**Draft1 - Waypoint**

# I - Definition

We call a **waypoint** a location reached by a drone during a mission. It should be linked to a mission and could be linked to a goal.

# II - Attributes

## II.1 - Definitions

A waypoint can have the following attributes:

- **battery_level**, the battery level (in percent) when the drone arrives at the waypoint.
- **comments**, comments about the mission.
- **waypoint_location**, the GPS coordinates of the waypoint.
- **end_pose_time**; for some reasons (like collecting data in a interesting point or try to send videos to the base on the ground), the drone may want to stay a few seconds on the waypoint. When he leaves the waypoint to continue the mission, we store the time in the end_pose_time attribute.
- **arrival_time**, when the drone arrives at the waypoint (or pass through the waypoint).
- **temperature**, the temperature at the waypoint.
- **wind_direction**, the direction of the wind (in degree relative to the north, clockwise).
- **wind_strength**, the strength of the wind (in km/h)

## II.2 - Description

### II.2.1 - Graphical representation

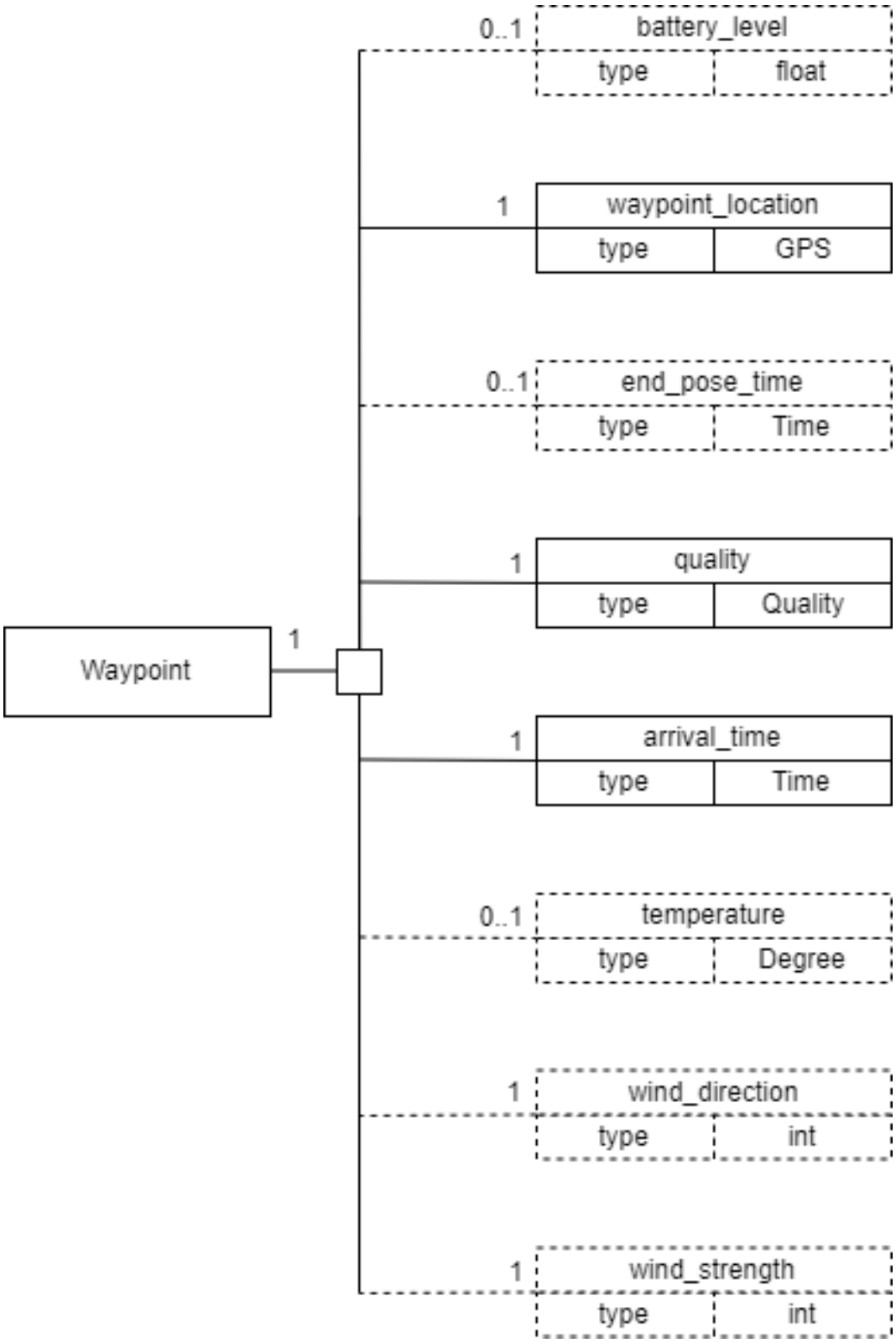


Figure 1: Graphical representation of a waypoint

### II.2.2 - Description table

| Name | Type | Expected length | Optional | Significant |
|---|---|---|---|---|
| *battery_level* | float | - | Yes | 2 |
| *waypoint_location* | GPS | - | No | 1 |
| *end_pose_time* | Time | - | No | 1 |
| *arrival_time* | Time | - | No | 1 |
| *temperature* | float | - | Yes | 3 |
| *wind_direction* | float | - | Yes | 3 |
| *wind_strength* | int | - | Yes | 3 |

Table 1: Description table

## III - Examples

```
{ "waypoint_id" : ObjectId("5bedacdee92e0f1838941fde"),
  "battery_level" : 80.5,
  "waypoint_location" : {"altitude" : 15.321,
                         "latitude" : 048.452666,
                         "longitude" : -001.6406852},
  "end_pose_time" : "2019-05-02T17:05:32,854+02:00",
  "quality" : 2,
  "arrival_time" : "2019-05-02T17:05:24,413+02:00",
  "temperature" : 14.3,
  "wind_direction" : 320.4,
  "wind_strength" : 25}
```

Figure 2: Example of a waypoint in json