development (when resumed work in May) ... not done at all.

Some random thoughts ... reflections/ideas (cont.)

- **It's still a lot of fun, but also a lot of work ... some frustration ... but mostly fun!**
- Working with a distributed setup, it would be great to have much improved debugging & logging capabilities: levels of logging, component based logging, ...
- Better understanding of the whole tool environment (scripts, eb, waitress, ...): used packages, their configuration, instrumentation
- Self-config for bot (figure out queueing setup, accounts, storage, limits, ...): have some initial script which helps a bit in the setup

Some random thoughts ... reflections/ideas (cont.)

- **It's still a lot of fun, but also a lot of work ... some frustration ... but mostly fun!**
- Workflow for building software: make it configurable?
- Bot for control center: overview for PR, redo a build job, switch on/off bot instances, know available compute resources for building, know costs of building (history, estimates)
- Redo a job without changing the PR, e.g., to test a modification first locally

Some random thoughts ... reflections/ideas (cont.)

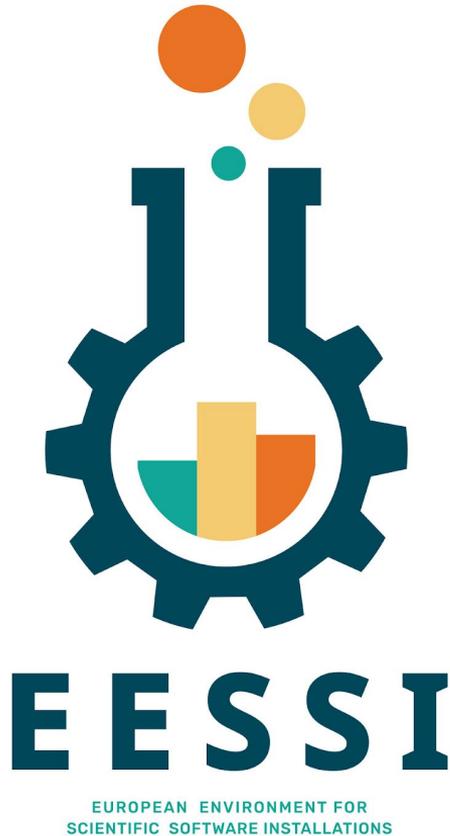
- **It's still a lot of fun, but also a lot of work ... some frustration ... but mostly fun!**
- Parallelization: inside a job, for a PR (splitting a big build job up in several)
- Coordination of multiple concurrent build jobs
- Access control: who can trigger bot actions (label bot:build, label bot:deploy)
- Error handling: the bot has almost no error handling right now (very annoying if it doesn't build what you think it should build because the "get PR procedure" failed)

Some random thoughts ... reflections/ideas (cont.)

- **It's still a lot of fun, but also a lot of work ... some frustration ... but mostly fun!**
- Bot (instance) alive check ... maybe something for the control center?
 - bot resources (consumption, availability)
 - bot health information
 - bot probe (respond what can be built, health, resources)
- Better design or just re-design (very much see the current implementation just as a first incarnation to learn how it could work)

Next steps

- Get [PR#24](#) merged, great starting point for further development
 - Spreading the effort across multiple contributors via [issues](#) for specific enhancements/fixes
- Also implement `deploy` phase to get built software into Stratum-0
- Start using the bot to build software for next EESSI pilot/beta version
 - Cut out the humans as much as possible, yet under human supervision
 - Only CPU targets supported on CitC @ AWS for now?
 - Intel Haswell/Skylake, AMD Rome (+Milan?), Arm Graviton2/3
- (Open the doors to start accepting community contributions...)



Paper (open access): <https://doi.org/10.1002/spe.3075>

Website: <https://www.eessi-hpc.org>

Join our mailing list & Slack channel

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Documentation: <https://eessi.github.io/docs>

GitHub: <https://github.com/eessi>

Twitter: [@eessi_hpc](https://twitter.com/eessi_hpc)

youtube.com/channel/UCKLS5X7_oMWhUrAZuzSwBxQ

Monthly online meetings (first Thursday, 2pm CEST)