*Disclaimer: This is an invite-only version of the RealEstateCore ontology. It is work-in-progress. Improvements and comments are most welcome.*

**Why do we need the RealEstateCore?**

Ever increasing amounts of data are generated by and within buildings. Several different systems exist to control climate, lighting, access control, etc., not to mention all the new data sources that emerge from IoT devices, all of which generate data. These large amounts of heterogeneous data need to be organized if they are to contribute to cost-efficient and environmentally friendly real estate management.

We use Semantic Web technologies combined with a business-usefulness-approach; the result is the RealEstateCore (REC) ontology.

**What is the RealEstateCore?**

RealEstateCore is a common language that will enable control over buildings and development of new services – the facilitator of the promises of a digital transformation.

RealEstateCore is a domain ontology preparing buildings to interact with the Smart City. RealEstateCore is **made by and for property owners**.

**What are the benefits for the property owners?**

Property owners can use RealEstateCore to describe the data of interaction within the buildings that they operate – as well as the management, storage, and sharing of this data. RealEstateCore is a modular ontology, that is, a collection of data schemas that describe concepts and relations that can occur in data that is generated to model buildings and building systems, or that is sourced from such systems. For instance, RealEstateCore covers building structures, ownership, inhabitants, technical systems and sensors, events, etc.

Having the shared language that these data schemas provide enables property owners to connect their buildings with new services on a large scale, and not have to worry about building- or technology-specific implementation details and formats.

RealEstateCore focuses on merging and bridging three domains:

1. Digital representation of the building’s elements (e.g. BIM/IFC)
2. Control and operation of the building (e.g. Belok, Haystack, REHVA)
3. Emerging IoT technologies (e.g. SSN, WoT, IPSO)

**Yet another standard?**

RealEstateCore is not aiming to be a new standard, but we rather intend for it bridge existing standards and find the common denominators. RealEstateCore uses and maps such existing standards in a pragmatic manner by adding annotations (which can be reused by the community directly if needed).

*Note for this version: The mappings to other standards are expressed as property annotations (e.g. "comparableIFC") and will be better expressed in this documentation in upcoming revisions.*

**Modules to make it customizable**

RealEstateCore consists of a set of modules, which in the current version include:

* Core (covering shared concepts and properties that occur in two or more other modules, e.g. time, units, agents, etc. – this module)
* Building(clickable link) (e.g. building type specific vocabularies)
* Device(clickable link) (e.g. communication-tech specific vocabularies and classes).

The purpose of using different modules to model domain-specific details is to facilitate customization for each user, e.g. a fictitious *RetailPropertyOwner* might use the Core and Device modules just as they are, but might want to modify the Building module to reflect the type of business that they do (e.g., by providing a more suitable taxonomy of room types for retail real estate).

The Core module is an upper ontology supporting the more specific modules that model domain specific details. This structure makes it easy to in the future add more domain ontologies to expand the usefulness of the RealEstateCore.During Q2-2018, the REC consortium is planning to add develop modules covering Access Control (door locks, etc. ) and Energy (consumers, producers, storage, prioritizations, etc.).

**The RealEstateCore’s contribution**

The RealEstateCore is merely a summarization or finding-the-least-common-denominator-excercise of different leading standards within the domains BIM, Control, and IoT.

The major contribution of the RealEstateCore is the invention of separating what is being measured (rec:QuantityKind) and where it is taking place (rec:PlacementType). This separation and deconstruction gives a precision in describing the characteristics of a measured value (or an actuation).

**Openness – Share the knowledge in order to scale**

A consortium was formed 2017 with Vasakronan AB, Akademiska Hus AB, Klipsk AB, and Willhem AB as the founders and main sponsors of the RealEstateCore project.

[links to clickable logos on a row /img/vk\_small.jp, /img/ah\_small.jp, /img/klipsk\_small.jp, /img/wh\_small.jp]

The purpose of the consortium is to create an environment for cooperation and sharing of knowledge between property owners and partners.

The Consortium is working together with the academia (Dr. Karl Hammar, Jönköping University, Sweden) in the field of semantic web and linked open data to further develop the toolchain for using the RealEstateCore in smart building platforms.

RealEstateCore is published as open source under the Apache License 2.0, to ensure that it is freely accessible for commercial use to property owners, suppliers, integrators, etc.

**How to Contribute?**

We encourage you to contribute to make RealEstateCore better. Please point out bugs or peculiarities, add or extend modules and vocabularies, suggest improvements.

Please use our Github repo. [link to github.com/realestatecore.io]

The RealEstateCore consortium is working on improving the core ontology and are adding more modules and as well working on making better tools to integrate and use the ontology in smart building platforms and its applications.

See the roadmap here (link to <http://realestatecore.io/roadmap.html)>

**Best practice**

We have put together an example deployment version of RealEstateCore by importing the Device and Building modules (each of which import the shared Core module) into a ready-to-use “REC-Full” ontology. Click here to download. [link to imported ontology].