

## Drone technology in support of suspended sediment mapping, test case at the Prins Hendrik dike in Texel (NL)

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A pilot test case at the Prins Hendrikzanddijk project in Texel, the Netherlands, was organized end October 2018 to demonstrate drone technology for water quality monitoring. A new dune area seaward of the existing dike is created, which takes over the coastal protection function of the existing dike and combines it with nature development, public services and recreational appeal. For the demo an octocopter drone platform, Altura Zenith ATX8, was used with a multispectral camera, MicaSense RedEdge M, underneath. During drone flights, a base station shows real-time information on the location of the drone, a projected true-colour image captured by the camera and the position of neighbouring boats through Automatic Identification System (AIS). Thanks to this information it is easy to adapt flight missions according to the situation. The drone data were processed with dedicated software into Total Suspended Solids (TSS) maps. This independently from in-situ observations. Water samples, collected simultaneously with drone flights were used for the validation of the derived products.

Keywords: Drone technology; Optical sensor; Water quality