

SCIENCE

Worldwide cities contribute to the rapid climate change with growing greenhouse emissions. At the same time, they are sensitive to impacts of climate change, such as heat waves, extreme rain events, heavy storms or increased air pollution.

High-performance urban climate models can form the basis for prospective planning decisions. The funding program 'Urban Climate Under Change' [UC]² aims to further develop the innovative and user-friendly urban climate model PALM-4U (**Parallelized large eddy simulation model for urban applications**) that allows simulating microscale atmospheric processes in urban areas.

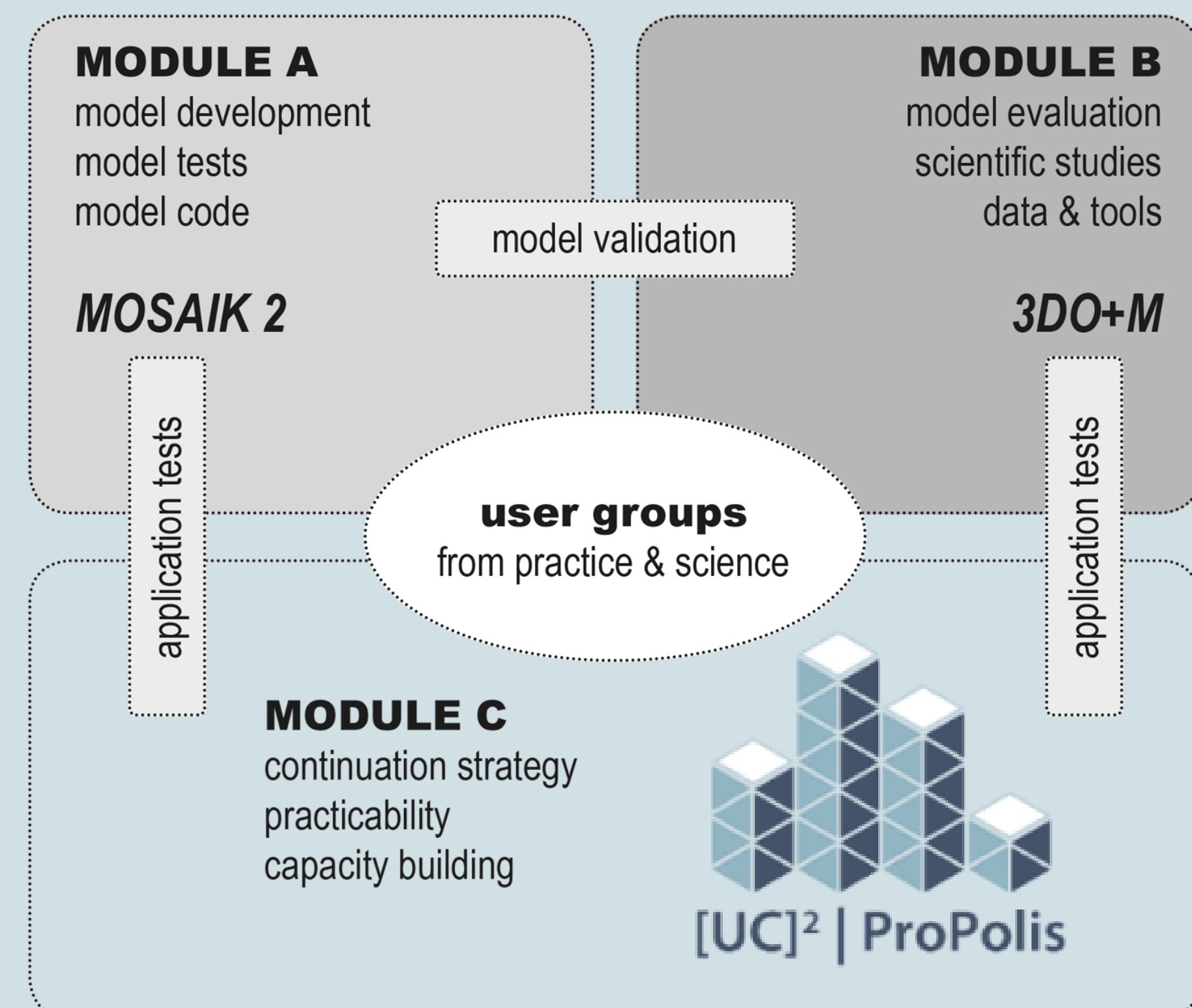


Fig. 1 [UC]² Project structure

ProPolis as a part of [UC]² focuses on the operationalization of PALM-4U with the main goals practicability, continuation strategy and capacity building (see Fig. 1). Potential users from the planning practice are closely involved into the project work through an iterative living lab process divided into exploration, experimentation and evaluation phases.

Where science meets the user.

Living lab method to support the co-development of the new urban climate model PALM-4U.

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USERS

12 German municipalities and an architecture and consultant company participate in ProPolis.

During the exploration phase, ProPolis scientists discussed the GUI concepts, training and support services with practice partners in several transdisciplinary workshops. Their feedback is translated into practicability requirements (user requirement catalogue) which will be used for evaluation and further development of the final products.

The conclusions of the exploration phase for the time during ⁽¹⁾ and after the project ⁽²⁾ are:

- (1)
 - Relevance and foreseen application benefits / added value of the model application increase motivation for participation of practice partners. Also, clear agreements about project workflows and continuous communication about the model development process are crucial for the success of the project.
 - Adaptations in the project schedule might be required to meet specific user requirements.
- (2)
 - Testing the planning cases in a real municipal environment allows consideration of user requirements in early development stages which can accelerate the application of the model in practice.
 - Non-scientific users will apply PALM-4U only when the model use can be integrated in their daily work routines.
 - Without financial and technical support beyond the project lifetime the model operationalization in practice is challenging.

LIVING LAB PHASES TOWARDS A USER-ORIENTED MODEL

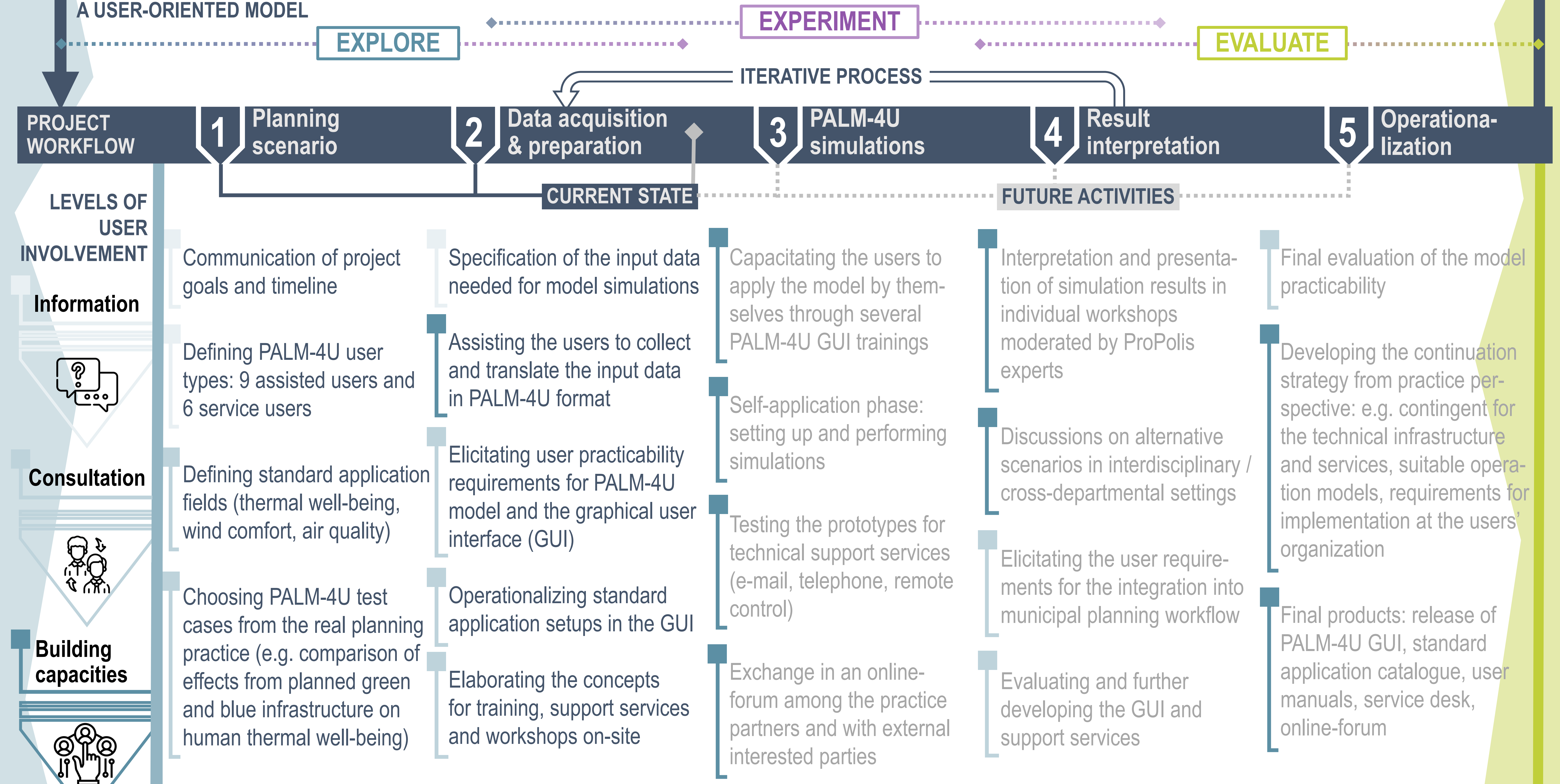


Fig. 2 Map of project partners