DeterCam Case Study

NEXCO East, Hokkaido Branch — Japan

Target: Brown Bear and Deer Detection and Deterrence Along Expressways

Project Overview

DeterCam units have been deployed at an identified wildlife hotspot in Hokkaido as part of a proof of concept with **East Nippon Expressway Company Limited (NEXCO East), Hokkaido Branch.**

The deployment targets both **Brown bears and deer**, detecting approaching animals and activating non-lethal deterrents to discourage them from entering the expressway. The project aims to protect motorists and wildlife while reducing the risk of collisions and traffic disruption.

Challenge

Brown bears and deer entering expressways create collision risks and can require temporary road closures and intervention by road management teams.

A published report citing NEXCO East's Hokkaido control centre recorded 44 bear appearances and four bear-related accident/roadkill cases during fiscal year 2023. It also reported **375 deer appearances and 87 deer-related accident/roadkill cases** during the same period. These figures cover the regional expressway network, rather than the specific DeterCam deployment site.
[Source](https://trafficnews.jp/post/134274)

Physical fencing alone does not prevent every incursion. Bears may climb barriers, while deer can exploit gaps or cross fencing. The deployment therefore provides an additional measure to detect animals and discourage access before they reach live traffic lanes.

Solution / Deployment

DeterCam units have been installed at the hotspot to monitor animal approaches and activate deterrence when target wildlife is detected.

The system uses **on-device AI** to identify animals and trigger species-specific audible and visual deterrents. Local processing enables detection and activation without relying on an internet connection.

Recorded footage supports the review of animal behaviour, including approach routes, responses to deterrence and subsequent movement. These observations can guide adjustments to unit positioning and alarm settings as activity changes.

The deployment complements existing expressway protection measures by providing an automated response to approaching deer and bears.

Objective

The project aims to reduce brown bear and deer entry onto the expressway through automated, non-lethal deterrence, helping protect road users, wildlife and maintenance personnel.

It also evaluates DeterCam's effectiveness under local conditions, including detection reliability, animal responses, repeat visits and operational performance. The findings will help inform future wildlife-management measures at the site.

Key Findings / Observations

The DeterCam units are **installed and operational**, with reported detection and deterrence of both deer and brown bears.

Initial operational feedback indicates that the system is working well, particularly in deterring deer from the protected approaches. Recorded encounters provide information about animal activity and responses to the deterrent sounds and lights.

Monitoring will continue to establish quantified detection totals, deterrence rates and any confirmed expressway entries during the deployment period.

Going Forward

The installed units will continue operating at the site, building on the positive deer-deterrence performance reported to date.

Ongoing monitoring will track responses from both deer and brown bears and help identify changes in approach routes or repeat activity. Findings will support adjustments to positioning and deterrence settings where needed.

The deployment will provide NEXCO East with further evidence to assess continued use at the current hotspot and potential expansion to other locations affected by wildlife incursions.

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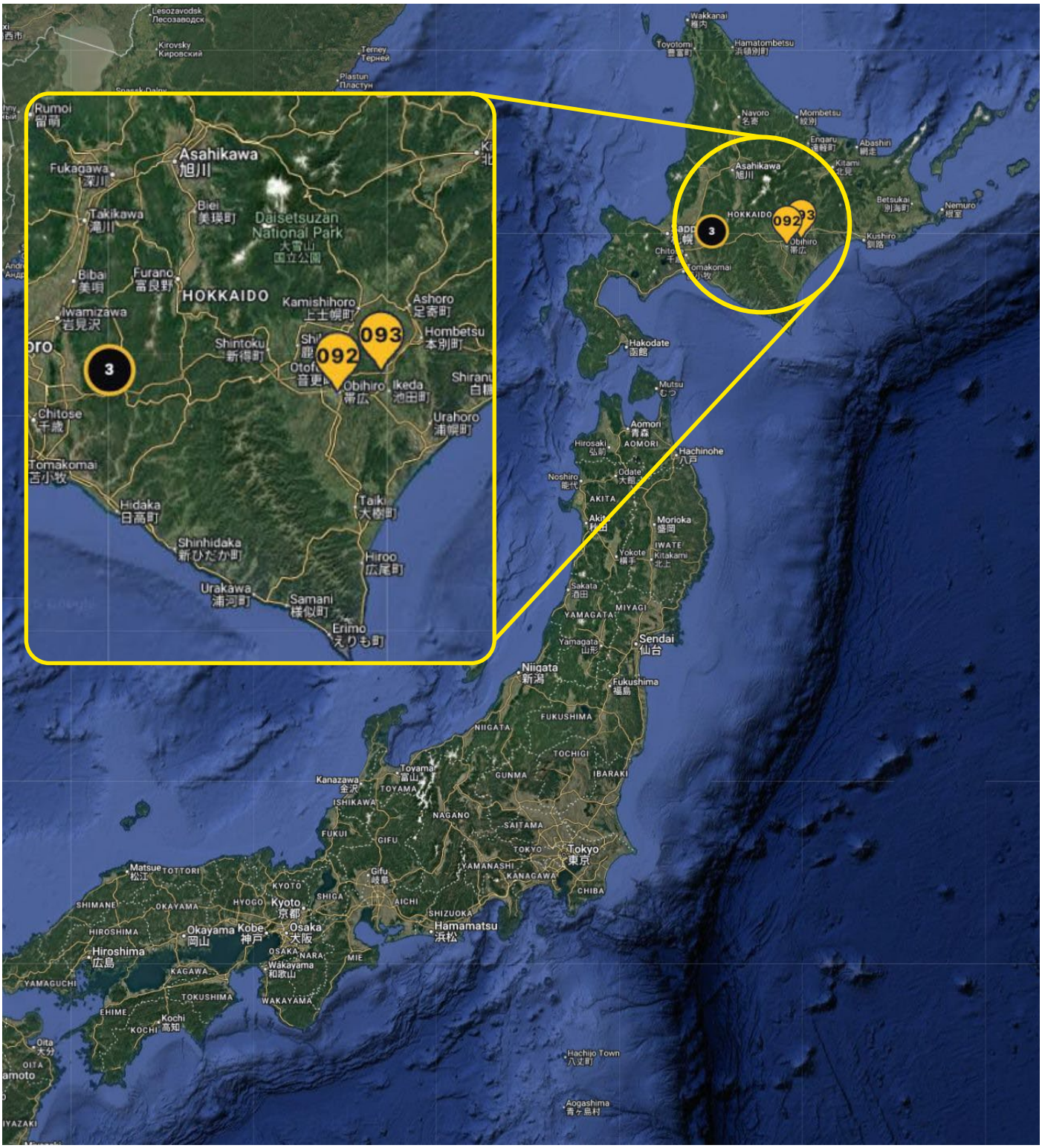

Deployed by Leading Organisations

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