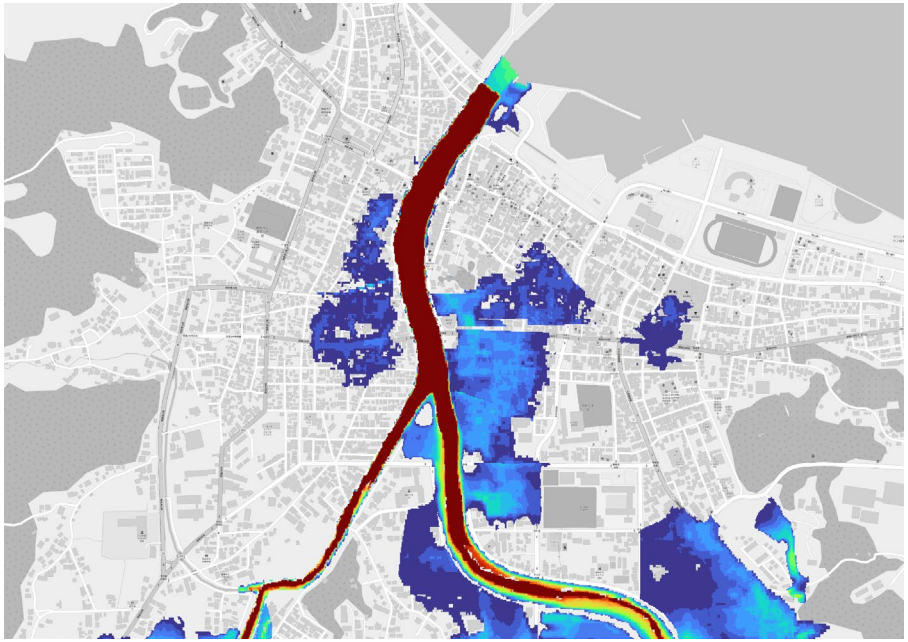
Natural Disaster Detection Solution: Insurance Companies' Disaster Response Expertise × Satellite Data

・We combine 30 types of geospatial data, mainly from satellites, to provide a nationwide disaster overview within 24 hours.
・Using reports from Tokio Marine & Nichido, we accurately assess building damage.
・Leveraging their disaster expertise, we deliver essential information to support recovery efforts.

Company name	Tokio Marine & Nichido Fire Insurance Co., Ltd.; ICEYE; ABeam Consulting Ltd.; SkymatiX, Inc.; Yazaki Corporation; Institute for Q-shu Pioneers of Space, Inc.
Service Overview	This solution merges Tokio Marine & Nichido's data and disaster expertise with satellite analysis to swiftly provide customized information that supports recovery efforts during natural disasters. Its key features include: **1. Utilization of 30 types of geospatial data:** The analysis integrates 30 types of geospatial information, including SAR and optical satellite images, as well as social media and flood simulations. This ensures a stable system that doesn't rely on a single data source, reducing the risk of missing damage. **2. Enhanced accuracy with Tokio Marine & Nichido's unique data:** By using damage reports and investigation results collected immediately after disasters from their nationwide network of branches and agents, the analysis aligns with real-time damage conditions. This achieves a level of accuracy suitable for use in insurance operations. **3. Tailored information through Tokio Marine & Nichido's disaster response expertise:** Previously, assessing the full damage took time and led to underestimations immediately after disasters. However, this solution has accurately estimated damage claims the day after, enabling quick support system setup. This tailored information streamlines recovery efforts and aids victims in rebuilding their lives. This solution is currently being utilized by disaster support volunteer organizations and domestic companies.
User	People engaged in disaster prevention and response in municipalities and companies
Satellite	・ICEYE ・ALOS-2/4 ・PleiadesNeo ・WorldView ・GeoEye ・QPS-SAR
URL	https://www.tokiomarine-nichido.co.jp/

Flood Analysis Image



- The results show the analysis of the inundation area caused by flooding with a 5-meter mesh and water depth measured in centimeters.
- By capturing the flood peak, it is possible to identify damaged buildings with nearly 80% accuracy.

Earthquake/Tsunami Analysis Example

■ : Completely destroyed ■ : No damage

Completely destroyed area　　Undamaged area

Map Image Source: Geospatial Information Authority of Japan, Orthophoto of the 2011 Tohoku Earthquake, March 2011-April 2011

- The results show the determination of building damage status from optical satellite images.
- For completely destroyed building due to flooding, the model achieved a high accuracy of 96%.