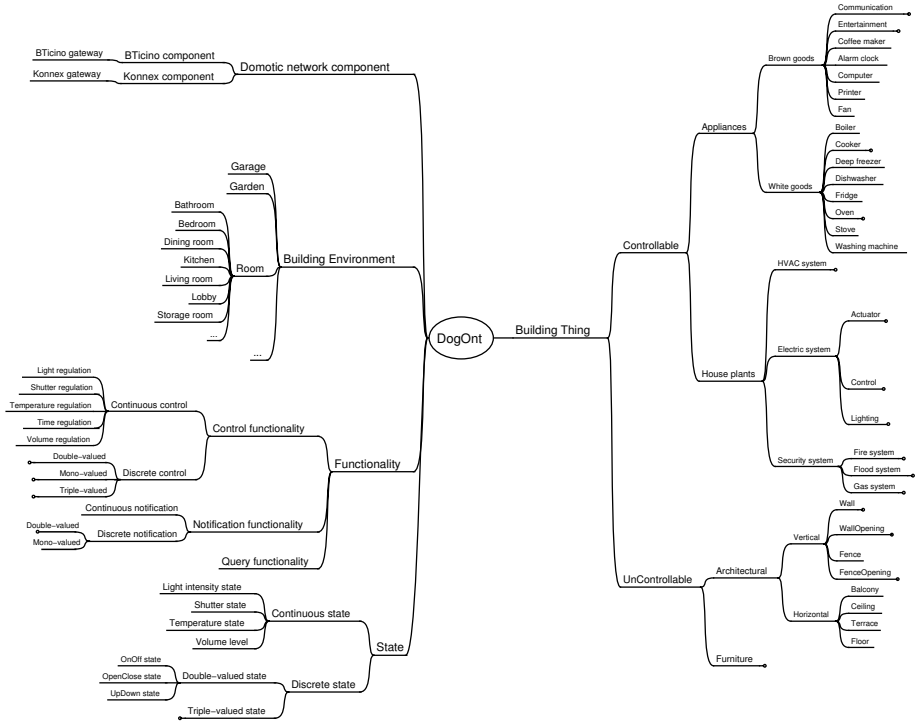

Fig. 1. An overview of the DogOnt ontology

subdivided in subclasses. Architectural modeling is somewhat limited to simple partitions (walls, floors) and openings (windows, doors) and may be extended for implementing advanced modeling, e.g., to support architectural design.

3.2 Device Modeling

All the objects referred to as "device," in this paper, are objects belonging to the *Controllable* sub-tree. A controllable object differs from an uncontrollable one as it must satisfy several restrictions on *Functionalities* and *State*s. It must possess at least the functionality of being queried about its operative condition (*QueryFunctionality*) and it must possess a state, intended as the ability of reaching a stable configuration identifiable in some way: a lamp is able to be steadily on or off, a flashing light can be on, off or flashing, a shutter can be moving up, down or being steady, etc.

Example (part 1): We consider a dimmer lamp connected to a KNX network, and located in the living room, as sample device. On the basis of formalization defined until now, our dimmer lamp is an instance of the class *Dimmer Lamp*, which in turn is a *Lamp*, a *Lighting*, an *Electric System*, a *HousePlant* and a *Controllable* object. The corresponding OWL formalization fragment is reported in Figure 2. As can be easily noticed, while the position inside the house is