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AI SUPPORT CORAL REEF RESTORATION

VIDEO TRANSCRIPT

[00:00:11] Coral reefs contain one of the most diverse ecosystems on the planet. They also perform a wide variety of functions that are critical to the well-being of marine life, people and even the economy. Sadly, coral reefs are now endangered due to destructive fishing methods, overfishing, bottom trawling, poor water quality and even the effects of the coal industry. Working together as a collaborative team, engineers from Accenture Intel and Sulubaai Environmental Foundation, along with other key technology and industry partners, have designed an innovative solution for recreating and restoring coral reefs to their former health and stability. By utilizing the latest mobile, digital and deep learning technologies together with rapid prototyping techniques, they've designed a cost-effective edge computing solution that observes, classifies and measures marine life while also monitoring the progress of coral reef restoration. The effort is called Project CORail. The "AI" is for the artificial intelligence used to capture and predict marine life data.

[00:01:25] In May 2019, the first project, CORail Testbed, was launched on Pangalan Island in the Philippine. To begin the restoration of the island's reef, concrete structures were carefully constructed and deposited along the sea floor. Fragments of living coral were then planted on the structures. The intention is that over time, the coral fragments will continue to grow and expand. And once again provide a safe place for fish to live and thrive.

[00:01:55] Ongoing observation of marine life within the reef is a critical part of the project. Unlike traditional observation methods, which involved human divers who would inadvertently frighten marine life into hiding, Project CORail uses underwater video cameras supplied by the Accenture Video Analytics Services platform, powered by Intel technologies such as Zoin, Intel FPGA's and VPU’s.

[00:02:24] The result is observation that is both highly effective and noninvasive. Here's how it works. Smart cameras were installed underwater within the coral reef concrete platform, as fish and other marine life pass by, the cameras detect and photograph them. From the pictures, deep learning algorithms are applied to count and classify the types of fish. The data is then sent to the surface via a wireless transmission where it is processed and analyzed. Dashboards and reports are generated, allowing the team to make data driven decisions, and all data is safely stored in an onshore location. To allow for deployment to be as cost efficient as possible, Project CORail uses leading edge technologies. In addition to the restoration of the world's coral reefs, Accenture hopes that Project CORail can be applied to other use cases, such as studying the migration rate of tropical fish as a result of global warming, monitoring intrusion in protected or restricted underwater areas or at fish farms, developing a mobile app for divers

to identify fish as they encounter them, and many other planet saving applications. For more information on Project CORail or to learn more about the restoration of the Pangalan Island Coral Reef, go to the link provided.