

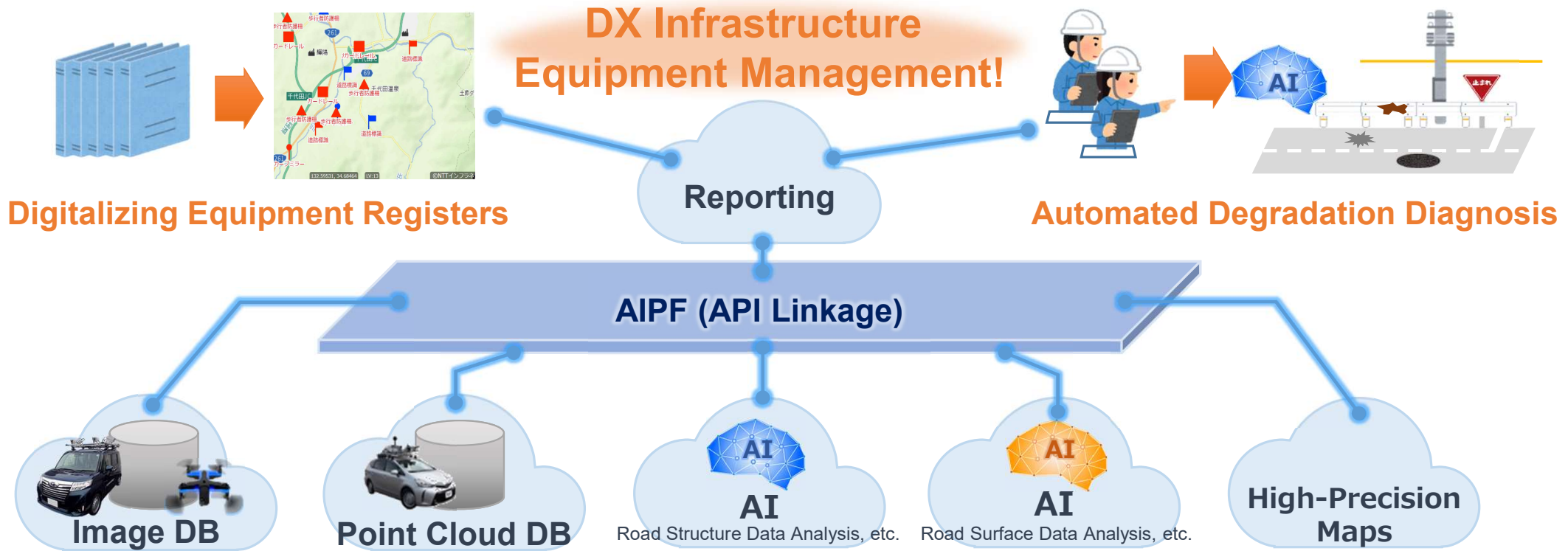
AIPF Services which Support Local Social Infrastructure

“Audin AI”

Developing Registers and Diagnosing the Deterioration of Social Infrastructure Equipment

Audin AI Overview

- Audin AI is a cloud service that utilizes data held by NTT Field Techno Co., Ltd. (NTT-FT), combines equipment identification and deterioration diagnosis technology possessed by Japan Infrastructure Mark Co., Ltd. (JIW), and establishes a register of social infrastructure equipment and determines deterioration using AI.
- We can improve the efficiency of equipment management by digitalizing the equipment information, and by maintaining and improving inspection quality by using AI for diagnosis.



What Audin AI Offers

➤ Audin AI helps with the DX of infrastructure equipment management by creating registers for infrastructure equipment and providing deterioration diagnosis for infrastructure providers.

Anticipated Challenges

- **Identification of the Necessary Inspection Points**
- Equipment is not datamined and the locations are difficult to identify
- **Improvement of the Quality of Visual Inspections**
- Difficulty in securing inspection quality due to oversights and individual skills

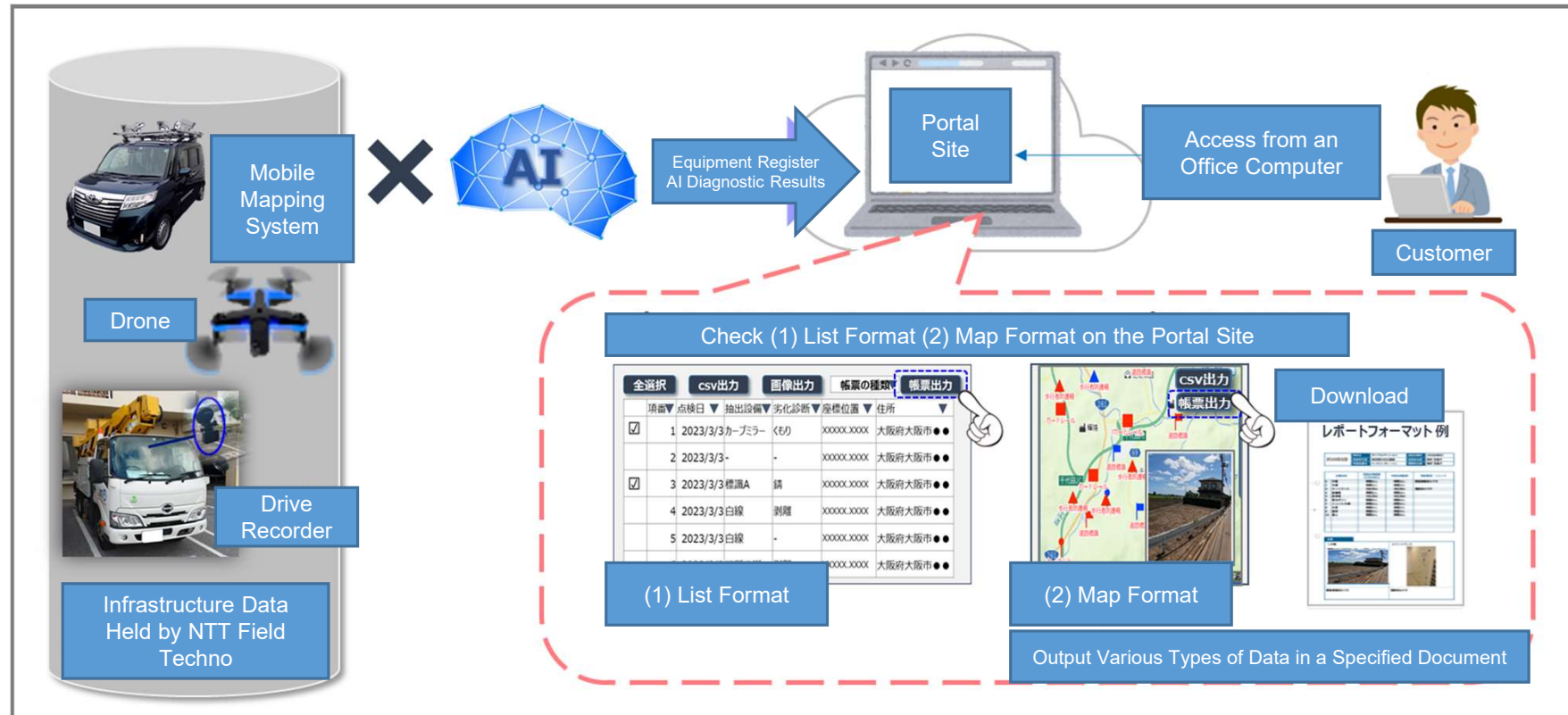


Details of the Service

1. **Creating Equipment Registers**
- Automatically identifies the target equipment from the image data and determines the location coordinates of the equipment, which are plotted on a map
2. **Deterioration Diagnostics**
- Automatically diagnoses degradation and homogenizes quality

What Audin AI Offers

- By combining the image data of social infrastructure equipment held by NTT Field Techno with JIW's deterioration diagnosis AI, the registers of social infrastructure equipment and the deterioration diagnosis results are digitalized and provided on a portal site.
- The maintenance and deterioration diagnosis of social infrastructure equipment can be viewed in a list or on a map.
- The report will be displayed in the format specified by the customer in advance.



Infrastructure Equipment Covered by Audin AI

➤ A register is created and the deterioration is diagnosed for three types of equipment: road structures, road surface painting, and road surfaces. 【Legend】 ○: Available from 23.8 ▲: Available in the Future

No.	Equipment Type	Target Equipment		(1) Creating the Equipment Register	(2) Equipment Deterioration Diagnosis	Deterioration Diagnosis Description
1	Road Structure	1-1	Road Signs	○	○	Rust
		1-2	Curved Mirrors	○	○	Rust
		1-3	Guardrails	○	○	Rust
2	Surface Coating	2-1	Road Markings (Symbols & Text)	○	○	Peeling
		2-2	Crosswalks	○	○	Peeling
		2-3	White Lines (Center & Side Road)	○	○	Peeling
3	Road Surface			—	○	Cracks & Potholes
4	Road Surface			—	▲	Crack Rate & IRI
5	MH Iron Lid			▲	▲	Level Difference etc.

Future Plans

Audin AI's Analysis Results (Example 1)

Picture Taken by the Drive Recorder



Analysis Results from the Road Structure AI



■ Labeling

Analysis Results from the Road Surface Diagnostic AI



■ Surface Paint Peeling (Text)

Audin AI's Analysis Results (Example 2)

Picture Taken by the Drive Recorder



Analysis Results from the Road Structure AI



■ Labeling

Analysis Results from the Road Surface Diagnostic AI



■ Lane Separation (Center Line)
■ Road Cracks

Provided Images (Data Map List)

- By plotting the data on a map, you can visually see the location of the equipment.
- By clicking the pins on the map, you can see detailed information about the equipment.

The screenshot displays a web interface for a data map. On the left, there is a search and filter panel with sections for '検索' (Search) and '凡例' (Legend). The search section includes filters for road structures and road surface conditions. The legend section uses colored pins to represent different road features. The main map area shows a street grid with several pins placed along a road. A blue arrow labeled 'click' points to one of these pins. A pop-up window titled 'AI判定結果' (AI Judgment Results) is open over the selected pin, displaying a table of location data and a small satellite image of the area.

BOXファイルID	BOXファイルURL
熊本市	市町村 熊本市中央区
大字	大字 新屋敷
町丁目	町丁目 3丁目15
緯度	32.80555
経度	130.7240972222

Provided Images (Form Output According to the Customer's Use)

➤ The contents of the equipment records can be formatted into documents that can be outputted as PDFs that are tailored to the customer's management specifications.

管理帳票

帳票出力内容

No. 旧番号 大字 地区

道路名 1 道路名 2 位置 設置土地

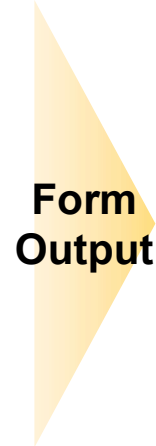
支出科目 款 項 目

ミラー呼径 ミラー面数 ミラーR ミラー材質 支柱径 支柱形状 添架柱 基礎形状

設置年度 点検 基礎点検 ミラー点検 支柱点検 ステッカー有無 取付金具点検 注意版有無

修繕履歴

現在の状況



No.	旧番号	大字	地区
道路名	ミラー呼径	ミラー面数	
道路名	ミラーR	ミラー材質	
位置	支柱径	支柱形状	
設置土地	添架柱	基礎形状	
支出科目	款 項 目	設置年度	
略 図	住宅地図など	点検	
		基礎点検	ミラー点検
		支柱点検	ステッカー 有 無
		取付金具 点検	注意版 有 無
		修繕履歴	
		現在の状況	
		緊急性	
現況写真	遠景	現況写真	近景
備考			

* This document is just an example.

[Reference] AI Analysis Results (Road Structures - Signs)



[Reference] AI Analysis Results (Road Structures - Curved Mirrors)



[Reference] AI Analysis Results (Road Structures - Curved Mirror Rust)

Picture Taken by the Drive Recorder



Analysis Results from the Road Structure AI



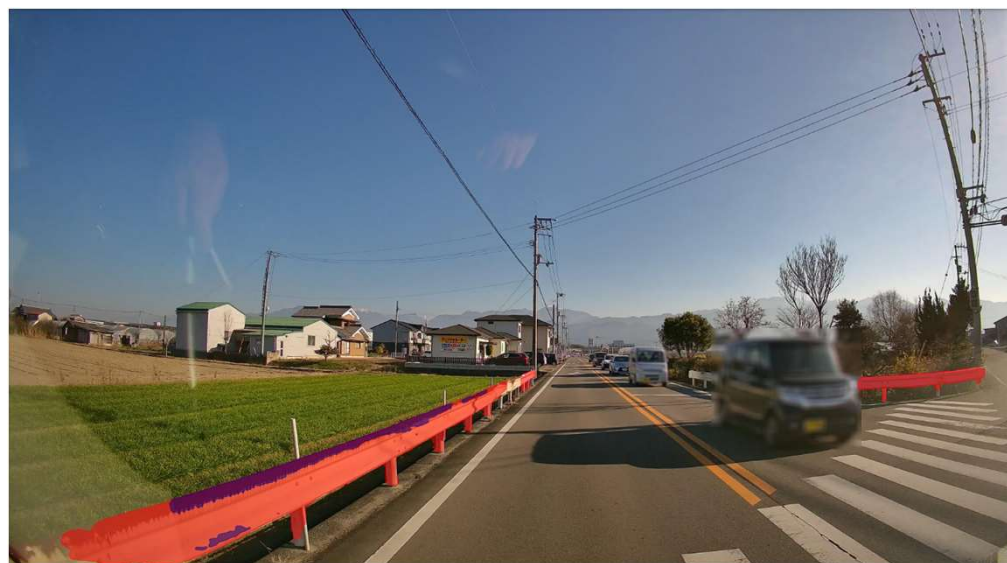
- Curved Mirror Detection
- Rust Detection

[Reference] AI Analysis Results (Road Structures - Guardrail Rust)

Picture Taken by the Drive Recorder



Analysis Results from the Road Structure AI



- Guardrail Detection
- Rust Detection

[Reference] (Customer-only Browser) Example of Equipment List Display

- We will provide you with a list of equipment data included in your target area.
- You can also output the equipment list in CSV format.

帳票出力_AA自治体

スペース: 帳票出力_AA自治体 アプリ: 帳票出力用アプリ

施設一覧 設備情報取得

1 - 7 (7件中)

年度	要望苦情ID	分類	受付日	県域	市町村	町丁目	緯度	経度	更新日時	
2023 年度	A12345678	要望苦情	2023-09-22	京都府	与謝郡与謝野町	上山田	35.53721	135.103772	2023-09-25 19:13	 
2023 年度		要望苦情		京都府	与謝郡与謝野町	上山田	35.53721	135.103772	2023-09-25 16:14	 
2023 年度		要望苦情		京都府	与謝郡与謝野町	上山田	35.53721	135.103772	2023-09-25 16:14	 
2023 年度		要望苦情		京都府	与謝郡与謝野町	与謝	35.460043	135.083902	2023-09-25 16:15	 
2023 年度		要望苦情		京都府	与謝郡与謝野町	与謝	35.460043	135.083902	2023-09-25 16:15	 
2023 年度		要望苦情		京都府	与謝郡与謝野町	与謝	35.460043	135.083902	2023-09-25 16:15	 
2023 年度		要望苦情		京都府	与謝郡与謝野町	与謝	35.460043	135.083902	2023-09-25 14:06	 

[Reference] (Customer-only Browser) Example Record for Equipment (1/3) 15

- We will prepare and provide a form for your equipment according to your requests.
- You can also include additional items that you need, enabling us to digitalize the equipment register.

申出受付書 ▼ 出力

帳票出力内容

年度	要望苦情ID	分類	受付日	受付者
2023 年度	A12345678	要望 苦情	2023-09-22	玉井

■ 申告受付

申告人	所属	氏名	電話番号	住所
	テスト所属 1	テスト氏名 1	123-456-7890	京都府与謝郡与謝野町上山田
要望者	所属	氏名	電話番号	
	テスト所属 2	テスト氏名 2	234-567-8901	

方法	発生日	緊急度	業務区分	箇所補助
目視	2023-09-21	緊急	業務区分	箇所補助

路線・管理・施設名等	台帳情報
路線・管理・施設名等	台帳情報

場所	状況分類
	状況分類

備考

Create Items According to the Customer's Specifications(Example)

- ✓ Pre-existing Customer ID
- ✓ Person in Charge
- ✓ Name of Routes & Equipment, etc.

*This document is just an example.
(Form separate from p.9)

[Reference] (Customer-only Browser) Example Record for Equipment (2/3) 16

- Even when you work across multiple departments, you can easily communicate by including comments from other departments and work history.

■ 現場確認

確認日	管理外	状況評価
2023-09-25	府管理外土地 府所有外土地 府管理外施設 府所有外施設	状況評価

原因

備考

経過日時	経過内容
2023-09-23 6:00	現地確認
2023-09-23 10:00	修繕依頼
2023-09-24 17:00	修繕完了の確認

▶ **Comments from Other Departments can be Written on Audin AI**

▶ **An Item History Log Can be Kept**

↓ 3/3に続く

*This document is just an example.
(Form separate from p.9)

[Reference] (Customer-only Browser) Example Record for Equipment (3/3) 17

- Displays the equipment address information, maps, and photographs based on the drive recorder data.
- Based on the AI analysis, it is possible to check the presence of the equipment and the deterioration status.

AI判定結果

BOXファイルID: BOXファイルURL:

県域: 市町村: 大字: 町丁目:

緯度: 経度:

添付ファイル:

■路面塗表・路面の判定結果		
側線	中央線	横断歩道
<input type="text" value="なし"/>	<input type="text" value="なし"/>	<input type="text" value="なし"/>
記号	文字	
<input type="text" value="なし"/>	<input type="text" value="なし"/>	
ヒビ	穴	
<input type="text" value="あり"/>	<input type="text" value="なし"/>	

■道路構造物の判定結果

The address near the position of the equipment is displayed based on the information obtained by the drive recorder.

A photograph of the target equipment is displayed.

The AI's analysis of the equipment is displayed.