Quad-Rotor Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Detail</th>
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<tbody>
<tr>
<td>Weight(including the battery and the electronics)</td>
<td>1.25 Kg</td>
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<tr>
<td>Battery time while hovering</td>
<td>15 min (150W power consumption)</td>
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<td>Payload</td>
<td>about 250 g</td>
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<tr>
<td>Dimensions</td>
<td>almost square with sides of 0.5m</td>
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<tr>
<td>Radio communication range</td>
<td>150m indoor, 800m outdoor</td>
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On-board sensors (50 Hz sample rate)
- 3 x gyroscopes
- 3D accelerometer
- 3D magnetometer
- GPS, 4Hz sample rate
- Vertical distance (ultrasound), 16.66 Hz sample rate
- 4 x motor speed readings
- Battery voltage & current consumption

Base Station capabilities
- USB connectivity: 12Mbps, CDC ACM class (seen as a serial port under Windows or Linux)
- Ethernet, 100Mbps, UDP and TCP/IP support
- Power: by USB, by an external power connector (12V) or via Power over Ethernet (PoE)

Software support
- Simulink S-function for real-time communication using the USB link to the Base Station.
  Works in all simulation modes, normal and accelerated
- Nonlinear model of the quadrotor platform in Simulink
- LabView support using UDP packets
Organization of the control system

The mechanical platform
Quad-Rotor electronic board

Base station
Remote control
Simulink Implementation

Simulink commands are sent to the quadrotor platform using this block.

Sensor data is used by Simulink to generate the new commands.