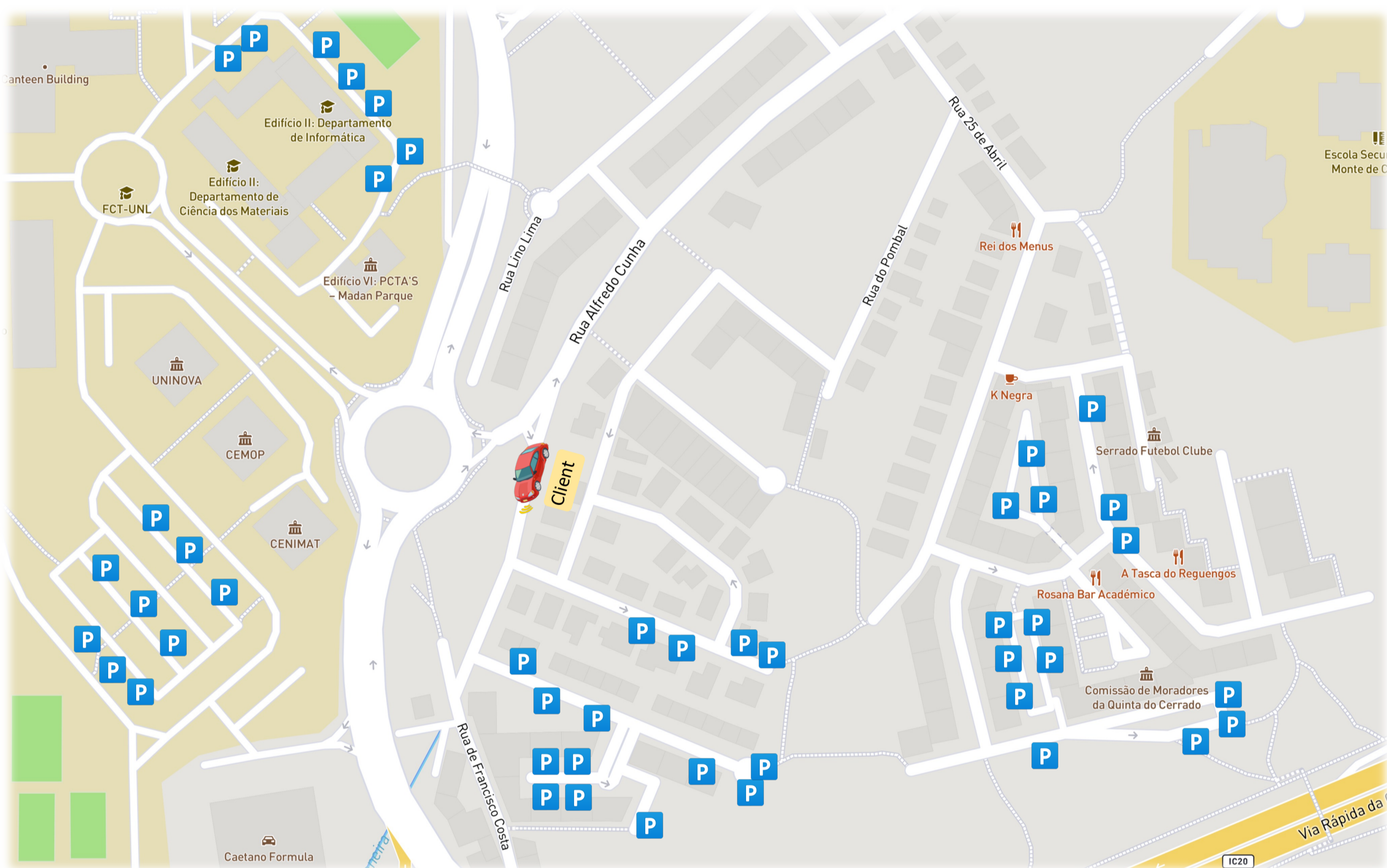


Location-aware data management for mobile applications

Luís M. Silva, João Leitão, Nuno Preguiça
lmt.silva@campus.fct.unl.pt, {jc.leitao,nuno.preguica}@fct.unl.pt

1. Problem / Context

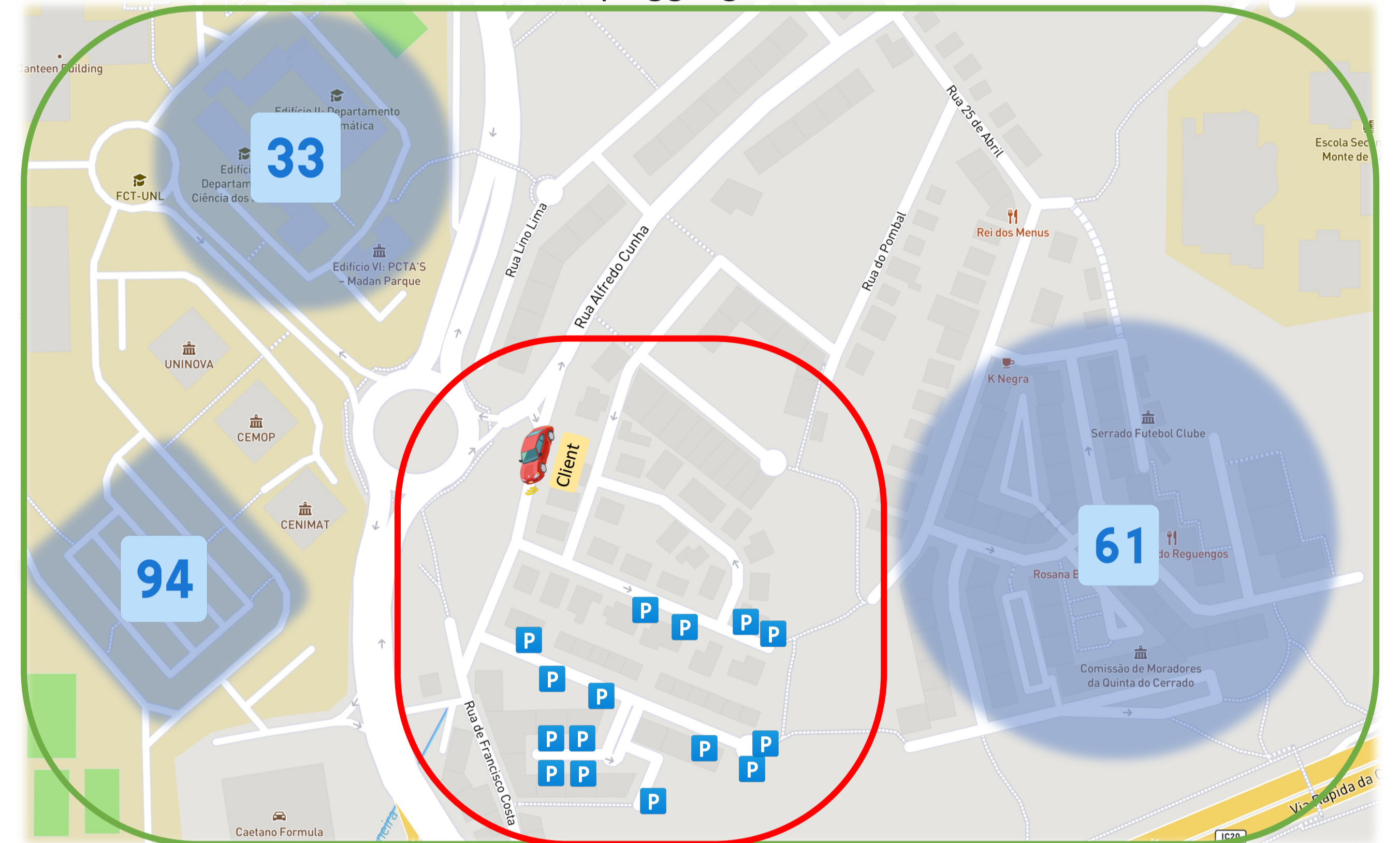
- Some applications' features directly relate to the user's location.
- The user's interest in data depends on the distance. Current datastores can not deal with that.
- We can build a framework that helps the development of those apps.



2. Data Model

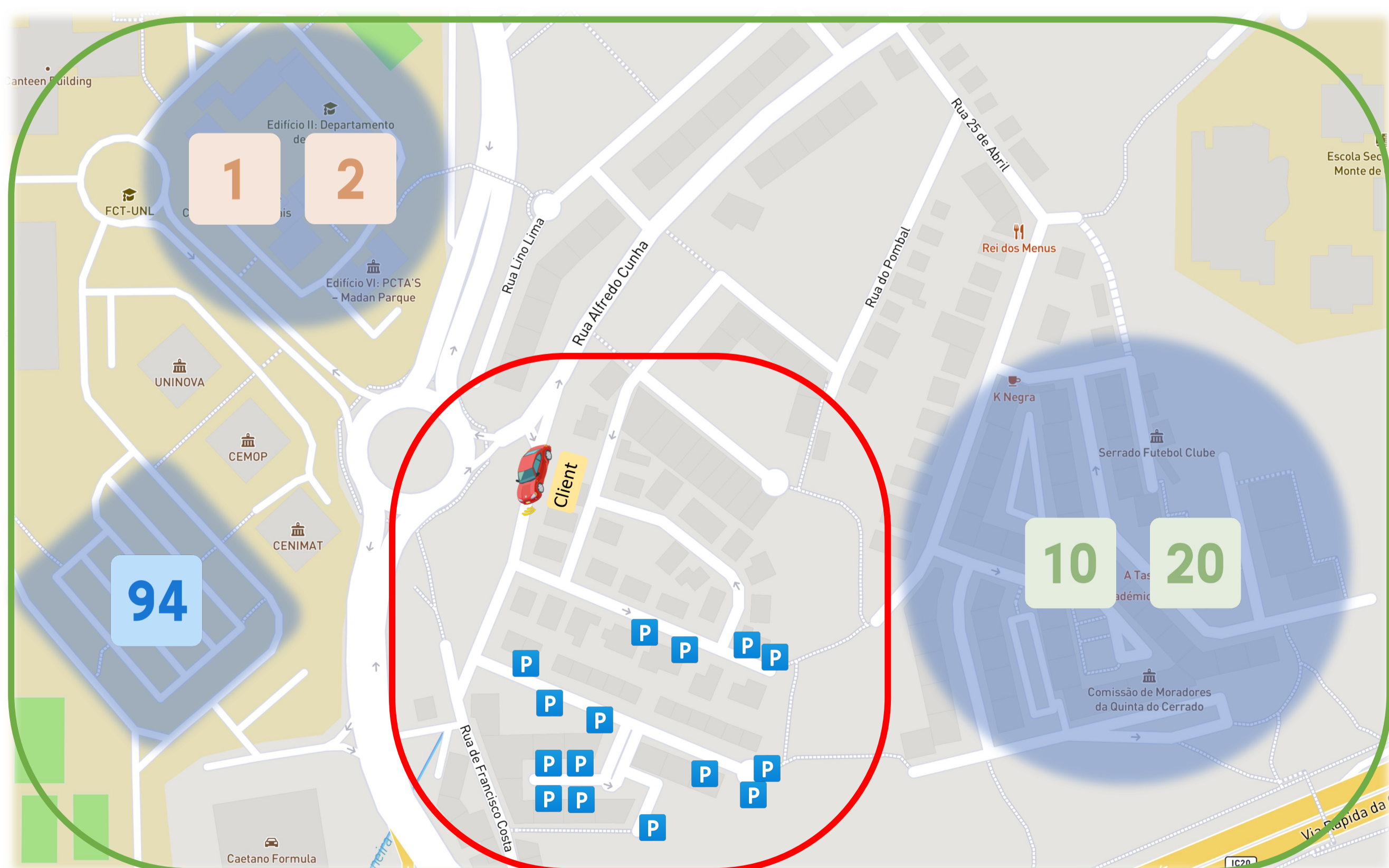
- Applications are interested in different data models for the same data, depending on the distance.
- A API should be defined to support the different layers of data detail.

Data in full detail in the Red area | Aggregation of information in the Green area



3. Data Consistency

- Data model allows for constructing multiple hierarchical degrees of consistency.
- Consistency guarantees are application bound and non-linear.
- An exact value is not essential; the system may only expose a quantifier class (0, few, some, many).



4. Deployment

- Map Edge regions to data's detail and consistency.
- Optimized replication between Edge nodes based on the consistency and data model.

