

# 2013 NEPPP

## Road Surveying Equipment and Data Collection Technology Overview

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# Road Survey Data

- What is it?
- Why collect it?
- Who uses it?

# What is it?

- Road survey data is composed of sensor data and images used to assess the condition of a road or network of roads



# Why Collect It?

- Road survey data is used to maximize the efficiency of materials, manpower and resources within an agency to guarantee the safest and most cost effective means of road travel
- Road survey data collection is both a responsive and proactive means of maintaining a network of roads



# Who Uses It?

- Road survey data is used by agencies to gather information about the location and condition of maintained roads



- This information is used to assess funding, planning, repairs, performance and future projects

# Technology Overview

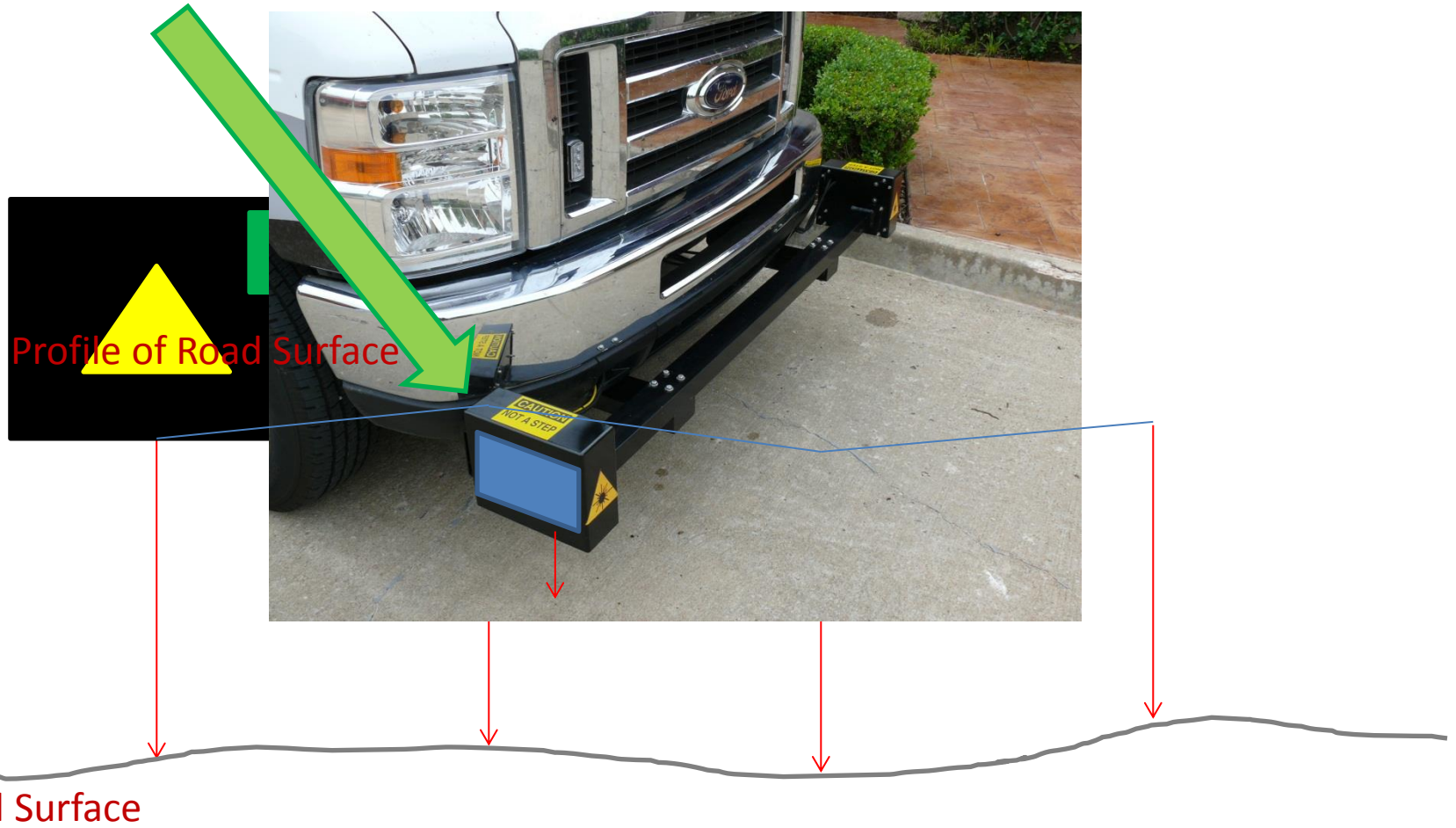
- Inertial Profiler
- GPS Data
- Road Geometry Data
- Surface Condition Analysis
- Sub-grade Road Condition Analysis
- Multi-sensor Reporting

# Sophisticated Equipment

- Inertial Profile Measurement Equipment
- Macrotexture Measurement
- High Precision Gyrometric Measurement System with Integrated GPS Positioning
- Roadway Imaging System
- Automated Crack Detection and Rut Measurement With 3D Laser Imaging System

# Inertial Profiler

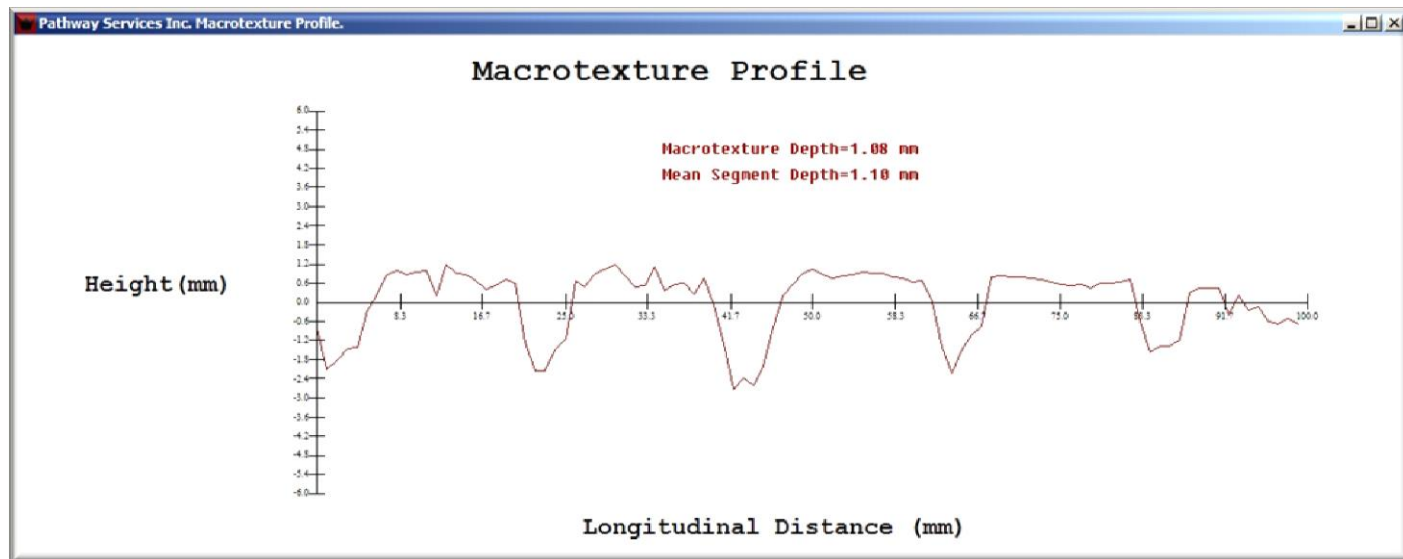
Laser Mounted to Vehicle





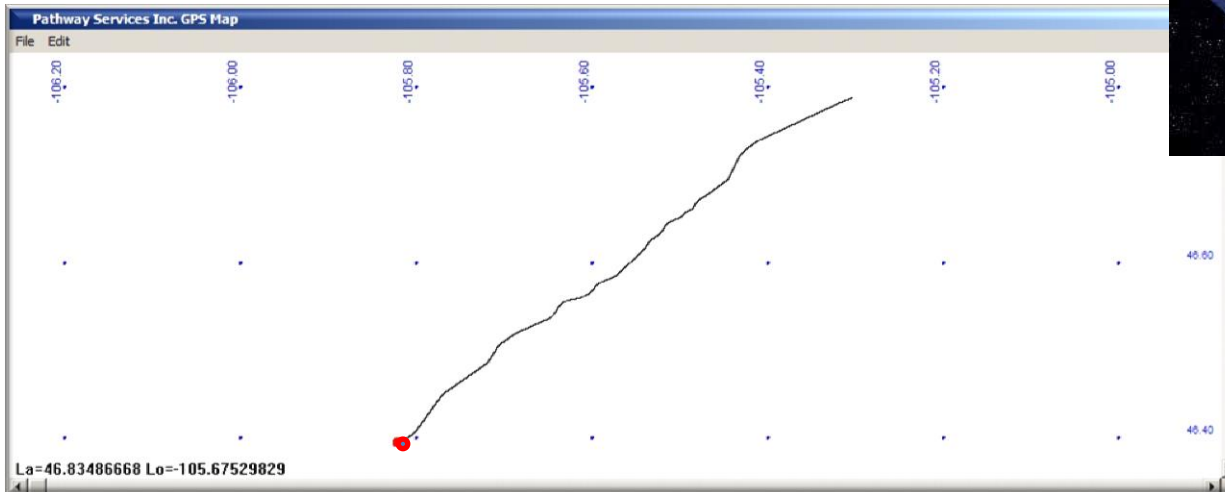
# Macrotexture Measurement System

- Measure Mean Texture Depth (MTD) and Mean Profile Depth (MPD)
- ASTM E1845



# Gyrometric Measurement System

- High Precision Measurement of Pitch, Roll, Cross-slope, and Heading
- Integrates GPS Location



# Roadway Imaging System



- HD Imaging System

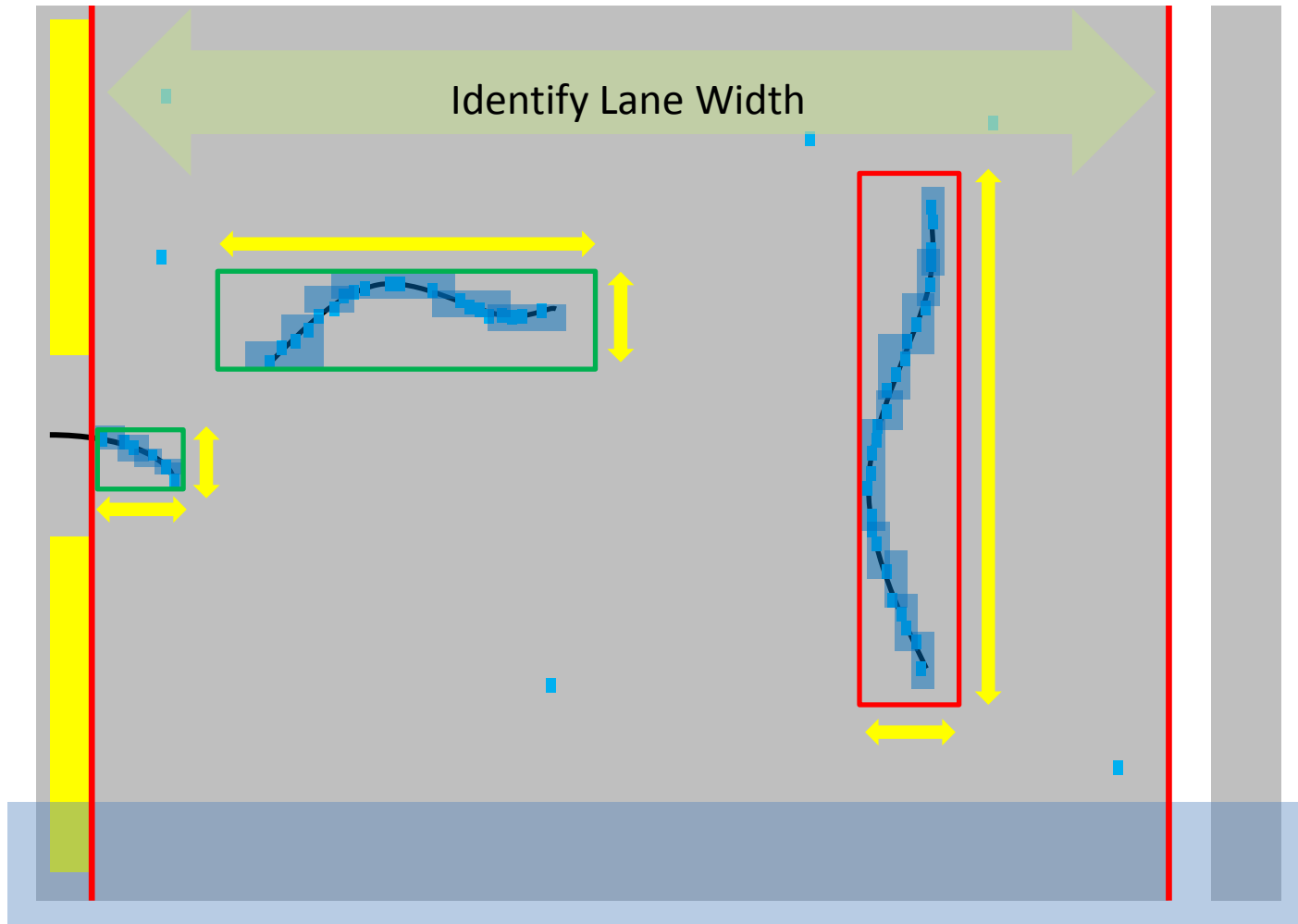
# Roadway Imaging



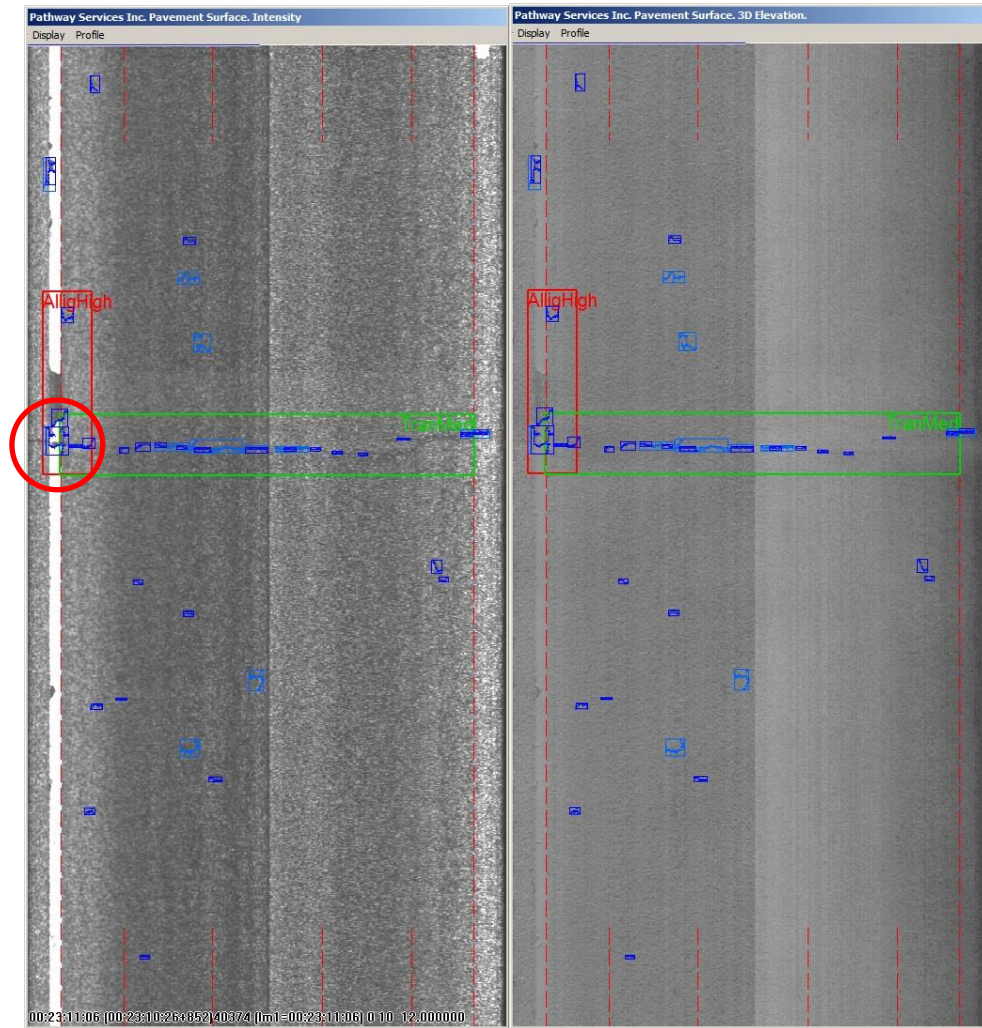
# Automated Crack Detection With 3D Imaging System



# Automated Crack Detection With 3D Imaging System



# Automated Crack Detection With 3D Imaging System



# Asset Inventory

Pathway Services Inc. Digital Images
Image Help

Signs/Inventory Input

Stop	Yield	To Oncoming Traffic	4-Way	All Way
Yield Here To Ped	Yield Here To Ped R	Yield Street Ped	Yield Here To Ped R	Street Ped Cross Yield
HERE TO	HERE TO	HERE TO	TO PEDESTRIANS	TO PEDESTRIANS
Street Ped Cross Stop	Speed Limit 50	Speed Limit 80 km/h	Trucks 40	Trucks 60 km/h
Night 45	Night 70 km/h	Minimum Speed 40	Minimum Speed 60 km/h	Speed Lim 50 min 30
Speed Lim 90 min 50	Fines Higher	No Right Turn Symb	No Right Turn Across	No Left Turn Symb
No Right Turn Across	No Turns	No U-Turn	MMLane Control Left	MMLane Control Right
MMAhead	Left Lane Control P	High Occupancy V+2	Taxi Lane Plaque	Center Lane Plaque
Right Lane Plaque	Bus Lane Plaque	MMLane Ctrl Ahead L	MMLane Ctrl Ahead R	Lane Ctrl Turn Left
4MLane Ctrl Turn Right	Advanced Lane Ctrl	Advanced Intersect LAR	Advanced Intersect LAR	Overhead Mount
Post-Mounted	Reversible Lane Ctrl	Reversible Lane Ctrl	Reversible Lane Ctrl	Reversible Lane Ctrl
Center Lane Only	Center Lane Do Not Use 7-9 AM Mon-Fri	End Reverse Lane at Co. Orado Blvd.	Begin Reverse Lane 150 Meters	

Image / Location Data

01:53:46.28	Rec 1	Set 999
Dist 441.3 ft	39.716 mi	60.0 m/h
Lat +43.2270800	Lon -71.5357132	
Heading 168.0° Grade -2.5% CS +0.8°		
Date 05/30/2008 Time 16:18		
Multi: NewHamp	Road: 193 5B	
Road-From: RP 39.8	Road-To: RP 39.4	
Len: 2112.0	Sign Leng: 2091.2	
IRI L e: 81	IRI R e: 81	
IRI e: 64	RUT e: 0.39	

Digitized Image Control

1    <<    >>    Find    Change Dir.    Print

Skip 0 feet

Signs/Inventory Database

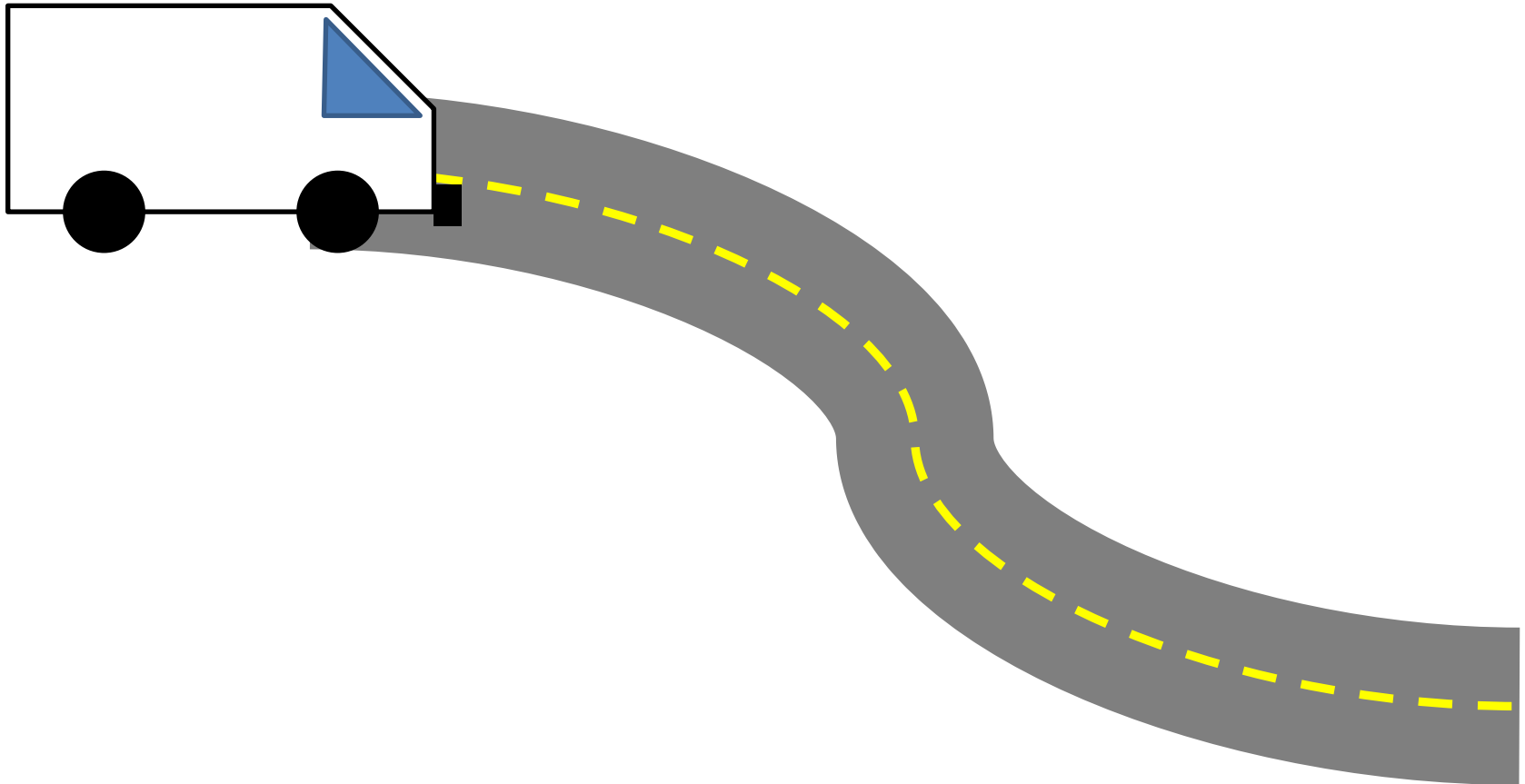
File Edit Image

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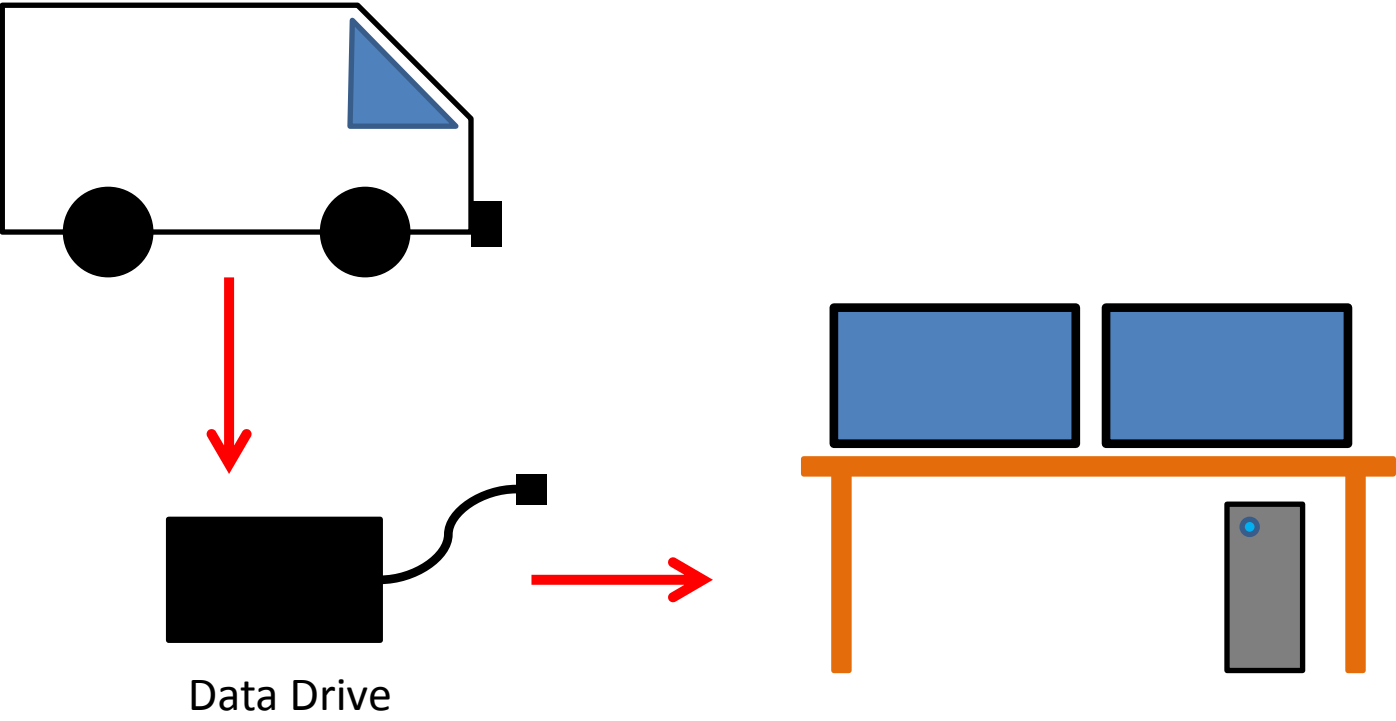
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# Data Collection



# Data Transfer to Work Station



# Process Data In Work Station



**QUESTIONS?**