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<p><b>Project title</b></p>	<p><b>3D Augmented Reality Visualisation of Biomass for the Waldlabor Zurich App</b></p>
<p><b>Abstract and work packages:</b></p>	<p>The Waldlabor Zürich (<a href="http://www.waldlabor.ch">www.waldlabor.ch</a>) – the first forest laboratory of Switzerland (located right next to the ETH Höggerberg Campus) – aims to study the various forms of how society interacts with forests. In turn, the collected knowledge as well as the Waldlabor itself and its projects are to be made available to the public. To avoid a jungle of sign posts but still give location-based information when exploring the forest, the Waldlabor App (<a href="#">link to the android app</a>, <a href="#">link to the iOS app</a>, <a href="#">link to the web app</a>) was developed. Currently, it features a regular 2D map with primarily metadata about the individual Waldlabor projects. However, 3D visualisations in combination with augmented reality would be more intuitive and also possibly more accurate.</p> <div data-bbox="580 891 1069 1321" data-label="Image"> </div> <p><i>Screenshots of the Waldlabor App (left: Android, right: iOS).</i></p> <p>Thus, the goal of this geomatics project is to implement (and evaluate) a prototype of an augmented reality visualisation of selected 3D tree data from a specific project; namely the Swiss Biomass project (<a href="http://www.wsl.ch/de/projekte/swiss-biomass.html">www.wsl.ch/de/projekte/swiss-biomass.html</a>).</p> <p>Specifically, it is intended that students tackle the following tasks:</p> <ul style="list-style-type: none"> <li>- Implement and compare different setups of markers to find the most effective but unobtrusive setup for a marker-based localisation;</li> <li>- visualise the biomass data (TLS point cloud data, cartographic representation of biomass parameters) in a way that can be understood by the interested layperson;</li> <li>- implement a user-interface that facilitates an interactive visualisation;</li> <li>- optional: evaluate the developed prototype in a user study.</li> </ul> <p>The prototype is to be developed independently from the app but with the clear aim to be integrated into the app afterwards. Successful results may be presented at the annual Waldlabor-Day.</p>
<p><b>Number of students per group (1–3)</b></p>	<p>Project work: 2–3          Master thesis: 1</p>
<p><b>Maximum number of groups</b></p>	<p>1</p>
<p><b>Language (incl. report, oral presentation and poster)</b></p>	<p>English (preferred) or German</p>