Request Architecture and Formalization

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# Request Formalization

**Goal:** Allow requests being written in plain English but following certain structure. The structure assumes the following components defined in the request. Not all components are mandatory. The system should analyze the request and ask for additional info if the request is ambiguous. The first implementation may require a rigid request structure.

## Request Components

1. What to know: GPS location of the nearest point of an object, boundaries as a polygon, area of the object, number of objects in a group, timestamp when first identified, area of the polygon, etc.
2. Object type or group type: cone, traffic sign, temporary marking, people, equipment, curb empty space, parking space, double parking, illegal parking, vehicle, pothole, cracking or road damage, degraded pavement marking, unidentified object.
3. Specific object parameters: a white color of a vehicle, UPS delivery track, etc.
4. Where: ahead of the current location, behind the current location, at a specific street, after turning right at the next intersection, after turning left at the next intersection, after making a U-turn at the next opportunity, around a specific intersection, at an address, at specific coordinates, within city boundaries.
5. Search distance from the point of interest: 1 mile, 100 yards, etc.
6. Time boundaries: now, since yesterday, since date, since specified number of hours or days, till tomorrow, till specified number of hours or days (remaining life span), etc.
7. What is the remaining life span of the object.
8. Statistics: how many times the object in the request was identified at the specified location, percentage of time the object is present at the specified location, how many objects are identified with the specified area, etc.