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Author: Mr. Aidan O'Toole
Ireland, palotoole@gmail.com

Mrs. Ana Cristina van Oijhuizen Galhego Rosa
The Netherlands, anacristina.rosa@gmail.com
Ms. Lisa Karina Broekhuizen
The Netherlands, lisa.k.broekhuizen@gmail.com
Ms. Wendy Mensink
The Netherlands, wendymensink@gmail.com

MOBILE APPLICATION CONCEPT USING COPERNICUS SENTINEL EARTH OBSERVATION
DATA AND SAP HANA CLOUD PLATFORM TO ADDRESS BARK BEETLES INFESTATION IN
THE WORLD'S FOREST: A BUSINESS CASE

Abstract

Due to global warming, invasive species and non-sustainable farming practices many forests worldwide are under threat. One such threat is that of bark beetle outbreaks. These insects lay eggs under the bark of a tree, and when the eggs hatch, larvae then eat a path out of the tree. In many systems bark beetles occur naturally and do not damage healthy trees. However, under certain conditions large scale outbreaks can occur. During these outbreaks bark beetles occur in such high numbers that they are capable of killing trees, stands or entire forests. This results in a loss of economic value (as timber is not suitable for sale) and a loss of recreational value. When a bark beetle outbreak occurs, little can be done to stop it. However, by constantly assessing the risk of an outbreak, management measures can be taken before the outbreak occurs, preventing damage to the forest. The authors have developed an app which uses the latest remote sensing data to calculate the risk of an outbreak. By continuously assessing risk early intervention is possible and major damage can be prevented. The app uses Copernicus Sentinel Earth observation data and the SAP HANA Cloud Platform and targets foresters, forestry companies and researchers in the field of forestry. Aside from protecting forests and timber from bark beetles, this app also has growth potential in assessing risks for other pest species and forest fires using state of the art remote sensing data. This paper examines the problem of bark beetles, the solution in the form of the aforementioned app, business opportunities, and the business concept for the app. This initiative could incentivize other entrepreneurs and start-ups to apply satellite data and applications in the space and non space markets respectively.