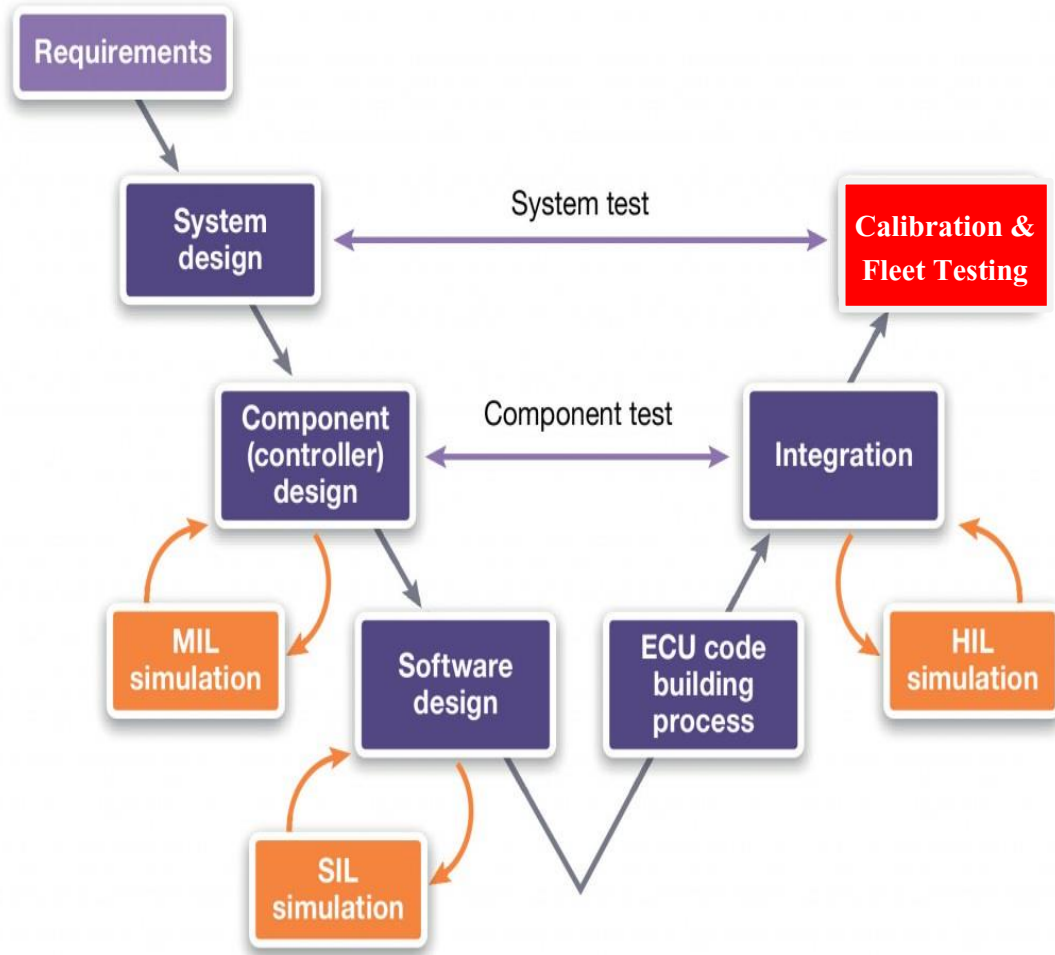


TOOL FOR MAPPING HYBRID VEHICLE DATA OF ON-ROAD FLEET TESTING ON GOOGLE MAPS

Dushyant Kumbhat
Harish Chandra

PRODUCT DEVELOPMENT CYCLE



Calibration and Fleet Testing are necessary to do testing and the integration without of product development cycle the they are top of V-Cycle.

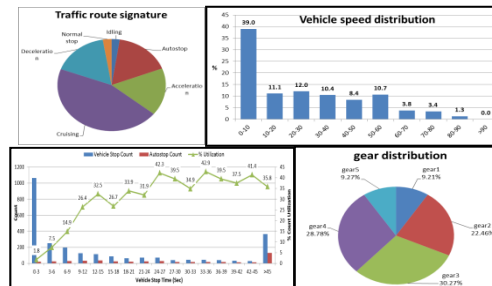
Fleet Testing and Analysis

For **CALIBRATION** and gauging the actual On road performance of a hybrid/electric vehicle

Fleet testing for different road conditions

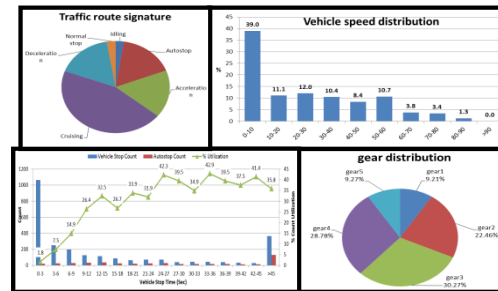
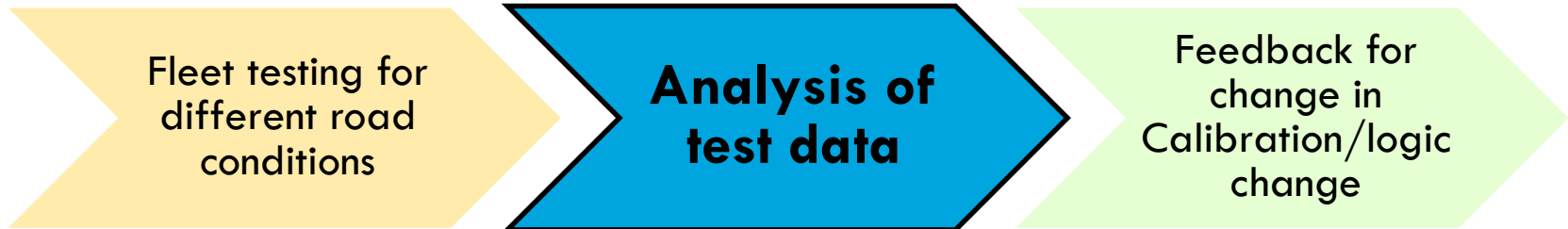
Analysis of test data

Feedback for change in Calibration/logic change



Fleet Testing and Analysis

For **CALIBRATION** and gauging the actual On road performance of a hybrid/electric vehicle

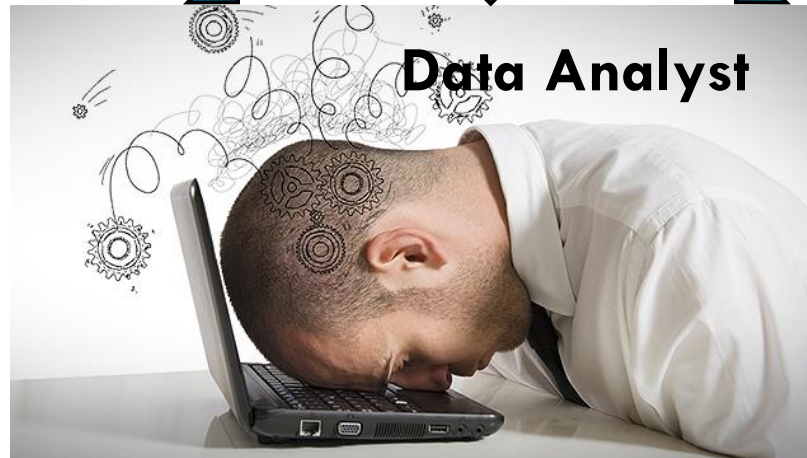
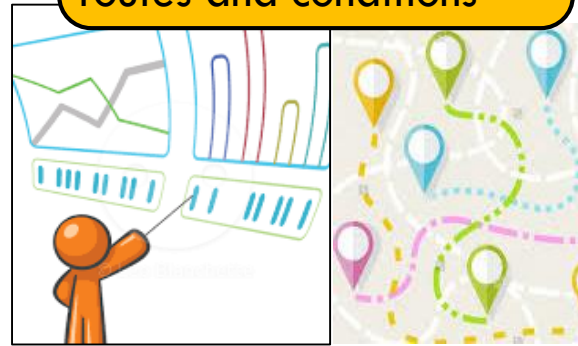
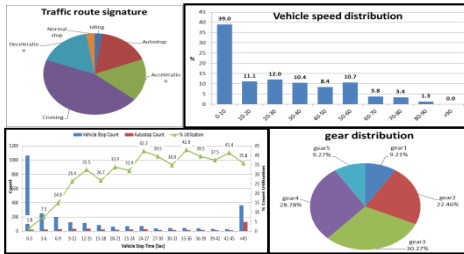


Conventional Approach for Fleet data Analysis

Using Excel for plotting data in various pie charts, histograms, etc

Correlating Excel results with different testing routes and conditions

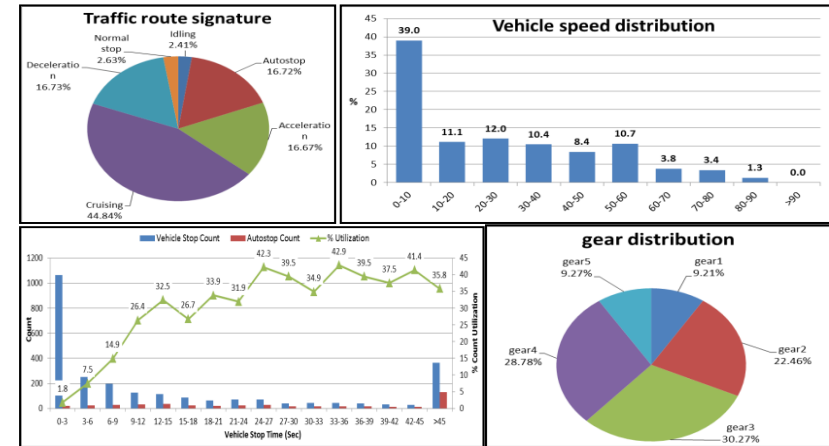
Input from drivers, other misc. test conditions, breakdowns and other issues



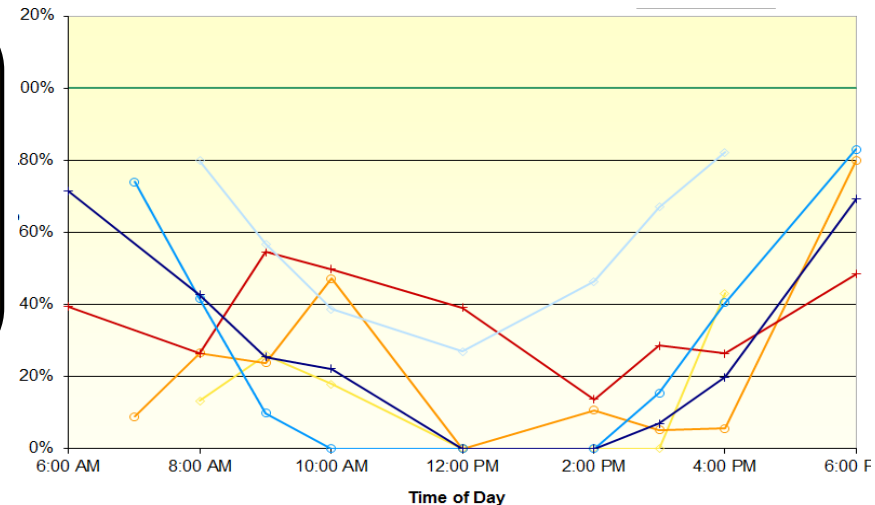
- TIME** • More time required for data interpretation
- EFFORT** • Extra efforts to correlate data with route
- SKILL** • Skilled/Experienced person on job required for analysis

Other Limitations of Conventional Approach

Poor visualization techniques for studying impact of different routes and traffic conditions on system



Correlation of System performance with changing routes is difficult to study

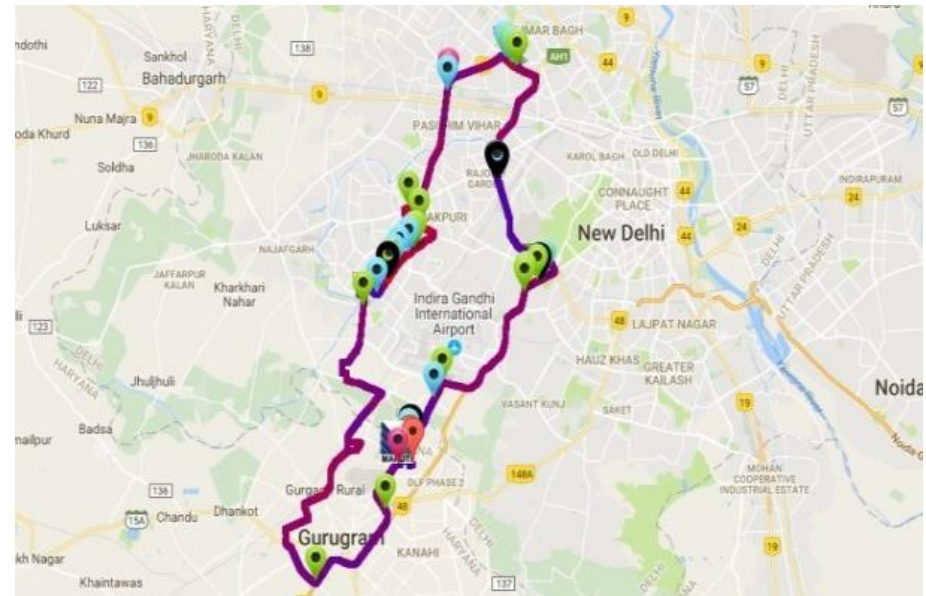


Limitations of Conventional approach

Exclusivity loss of short intermittent conditions of route



No geographical correlation of data with the test route and traffic conditions



SOLUTION

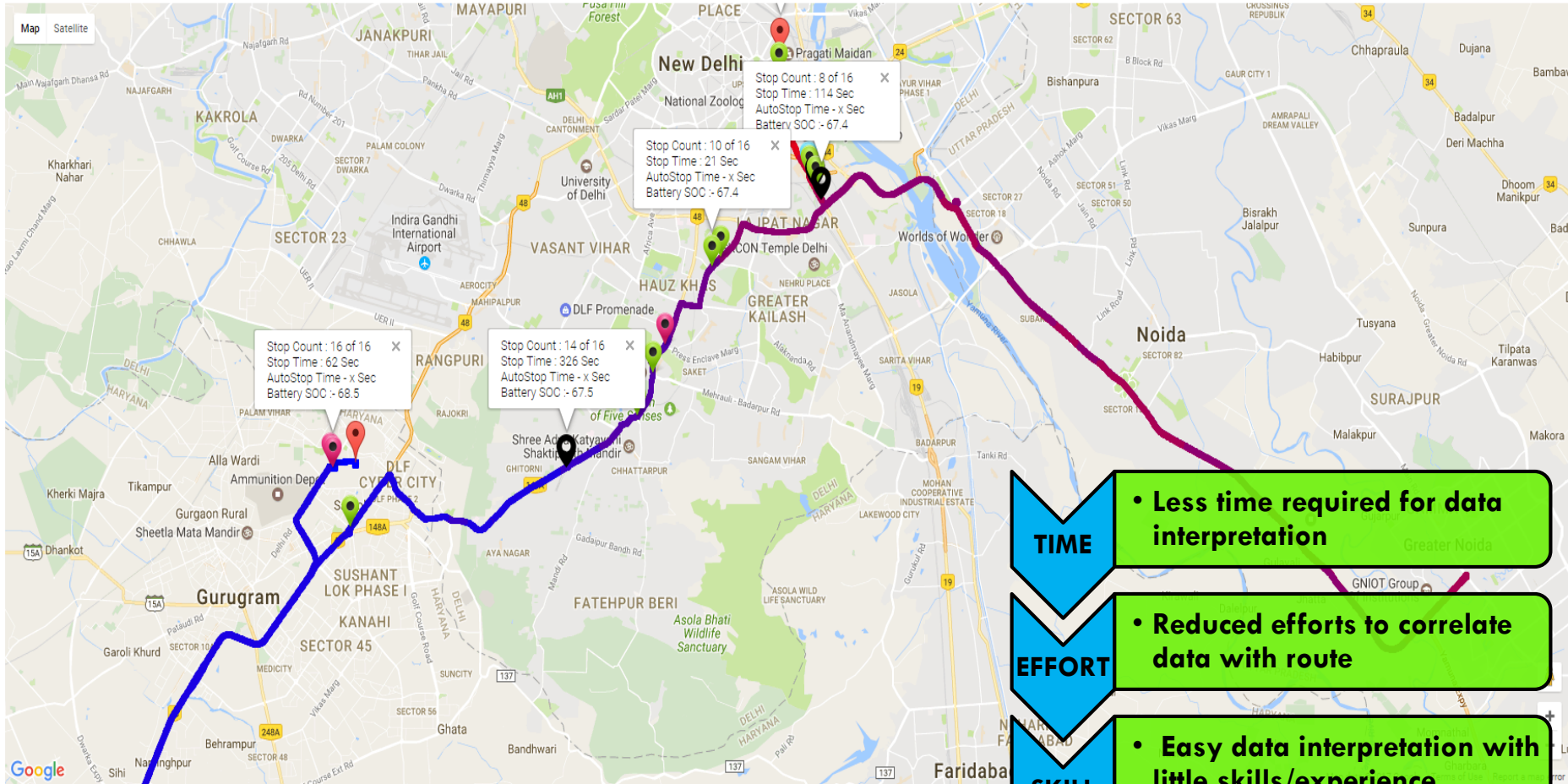
Way of Life!

Geographical correlation

Poor visualization

Exclusivity loss

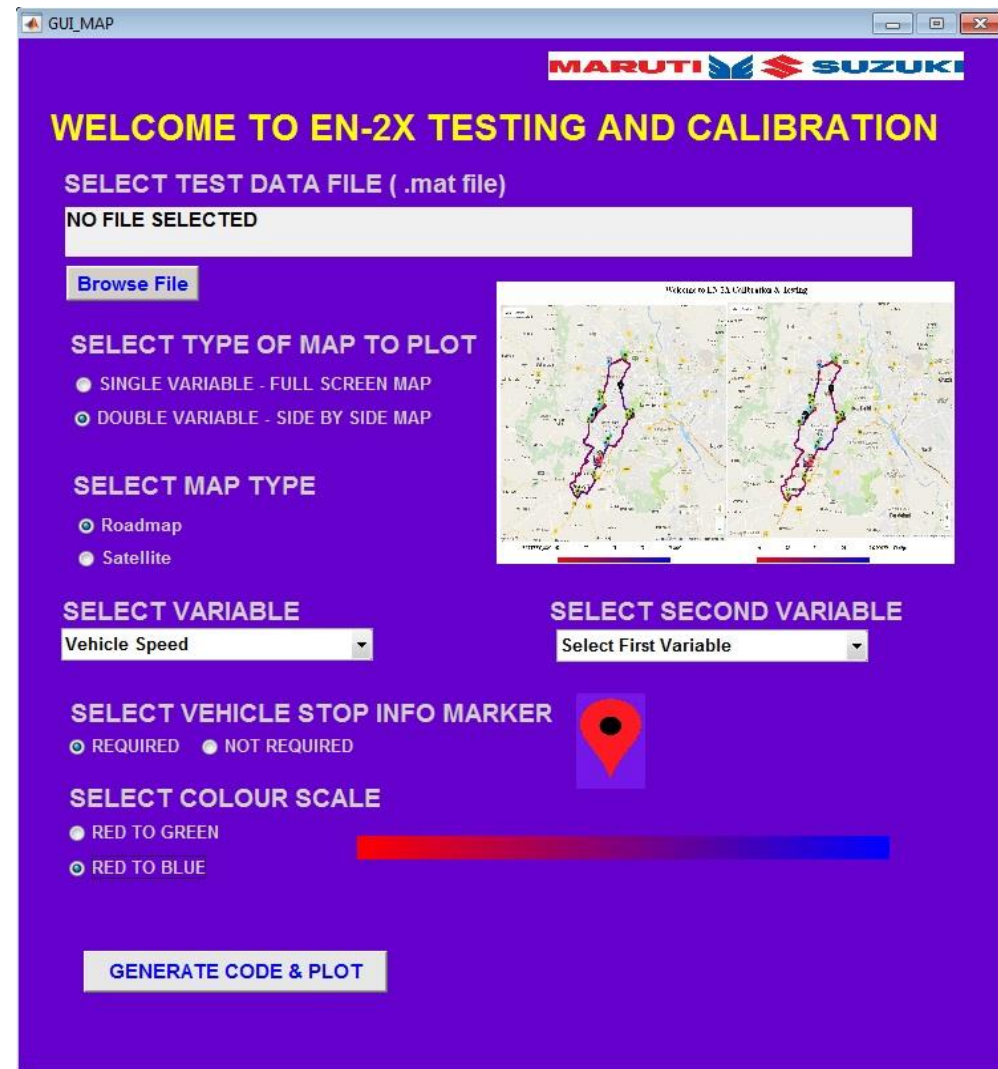
Overcoming the present challenges faced with the conventional



- TIME** • Less time required for data interpretation
- EFFORT** • Reduced efforts to correlate data with route
- SKILL** • Easy data interpretation with little skills/experience

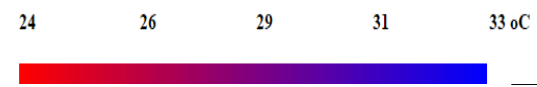
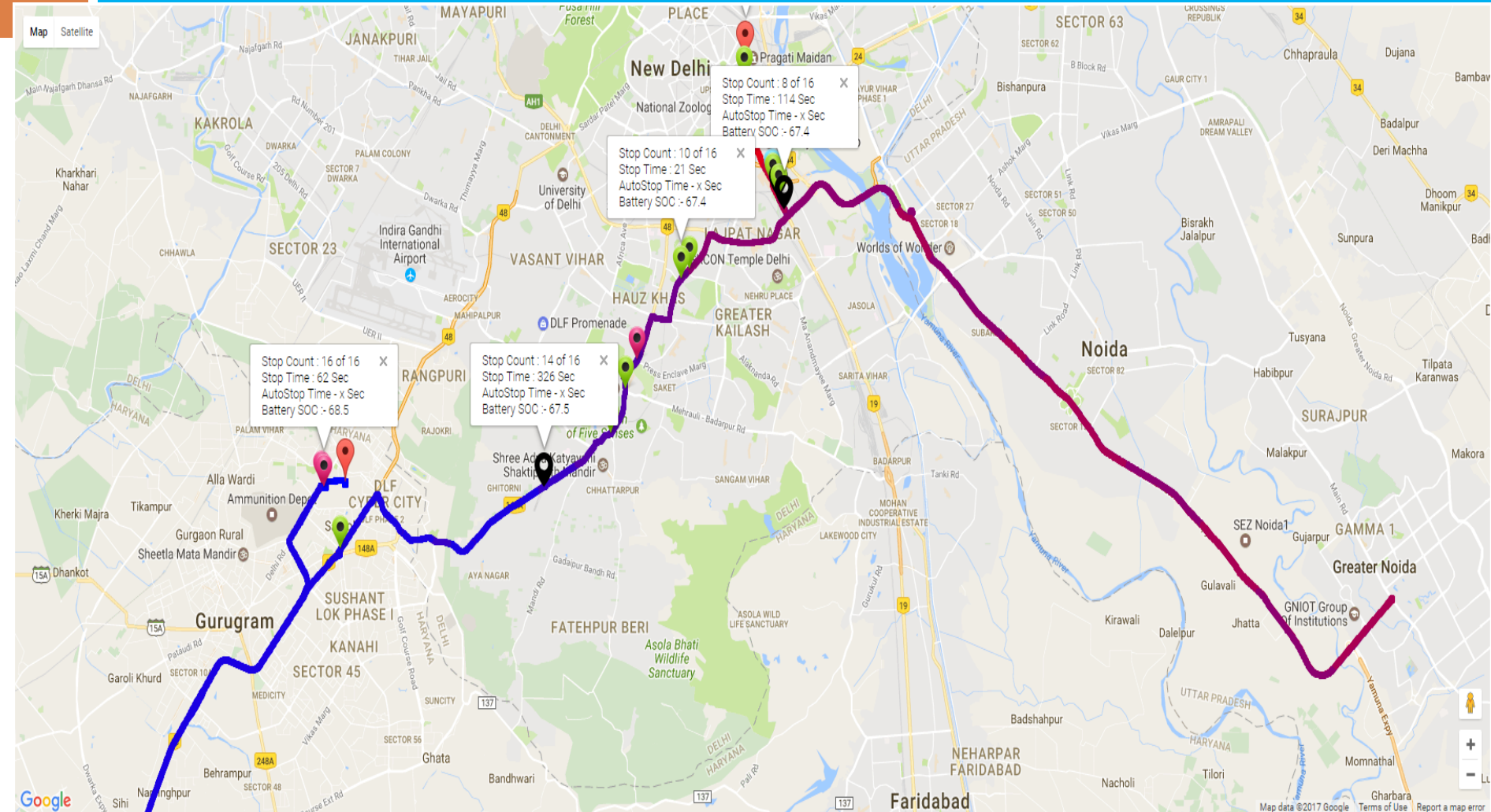
Development of Mapping tool using MATLAB

- A GUI based **standalone application** for mapping data on google maps was developed using MATLAB
- It lets user select the **test data file** along with few options for **customization**

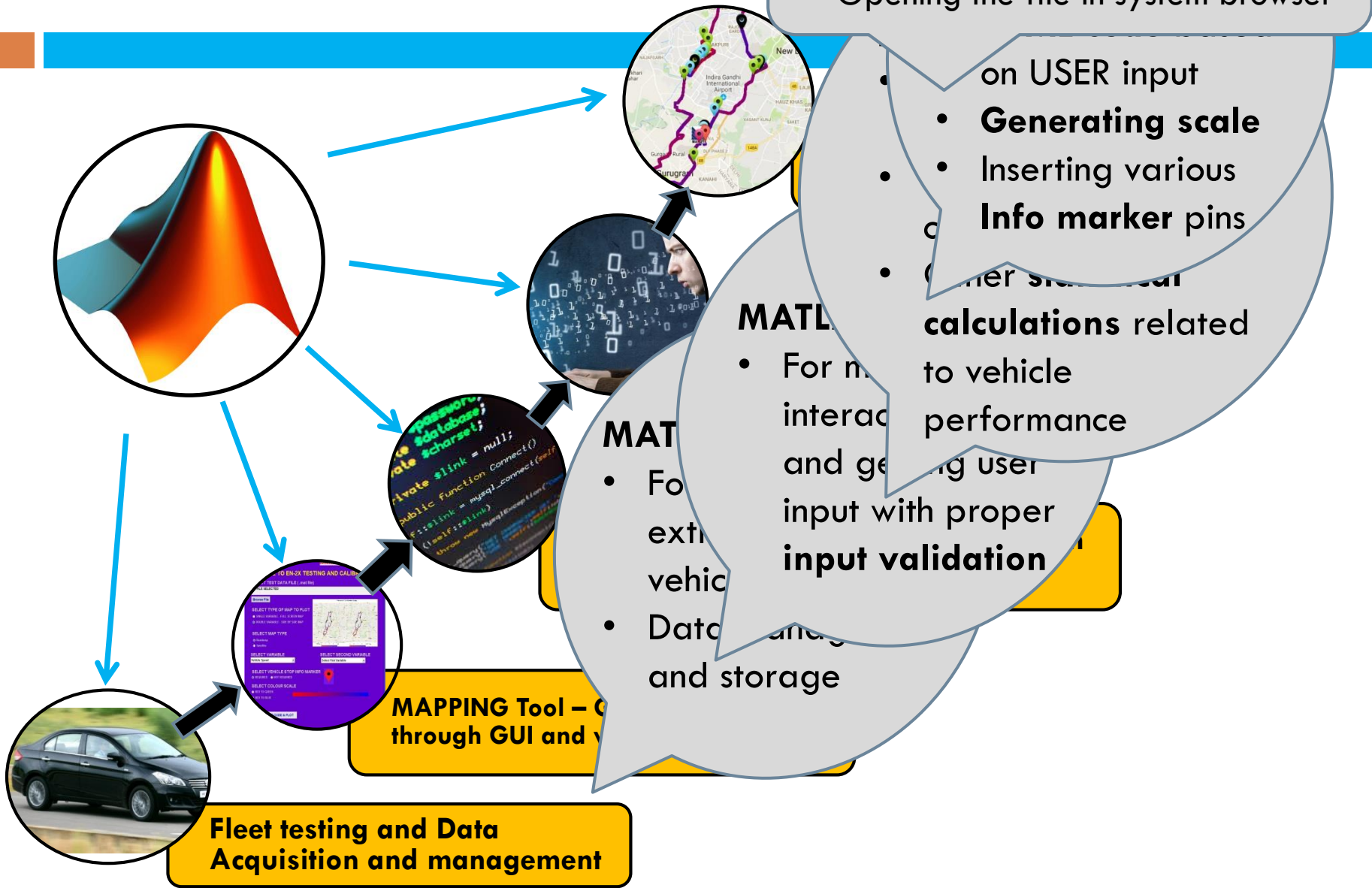


Mapping Tool Framework

Way of Life!



APPLICATION OF MATLAB AT DIFFERENT STAGES



Questions and Discussions

Way of Life!

