Pont de la Poya

Main construction steps

2010
- Securing the slope (Palatinat) prior to the main work
- Flat foundations, foundations on shafts, foundations on bored piles
- Construction of the piles with large-scale formwork

2011
- Building the Palatinat tunnel

2011/2012
- Constructing the crossing below the railway line
- Installation of the road plate with concrete design
- Palatinat approach viaduct (252.6m) in retraction process

2012/2013
- Middle bridge section designed as cable-stayed bridge by cantilever method
- Schönberg approach viaduct (231 m) constructed successively using a heavy lifting crane
Pont de la Poya

2010
Pont de la Poya

2011
Pont de la Poya

2011
Pont de la Poya

2012
Pont de la Poya

2011
Pont de la Poya

2012
Pont de la Poya

Sections to be monitored

- 10 strain gauges and temperatures at 5 locations at Section A
- Possibly up to 5 anchor loads and temperatures at Section C
- 4 displacement and 1 temperature at 4 locations at Section D
- Pylon West top: 2 tilt and 1 temperature
  Pylon base: 1 pressure
- Pylon East top: 2 tilt and 1 temperature
  1 wind, 1 pressure
  Pylon base: 1 pressure
- Possibly 2 displacement

Blue circles: possible positions for base station
Pont de la Poya

Monitoring Concept
## Deployment Pont de la Poya

### Sensor table

<table>
<thead>
<tr>
<th>Location in figure</th>
<th>Sensor Type</th>
<th>Ref.# in sensor list (D2.1, Sec. 2.3)</th>
<th>Number of sensors resp. ports</th>
<th>Remark</th>
<th>Shortest sampling interval, scenario critical (SPI)</th>
<th>Sampling interval, scenario normal (SPI)</th>
<th>Latency (LAT) in normal mode (in critical scenario seconds or minutes)</th>
<th>Relevance for Poya Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bearing West</td>
<td>Displacement</td>
<td>1</td>
<td>2</td>
<td>30 sec.</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>4</td>
<td>2</td>
<td>30 sec.</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
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<td>2</td>
<td>30 sec.</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pylon West</td>
<td>Tilt</td>
<td>3</td>
<td>2</td>
<td>ca. 20 ... 30 Hz</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>4</td>
<td>1</td>
<td>30 sec.</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pylon East</td>
<td>Tilt</td>
<td>5</td>
<td>2</td>
<td>ca. 20 ... 30 Hz</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>4</td>
<td>1</td>
<td>30 sec.</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Wind velocity</td>
<td>8</td>
<td>1</td>
<td>ca. 20 ... 30 Hz</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Wind direction</td>
<td>8</td>
<td>1</td>
<td>10 Hz.</td>
<td>0.25 hour (Average and Peaks within that time span)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Carriageway Mid</td>
<td>Accelerometer</td>
<td>9</td>
<td>3</td>
<td>3D Sensor</td>
<td>20 ... 30 Hz</td>
<td>1 hour (peaks)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>4</td>
<td>1</td>
<td>30 sec.</td>
<td>30 min</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Foundation West</td>
<td>Strain Gauge</td>
<td>7</td>
<td>8</td>
<td>In the Pile</td>
<td>2 min</td>
<td>12 hours</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>4</td>
<td>12</td>
<td>In the Pile</td>
<td>30 sec</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
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<td>4</td>
<td>12</td>
<td>In the Pile</td>
<td>30 sec</td>
<td>2 hours</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Retaining Wall</td>
<td>Force</td>
<td>6</td>
<td>4</td>
<td>Single Load Cells</td>
<td>10 min</td>
<td>2 hours</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Soil /Drilling</td>
<td>Pressure</td>
<td>2</td>
<td>4</td>
<td>Single Water Level</td>
<td>10 min</td>
<td>2 hours</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Deployment Pont de la Poya

Installation of strain gages at stiff bars

Excavation under railway line

January 2012