Routing Use Cases

Megan Katsumi

Mark Fox

W3C Auto and Transportation WG Meeting

TOCC session: Thursday, March 25, 2020

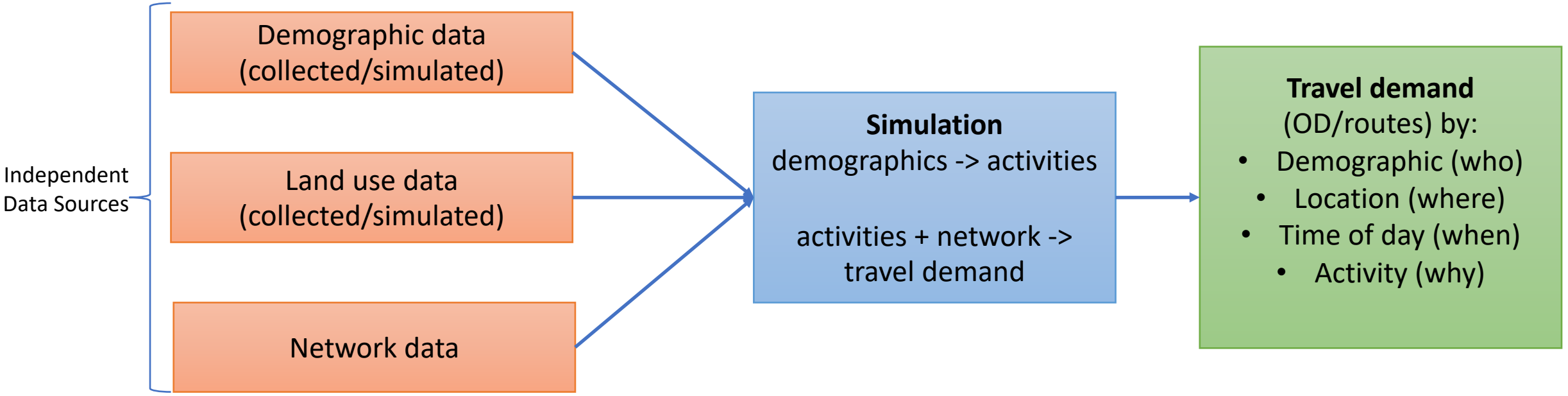
Use Case #1: Transportation Planning

- **Actors**
  - Transportation researchers
  - Policy-makers

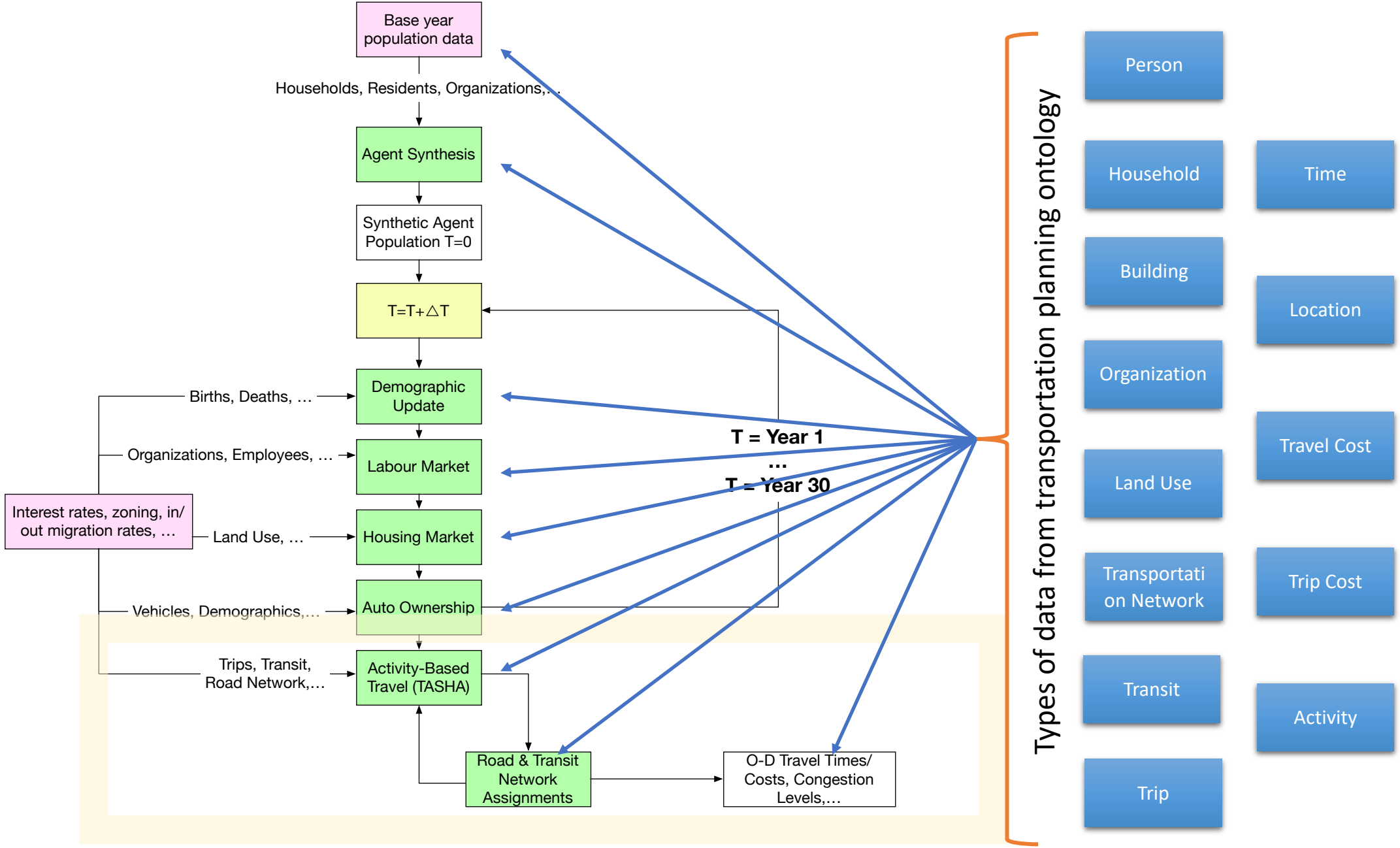
- **Data Requirements (input)**
  - Demographic + travel demand data
  - Network representation(s)
    - Mode
    - Capacity
    - Distance, posted speed
- **Output:** allocation of trips to routes on the network(s)

- **Constraints**
  - Network capacity limitations
  - Travel demand requirements (trips that must be made with a given mode, a given time of day)

Use Case #1: *Example* physical view Transportation Planning



Note: the these are *example* physical views. The architecture details (physical and logical levels) are outside the scope of our standardization work.

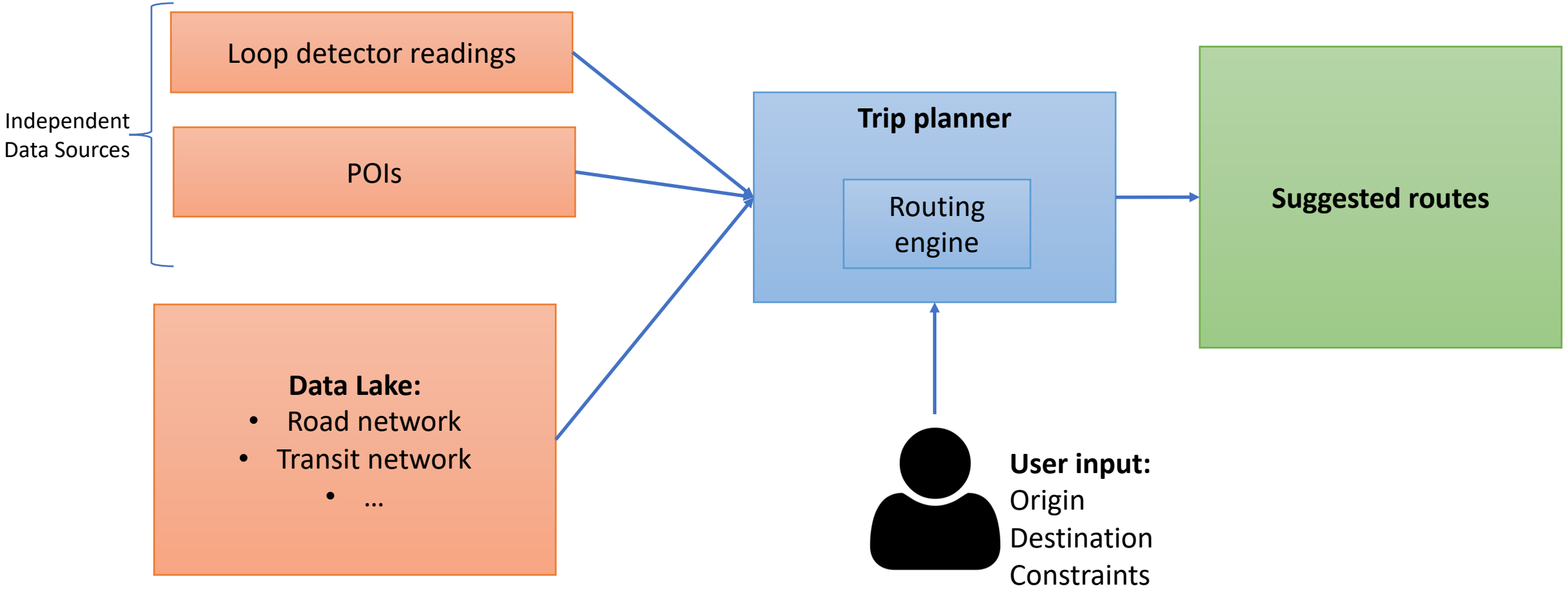


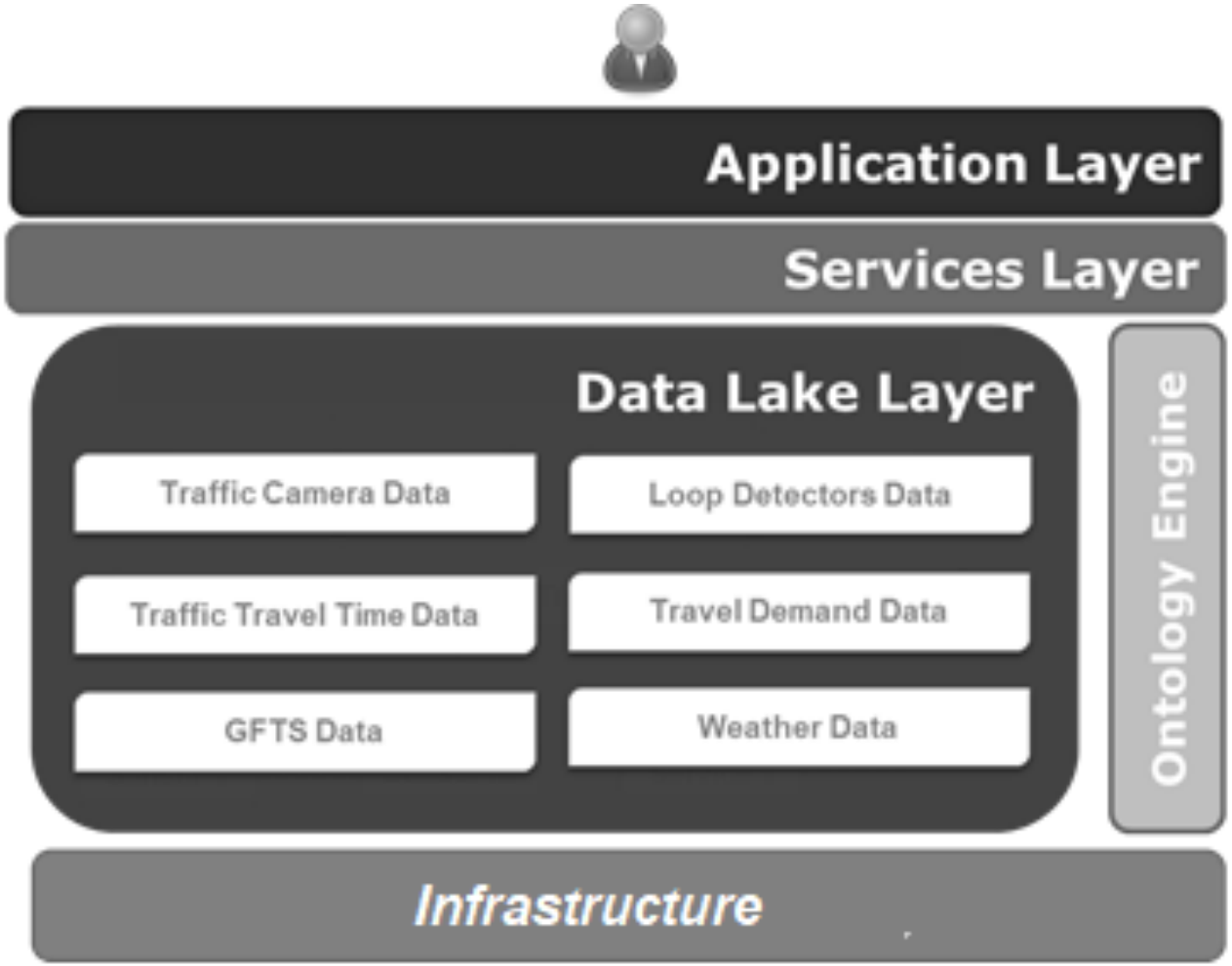
Integrated Land Use, Transportation and Environment model (simplified)

Use Case #2: Personal Traveler (A to B)

- **Actors**
  - City services: public works, transit, recreation, emergency services…
  - General public
  - Businesses: POIs, events
- **Data Requirements (input)**
  - Origin, Destination
    - Addresses, POIs, coordinates
  - Network representation
    - Mode
    - Capacity
    - Distance, posted speed
    - Access cost(s)
    - Access restrictions (time of day, vehicle/user type,…)
  - Network status (closures, construction, congestion)
  - Parking (type, cost, etc)
- **Output:** proposed route from origin to destination according to known constraints
- **Constraints**
  - Network availability/capacity
  - Cost
  - Other (user-defined)
    - Accessibility
    - Mode

Use Case #2: *Example* physical view Personal Traveler (A to B)





Proposed architecture from: Bayanouni, Hasan, et. al. “Semantically Enabled Sensor Data Integration for ATIS in the Transportation Domain” to appear in proceedings of the 55th Canadian Transportation Research Forum (CTRF). Montreal, Canada.

TOCC Meeting Synthesis

1. Identify some use cases (within the routing scenario)
2. Identify the core classes required for the use cases
3. Bring together existing work: catalog of the ontologies/data models that exist and may be reusable
4. Domain alignment: mapping and aligning models from different perspectives

Next steps: A focused exercise for routing

- Use case template (starting point from Ken)
- Identify use cases
- Identify core classes for routing use cases
- Meet to review the above (in 2 weeks)