Industry-Academia-Government Collaboration and Tech4DRR Initiatives in Sendai, A Disaster-Resilient and Environmentally-Friendly City

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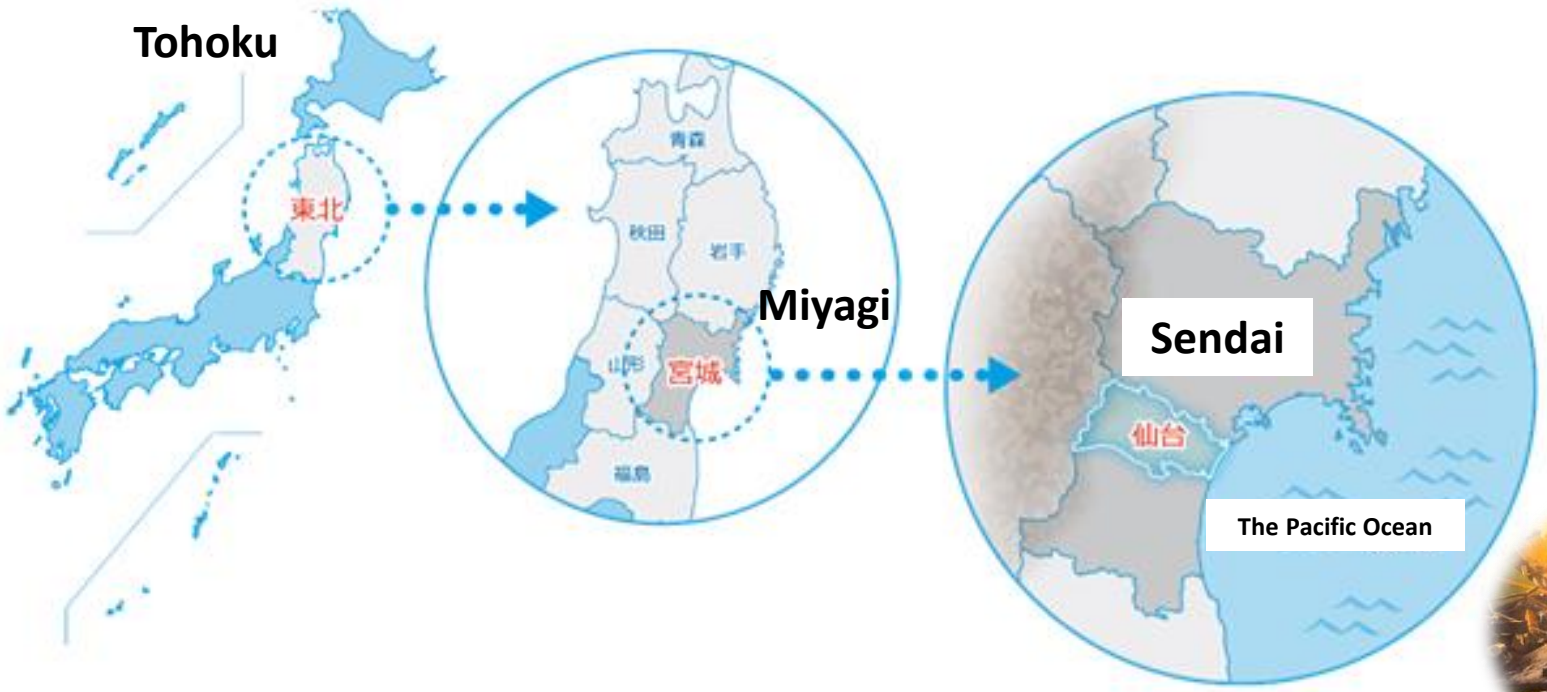
Japan

The City of Sendai

- A central hub city in the Tohoku region, known as the "City of Trees," the "City of Music," and the "Academic City"
- Promoting the city's development as a disaster-resilient and environmentally-friendly city throughout its recovery from the Great East Japan Earthquake of 2011



Sendai City as a National Strategic Special Zone

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- National Strategic Special Zones:

  A national initiative that promotes regulatory reform and institutional innovation in selected areas to facilitate the development and implementation of new services and technologies.

2011 — Great East Japan Earthquake

2015 — Designated as a National Strategic Special Zone: “Special Zone for Women’s Empowerment and Social Entrepreneurship”

2019 — One-Stop Center for Near-Future Technology Demonstration Experiments opened

2023 — Consortium for "Sendai City x Tohoku University Smart-Frontier" established

Consortium for Sendai City x Tohoku University Smart-Frontier

- Promoting the creation of advanced services through industry-academia-government collaboration between the City of Sendai, Tohoku University, and the private sector
- Addressing local challenges in line with citizens' needs through proposals to the national government for regulatory reform

Japan's first University for International Research Excellence

TOHOKU UNIVERSITY

Participating businesses:
100 companies
As of Aug. 2026

City of Sendai

- Zero-carbon City Group
- Wellness Group
- Urban Resilience Group
- Urban Revitalization and Mobility Group

Exploring ways to enhance urban resilience and create new business opportunities, with a focus on disaster risk reduction

Aspiring to be a frontier that paves the way for the region's future

Urban Resilience Group Activities

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Citizens' views are displayed as icons representing local challenges

地域課題や市民の意見を様々なアイコンで表示

市民の声をいくつかのアイコンによって表示。怒り・悩み・喜びなど。選択すると市民の声が個別に展開（次ページ参照）

人流・渋滞データ等のビジュアル化

実際の人流データ等の各種データ連携により、人の密集率や渋滞状況などエリアごとの人の分布をビジュアル化できないか

- Researchers from Tohoku University shared the latest research trends in the field of disaster-related fields
- Public and private sector stakeholders exchanged views and shared challenges concerning DRR education and measures for stranded commuters
- Private companies delivered pitch presentations on the use of 3D city models

Demonstration of a Tourism App equipped with Disaster Information Announcements

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【Normal Situation】Tourism Guide Information

【During Emergencies】DRR Guide Information

- As part of the consortium's activities, a demonstration was conducted to provide timely information on tourism and disaster risk reduction during emergencies using smartphone location data
- Supporting visitors, including tourists, in taking prompt and appropriate evacuation actions when disasters occur
- Verifying effectiveness in real-world environments through citizen participation and product testing

AI-powered Disaster Risk Analysis

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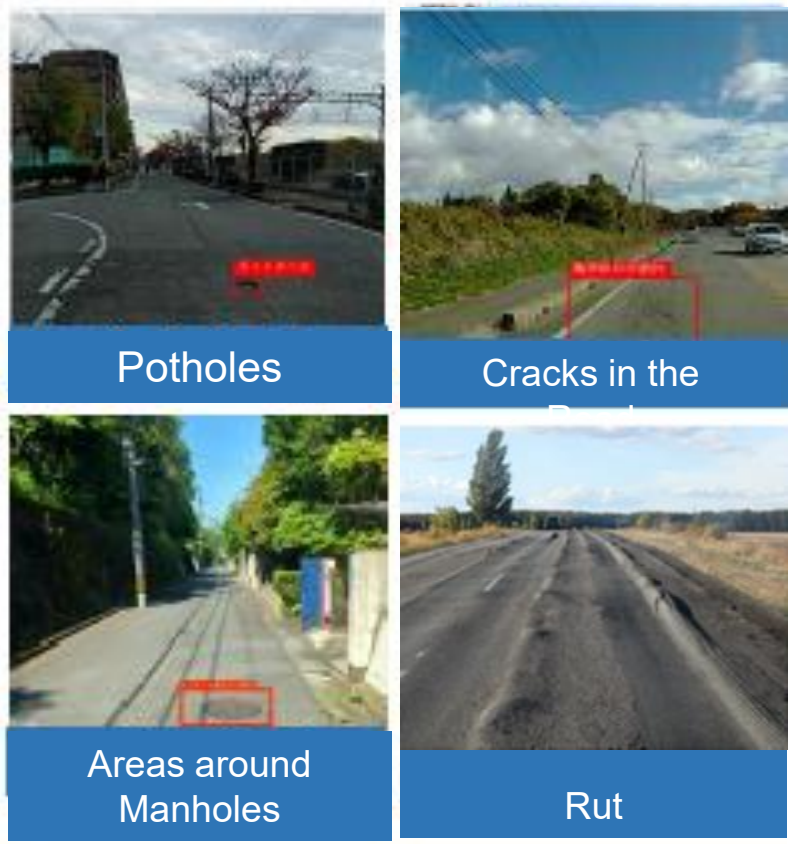
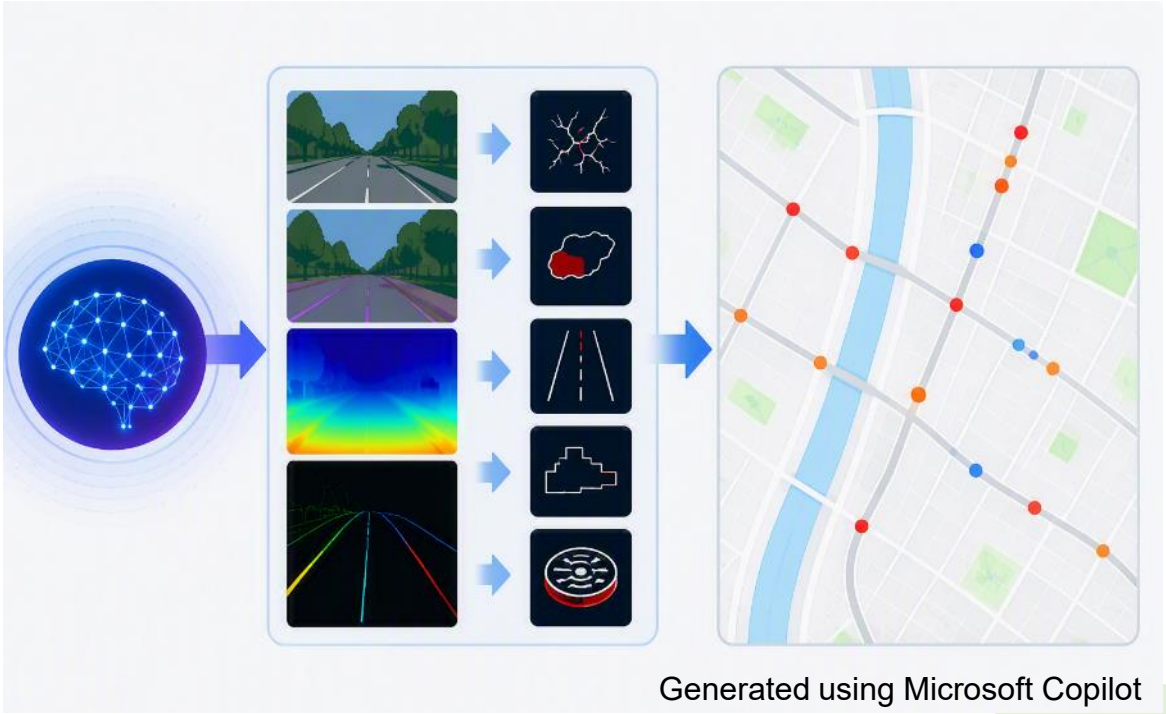
Road-related Disaster Risks

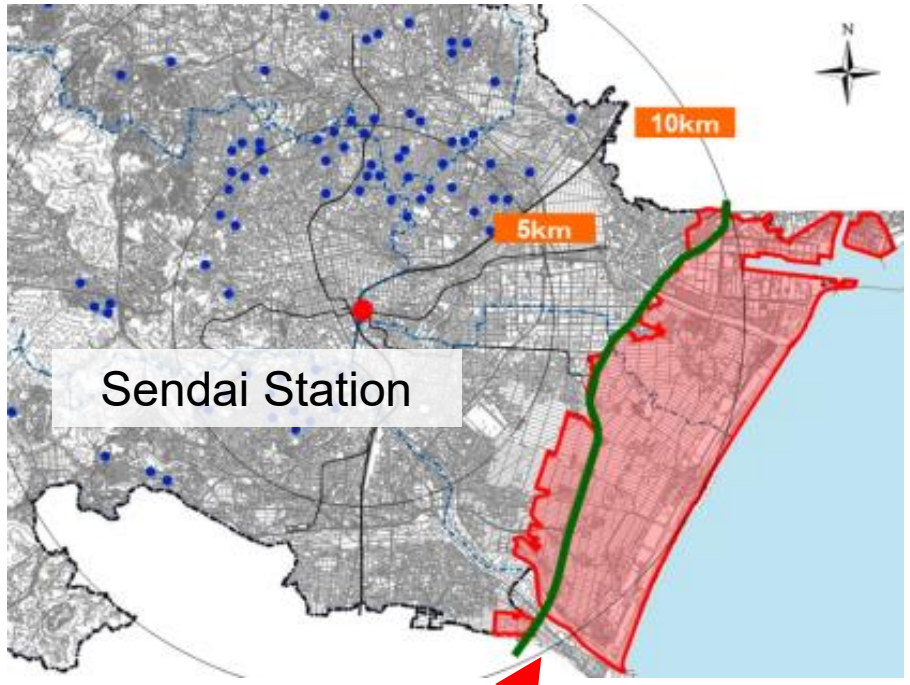




Generated using Microsoft Copilot

- Detecting road damage from dashcam footage and visualizing disaster risks through AI analysis
- Aiming to utilize residents' dashcam footage to monitor road conditions over wider areas and at higher frequency

Tsunami Evacuation Announcement Drones



Inundation Area

Inundated Area: 4,523 ha
Affected Households: 8,110

- In operation since October 2022, based on lessons learned from the Great East Japan Earthquake
- Two drones automatically take off when a tsunami warning is issued and broadcast evacuation messages via built-in speakers
- The world's first initiative combining Private LTE-based control and autonomous flight operations

Bear Damage Countermeasures Using Physical AI

- Bear sightings and bear-related injuries in urban areas have become a local concern
- Conducting demonstration tests of a quadruped robot using Physical AI
- Enhancing public safety by enabling the robot to detect bears, assess surrounding conditions, and autonomously drive them away

Message from Sendai City

- Advanced technologies, including Physical AI, are essential for building a resilient society
- Drawing on the experiences and lessons of the Great East Japan Earthquake, the City of Sendai aims to build a resilient society through innovation in disaster risk reduction
- Leveraging diverse demonstration fields and the strengths of industry-academia-government collaboration to promote technologies throughout the process from development to social implementation

Announcement

The 5th IDRLF International Disaster Resilience Leaders Forum Incheon 2026

APMCDRR 2027 in Sendai

Oct. 25-29 | Organized by UNDRR

Please Save the Date!

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Thank you

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