



THE ROAD LESS BROKEN:

SMARTER SOLUTIONS WITH AI

Ohio DOT Vehicle Data Project

Project Manager: Jodie Bare

Presented by: Lindsey Carroll, P.E.

10/09/2025



THE CORE TEAM

PUBLIC / PRIVATE PARTNERSHIP (P3)



Department of
Transportation

Nick Hegemier, Sponsor
Managing Director, DriveOhio



HONDA
The Power of Dreams

Sue Bai, Ph.D.
Chief Engineer



Jodie Bare-Thompson
Vice President, Parsons X



University of
CINCINNATI

Professor Munir Nazzal
Department of Civil &
Architectural Engineering
University of Cincinnati

Vehicle Based Roadway Data for Asset Management

1. Potholes



2. Ride Quality / Roughness



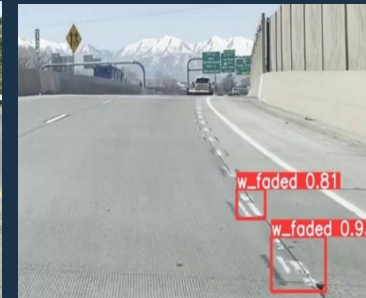
3. Berm Conditions



4. Guardrails



5. Road Striping



6. Road Signs (damaged + missing)



Challenge



- 49,000 lane miles of roadway to maintain assets for.
- Ohio DOT manually checks data through driving each section of the roadway at a minimum of every 2 weeks; pavement done every year.
- Manually record & generate work order maintenance tickets

Approach



- Use vehicle sensors data to assess assets, ingest data, analyze insights, apply intelligence, teach the machine, group assets by proximity, recommend severity, auto-create work order maintenance ticket with images
- Collaborative effort: Honda (OEM) + iProbe (data analysis), Parsons (Systems Integrator) + Ohio DOT (User) + University of Cincinnati (vision detection feature development)
- Two pilot vehicles
- Agile like methodology – thin slice solutioning (**2 districts, 6 types of assets**) with frequent, regular feedback loop & iterating on architecture & design

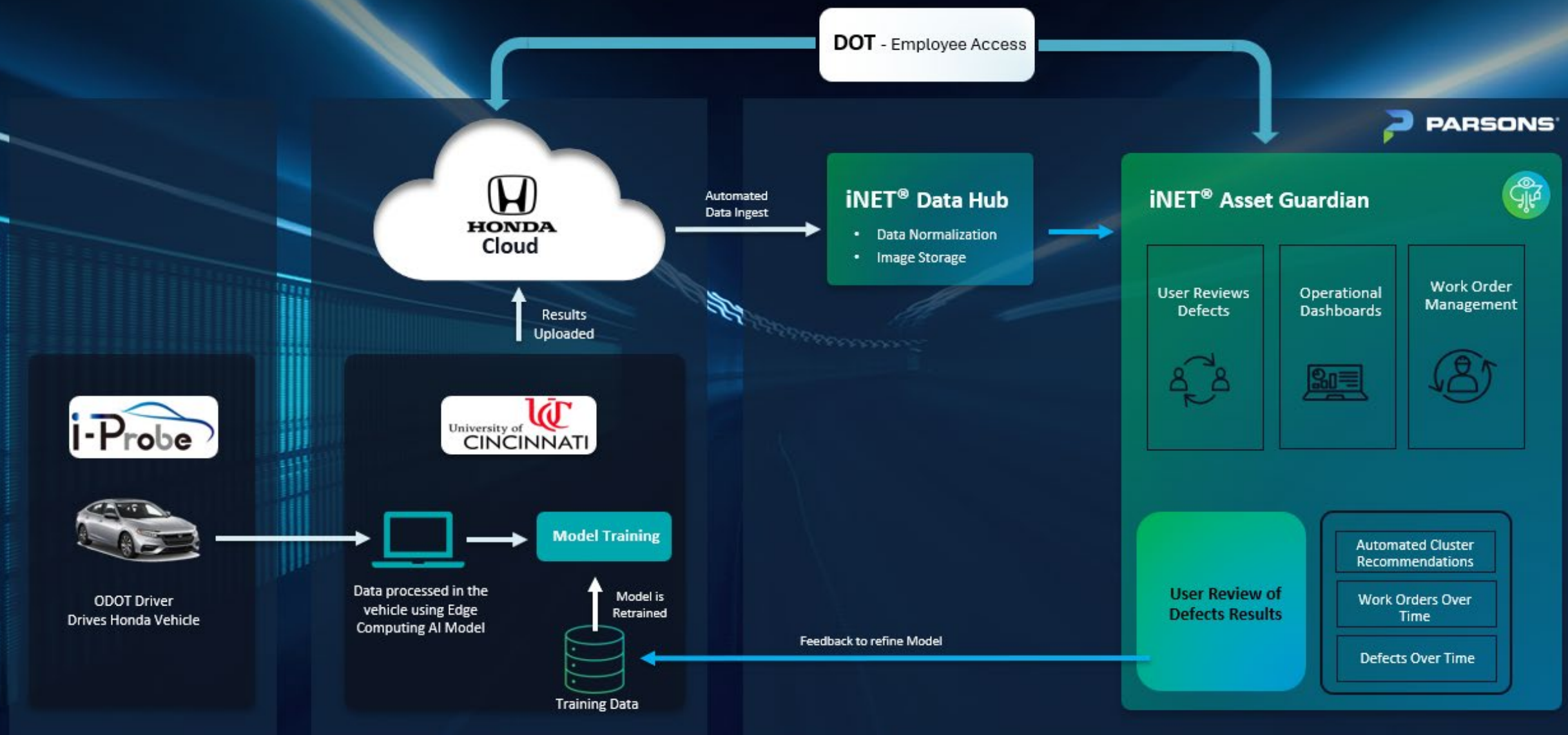
Expected Outcomes



- Automated reporting of roadside asset conditions
- Efficient, streamlined workflow for work order maintenance
- Confirm value of vehicle-generated data
- Understand the level of collaboration required by key stakeholders & partners for scale up success, especially the road operators' needs
- Shapes future technical direction on vehicle sensor types and placement on vehicles
- System Integrators learn how to best support DOTs for operationalizing data
- Lessons learned to help shape next level roll out

- Client: Ohio Department of Transportation
- Delivery Team: Honda, i-Probe, Parsons and University of Cincinnati

ODOT System Architecture



INET® ASSET GUARDIAN | OPERATIONALIZING THE DATA



PARSONS

+ ADD NEW DEFECT

Issue Type

District/Jurisdiction

Work Orders

Search

Azure Maps

Shortcuts

Traffic Layers

Transit

COLUMNS FILTERS DENSITY EXPORT

ID	Defect Type	Severity	Source	Status	Description	Location	Latitude	Date Collected	Work Order #
67d87c4eb10bb24612b0cda4	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	CONFIRMED		40.26633, -83.48992		2024-08-27T15:42:59.219+00	
67d87c4eb10bb24612b0cda5	SIGN-WARNING - NO-DAMAGE	LOW	HONDA	REJECTED		40.238132, -83.40012		2024-08-27T15:47:27.104+00	
67d87c4eb10bb24612b0cda6	SURFACE-PAVEMENT - POTHOLE	MEDIUM	HONDA	REJECTED		40.239307, -83.399025		2024-08-27T15:47:32.000+00	
67d87c4eb10bb24612b0cda7	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	REJECTED		40.239742, -83.39877		2024-08-27T15:47:34.707+00	
67d87c4eb10bb24612b0cda8	SIGN-WARNING - NO-DAMAGE	LOW	HONDA	OPENED		40.241634, -83.398315		2024-08-27T15:47:41.565+00	
67d87c4eb10bb24612b0cda9	SIGN-WARNING - OBSTRUCTED	HIGH	HONDA	OPENED		40.24322, -83.39797		2024-08-27T15:47:48.348+00	
67d87c4eb10bb24612b0cdaa	SURFACE-PAVEMENT - POTHOLE	MEDIUM	HONDA	CONFIRMED		40.245243, -83.396416		2024-08-27T15:47:57.000+00	
67d87c4eb10bb24612b0cdab	SURFACE-PAVEMENT - POTHOLE	MEDIUM	HONDA	REJECTED		40.2454, -83.39622		2024-08-27T15:47:58.000+00	
67d87c4eb10bb24612b0cdac	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	OPENED		40.2486, -83.39646		2024-08-27T15:48:00.997+00	

1 row selected

Defect #
67d87c4eb10bb24612b0cda9

67d87c4eb10bb24612b0cda9 at HONDA
SIGN-WARNING - OBSTRUCTED

Source:
HONDA

Defect Type*
SIGN-WARNING - OBS

Severity*
HIGH

Status*
OPENED

Notes

City

Work Orders

Assign WO

Save

Reject

Delete

Create WO

INET® ASSET GUARDIAN | USER MAIN DASHBOARD



PARSONS

Settings

Help

Logout

Total Defects

24608

Defects older than 30 days

23930

Defects within last 2 weeks

0

Assigned Work Orders

1

Work Order Average Resolution Time

0 min

Critical Work Orders

0

Defect Types Distribution

Defect Type	Count (approx.)
SHOULDER-ROADSIDE - DROP-OFF	21500
SIGN-WARNING - NO-DAMAGE	1500
SURFACE-PAVEMENT - POT HOLE	1000
SIGN-SPEED- SAFETY - NO-DAMAGE	1000
GUARDRAIL-PANEL - DAMAGED	1000
Other	1000

Azure Maps

Shortcuts

Traffic Layers

☐ Transit

Filters

Search map

Currently Assigned Work Orders

No Work Orders are assigned to current user

Parsons Corporation

Sensitive / Proprietary

6

INET® ASSET GUARDIAN | USER INTERFACE



PARSONS

+ ADD NEW DEFECT

Issue Type

District/Jurisdiction

Work Orders

Search

Azure Maps

Shortcuts

Traffic Layers

Transit

Filters

Defects

Select all

Defect Opened

Defect Confirmed

Defect Rejected

Defect Closed

Defect Unknown

Work Orders

Other Map Layers

WMSRoadwayStriping

WMSShoulderDropoff

COLUMNS

FILTERS

DENSITY

EXPORT

ID	Defect Type	Severity	Source	Status	Description	Location	Latitude	Date Collected	Work Order #	Created in AG	Actions
67d87c4cb10bb24612b0cd85	SIGN-STOP - NO-DAMAGE	LOW	HONDA	REJECTED		40.079247, -83.12816		2024-08-30T17:53:54.807+00		2025-03-17T19:47:24.947+00	Reject Create WO
67d87c4db10bb24612b0cd86	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	OPENED		40.07936, -83.12813		2024-08-30T17:53:57.519+00		2025-03-17T19:47:25.017+00	Reject Create WO
67d87c4db10bb24612b0cd87	SIGN-PROHIBITORY - NO-DAMAGE	LOW	HONDA	OPENED		40.234875, -83.36703		2024-08-27T15:25:59.627+00		2025-03-17T19:47:25.044+00	Reject Create WO
67d87c4db10bb24612b0cd88	SIGN-WARNING - OBSTRUCTED	HIGH	HONDA	REJECTED		40.234875, -83.36703		2024-08-27T15:25:59.827+00	67d9df811f257a3dd3bae809	2025-03-17T19:47:25.063+00	Reject Create WO
67d87c4db10bb24612b0cd89	SIGN-WARNING - NO-DAMAGE	LOW	HONDA	OPENED		40.238373, -83.3667		2024-08-27T15:27:07.868+00	67f8099531fcac262fa0af1c 67f8095	2025-03-17T19:47:25.147+00	Reject Create WO
67d87c4db10bb24612b0cd8a	SIGN-WARNING - NO-DAMAGE	LOW	HONDA	OPENED		40.239017, -83.36663		2024-08-27T15:27:14.523+00		2025-03-17T19:47:25.193+00	Reject Create WO
67d87c4db10bb24612b0cd8b	SURFACE-PAVEMENT - POTHOLE	MEDIUM	HONDA	OPENED		40.240444, -83.36649		2024-08-27T15:27:26.000+00		2025-03-17T19:47:25.263+00	Reject Create WO
67d87c4db10bb24612b0cd8c	SIGN-WARNING - NO-DAMAGE	LOW	HONDA	OPENED		40.245358, -83.37131		2024-08-27T15:28:17.350+00		2025-03-17T19:47:25.372+00	Reject Create WO
67d87c4db10bb24612b0cd8d	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	OPENED		40.24568, -83.37175		2024-08-27T15:28:20.746+00		2025-03-17T19:47:25.421+00	Reject Create WO

Total Rows: 24,608

INET® ASSET GUARDIAN | DOT USER DEFECT VERIFICATION



PARSONS

+

ADD NEW DEFECT

Issue Type

District/Jurisdiction

Work Orders

Search

Azure Maps

Shortcuts

Traffic Layers

Transit

Map of Ohio with defect markers

COLUMNS

FILTERS

DENSITY

EXPORT

ID	Defect Type	Severity	Source	Status	Description	Location	Latitude	Date Collected	Work Order #
67d87c4eb10bb24612b0cda4	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	CONFIRMED		40.26633, -83.48992		2024-08-27T15:42:59.219+00	
67d87c4eb10bb24612b0cda5	SIGN-WARNING - NO-DAMAGE	LOW	HONDA	REJECTED		40.238132, -83.40012		2024-08-27T15:47:27.104+00	
67d87c4eb10bb24612b0cda6	SURFACE-PAVEMENT - POTHOLE	MEDIUM	HONDA	REJECTED		40.239307, -83.399025		2024-08-27T15:47:32.000+00	
67d87c4eb10bb24612b0cda7	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	REJECTED		40.239742, -83.39877		2024-08-27T15:47:34.707+00	
67d87c4eb10bb24612b0cda8	SIGN-WARNING - NO-DAMAGE	LOW	HONDA	OPENED		40.241634, -83.398315		2024-08-27T15:47:41.565+00	
67d87c4eb10bb24612b0cda9	SIGN-WARNING - OBSTRUCTED	HIGH	HONDA	OPENED		40.24322, -83.39797		2024-08-27T15:47:48.348+00	
67d87c4eb10bb24612b0cdaa	SURFACE-PAVEMENT - POTHOLE	MEDIUM	HONDA	CONFIRMED		40.245243, -83.396416		2024-08-27T15:47:57.000+00	
67d87c4eb10bb24612b0cdab	SURFACE-PAVEMENT - POTHOLE	MEDIUM	HONDA	REJECTED		40.2454, -83.39622		2024-08-27T15:47:58.000+00	
67d87c4eb10bb24612b0cdac	SIGN-SPEED-SAFETY - NO-DAMAG	LOW	HONDA	OPENED		40.2486, -83.39940		2024-08-27T15:48:00.887+00	

1 row selected

Defect #
67d87c4eb10bb24612b0cda9

597_warning

67d87c4eb10bb24612b0cda9 at HONDA
SIGN-WARNING - OBSTRUCTED

Source:
HONDA

Defect Type *
SIGN-WARNING - OBS

Severity *
HIGH

Status *
OPENED

Notes

City

Work Orders

Assign WO

Save

Reject

Delete

Create WO

INET® ASSET GUARDIAN | WORK ORDER ENTRY SCREEN



PARSONS

←

Work order # 67d9dfa61f257a3dd3bae80b

MAIN DETAILS

ATTACHMENTS

AUDIT LOG

ASSETS

MAINTENANCE CHECKLISTS

Work Order Request Name

Pavement Repair

Status *

Opened

Assigned

dwork

Work Order Type:

SURFACE-PAVEMENT - POTHOLE

Service Type

Pot Hole Repair

Severity

MEDIUM

Created:

2025-03-18T21:03:34.770+00:00

Orig Issue:

67d87c4db10bb24612b0cd8f

680bfe0475cd4f363991ca2a

Defects Id

Assign Defect

Updated:

2025-06-03T13:49:34.277+00:00

Work Order Started

08/27/2024 03:28 PM

Work Order Resolved

mm/dd/yyyy --:-- --

Target Completion Date

08/29/2025 03:53 PM

Description

SURFACE-PAVEMENT - POTHOLE

Materials

Asset

Contact

Notes

Type notes...

Azure Maps

Shortcuts

Traffic Layers

Trails

Filtered to Work Order #67d9dfa61f257a3dd3bae80b

Location

District: 5

County:

City:

Reference:

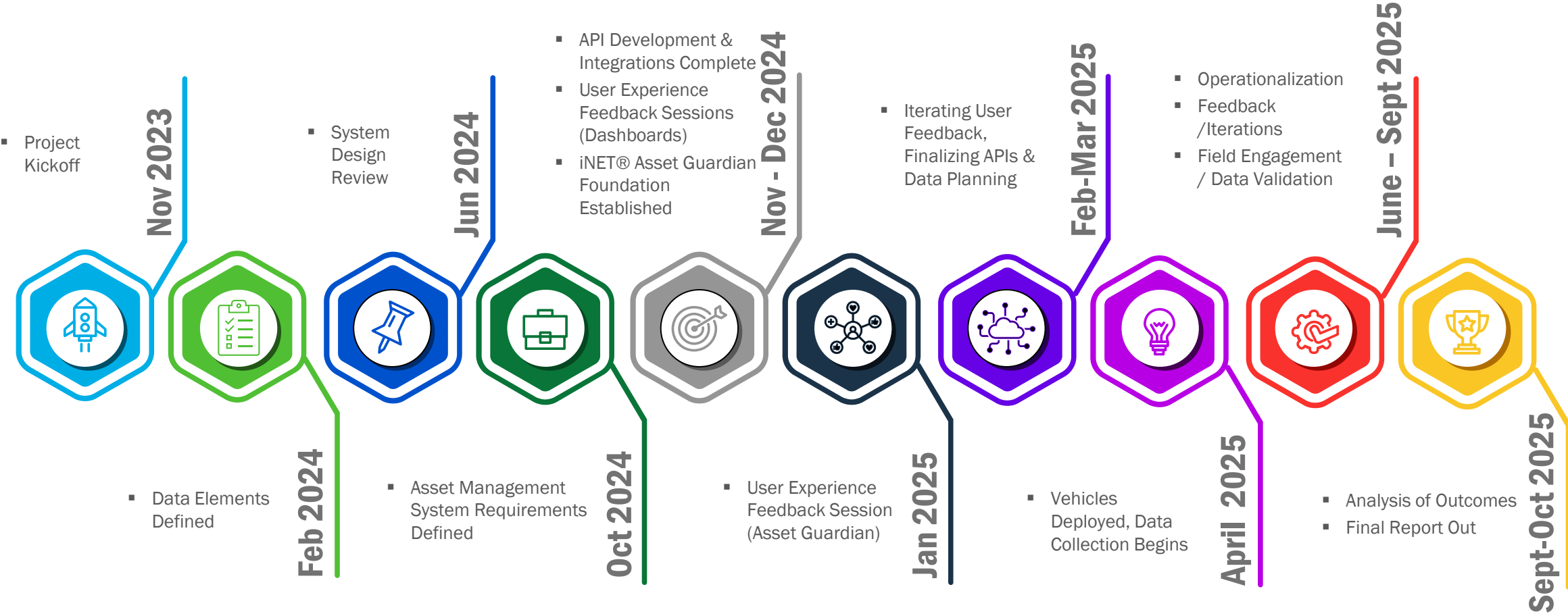
Longitude:

Latitude:

Location:

Direction: 356.47946

PROJECT TIMELINE





QUESTIONS?