First developments as steps to pave the way

12 months into the start of the SATO project, progress is on track according to its original schedule. 15 High-Level Use Cases (HLUC) have been identified in five additional SATO areas: Monitoring, Self-Assessment and benchmarking, Visualization, Self-Optimization, and Control. Overall, 15 HLUCs have been established in order to showcase the benefits of the SATO platform and its services.

High-Level Use cases have been further divided into 37 Primary Use Cases. This will ensure the effective implementation of the solutions and that all solutions can be applied and replicated in different scenarios. Furthermore, all use cases in the project's pilots will undergo various tests for validation purposes. As shown below in Figure 1, the SATO Platform will have a pivotal role to play, in all of the Use Cases. All the internally and externally (sensors and third-party data) generated data will be stored and distributed via the SATO Platform.
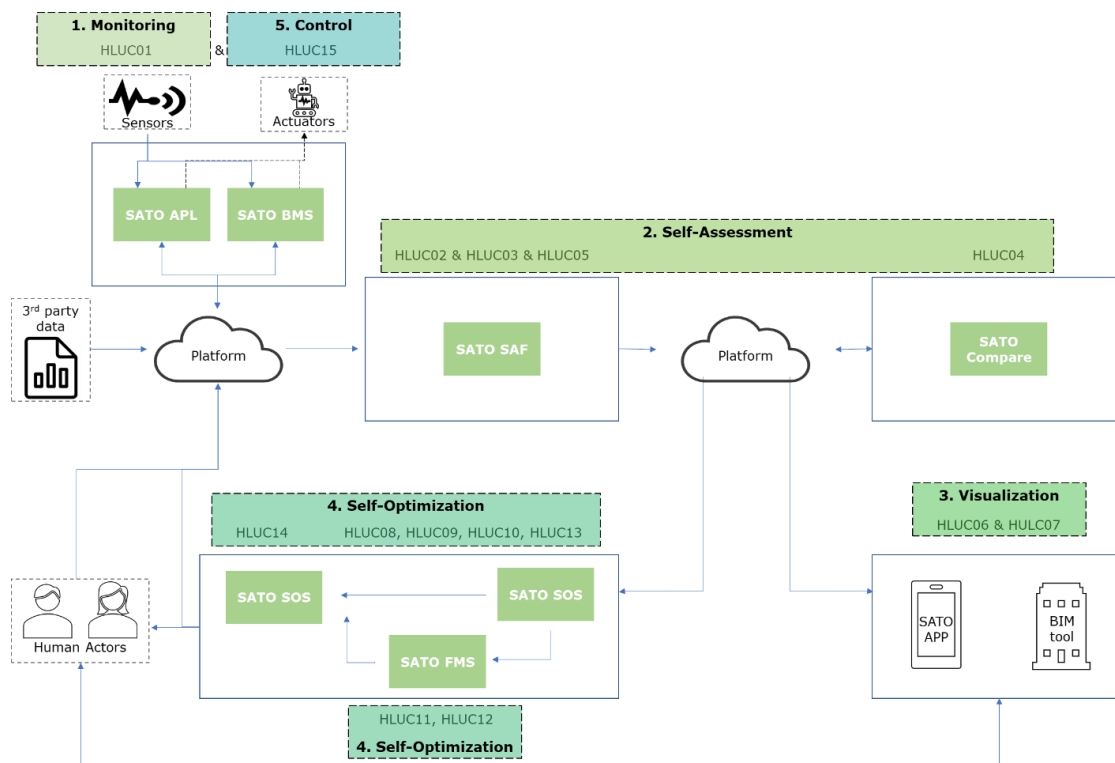

Figure 1: Description of the interactions between the different Areas, Actors and HLUCs

More specifically, one of the HLUCs will examine the connection between the SATO Platform and the building equipment and building components (EBC) that is set to receive real-time data of building performance and indoor conditions enabling SATO Self-Assessment Framework (SAF). All this will be achieved through SATO BMS and SATO APL. As a result of SAF, this will also aid SATO Self-Optimization Services.

The end goal here is to give everyone -from building tenants to building owners or facility managers- access to data-driven assessments on the EBC performance and smartness through the SATO Platform & APP. This will assist in showcasing the building's energy consumption and user behavior, thus increasing SATO users' awareness on their energy consumption profiles while creating a shift towards sustainable behaviors.

Another HLUC will focus on energy efficient optimization actions applied to the static and dynamic elements of building fabric, technical building equipment, appliances, and V2G chargers and batteries. For this purpose, SATO Self-Optimization Services will be implemented with the contributions received from SATO SAF.

Taking five objectives into consideration: 1 - reducing of energy needs for heating, cooling, ventilation, domestic hot water, lighting; 2 – reducing of total primary energy use; 3 - optimizing energy efficient equipment; 4 – optimizing energy and capacity costs; and 5 – optimizing self-consumption, a strategy plan will be established where SATO APP users will be able to establish which strategy should be prioritized and then applied.

Finally, it is important to note that this work offers the possibility to oversee all solutions planned in SATO together with the correlations between them, resulting in a solution-oriented architecture that allows consortium members and stakeholders to define the requirements for their solutions regarding SATO characteristics and features.

Consortium

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