

Event Graphs

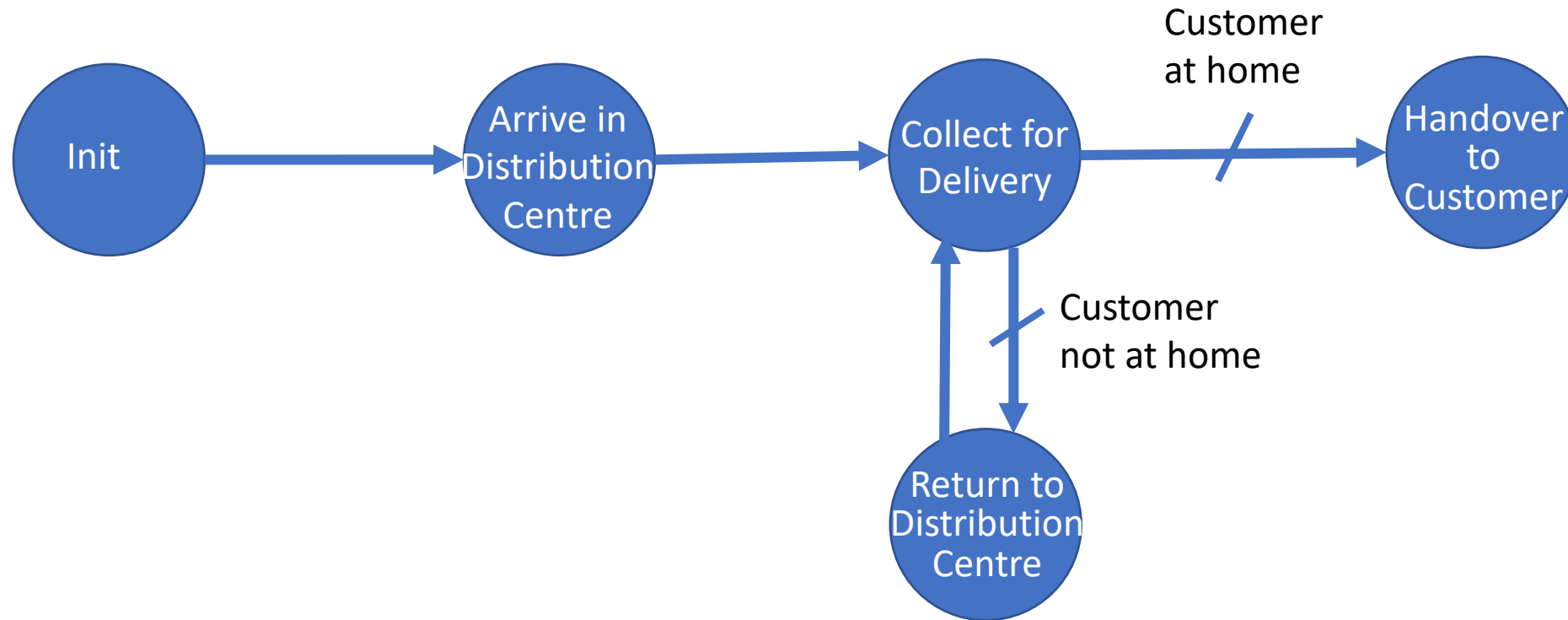
1 Identify Entities

- Parcels (moving)
- Customers (static)
- Driver (Unique Resource)
- Delivery Centre (Unique Resource)

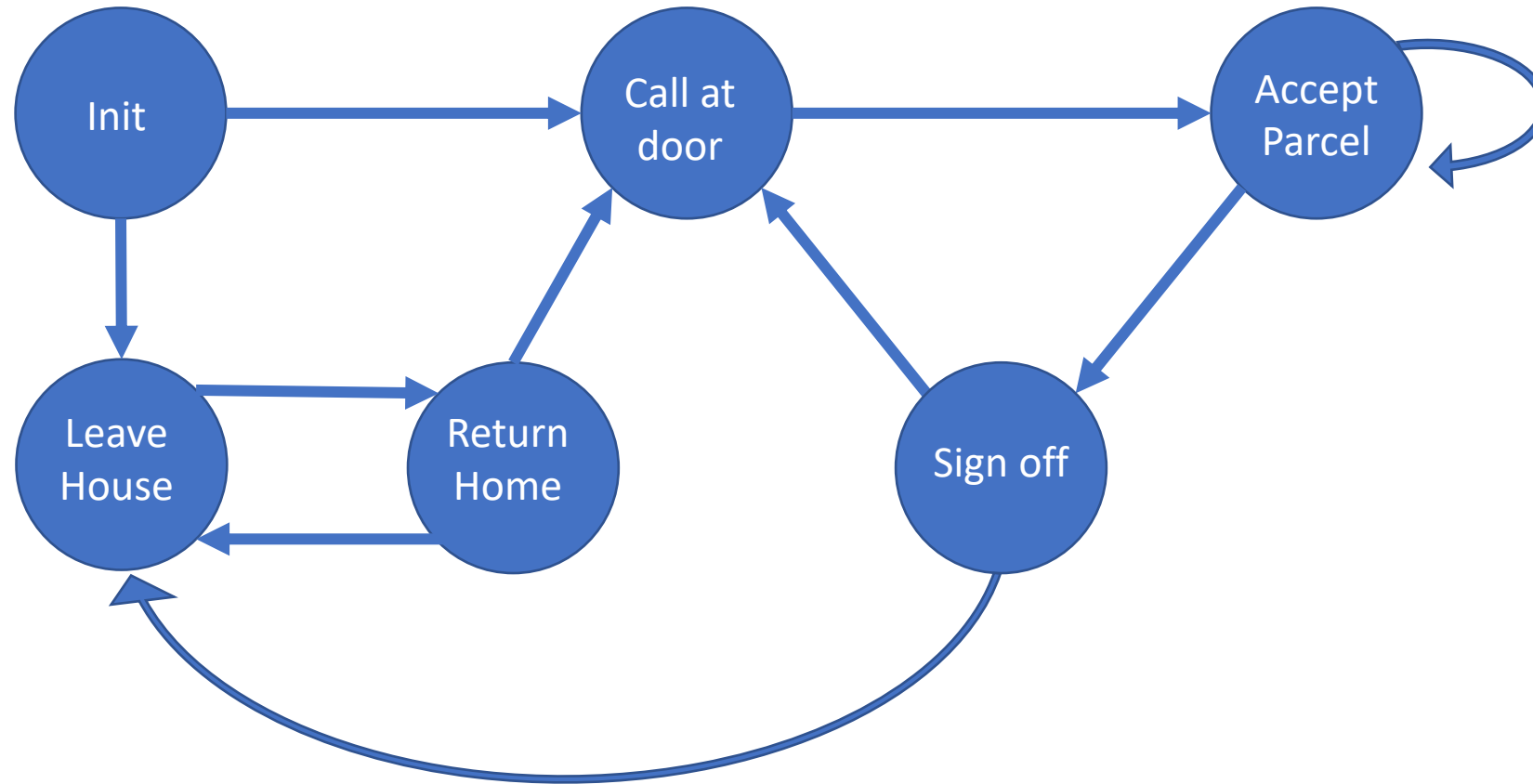
2 Identify Events

- Initially independently for each of the entities

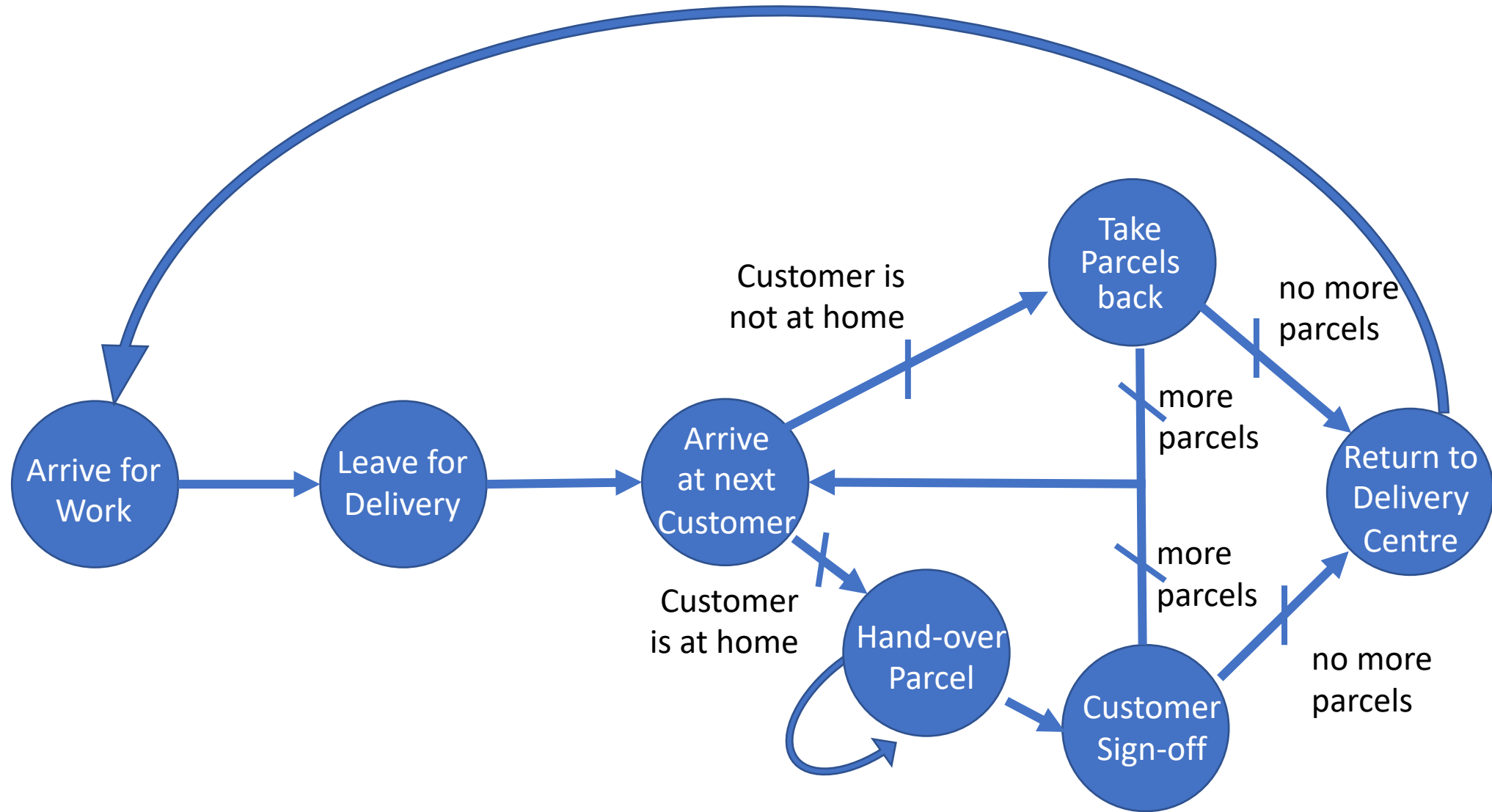
Event Graph for Parcels



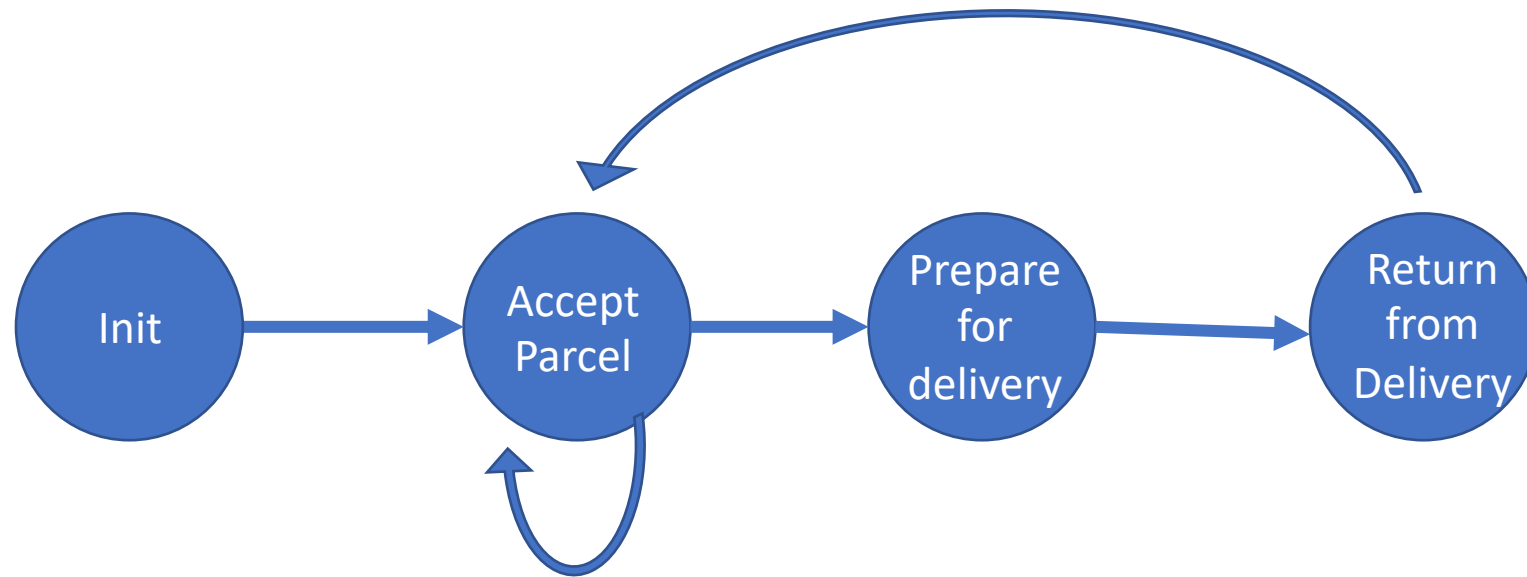
Event Graph for Customers



Event Graph for Driver

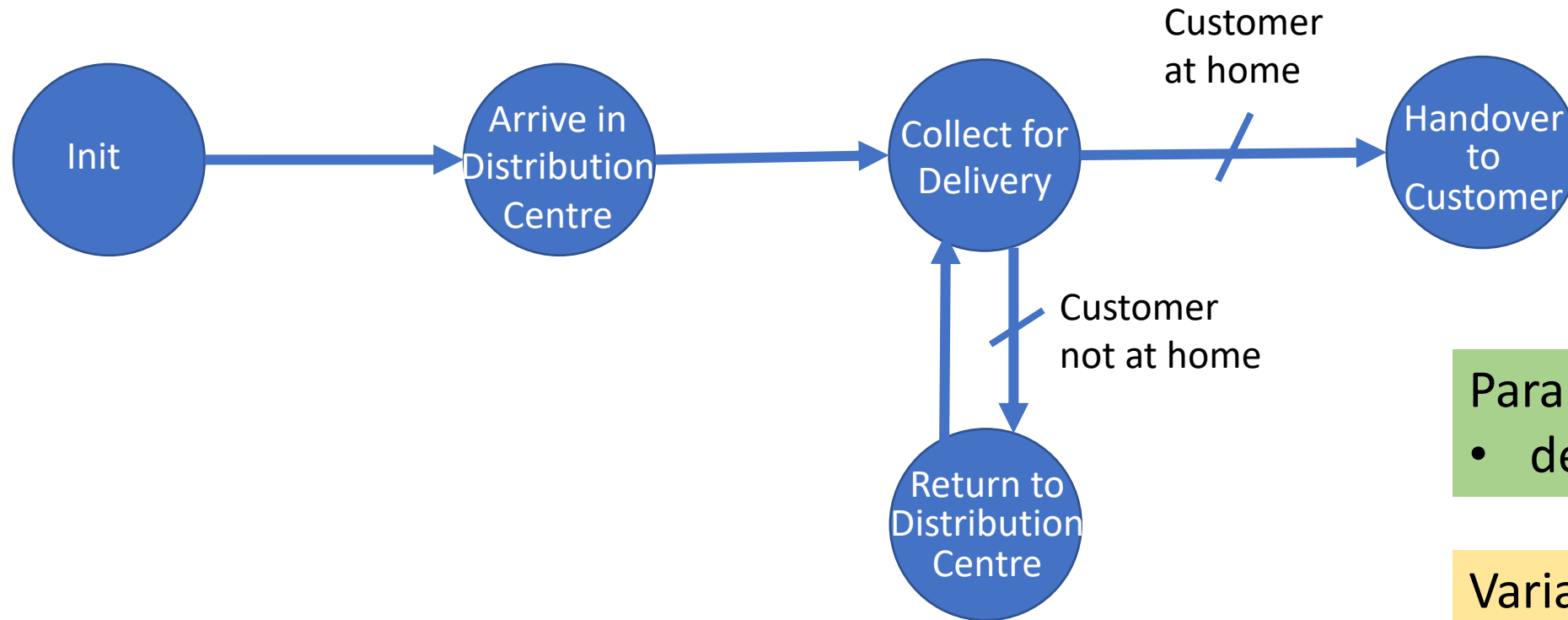


Event Graph for Delivery Centre



3 Identify Variables and Parameters

Event Graph for Parcels



Parameters:

- destination

Variables:

- status

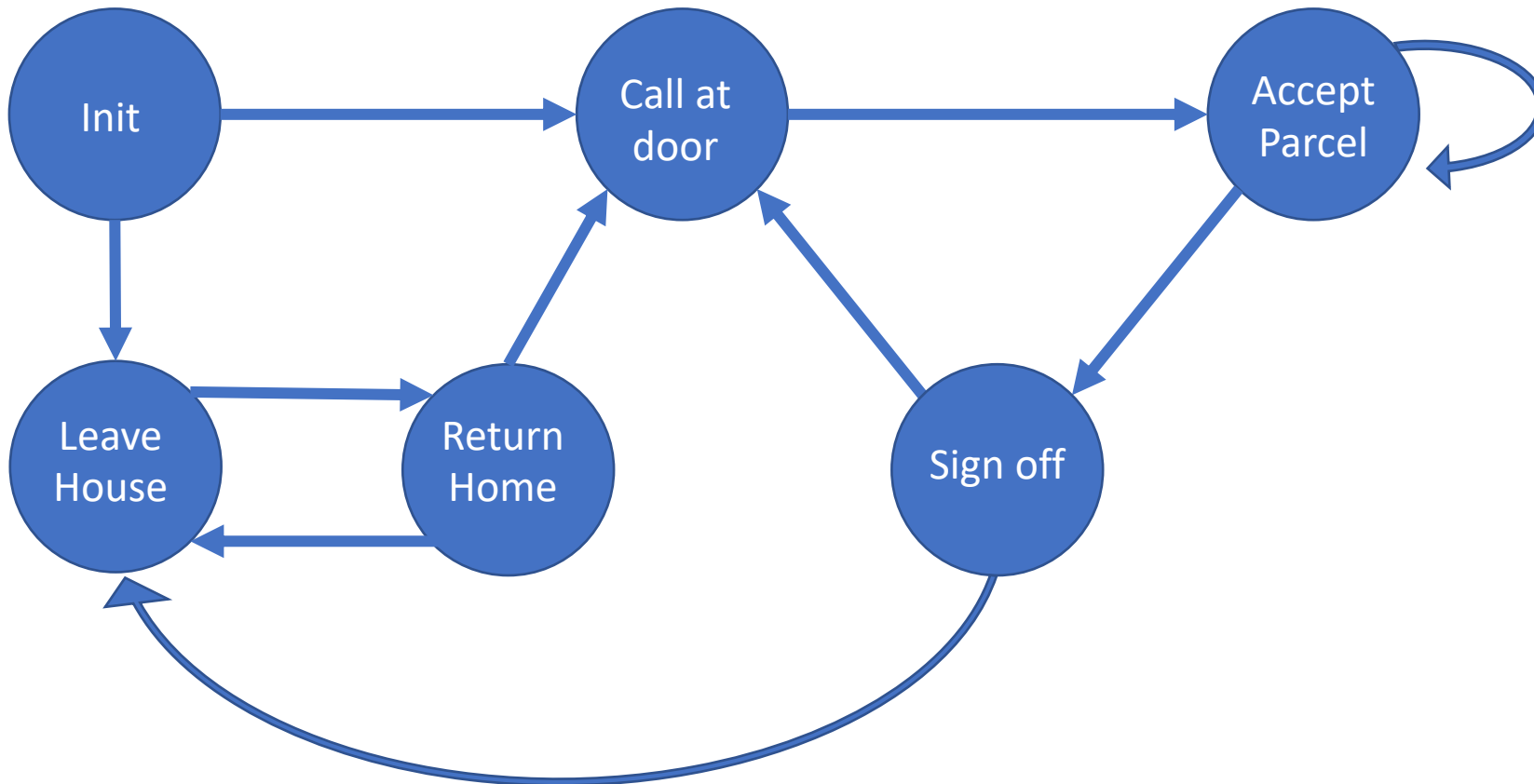
Event Graph for Customers

Parameters:

- Location

Variables:

- atHome
- answersDoor
- ParcelsReceived



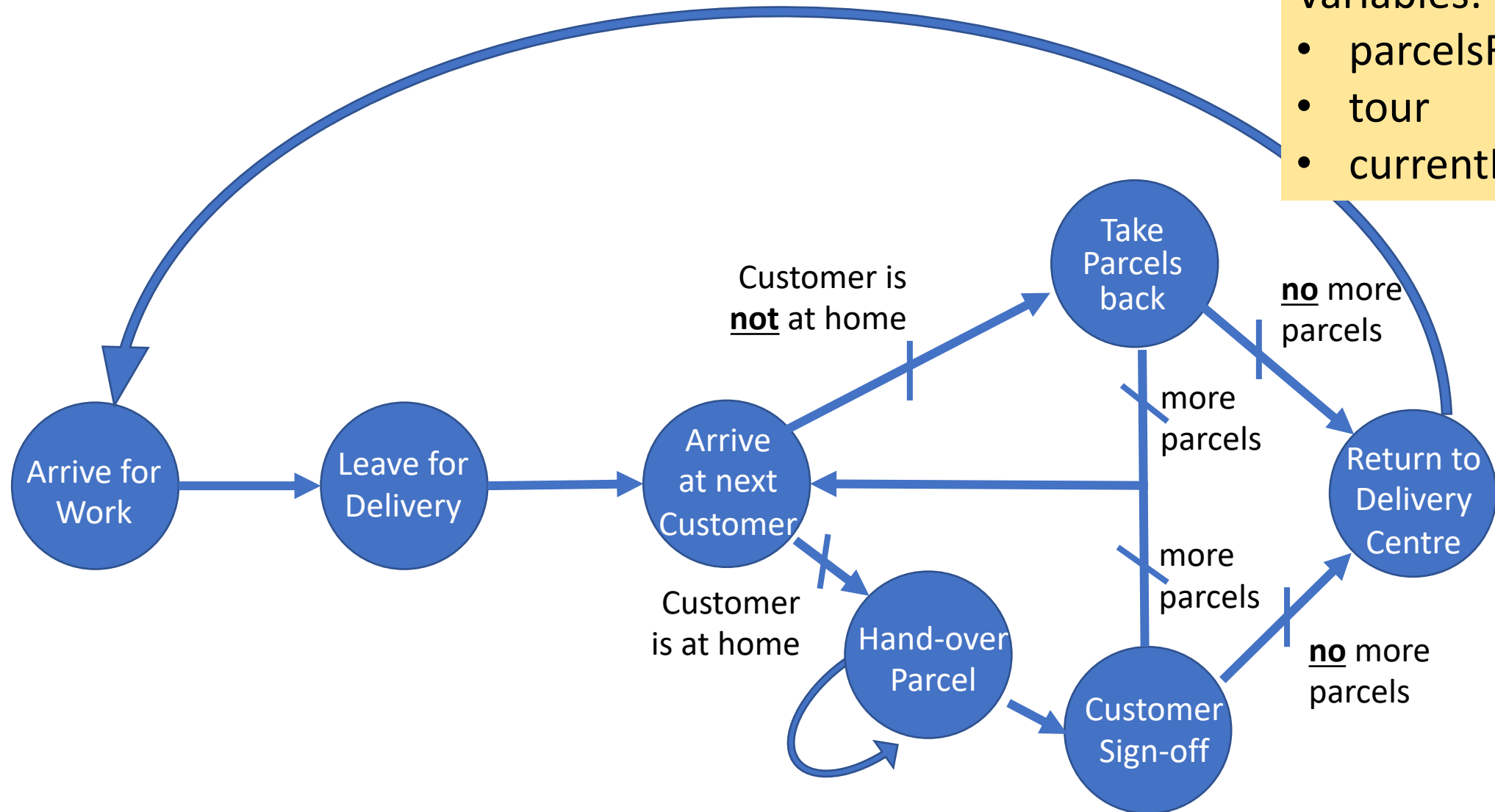
Event Graph for Driver

Parameters:

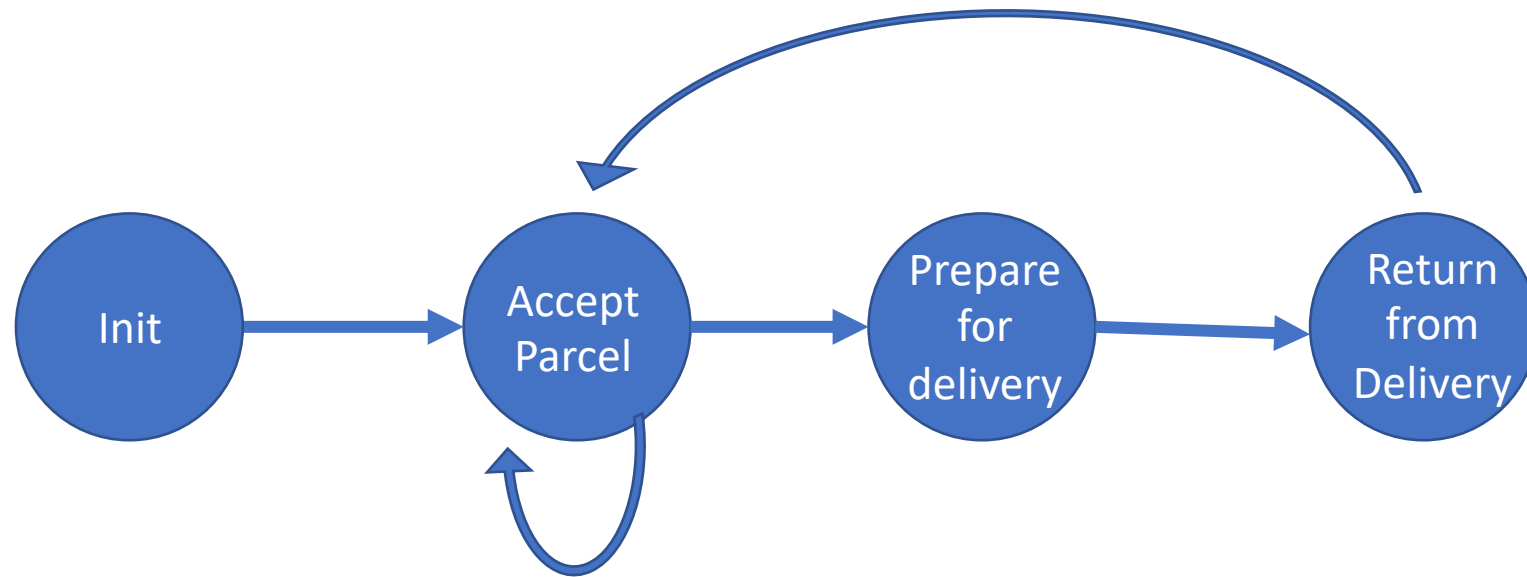
- DeliveryCentre

Variables:

- parcelsForDelivery
- tour
- currentLocation



Event Graph for Delivery Centre



Parameters:

- maxTourLength

Variables:

- leftOver
- parcelsForDelivery
- tour

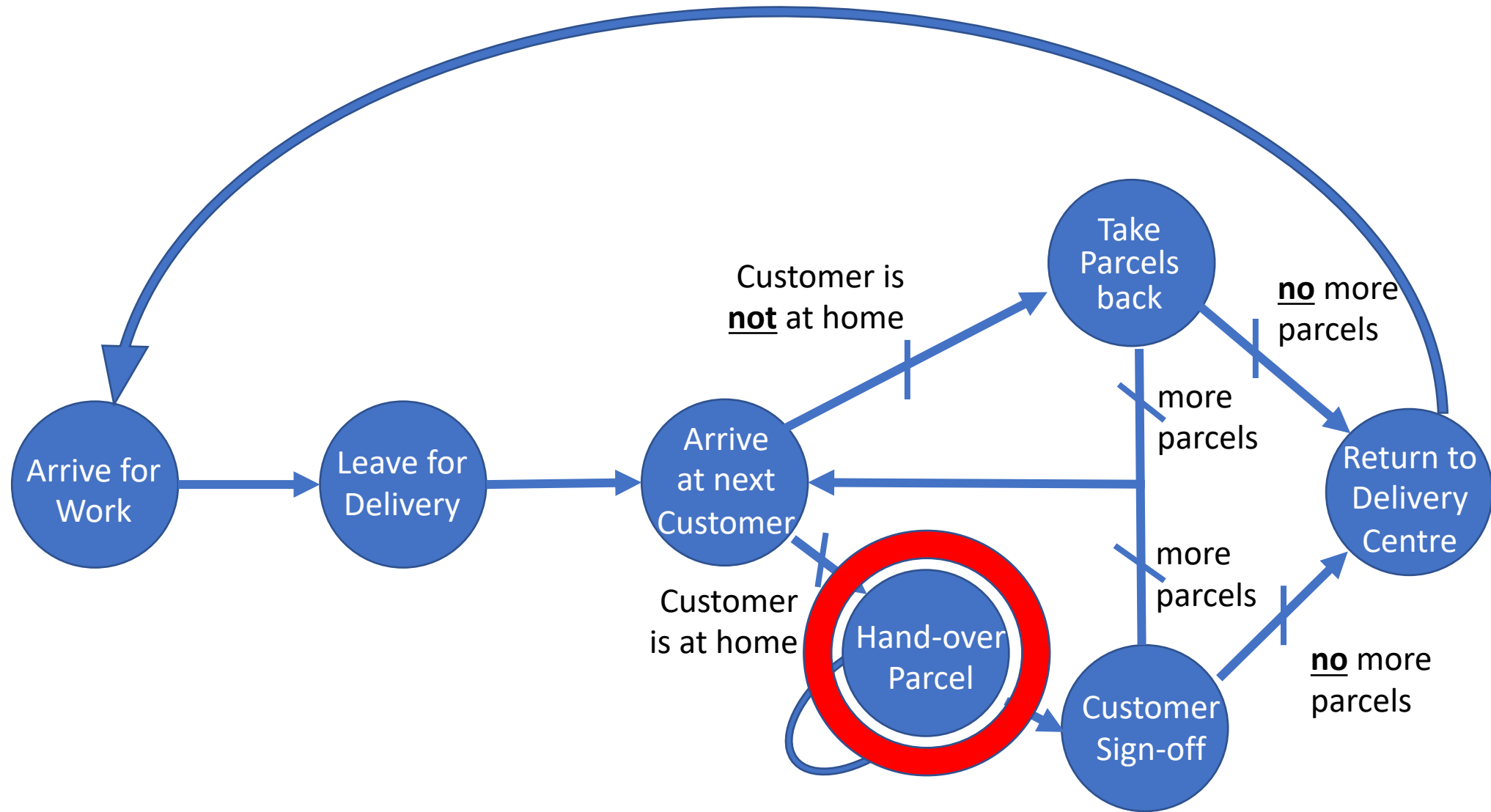
4 Refine Events

For each Entity and each Event:

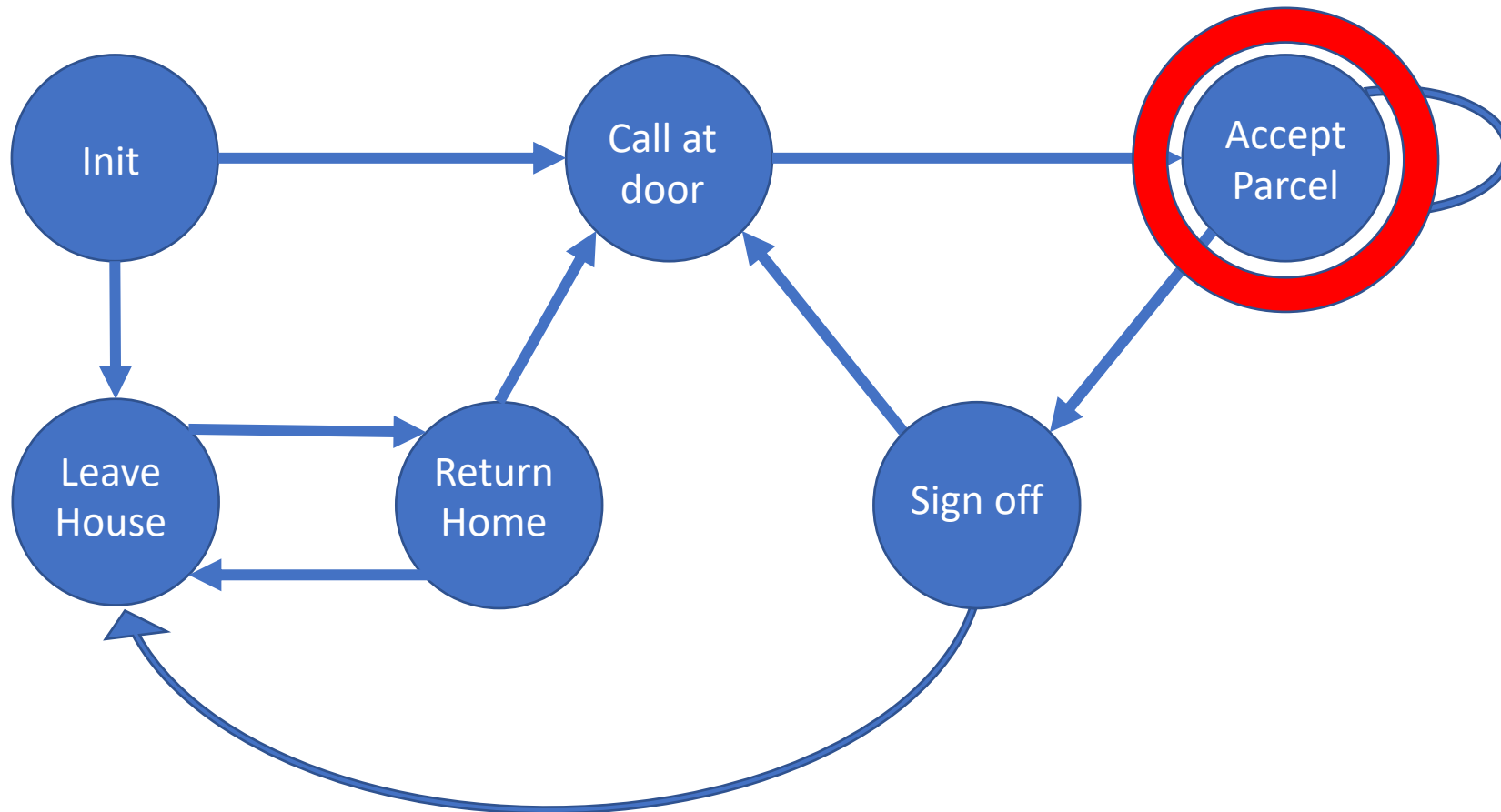
- Link the Events affecting different entities
- Specify the changes to the state variables

For example: Handover Parcel to Customer

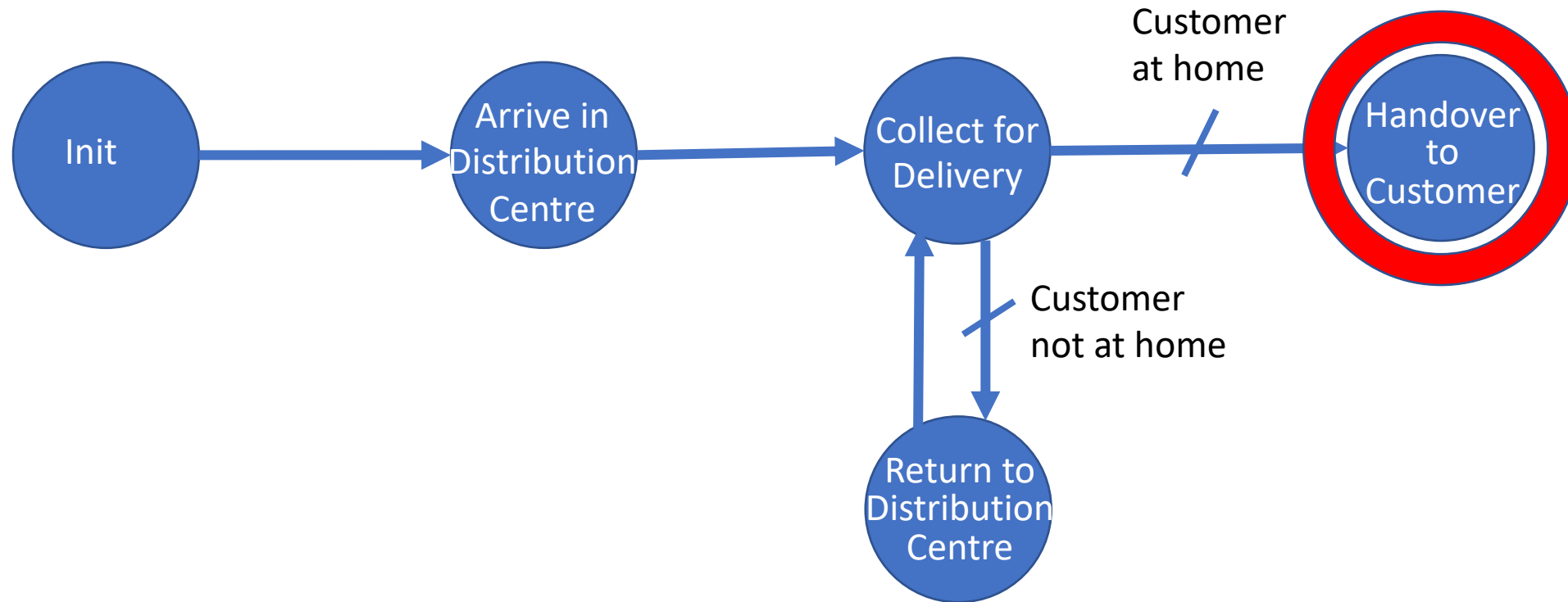
Handover of Parcel (Drivers View)



Handover of Parcel (Customer View)



Handover of Parcel (Parcel View)



Handover of Parcel (State Transition)

Driver: HandoverToParcel()

- **P** = parcelsForDelivery[0]
- **C** = **P**.cust()
- ParcelsForDelivery = ParcelsForDelivery[1:]

Customer **C**: AcceptParcel()

- ParcelsReceived += [**P**]

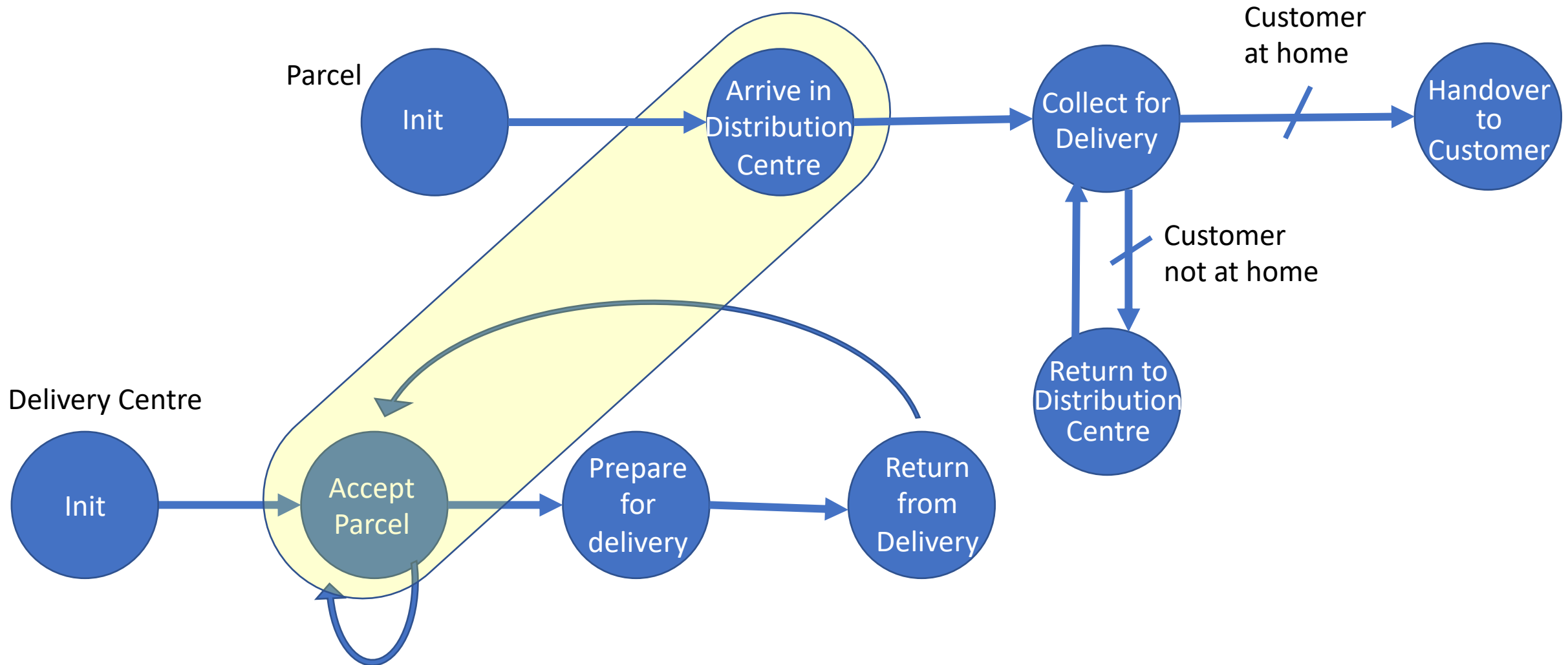
Parcel **P**: HandoverToCustomer()

- Status = 'Delivered'

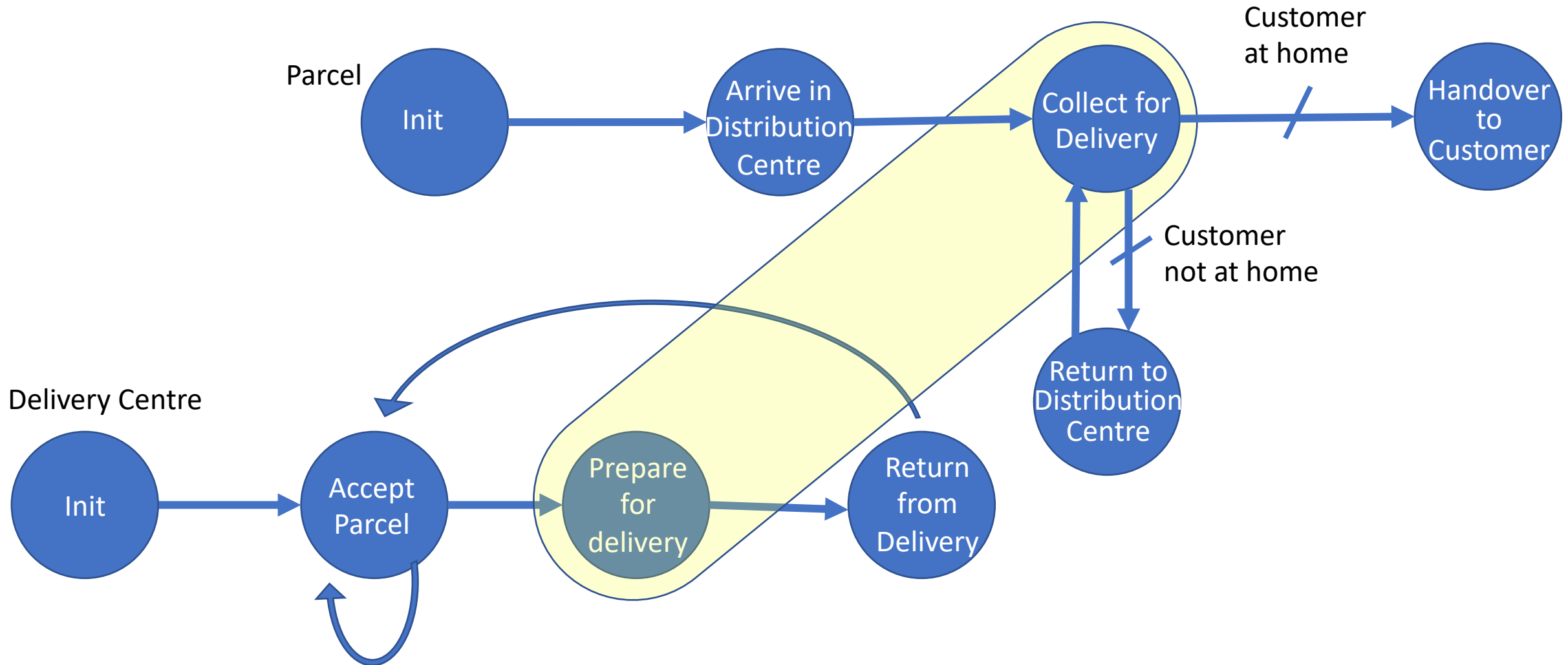
5 Link Events

- Delivery Center – Accept Parcel
= Parcel – Arrive in Distribution Centre
- Delivery Center – Prepare for Delivery
= Driver – Leave for Delivery
= Parcel* – Collect for Delivery (affects multiple parcels)
- Driver – Ring at customer
= Customer – Call at door

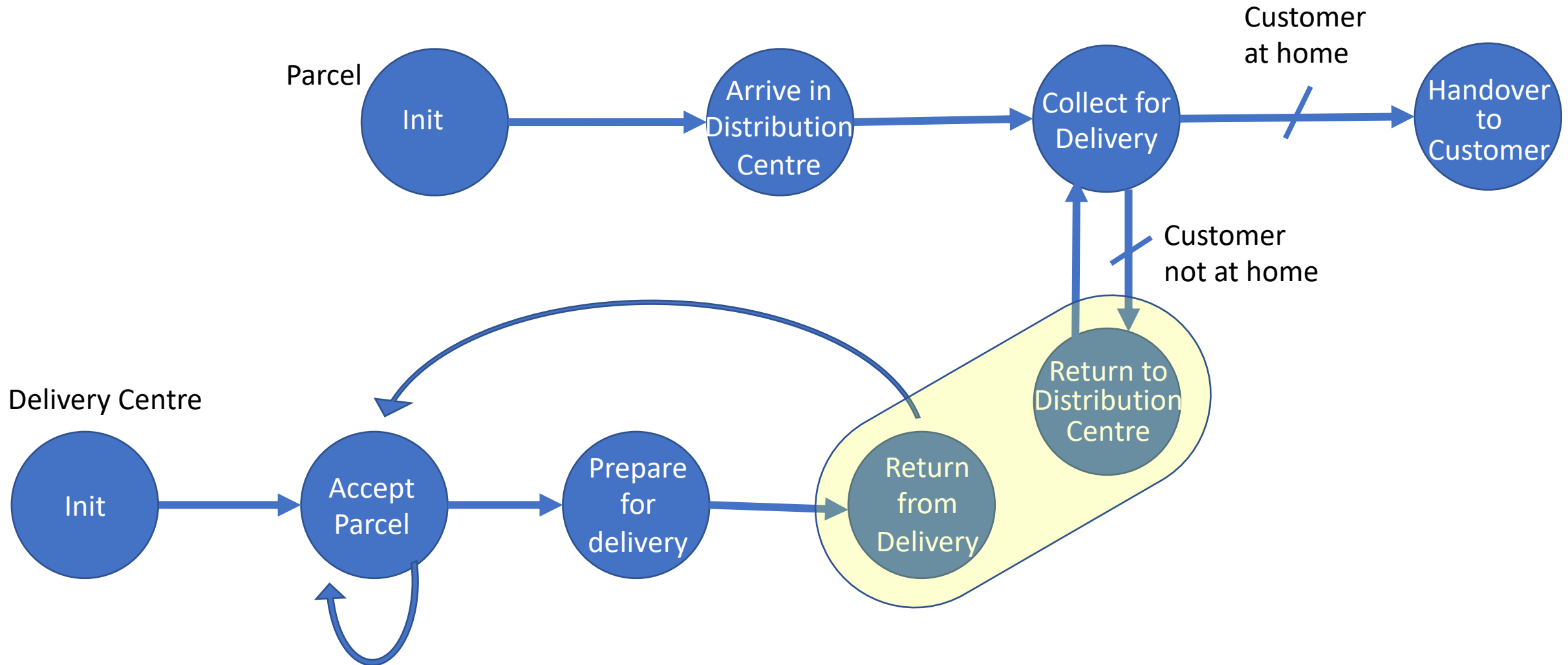
Parcel and Delivery Centre



Parcel and Delivery Centre



Parcel and Delivery Centre



6 Identify Activities

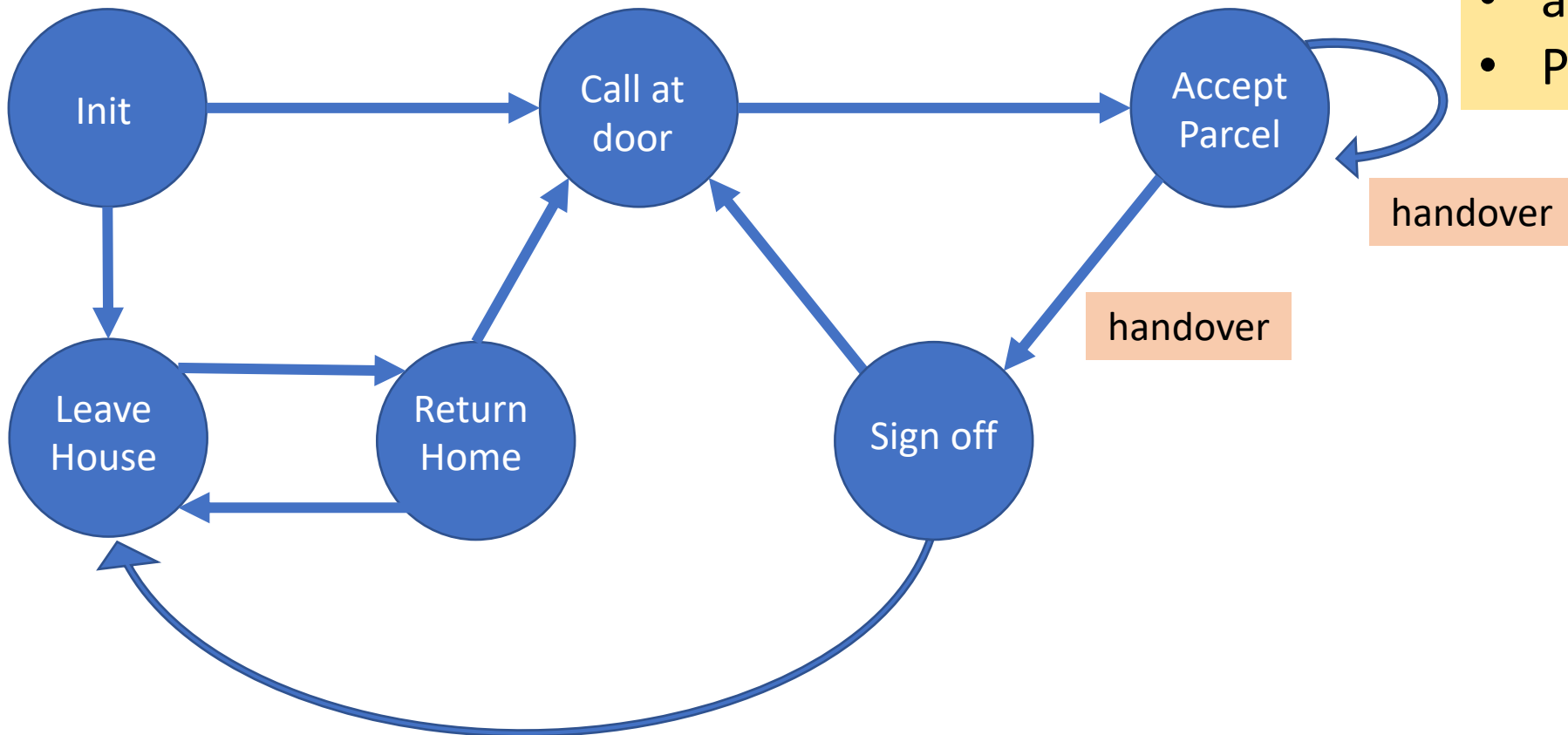
Event Graph for Customers

Parameters:

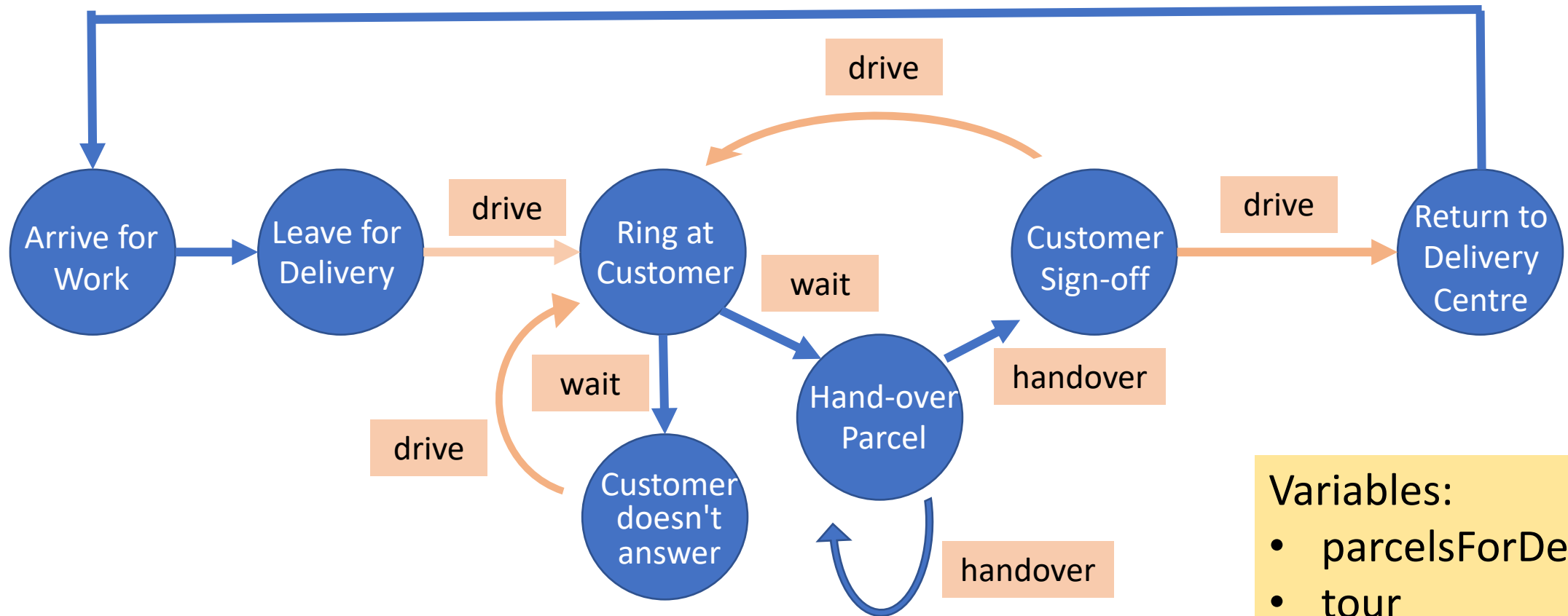
- Location

Variables:

- atHome
- answersDoor
- ParcelsReceived



Event Graph for Driver



Variables:

- parcelsForDelivery
- tour
- currentLocation