AI Real Time Road Information Service
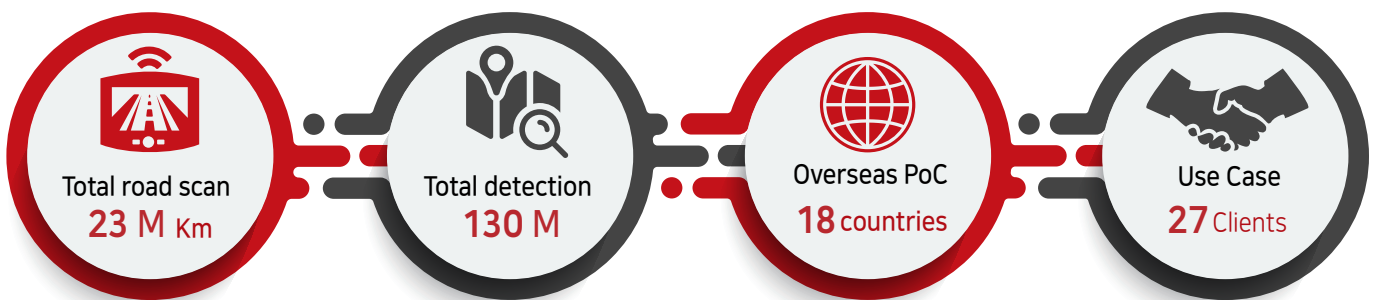
RiaoS

Road information as a Service

DareeSoft

RiaaS
Road information as a Service

● Vision of Dareesoft

Dareesoft, since its establishment in 2020, has commercialized RiaaS and been recognized for its technological innovation through various startup support programs such as Baby Unicorn, TIPS, Scale-Up TIPS, IBK Changgong, and national projects. Dareesoft's **RiaaS**, has been successfully introduced to domestic local governments including Seoul Metropolitan City, and is now expanding globally.

● Unparalleled Data and Technological Competitiveness

We are securing customized data tailored to local road through high-quality data collected by AI Road Analyzer device and accumulated AI analysis know-how through demonstration projects/POCs.

Total road scan	Total detection	Overseas PoC	Use Case
23 M Km	**130 M**	**18** countries	**27** Clients

● Major Customers

From local governments to businesses, customers from various industries have chosen RiaaS.

NEW YORK CITY DOT	COUNTY OF INYO CALIFORNIA	CITY OF MAPLE VALLEY A Natural Fit	EMCON SERVICES INC.	SEOUL METROPOLITAN GOVERNMENT	The Way to Better Living Hwaseong	UIJEONGBU CITY
SEJONG CITY	Yangju	CHEONGJU CITY	GWANGJU NAMGU	Seongnam City	Jeju	GEOJE CITY
Hanam City	SUWON SPECIAL CITY	2nd Seohaean Expressway	Wonju Regional Construction & Transportation Office	HYUNDAI MOTOR GROUP	KAC 한국공항공사 KOREA AIRPORTS CORPORATION	Incheon Airport

DareeSoft

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Dareesoft North America Inc.
1730 Minor Ave Suite 1050, Seattle, WA 98101 U.S.A.
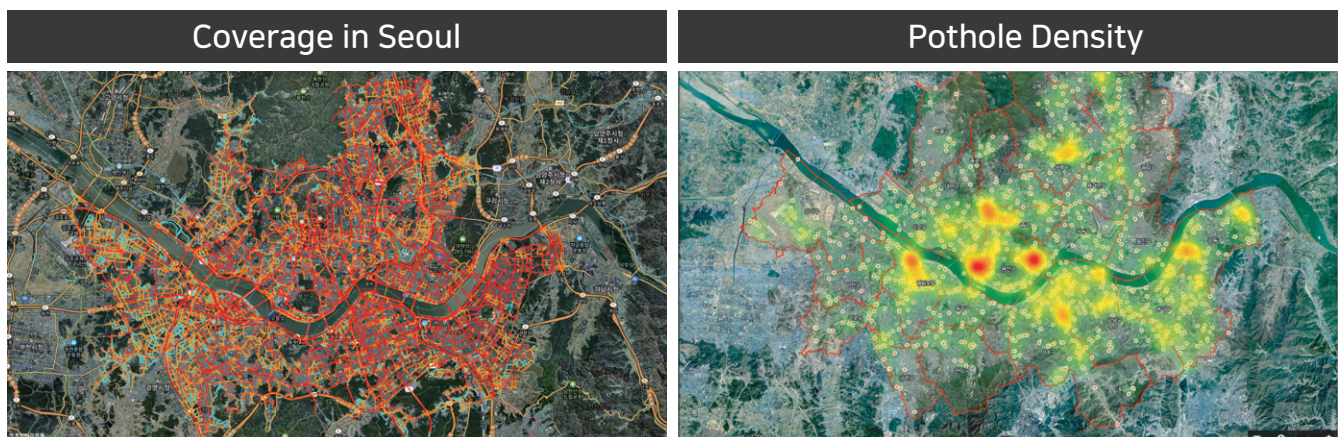**T.** +1 206. 355. 2998

RiaaS Use Cases

Applications

RiaaS can be applied to a variety circumstances. Current applications include road hazard & distresses detection including road kills and debris, asset management, autonomous driving and autonomous driving applications.

Road Maintenance & Planning	Smart Cities	Airport	Metaverse & Digital Twins	Insurance	Big Data	Maps & Navigations	C-ITS	Autonomous Driving

Unparalleled Data and Technological Competitiveness

We are securing customized data tailored to local road through high-quality data collected by AI Road Analyzer device and accumulated AI analysis know-how through demonstration projects/POCs.

Coverage in Seoul	Pothole Density

Project Details

We are developing solutions and accumulating know-how based on various projects and continuous R&D

Location	Region	Project
	Seoul, Korea	Vision based automatic pothole detection and analysis
	Gimcheon, Korea	Gimcheon Smart town; Smart Road Maintenance
	Wonju, Korea	ITS innovation; AI Highway Risk Management System
	Alberta, Canada	Automize road maintenance and reporting system
	California, USA	RiaaS for automation of road maintenance and PCI reporting
	Banggalulu, India	Pothole, debris, broken road asset detection
	Oitta, Japan	Replacing manual detection with RiaaS
	Dubai, UAE	Riaas + delivery motorcycle counting

RiaaS Solution

Real Time Road Hazard Information Service

End to End service, from collecting to sharing road hazard information within 1 second.

Hazard Detection	Service Platform	Monitoring
Road Analyzer	Road Wise	RiaaS RoadMonitor / RiaaS RoadKeeper

Pothole

Precise Analysis

External data collection

Map Matching

Data Processing

Web & Mobile Monitoring Services

One can enhance and strengthen the detection model autonomously through a One Stop Solution where detection, transmission, analysis, and visualization of road hazards are automatically implemented.

Expanding Detection Objects

Expanding the objects of detection from potholes to various other hazards/data.

Service Enhancement & Expansion

Improving Detection Accuracy

Construction and analysis of big data on hazard information Enhancing the model through deep learning

Benefits

Reduces the hazard processing time

Prevents accidents and traffic congestion

Reduces social and economic cost

Automates Road Hazard Management

RiaaS
Road information as a Service

Enhances citizen's safety and quality of life

Data based road management & maintenance

Information for safe and autonomous driving

Improves safety of pedestrians and drivers

● Road Analyzer

ARA is **the world's only road analysis device**

ARA 20
Powerful ultra-lightweight AI model
Detects over 12 kinds of road hazards
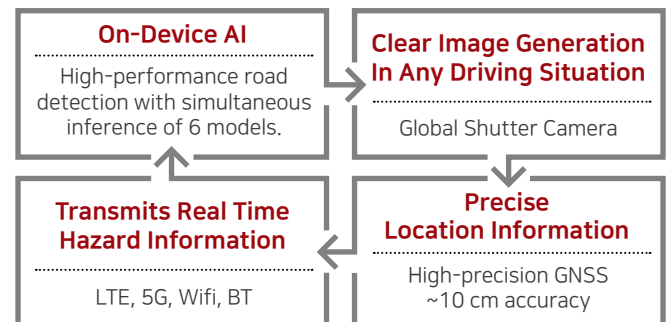Transmits data to a cloud platform.

ARA 30
8 times faster AI Model than ARA 20
Detects over 20 kinds road hazard
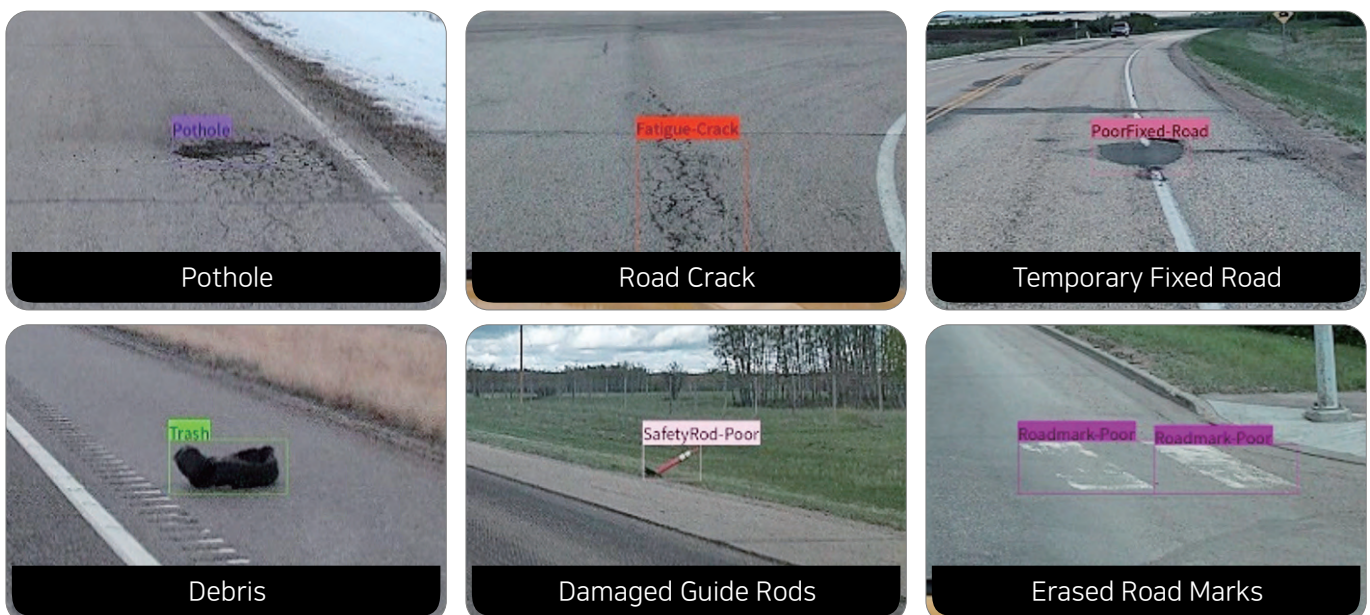and infrastructure information with
5 channel camera.

✓ Functions

1. › **Automatic On/Off & auto detection**

2. › **Installed inside vehicle (Black box type)**

3. › **Remote control/ Remote update (OTA)**

✓ Key Features

On-Device AI
High-performance road
detection with simultaneous
inference of 6 models.

**Clear Image Generation
In Any Driving Situation**
Global Shutter Camera

**Precise
Location Information**
High-precision GNSS
~10 cm accuracy

**Transmits Real Time
Hazard Information**
LTE, 5G, Wifi, BT

✓ Detected Hazards

Pothole	Road Crack	Temporary Fixed Road
Debris	Damaged Guide Rods	Erased Road Marks

RiaaS Solution

Road Wise

Through secondary processing of hazard information transmitted from ARA, precision analysis, size measurement, deduplication, and de-identification are processed on a single platform.

Secondary Precision Analysis

Improving data reliability through secondary processing

Tire Marks

Dark-Colored Trash

Data Anonymization

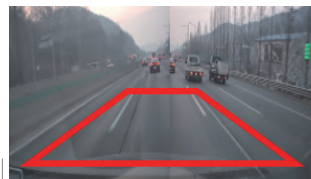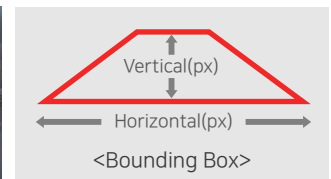De-identification for privacy protection of collected data

Human Faces

License

Size Measurement

Algorithm applied for size measurement of hazards

Vertical(px)

Horizontal(px)

<Bounding Box>

Forward Detection

Inference of Risk Area

Deduplication

Algorithm for deduplication of road hazards detected in the same location

De-dupe

Data Integration

Integration of various external data sources
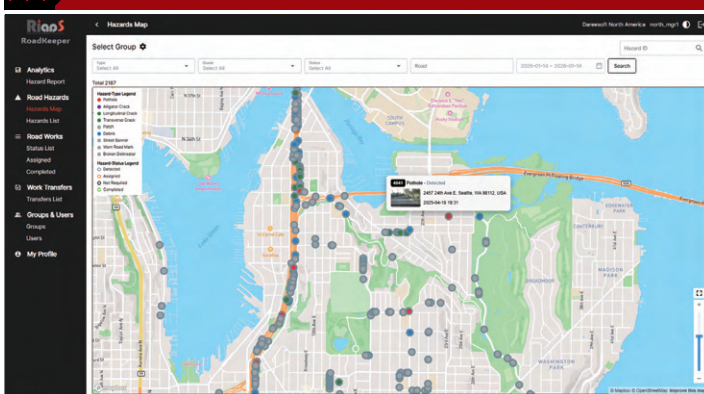
Reverse Geocoding

Standard Node Link

Weather Information

RiaaS RoadMonitor & RiaaS Road Keeper

Provides an intuitive UI/UX for monitoring the road hazards and a field response service app that enables the road management for the Road maintenance departments.
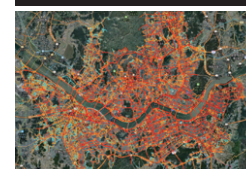
Web based UI/UX

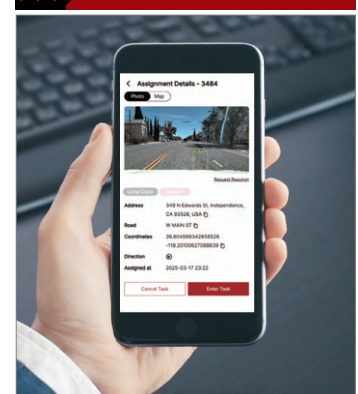Road hazard information by administrative area/road/time series

Graph-based statistics and visualization

GIS based hazard information

Field Response App

Hazard picture and location