



# Mobile Locker Storage Locations and Allocations

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## Background

- **Last-mile delivery** is a critical component of the e-commerce supply chain
- **Challenges**
  - Frequent legal or illegal **curbside parking**
  - **Traffic congestion**
- **Current Solution**
  - **Fixed locker**, but:
    - Extra space
    - Construction cost
    - Utilization may be low
- **We have another solution!**



## Proposed Design - Mobilized Lockers

- **Smart mobile locker**
  - To be operated in partnership with public transit
  - Use and route based on demand
  - Advantages:
    - Use existing transit infrastructure (terminals and bus stops)
    - Minimize curbside parking
    - May encourage more transit ridership

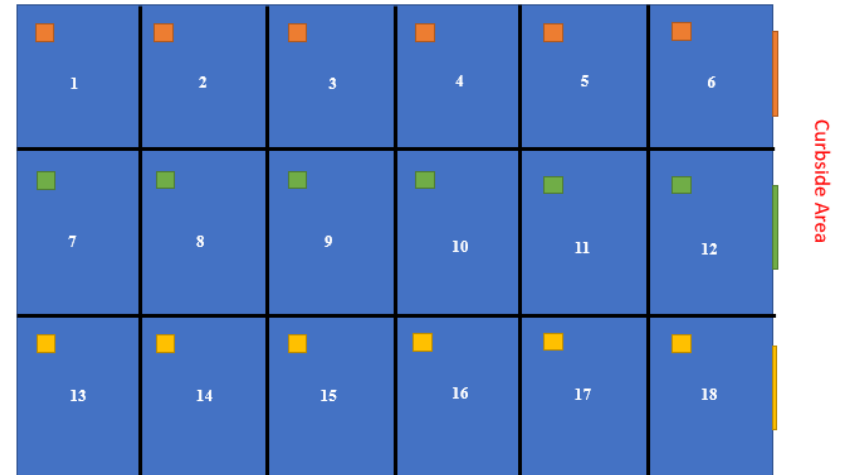
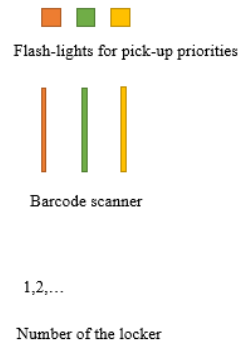
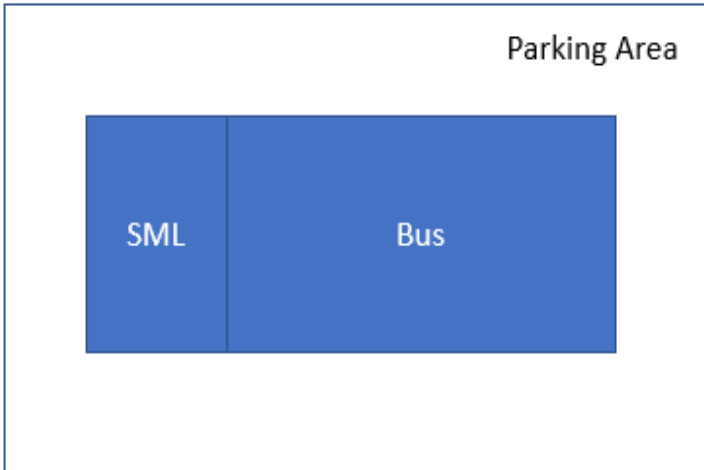


Smart Lockers



City Buses

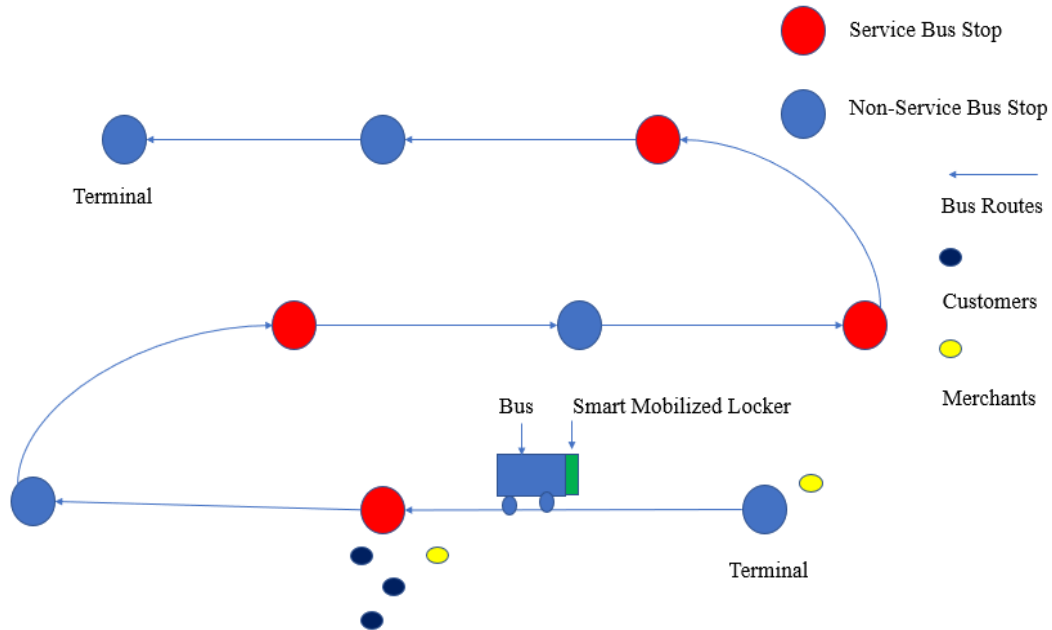
# Design Details



# Service Process



# Service Operations on A Bus Route

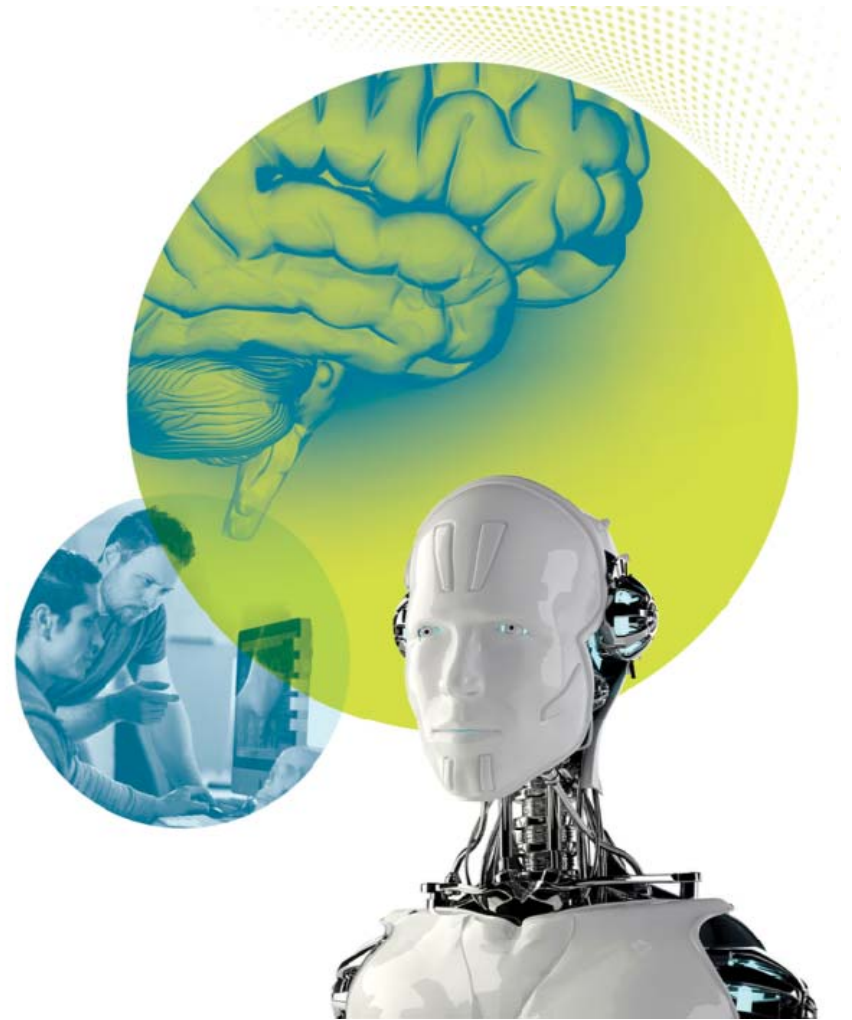


## Current Research Investigations

- We are developing several apps for the deployment of this service
  1. **Lockers Locations:** Number and location of lockers depending on daily demand
  2. **Parcel to Locker Assignment:** Which parcels to store in a given locker and at which slot
  3. **Locker Routing:** assigning lockers to bus routes and schedules
  4. **Customer Pickup:** Scheduling customer pick up

## Future Research Work

- Understanding the impact on transit service time
- Benchmark our solution with other last-mile delivery solutions
- A pilot study: we welcome discussion with transit operators, retailers and locker manufacturers!







Thank You

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