

# The Problem of Marine Litter in Tobishima, Sakata City, Yamagata Prefecture, and the Development of Automatic Transportation and Collection Robot by the Industry-Academia-Private Collaboration

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Marine litter, like microplastics, has become a social problem not only in Japan but also in the world and is included in Goal 14, "Protect the richness of the sea," of the SDGs set by the United Nations. For example, in Tobishima Island, Sakata City, Yamagata Prefecture, much marine litter drifts ashore. In the past, the islanders collected it for use as fuel, but with the spread of gas and the increase of plastic in recent years, the islanders no longer collect it for use as fuel. However, due to the spread of gas in recent years and the increase of plastics, the islanders' collection for fuel use is no longer carried out. Therefore, a manual collection project has been carried out every year. However, due to the new corona infection's influence, it could not be carried out, and marine litter was left as it was, which has become an environmental problem. To solve marine litter in Tobishima, we are developing an automatic marine litter transportation and collection robot using AI and automated driving technology in collaboration with organizations working on this problem in Tobishima, researchers in various fields, and companies (TECH ISLAND). This problem occurs in Tobishima Island and other remote islands and coastal areas in Japan. This research can contribute to the realization of a sustainable society by automatically collecting marine litter, which is expected to become difficult to collect in the corona disaster and a society with a declining and aging population, with a small number of people low cost.

Keywords: Marine litter, Local issues, Industry-Academia-Private Collaboration, TECH ISLAND conception, Transportation and collection and robots, AI and Automatic driving

