

Intelligent Transportation System of Systems

Project Name: “iCity: Urban Informatics for Sustainable Metropolitan Growth”

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Contents:

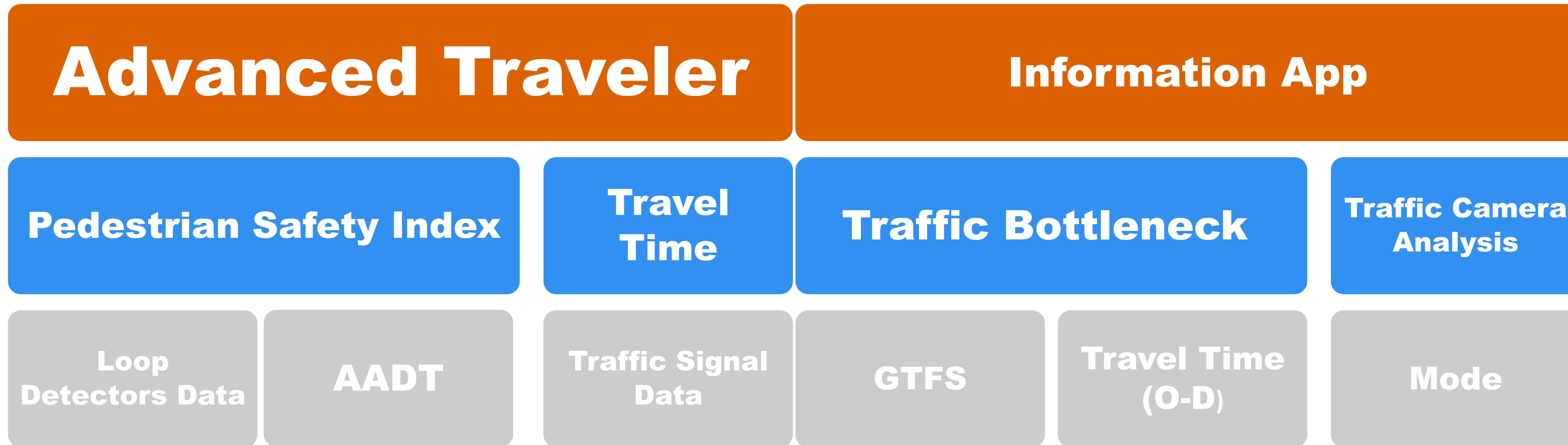
- ITSoS (iCity-ITSoS) Platform
- ITSoS (iCity-ITSoS) Architecture
- ITSoS: Data Module
- ITSoS: Services
- ITSoS: ATIS Application

ITSoS (iCity-ITSoS) Platform

- Develop the **ITSoS (iCity-ITSoS) as One Stop platform** for all data, services, ontologies and applications, research outcomes visualization for iCity Project.
- **ETL** (Extract, Transform, Load) **Data**.
- Design/ Develop set of **services** (GIS based/ Visualisation).
- Design/ Develop set of Transportation **Applications**.
- **Software Development Ecosystem**: Source code control, reusable design, shared data, Software Development Kit.



ITSoS (iCity-ITSoS) Architecture



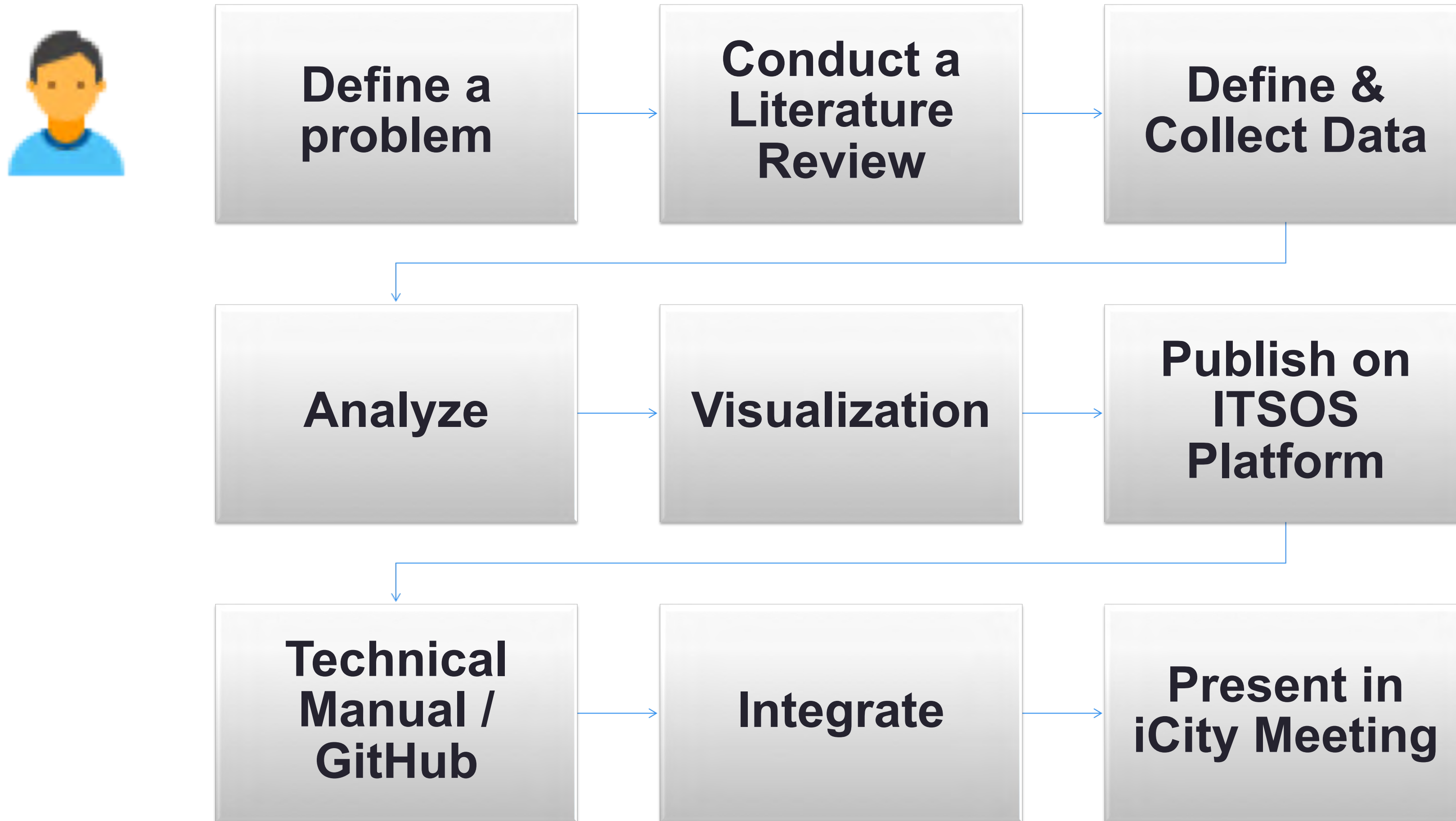
Apps

Services

Data Catalog

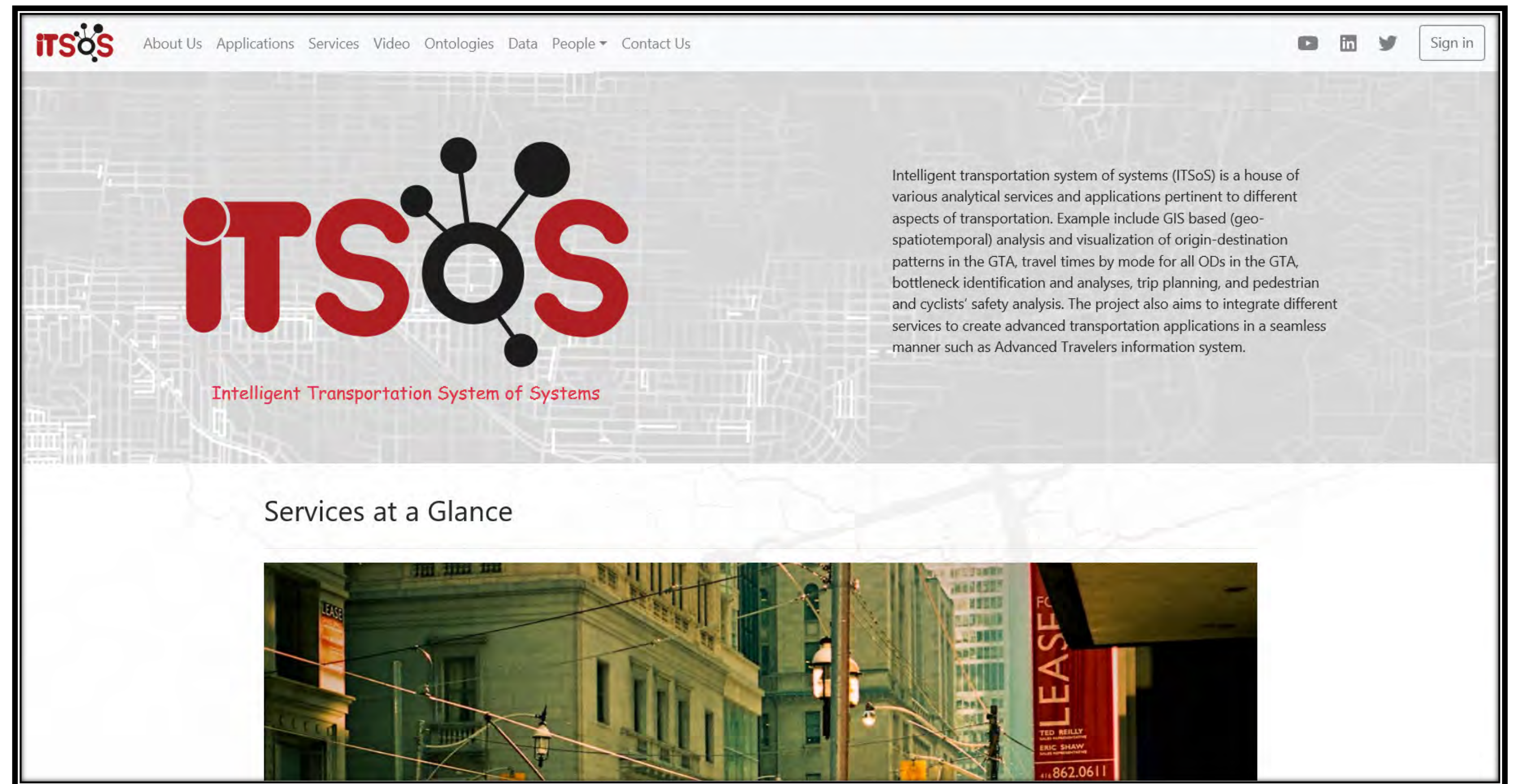


(9) Steps Development Lifecycle:



ITSoS as a Platform

- Data Module
- Ontologies (20+)
- Services (4)
- Application (1)



Data Module: Data Lake

- User can download the selected Loop Detector (Location)
- User can select specific period of time.
- Then Download the required Data

The screenshot displays a web application interface for sensor selection. On the left, a map of Toronto shows various streets and landmarks, with several sensors marked as blue and yellow icons. A legend in the bottom-left corner identifies 'City sensor' (blue icon) and 'MTO sensor' (yellow icon). On the right, a sidebar contains the following controls:

- Sensor selection:**
 - Data source: City of Toronto
 - Detector ID: de0010dwg
 - Longitude: -79.3741244629051
 - Latitude: 43.6449098509194
 - Lane count: 2
 - Buttons: Show on map, Add to selection
- Sensor Groups:**
 - Load group: Select a group
 - Selected sensors: ds0030dsr
 - Tip: Click on the "sensor badge" to remove a selected sensor.
 - Buttons: Create group, Clear selection
- Date options:**
 - From: 2017, January
 - To: 2018, May
- Included types:** (empty field)

Service : Pedestrian Safety Index

ITSOS About Us Applications Services Video Ontologies Data People Contact Us

Toronto: Pedestrian & Cyclist Intersection Safety

This tool calculates the safety score for Toronto's road intersections

Type of Safety Score Calculator
Pedestrian Calculator

Reset View

Is this a signal-controlled crossing? Check if Yes

Is this a stop-sign controlled crossing? Check if Yes

Are there commercial Development around the intersection? Check if Yes

Enter the number of through lanes on the street being crossed:
1

Select speed limit of the intersection
20km/hr

Enter street traffic volume

Legend:

- Mean.PSI.Score.of.Hexabin
- Pedestrian.Collision.Count

Pedestrian Safety Score

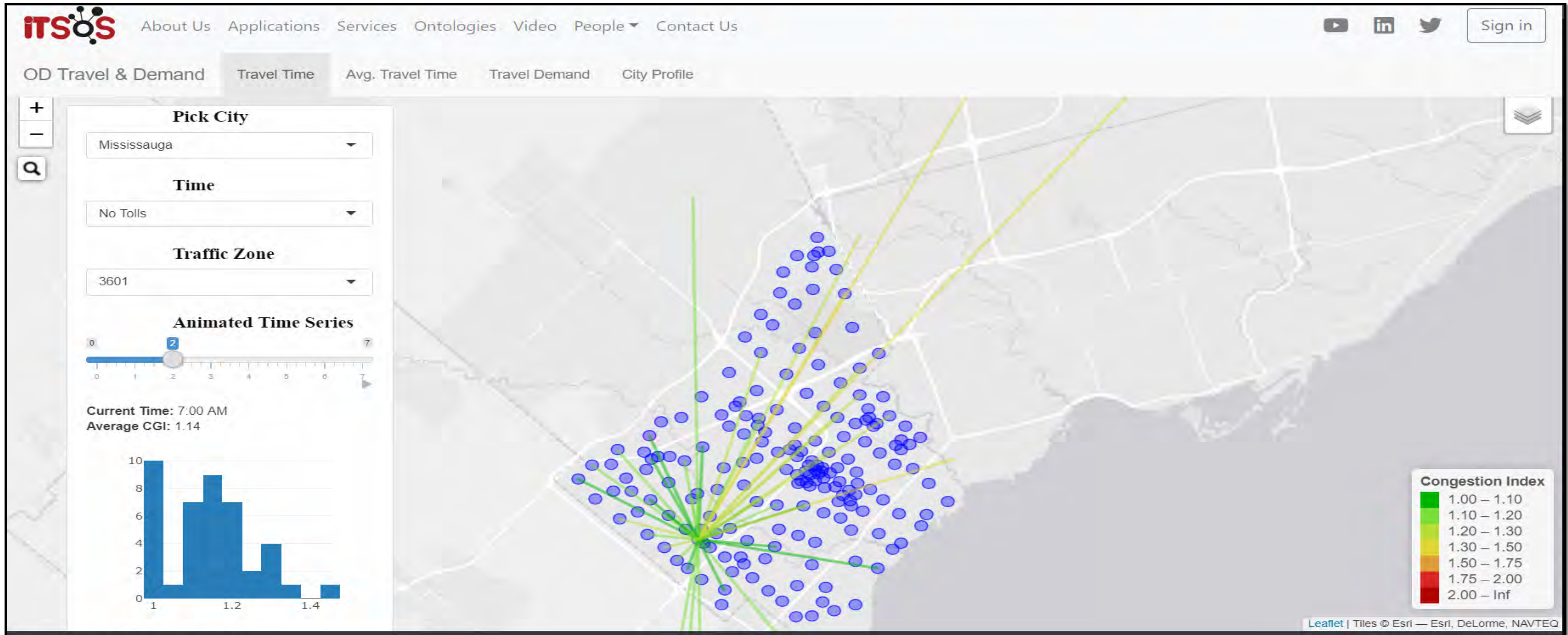
- No Improvement
- 2
- 3
- 4
- 5
- Attention is suggested

Cluster/Outlier Value Cycling & Pedestrian Collision 2010 - 2016 data

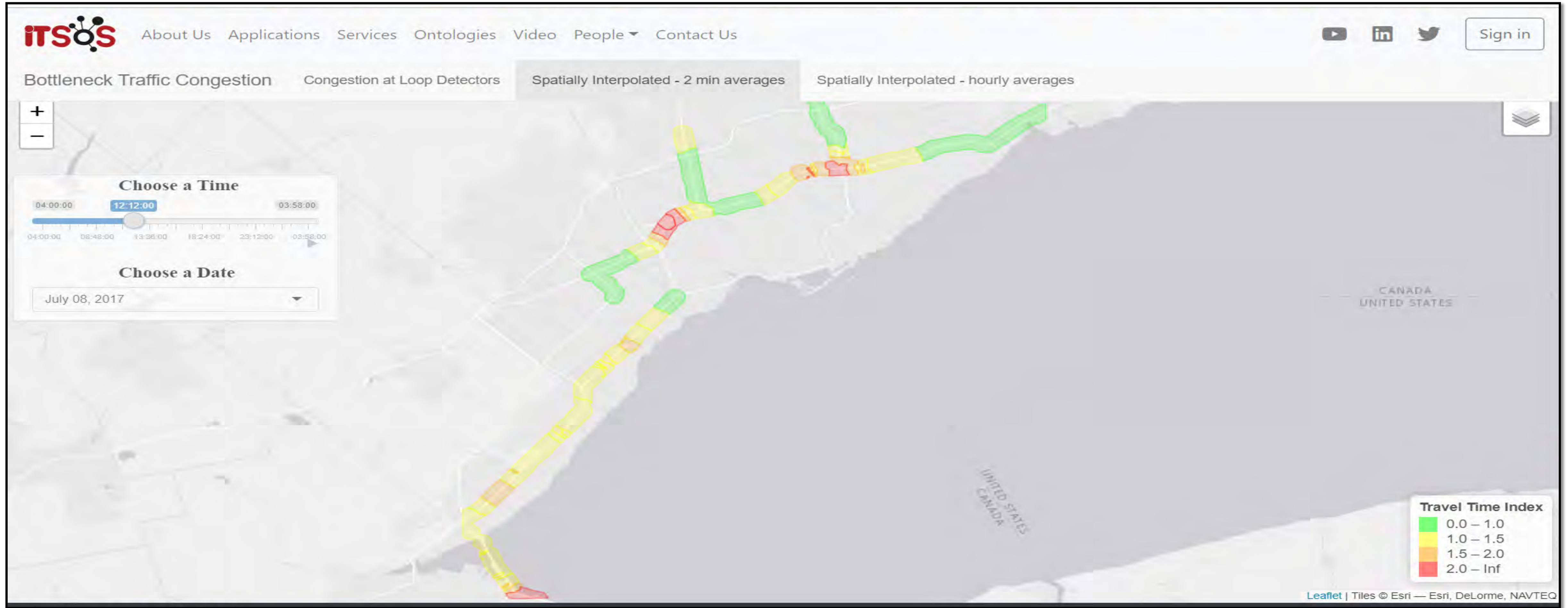
- High-High Cluster (HH)
- High-Low Outlier (HL)
- Low-High Cluster (LH)
- Low-Low Outlier (LL)

Leaflet | © OpenStreetMap, Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, UPR-EGP, and the GIS User Community

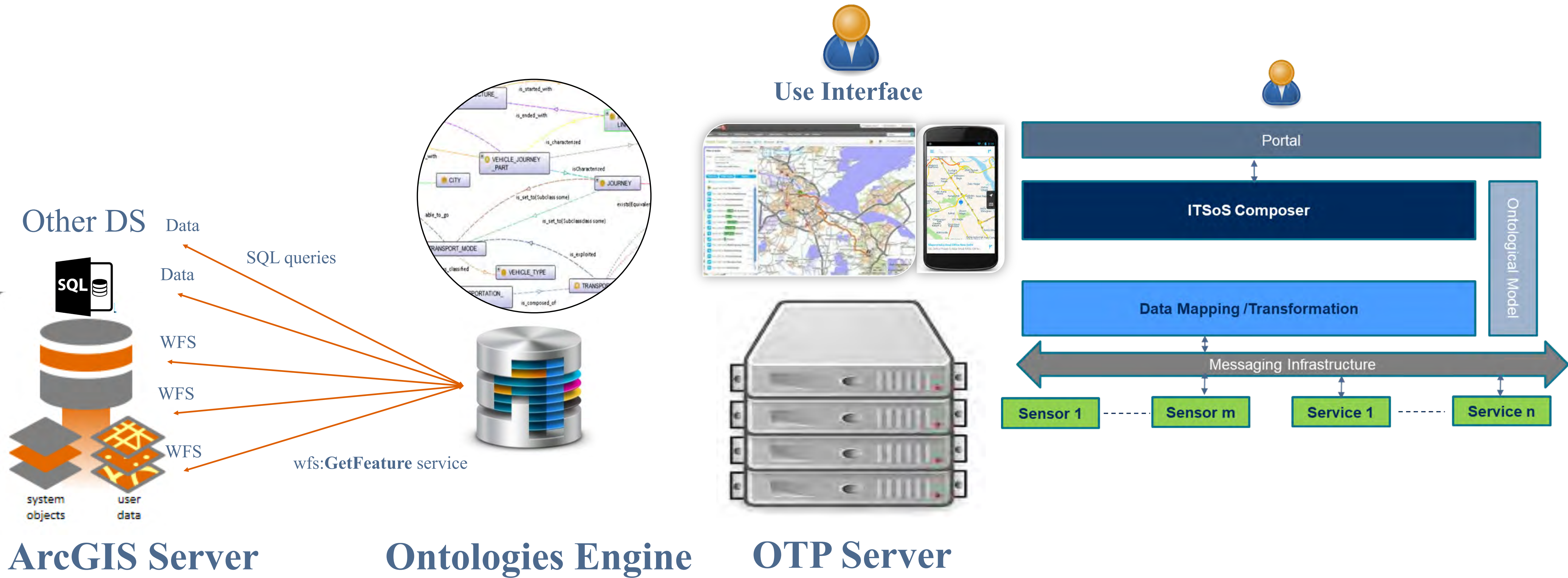
Service: GTA Origin-Destination Travel Time (Travel Demand)



Service: Traffic Bottleneck Visualization for 400-Series Highways



Architecture: Semantic Trip Planner



ATIS: Semantic Trip Planner

itsos.ca OTP Instance

About Contact

3 Itineraries Returned

1. 3:03p - 5:04p

Start: 3:03pm, 05/02/2018

- BUS: TTC, (506) CARLTON S.C. to EAST - 506 CARLTON REPLACEMENT BUS TOWARDS MAIN STREET STATION
- WALK 59 m to COLLEGE STATION - NORTHBOUND PLATFORM
- SUBWAY: TTC, (1) LINE 1 (YONGE-UNIVERSITY) to LINE 1 (YONGE-UNIVERSITY) TOWARDS FINCH STATION
- WALK 198 m to FINCH GO BUS TERMINAL PLATFORM 2
- BUS: York Region Transit, (blue) VIVA BLUE to Newmarket Terminal - NB
- WALK 346 m to stop York Region Administrative Centre

End: 5:04pm, 05/02/2018

2. 3:12p - 5:09p

3. 3:16p - 5:19p

First Previous Next Last

Trip Options

Start: stop COLLEGE ST AT MCCAUL ST (837)

End: stop York Region Administrative Centre

Depart: 3:00pm 05/02/2018 Now

Travel by: Transit

Maximum walk: 750.0 m Presets:

Preferred Routes: (None) Edit...

Weight: [Slider]

Banned routes: (None) Edit...

Wheelchair accessible trip:

Plan Your Trip

Map labels: Alliston, Orangeville, Bolton, Vaughan, Markham, Richmond Hill, Pickering, Whitby, Oshawa, Cobourg, Fergus, Brampton, Mississauga, Guelph, Milton, Oakville, Burlington, Toronto, Newmarket, York Region Administrative Centre, Lester B Pearson Int'l Airport.

Map icons: 3:03, 3:10, 3:44

Map controls: +, -

Map footer: Leaflet | Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCAN, Esri Japan, METI, Esri China (Hong Kong), NOSTRA, © OpenStreetMap contributors, and the GIS User Community

