Garage Parking using Paper Tickets

Transparent Wireless Systems, LLC

Version 3.0

9/17/2020

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Start Parking

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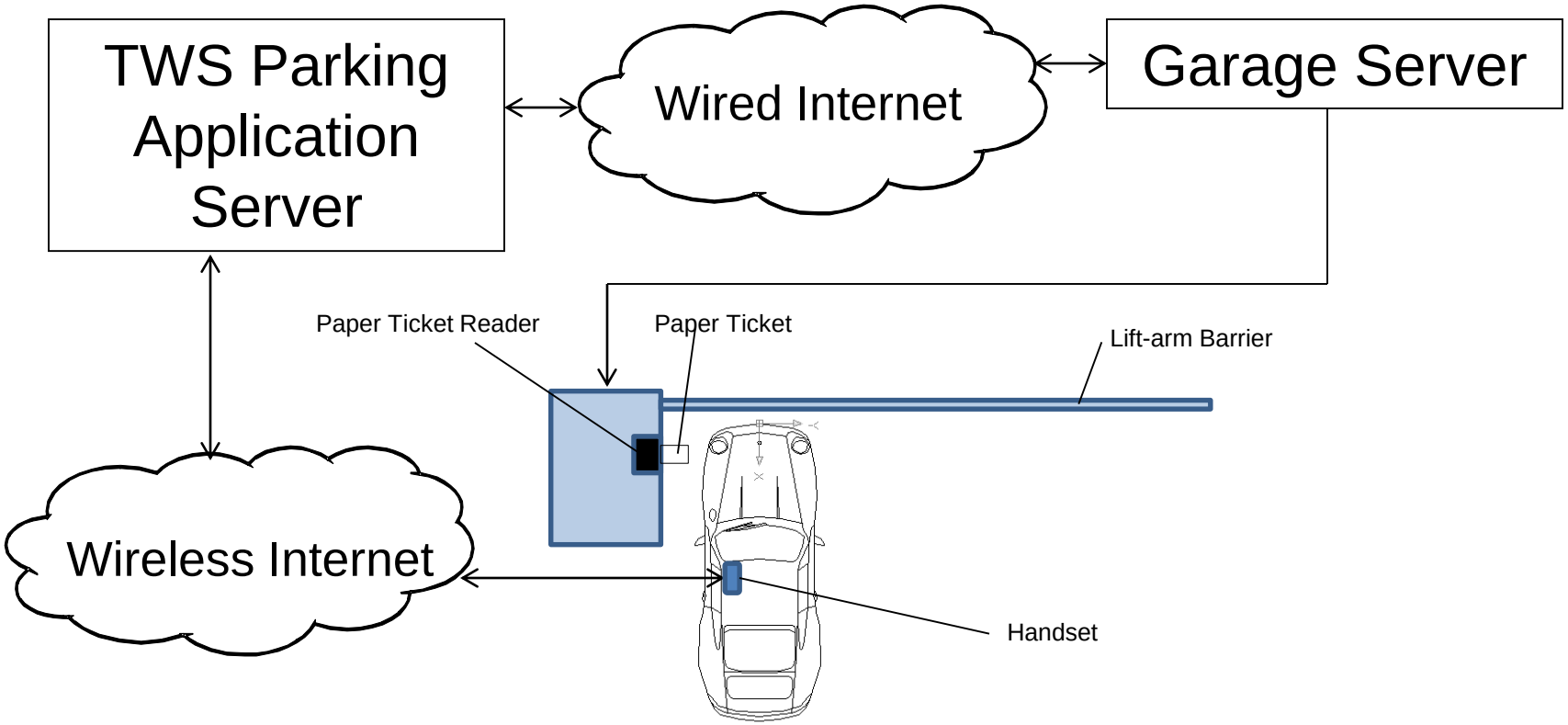
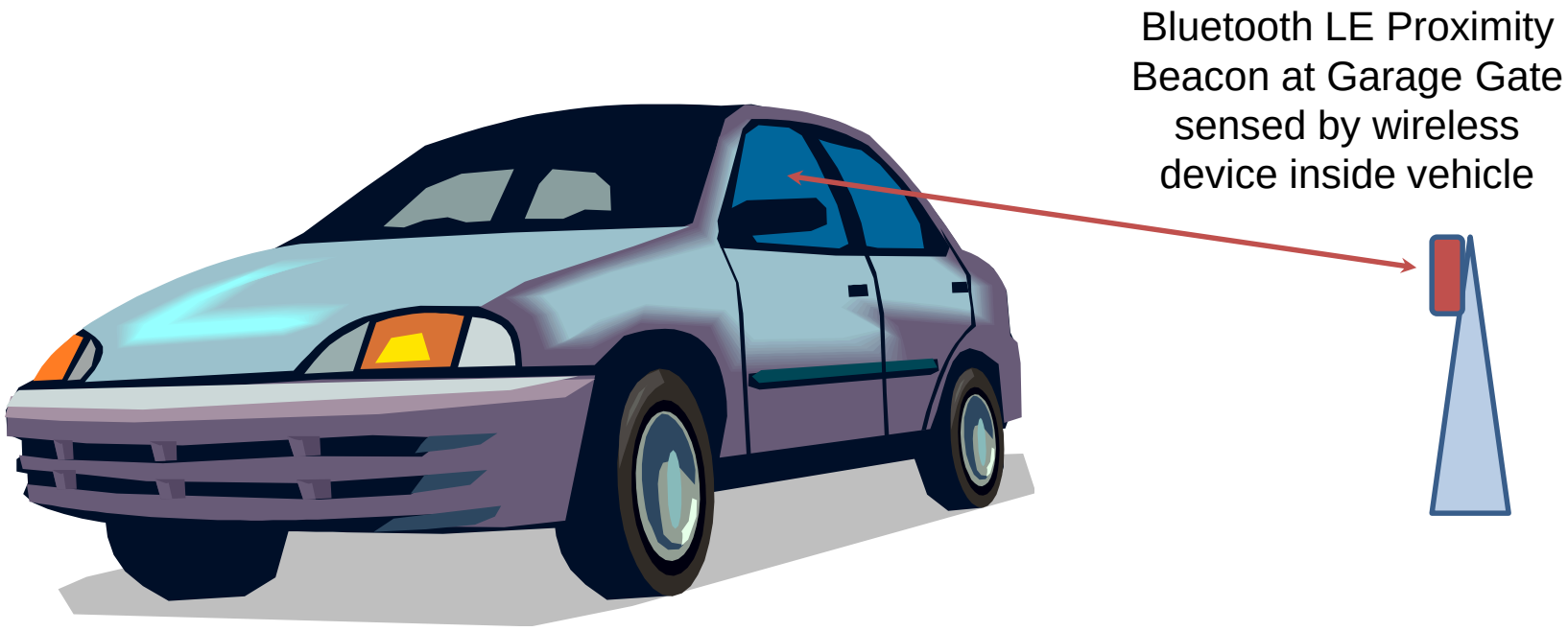
Garage Parking: Start Parking



User drives up to entrance gate



Phone reads & remembers Garage/Gate ID

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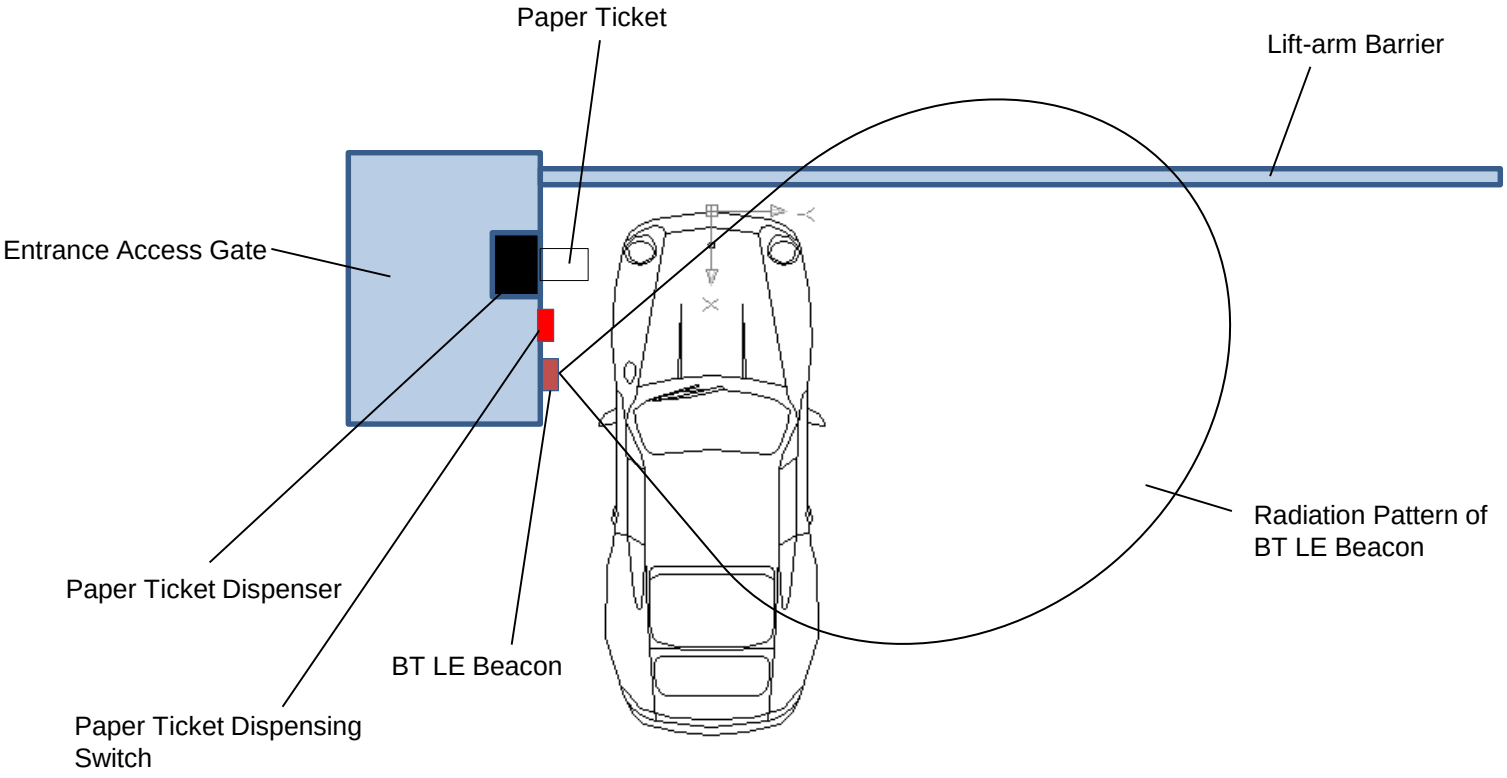
Garage Parking: Start Parking

Option 1: Automatic estimation of ticket issuance time



- Phone remembers time when BLE signal is maximum.
- This time is the user's estimated time of ticket issuance

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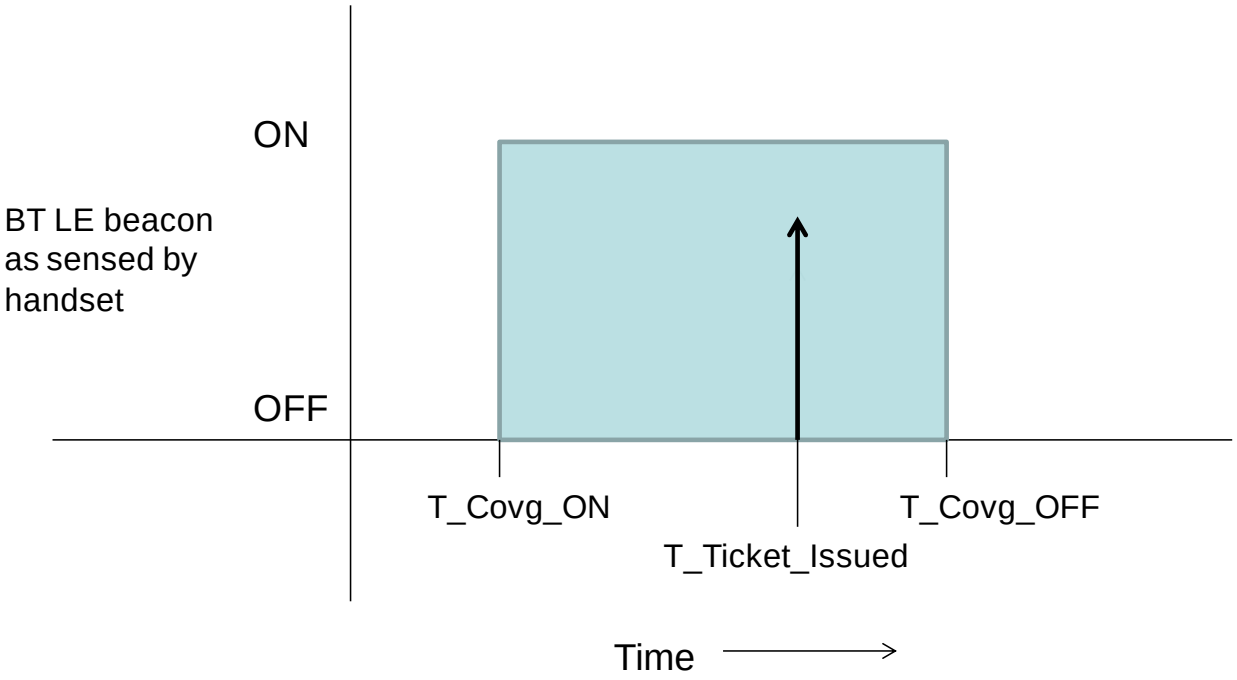

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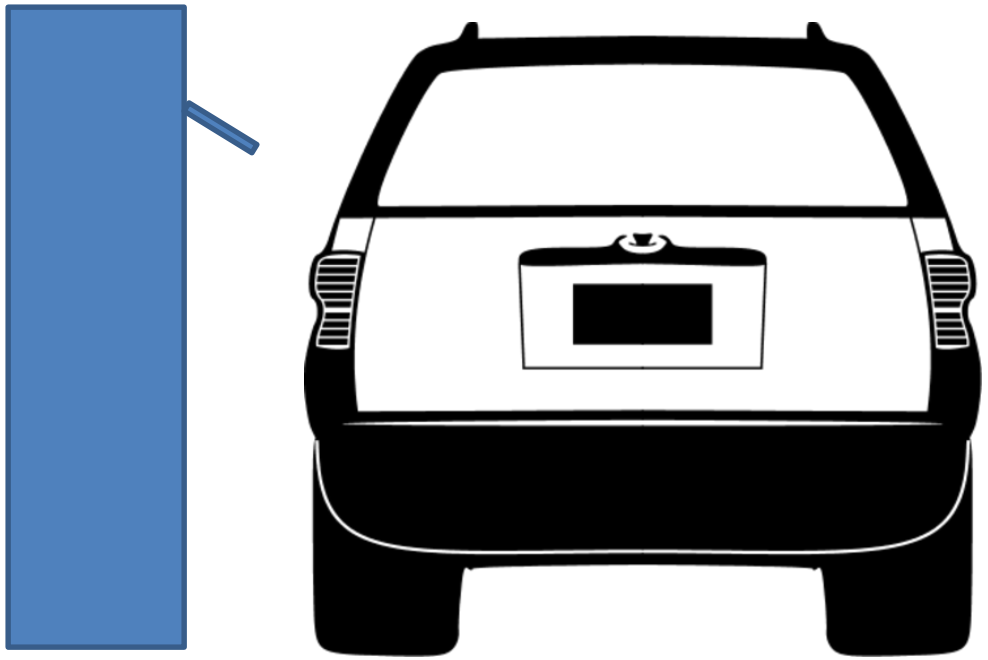

User takes paper ticket from ticket dispenser in the usual

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Garage Parking: Start Parking

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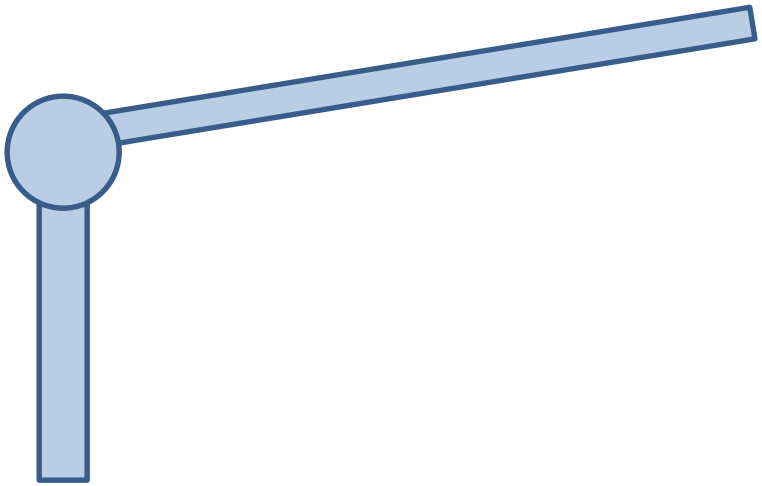
Garage Parking: Start Parking



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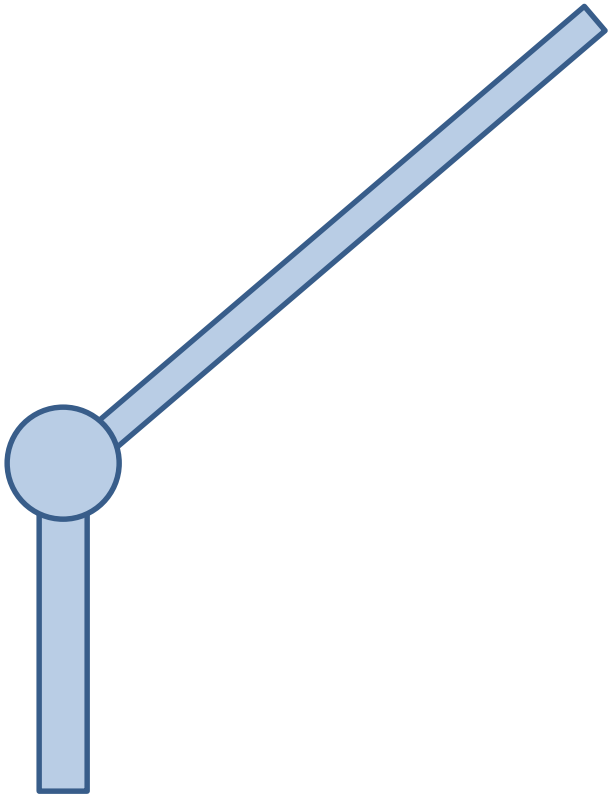
Garage Parking: Start Parking



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Garage Parking: Start Parking

- Prompted by
  - *Car going out of BLE coverage as it enters the garage*
- Handset sends a message to Parking Application Server to start a session.
  - Message contains
    - User ID (proxy: Session ID)
    - Garage/Gate IDs
    - Estimated time of ticket issuance
- Above info is forwarded by Parking Application Server to Garage Server with request to initiate a session

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Garage Parking: Start Parking

- Parking Application Server and Garage Server exchange messages
- Ticket held by user is identified by Garage Server on the basis of Estimated Time of Ticket Issuance
  - Ticket ID and Session ID are linked
- Ticket is cleared for exit by Garage Server
- Garage Server notifies the Parking Application Server that ticket has been cleared for exit
- Parking Application Server sends “Accepted” message back to Handset.
  - This tells the user that his payment method has been accepted by the garage

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End Parking

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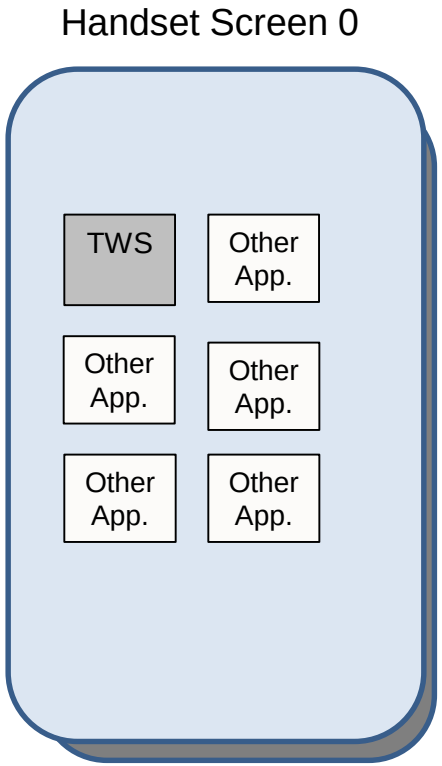
Garage Parking: End Parking



User returns to car and launches TWS app

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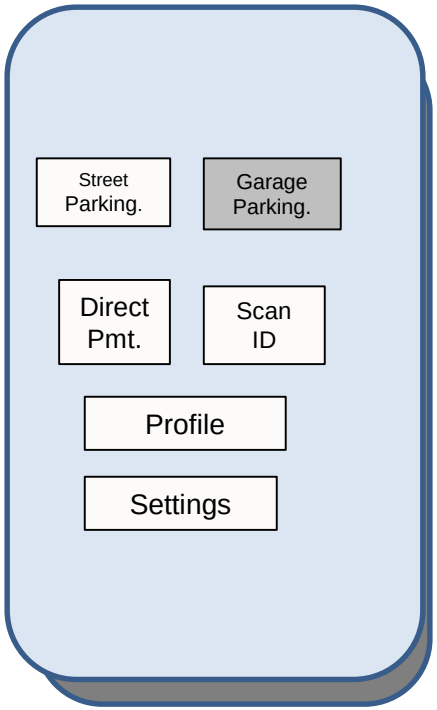
Garage Parking: Start Parking

Handset Screen 1



User launches Garage Parking app

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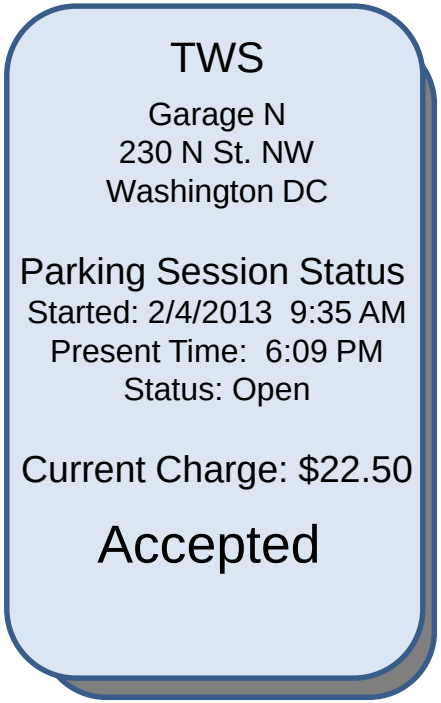
Garage Parking: End Parking

Handset Screen 2



Active Session Screen displayed

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Garage Parking: End Parking

- The active session screen, including the Accepted message and current charges, are displayed.
  - Accepted message is the user's assurance that the gate will open
- User drives to exit gate and inserts ticket into ticket reader.
- Ticket is recognized by Garage Server as cleared for exit.
- Garage Server opens gate.

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Garage Parking: End Parking

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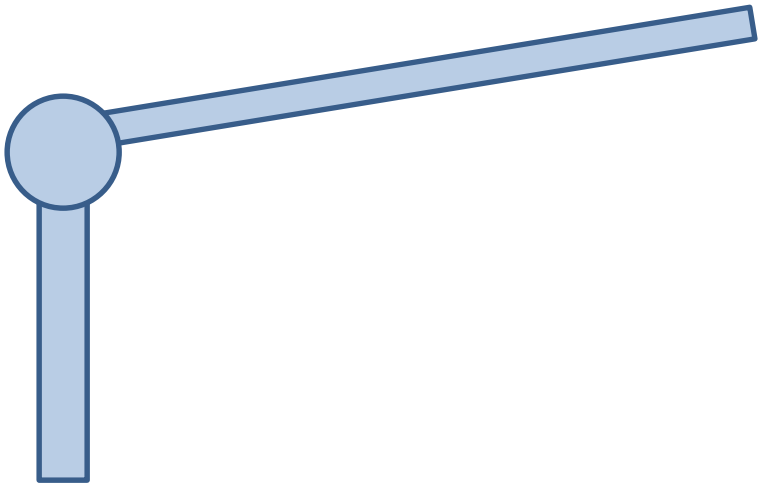
Garage Parking: End Parking



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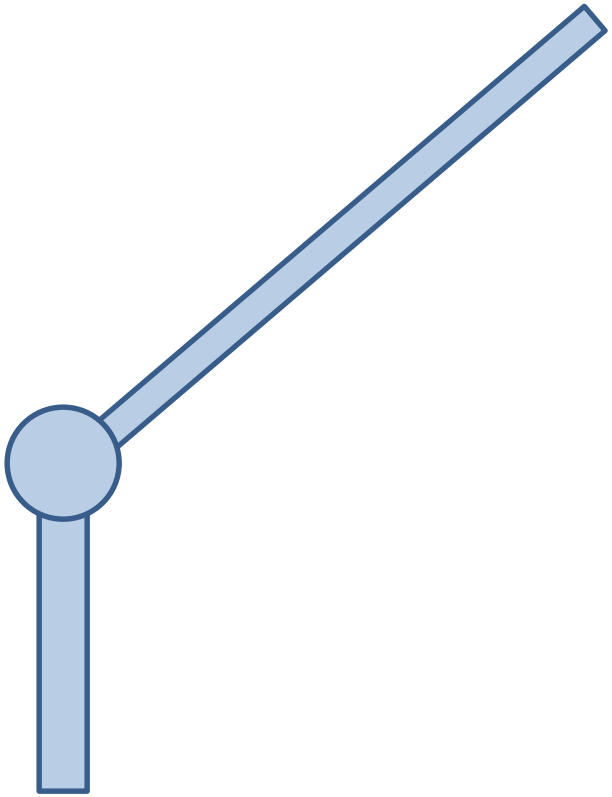
Garage Parking: End Parking



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Garage Parking: End Parking

- Garage Server determines final charge based on user's time of exit
- Garage server sends Invoice to Parking Application Server
- Parking Application Server sends Receipt to Handset

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Garage Parking: End Parking

Handset Screen 3

Final Receipt Screen

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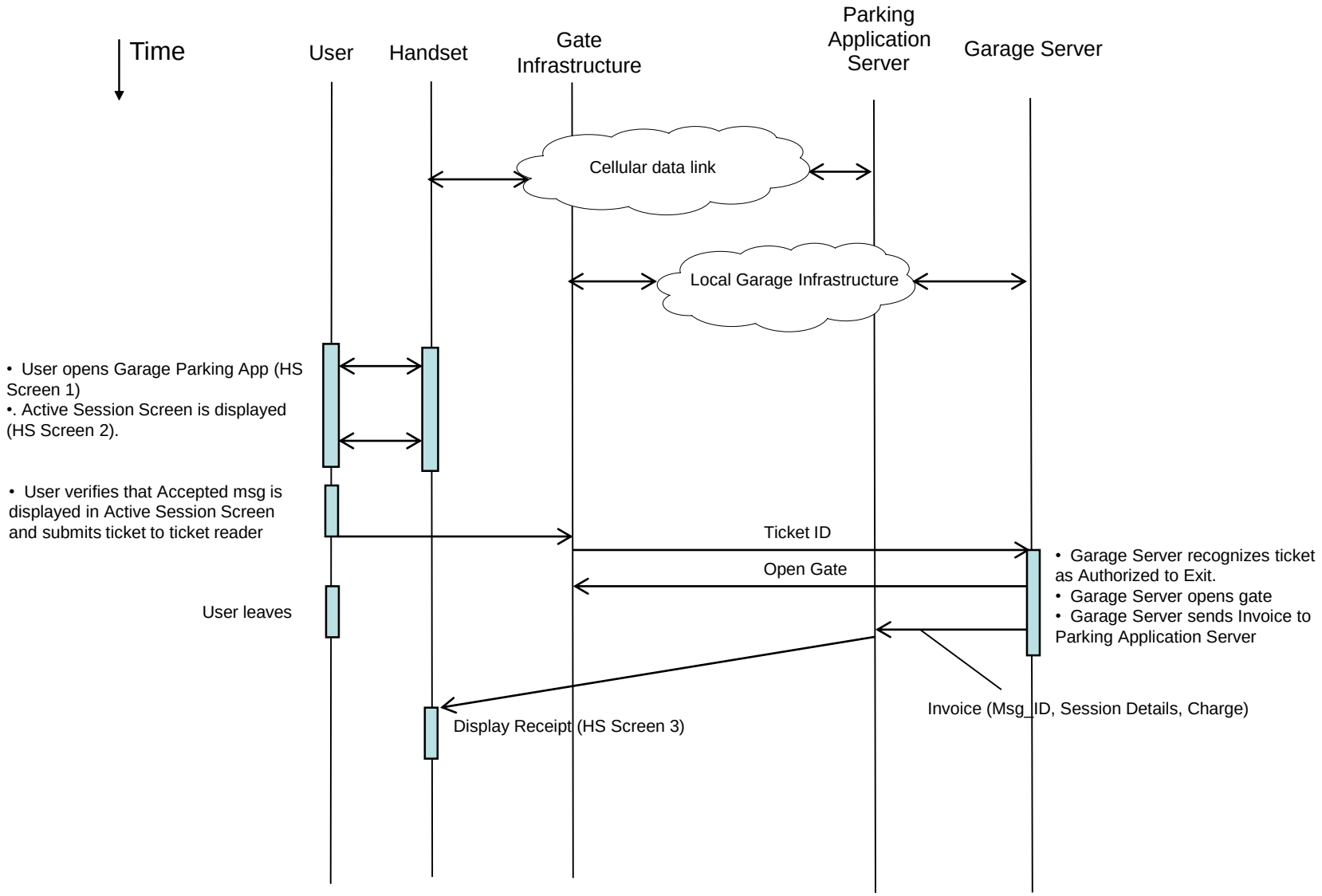
Exit Transactions for Gated Garage using paper ticket