

3rd OnSSET Steering Committee – Trieste, Tuesday June 19, 2019

Minutes

Participants

Mark Howells – KTH Royal Institute of Technology; **William Usher** – KTH Royal Institute of Technology; **Alexandros Korkovelos** – KTH Royal Institute of Technology; **Andreas Sahlberg** – KTH Royal Institute of Technology; **Babak Khavari** – KTH Royal Institute of Technology; **Benjamin Stewart** – The World Bank; **Dennis Konadu** – **OpTIMUS community**.

Main points discussed

1. Organization of the OnSSET community

OnSSET community is gradually growing both in absolute numbers but also in terms of diversity of users. The community is expected to further increase with new “high-profile” projects (e.g. Global electrification platform) and upcoming publications (e.g. peer review articles, reports, working papers etc.). The need to create a framework to support a dynamic community is essential.

Actions to be taken:

- Restructure and further develop Github repository as a means of keeping track of new advancements on the code. Explore its functionalities (e.g. issues, wiki) in order to record limitations, errors and suggestions by developers but also make new advancements available to all users within the community. Create a protocol that clearly defines the review process and provides guidelines on how new additions will be incorporated into the master code file.
- Create and circulate with the steering committee members, a suggested community management plan. After being finalized, this document will be published in OnSSET’s dissemination channels. This will allow users to know better the capabilities and limitations of the tool.
- Further develop and maintain engagement material for developers, researchers and observers. Encourage the involvement of users in improving the readability, usefulness and functionality of the manual.
- Use the newsletter in order to disseminate the latest news regarding the tool and its applications. Encourage OnSSET users to share their experiences with the community; interesting applications of the tool should be considered for publication in the official newsletter or get published at OnSSET’s website (onsset.org).

2. Overview of actions and development of the tool over the past year

The participants discussed upon a number of advancement that were introduced to the OnSSET tool over the past year. These included:

- a. The development of OnSSET code to serve the scope of the Global Electrification Platform.

- b. Changes and updates on Github repository
- c. Changes of OnSSET master code in order to include electricity demand for productive uses (mainly irrigation for agriculture).
- d. Updates of the educational material including the new OnSSET online manual and the online teaching material hosted at Google Education Platform.

3. Technical issues, limitations, enhancements and academic excellence

The participants discussed upon some of the limitations of the OnSSET tool and suggesting moving forward actions.

a. Modularity of OnSSET

Although OnSSET has a modular design, there are several limitation of the way the code is structured; this reduces the flexibility of the tool in several ways, especially when it comes to the involvement of external collaborators able and/or willing to add new functionalities to the tool.

Actions to be taken:

- Develop a schematic diagram of OnSSET aiming to capture and communicate in a clearer way the basic elements/aims of the tool (input/output data, functions and flows).

b. Representation of the demand

At the current stage OnSSET only considers residential (household) demand. The estimate of the demand is limited to the projection of the population and electrification target per area (grid cell).

Actions to be taken:

- Modify OnSSET code in a way that will facilitate the integration of additional demand nodes (agriculture, services, productive uses etc.) that are important elements and may influence the optimal electrification solution but also the decision making process.
- Collaborate with research partners (e.g. WRI) in order to identify the most critical parameters influencing electricity demand in rural (unelectrified) areas. Use the findings in order to enhance demand representation in the OnSSET model.
- Explore the option of representing demand using a bottom-up approach; demand not being static but rather evolving over the modelling period.

c. Measuring uncertainty in OnSSET

Work on trying to quantifying uncertainty in the OnSSET model, in terms of data and operations.

Actions to be taken:

- Explore options for measuring uncertainty and sensitivity as part of the academic curriculum around OnSSET.

d. Academic excellence

As the application of OnSSET is expanded within the academic community, it is essential that some sort of quality assessment is set in place.

Actions to be taken

- Identify software journal for OnSSET software meta paper
- Create a protocol to certify that the use of OnSSET is referenced properly with right attributes to the development team and supporting partners.
- Initiate and organize the process of preparing an annual, multi-author paper that will compile all recent developments of the OnSSET tool. This paper aims to work as a glue between the active community members and providing a space to developers working and updating the code to publish their work.