

November 11, 2021
Tokio Marine Holdings, Inc.
Tokio Marine & Nichido Fire Insurance Co., Ltd.
Tokio Marine dR Co., Ltd.

**Launch of Proof-of-Concept Project in Hawaii to Provide Predictive Services
to Reduce Auto Accidents**

Tokio Marine Holdings, Inc. (President and Group CEO, Satoru Komiya, hereinafter referred to as "TMHD"), Tokio Marine & Nichido Fire Insurance Co., Ltd. (President, Shinichi Hirose, hereinafter referred to as "TMNF") and Tokio Marine dR Co., Ltd. (President, Taizo Shimakura, hereinafter referred to as "Tokio dR") aim to provide "accident predictive services" through early detection of potential causes of auto accidents based on the driving data collected and using the data to provide alerts to customers.

To realize this concept we have started a Proof-of-Concept (PoC) project in Hawaii. We are always working to deliver greater security and safety to drivers by developing and providing new products and services, leveraging big data obtained from drive recorders provided to auto insurance policyholders, as well as data analysis methods such as machine learning.

1. Background

In April 2017, TMNF launched its own telematics service called "Drive Agent Personal (DAP)", a service that utilizes a drive recorder with an inbuilt communications function to individual customers, which was a first for the insurance industry in Japan. In April 2021, further progress was made by launching the industry's first "dual camera integrated drive recorder with an inbuilt communications function" equipped with a front-facing and an in-vehicle camera, which has been adopted by many customers since its launch.

In July 2021, Tokio Marine Group's core data company "Tokio dR" was established to develop data-driven products and risk solutions that utilize data and cutting-edge IoT devices to visualize and detect risks at an early stage.

TMHD aims to enhance its products and services related to safe driving and there has been a lot of research into this at its Digital Lab in Silicon Valley which has been utilizing the data collected by drive recorders. In order to further accelerate this

project it was decided to establish a joint PoC project with multiple group companies and an external partner.

2. Details of the PoC in Hawaii

(1) Overview

First Insurance Company of Hawaii (FICOH), a Tokio Marine group company in Hawaii, TMNF, and DENSO International America, Inc., a subsidiary of DENSO Corporation, have kicked off a joint PoC for the purpose of research on how to provide effective services deploying the beta version (prototype) of “Accident Predictive Algorithms (*)” developed at Tokio Marine’s Digital Lab in Silicon Valley.

Specifically, by monitoring driving behavior among volunteers who participate in the PoC, we will verify the accuracy of the “Accident Predictive Algorithms” as well as look into the optimal frequency of which to notify the driver of the findings in Oahu, Hawaii. Oahu was chosen because it is known as a compact city (urban design and residence combined in high density), where a wide variety of driving data is available within a single trip.

(*) Accident Predictive Algorithm

With 44 million hours of data (GPS, acceleration, video footage, etc.) collected from the drive recorders used by the auto insurance policyholders, the algorithm can predict the risk of an accident by detecting potentially dangerous driving behavior or situations. The algorithm (currently patent-pending) was developed by TMNF and Tokio dR in collaboration with the Digital Lab in Silicon Valley.

(2) Period

Two months until the end of December 2021

(3) Location

Oahu, Hawaii, USA

(4) Volunteers

FICOH employees and University of Hawaii students

3. Outlook for the Future

Based on the research results obtained from the PoC, TMNF will aim to provide service to corporate clients by the end of FY2022 as a starting point, and roll out according to evolving market needs.

Specifically, when a risk of an accident is detected by the algorithm based on the data captured by the drive recorder, effective safety measures such as notifying the operations manager of the relevant company and/or encouraging the driver to take a break will be utilized.

Going forward, we will continue to roll out our know-how globally by collaborating with various partners and strengthening our digital initiatives.

In addition, we will work to further deliver security and safety around daily driving for our customers by providing more advanced claims services and accident reduction services.