

Overview of the Asset Register in Georgia and Kyrgyz Republic

Country Context

Georgia



Network Managed by Roads Department:

International Roads – 1,511 km

Secondary Roads – 5,459 km

Sub-Total: 6,970 km

Network Managed by Municipalities

Local Roads: 14,496 km

Total: 24,466 km

RAMS Activities carried out in-house

Staff involved directly in RAMS: **4**

Staff under Planning Unit using RAMS output: **5**

Kyrgyz Republic



Network Managed by Ministry of Transport and Communications:

International Roads – 4,089 km

National Roads – 5,621 km

Local Roads – 9,109 km

Total: 18,819 km

RAMS Activities carried out by Production

Innovation Centre and Asset Management Unit under MOTC

PIC Staff involved RAMS: **6**

MOTC Staff under AMU: **4**

Asset Register: Georgia

<p>1 Data Type</p>	<p>GIS datasets: Road, Bridge/Tunnel, Condition (IRI), Traffic, Safety (iRAP star rating), Population, Education, Healthcare, Tourism. No data on Surface Distresses, Bridge passports not digitized, no Culverts, Signage</p>
<p>2 Update and Availability</p>	<p>Full network coverage of Condition and Traffic Data - Annual Update. iRAP – Cumulative progression (1,300 km by 2024). Population, Education and other social data – External Sources.</p>
<p>3 Who Collects and How Much</p>	<p>Condition data collection – inhouse 4-5K km annually. Traffic Data – inhouse and maintenance contractors – 300 count location. Social Data – Relevant ministries, Census, Public Sources</p>
<p>4 Methodology and Technology</p>	<p>Condition Data – ROMDAS Survey Vehicle Class 1 Laser for paved roads. Traffic – SDR and Video Analytics, seasonal counts</p>
<p>5 Dissemination & Data use</p>	<p>Manual GIS dataset sharing and GISCloud web map portal. 5 year network level plan is prepared and updated annually</p>

Asset Register: Kyrgyz Republic

<p>1 Data Type</p>	<p>GIS datasets: Road, Bridge/Tunnel, Condition (IRI), Rutting, Traffic No data on other Surface Distresses, Culverts, Signage</p>
<p>2 Update and Availability</p>	<p>Limited network coverage of Condition and Traffic Data - Sporadic Updates under IFI Projects.</p>
<p>3 Who Collects and How Much</p>	<p>Condition and Traffic data collection – by PIC, project dependent ~8,000 km, 200 traffic count locations</p>
<p>4 Methodology and Technology</p>	<p>Condition Data –Survey Vehicle TRASSA Class 1 Laser for paved roads. Traffic – SDR and Manual single day counts.</p>
<p>5 Dissemination & Data Use</p>	<p>Custom WEB GIS (ongoing update under RAMS project), manual data sharing. Limited data use, No multi year plan prepared and updated annually</p>

Road Survey System - ROMDAS

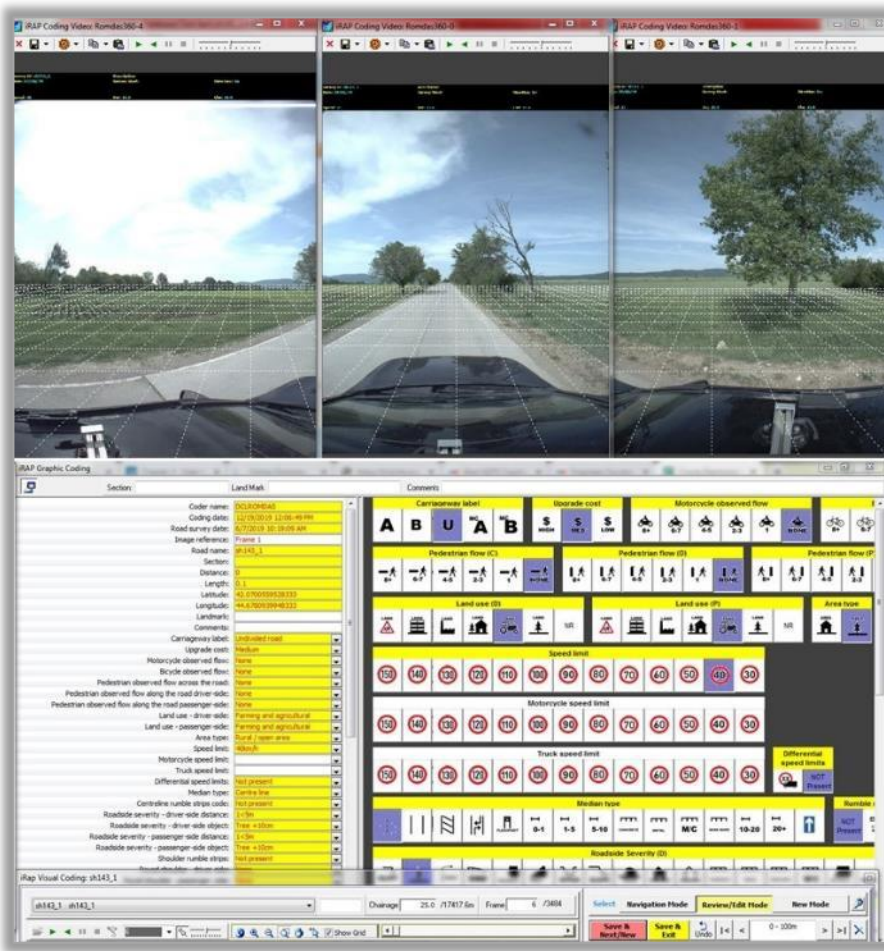
- 2x Class 1 Profilometers
- iRAP compatible 360 Degree video
- Road Geometry, GPS, chainage data.

Survey Vehicle



Equipment: Georgia

**360 Degree
Camera for iRAP
Coding and star
rating**



Equipment: Georgia

S03 TbMtskheta-Larsi (km15.8)

Vehicle Occupant:



Operational Speed 90 km/h

Straight road section

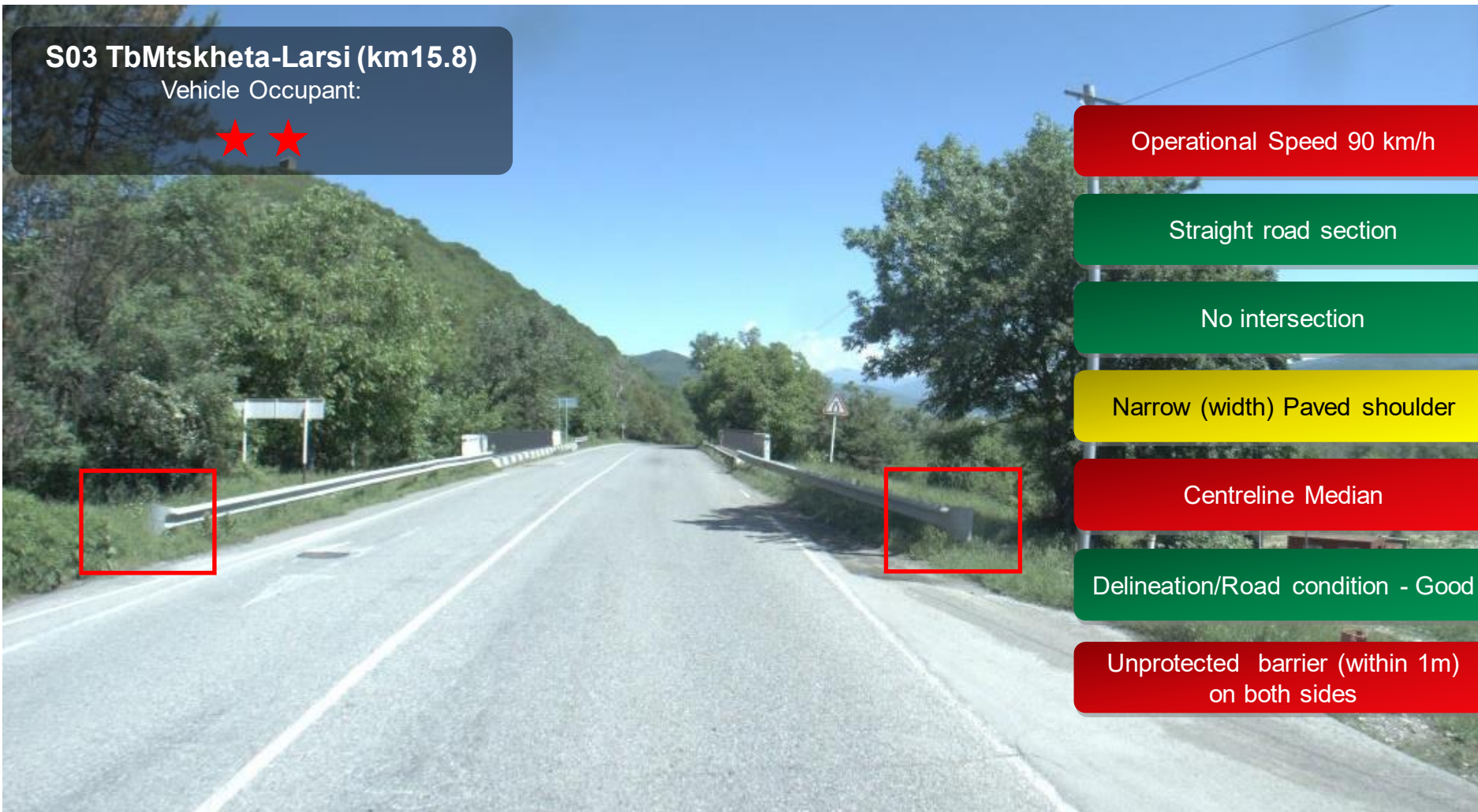
No intersection

Narrow (width) Paved shoulder

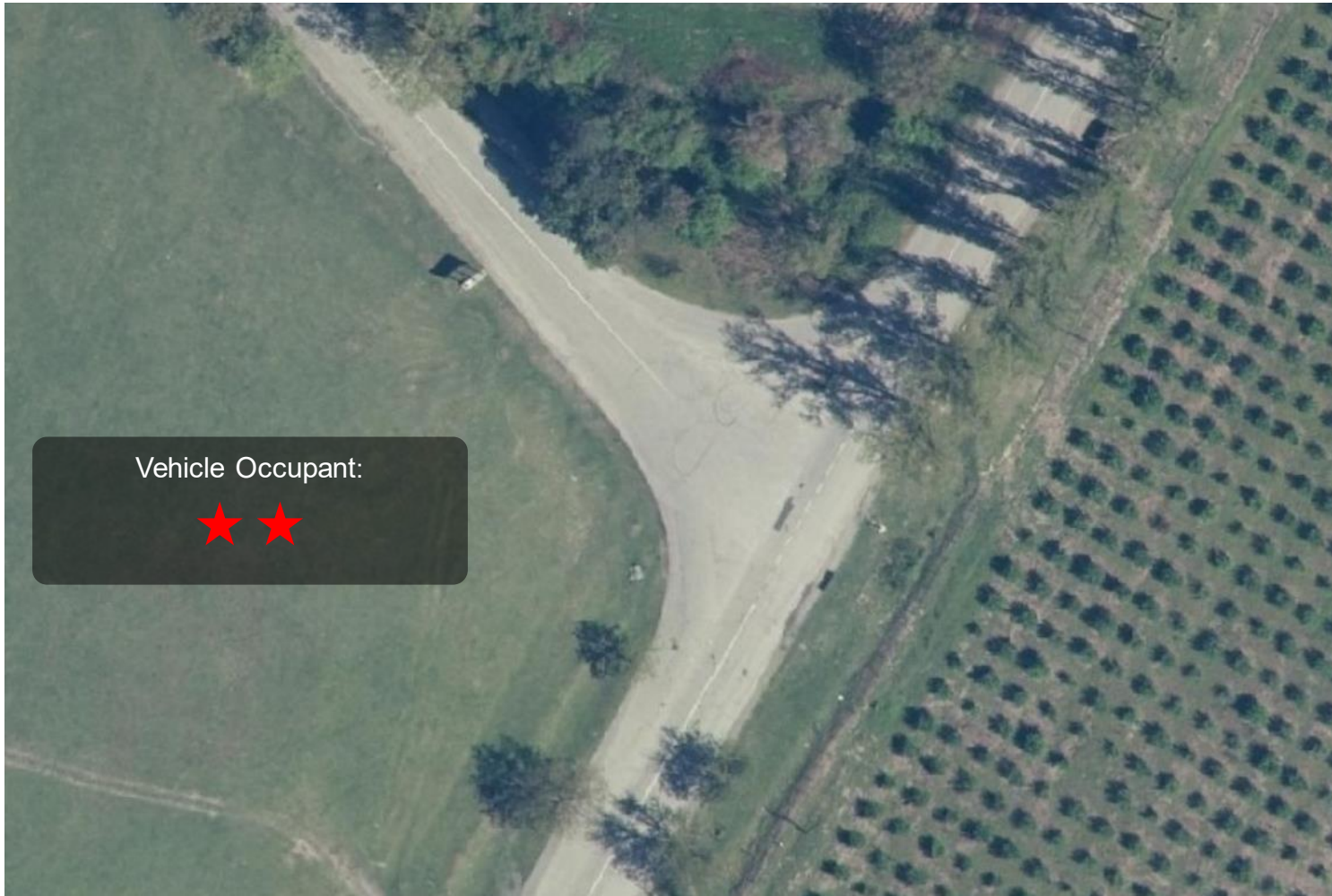
Centreline Median

Delineation/Road condition - Good

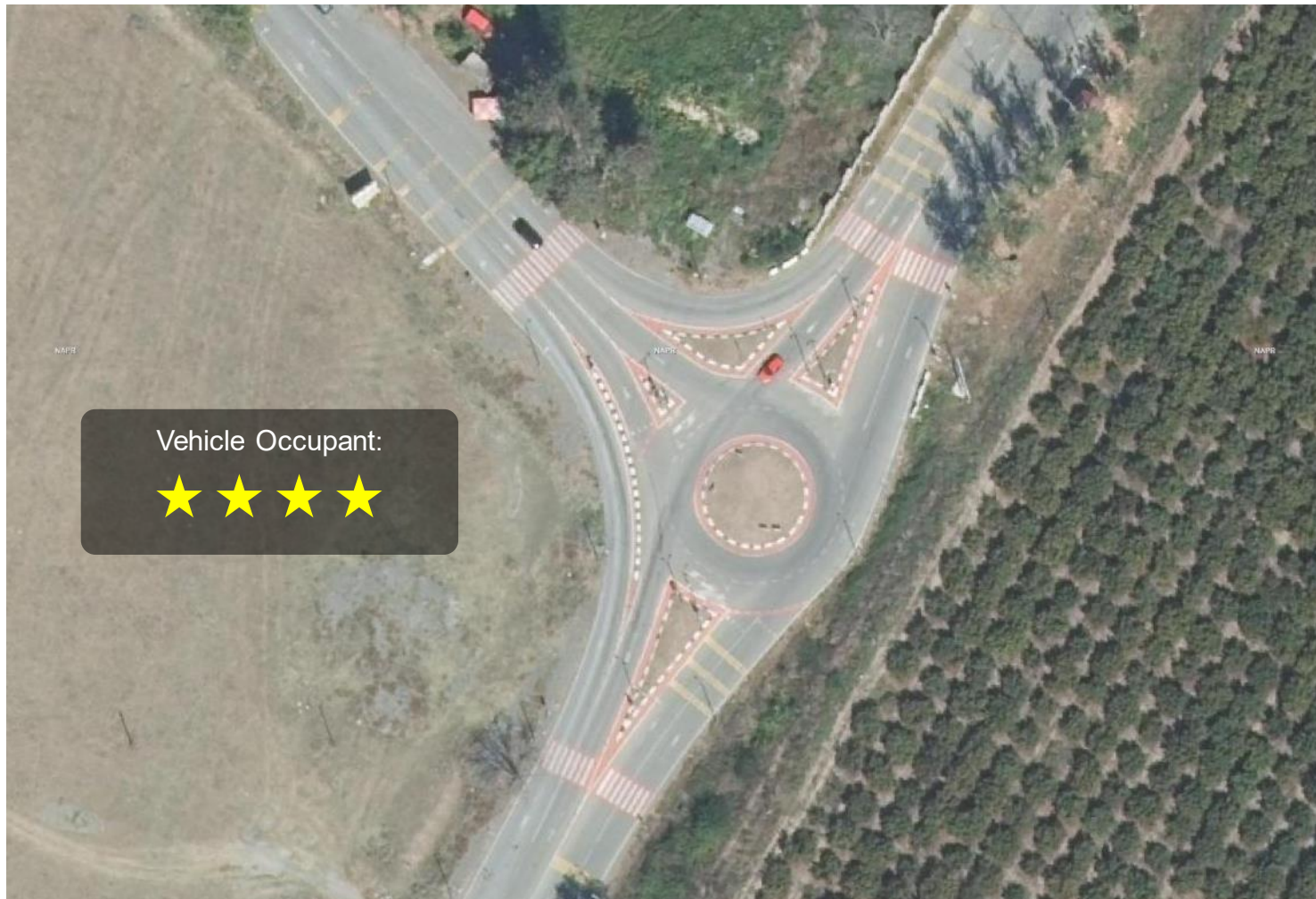
Unprotected barrier (within 1m)
on both sides



Equipment: Georgia



Equipment: Georgia



Traffic Count Equipment

- Radars and AI Video Analytics (piloting)
- 300 locations annually 3 times per year
- Individual location represents 48H
- Field RAW data collection by Maintenance Contractor
- Data processing carried out in-house by Roads Department



RD Drone Equipment

3 x **DJI Matrice 300** Enterprise drones equipped with **H20T 20x Optical zoom** and infrared camera
iXM50 PhaseOne Camera for high resolution image processing, mapping and 3D Reconstruction with DJI Terra software

Current Use

- Bridge Inspection
- Digital Terrain Mapping
- Monitoring of construction sites
- 3D reconstructions

Potential Use

- Calculation of cut/fill volumes
- Emergency response
- Infrared thermal imaging for crack detection/assessing water ingress



Road Survey System - TRASSA

- Laser Profilometers 2x
- Rutting with 3x lasers for transverse profile
- GPS, chainage data.

Traffic Counts

- Radar Traffic Counters and Manual Counts

Survey and data processing by Production Innovation Unit



ESRI Arc GIS

Used for Data Storage, Processing, Mapping, Analytics

HDM4

Multi year program preparation and project analysis

ROMDAS Dataview with iRAP

Field Surveys (IRI, centerline GPS, 360 vid) and iRAP Coding

VIDA

iRAP Star Rating

DJI Terra

Drone Data processing, measurements, 3D Reconstruction

GISCloud

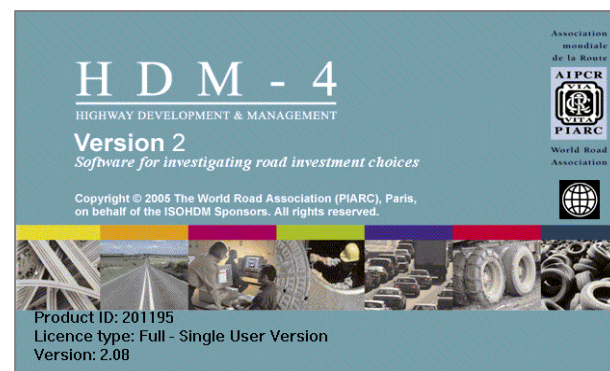
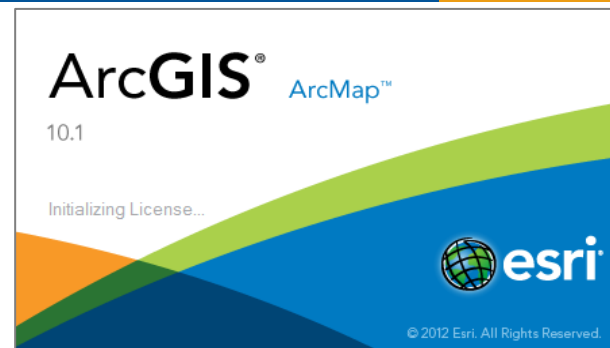
Data sharing, mobile data collection

Demonstration at:

<https://112674.giscloud.com>

FLOW

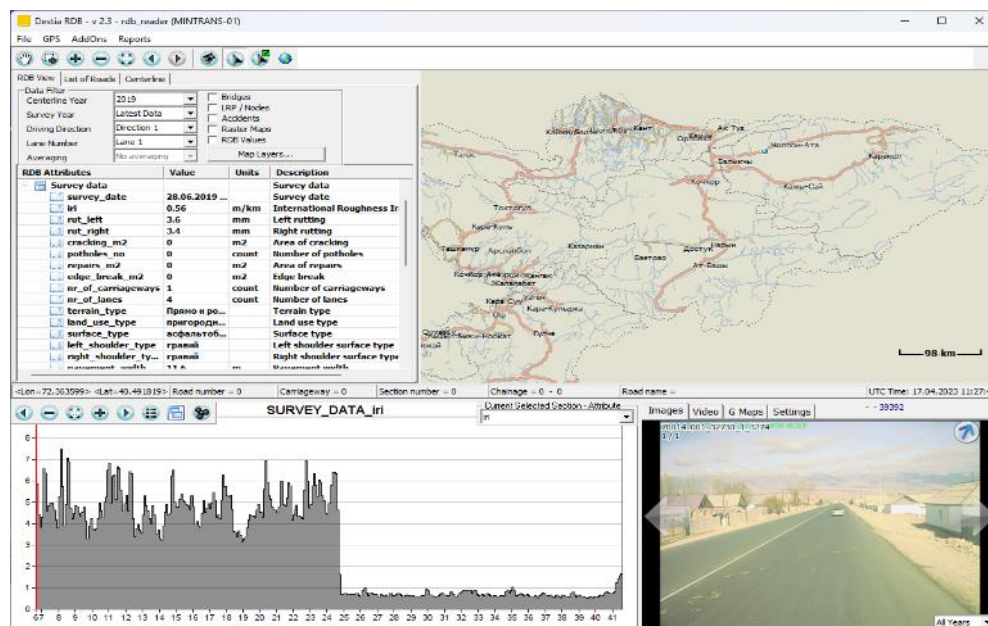
Video Analytics traffic data processing



Road Information System (custom development 2021)

Client-Server architecture Desktop application connecting to a database. Generates Graphs, Limited use, basic GIS functions, Mapping, Reporting

TRASSA - Field data collection for IRI, Centerline GPS, Rutting and Video



Comparative Analysis

GEORGIA

1. Focus is on using combination of **COTS software**, this allows flexible and **low cost deployment**.

Availability of specialists, knowledge materials and continuous **access to software updates**. While this approach has significant advantages, the **lack of sector specific customized software** has its drawback. This is most apparent with the lack of **Bridge Management System** for inventory, inspection and planning.

2. Majority of data collection and processing **is fully in-house**. This allows easier allocation of resources for annual update.

3. Data Use supported by internal processes requiring **formal submission and approval** of multi-year plan by RD Chairman.

KYRGYZ REPUBLIC

1. Focus is on **Custom RAMS**, this allows better customization, however, sacrifices **advanced functionalities** of COTS software and **flexibility of deployment**. Results in higher cost. Current RAMS software developed in 2021 already being replaced by new custom RAMS under different project. Due to functional limitation, unavailability of source codes, developers being international, no web support, etc.

2. Data collection is **outsourced** to PIC, resource allocation for update is sporadic and subject to availability of **resources under IFI projects**.

3. Data Use is limited due to lack of **management engagement** in RAMS operations and unavailability of relevant **formal processes**.

Thank you.

