

Adaptive Goal Management

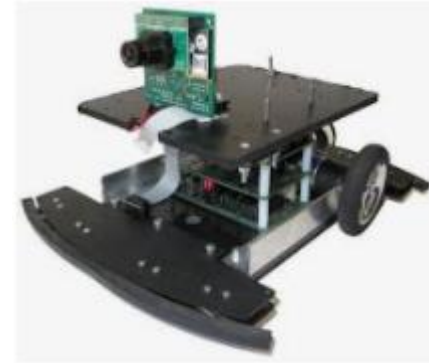
MVP website: <https://adaptive-goal-management.herokuapp.com/>

Github: <https://github.com/mukmalone/AdpativeGoalManagement>

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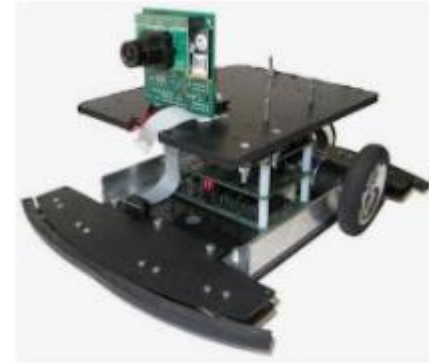
What is it?

- An adaptive goal execution system
- Designed for robotics and drones connected to the Internet



What does it do?

- Dynamically manages a series of steps or goals for a robot to perform



How does it work?

Let's use an example in a manufacturing context

Definitions

First some language, everything is built around aerospace manufacturing terminology and practices:

- Worker = your robot/drone
- Workstation = target source or destination location where something happens
- Routing = A set of manufacturing steps needed to complete a product or activity
- Customer = Who is this work being performed for
- Part number = A defined combination of a customer and routing which will be deployed

As you get creative you can think of ways to deploy this in every setting.

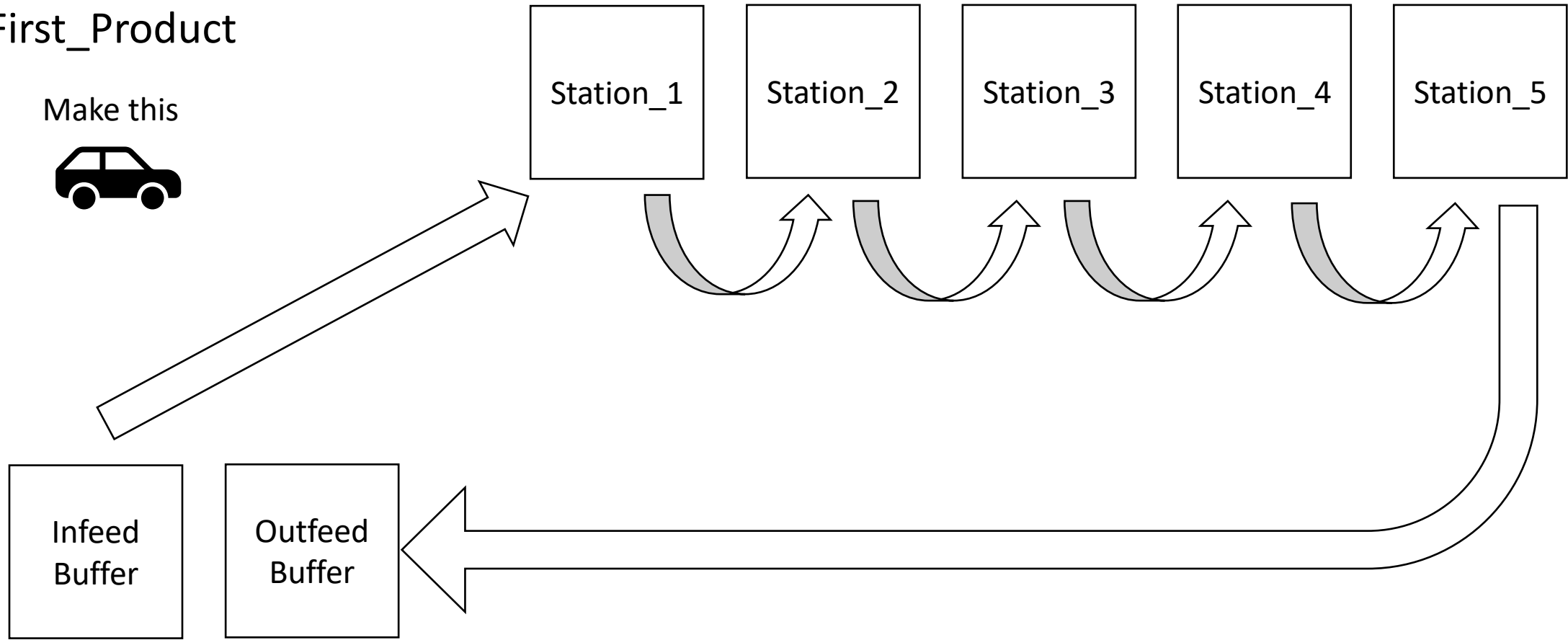
Communication

Worker talks to AGM through API using HTTP

What you need to accomplish

First_Product

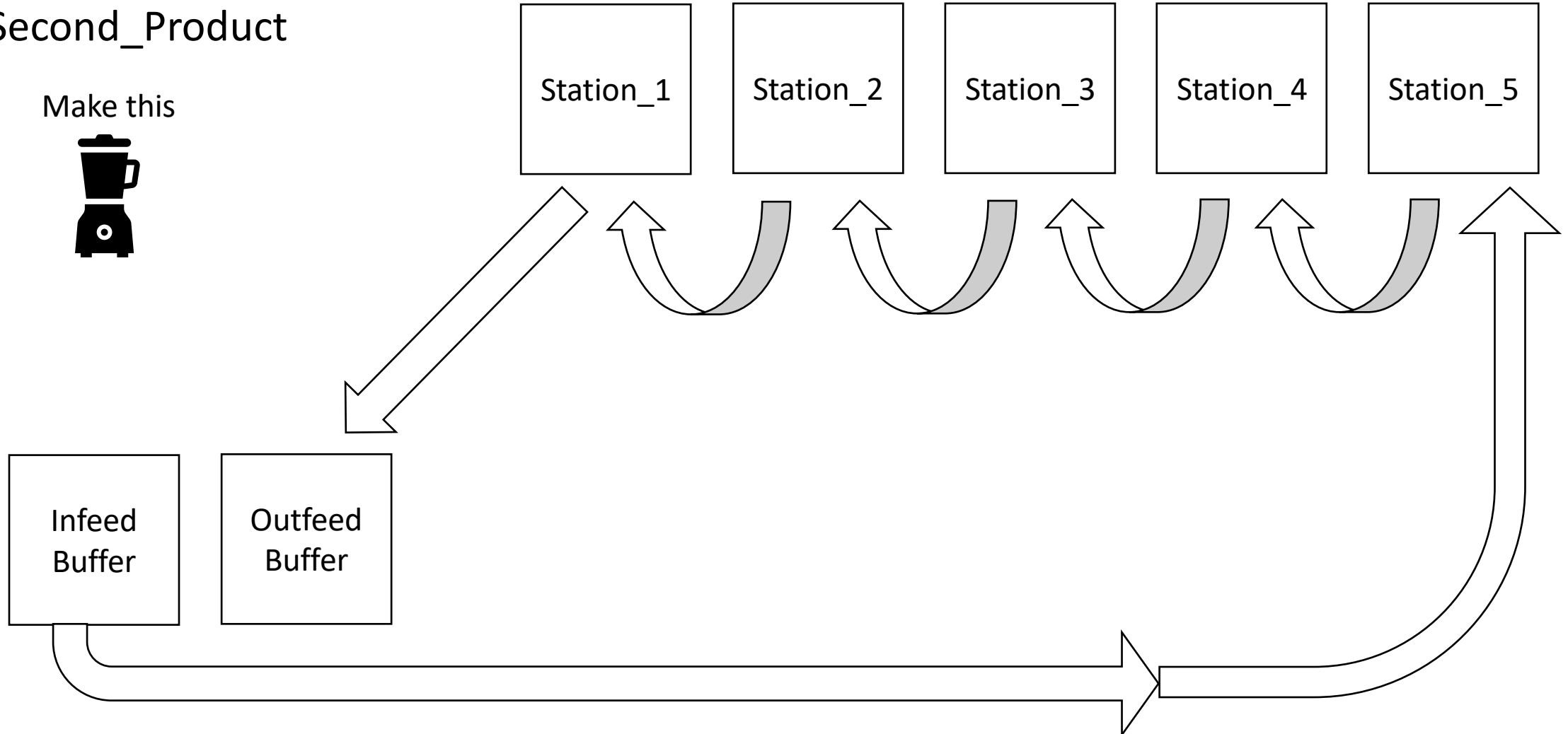
Make this



Another thing you need to accomplish

Second_Product

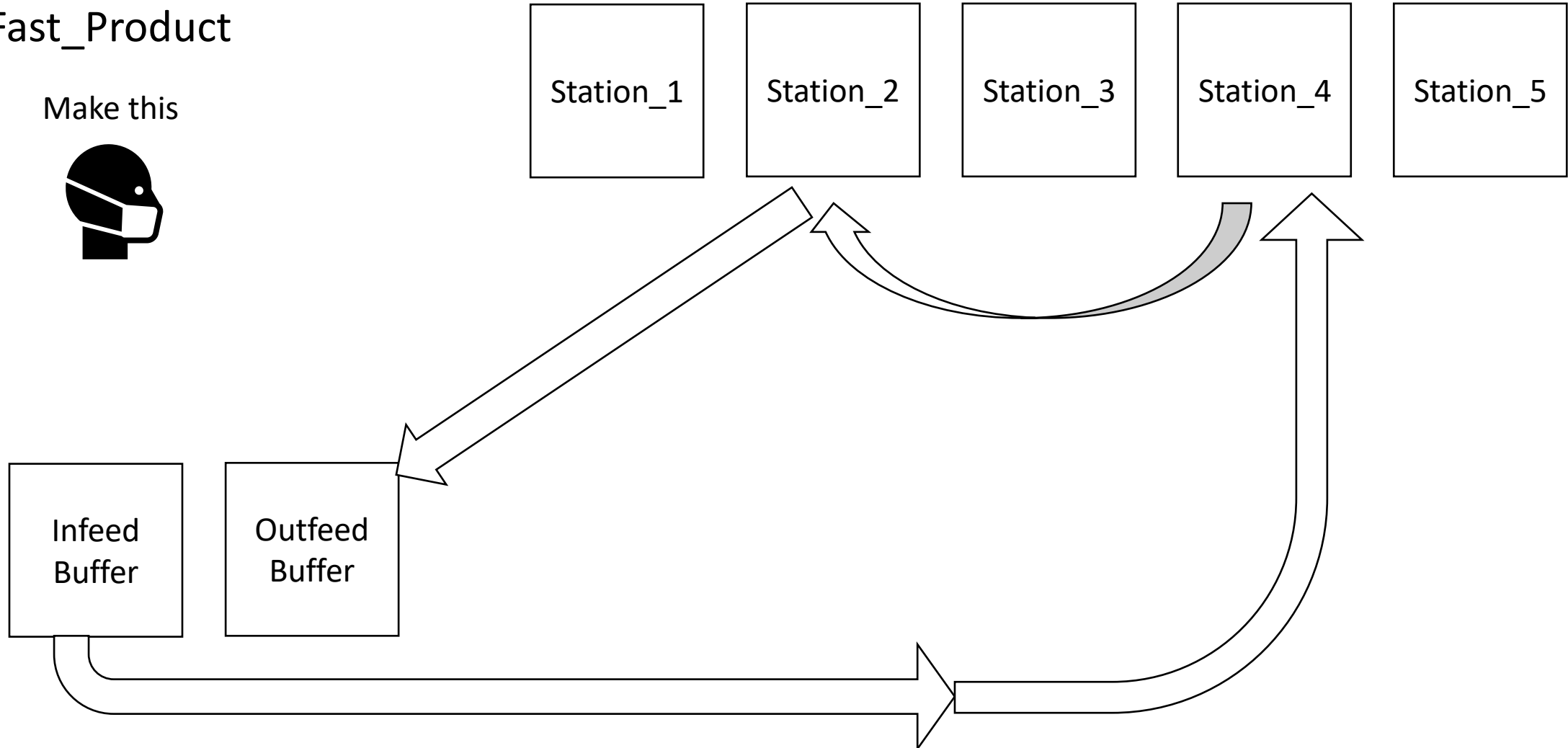
Make this



A third thing to accomplish

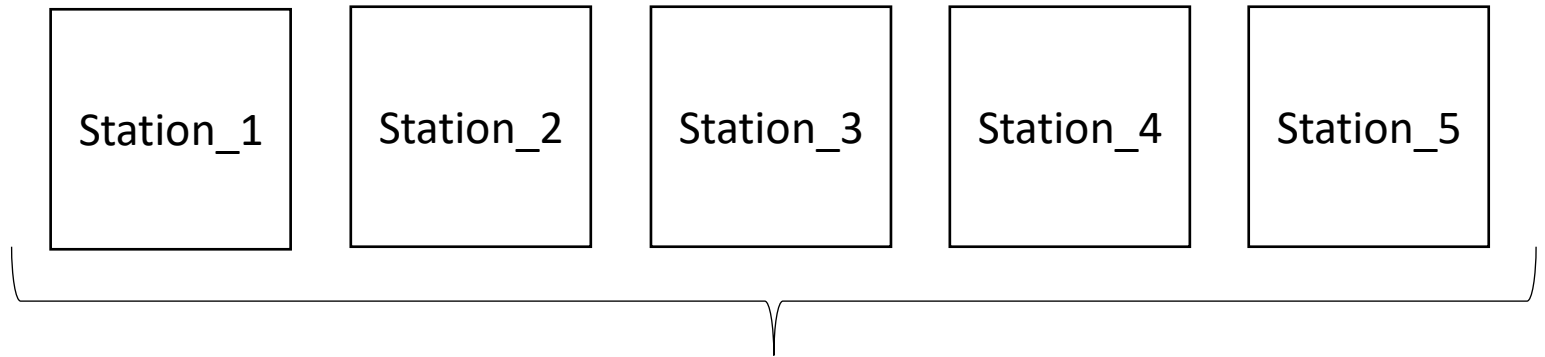
Fast_Product

Make this



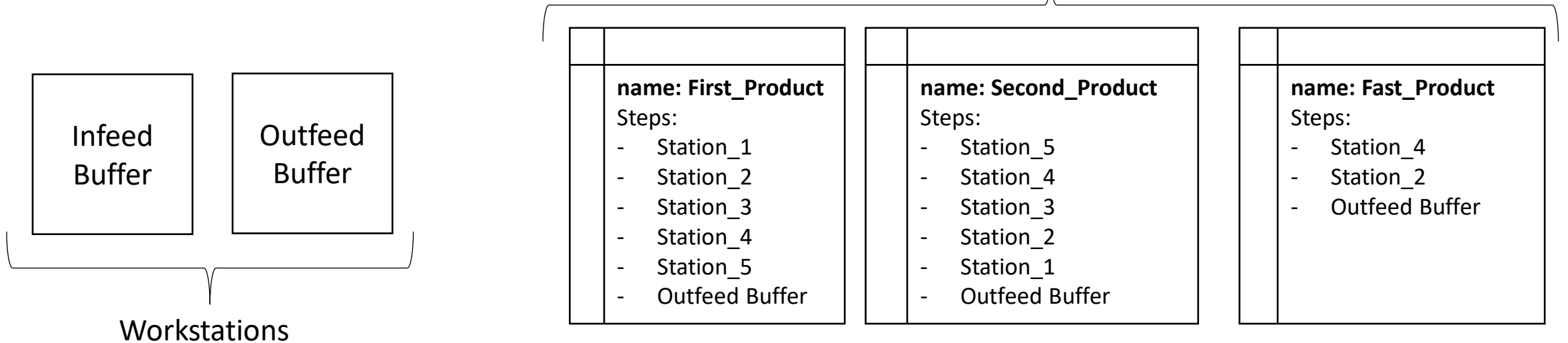
Setting it up

Worker: Tesla

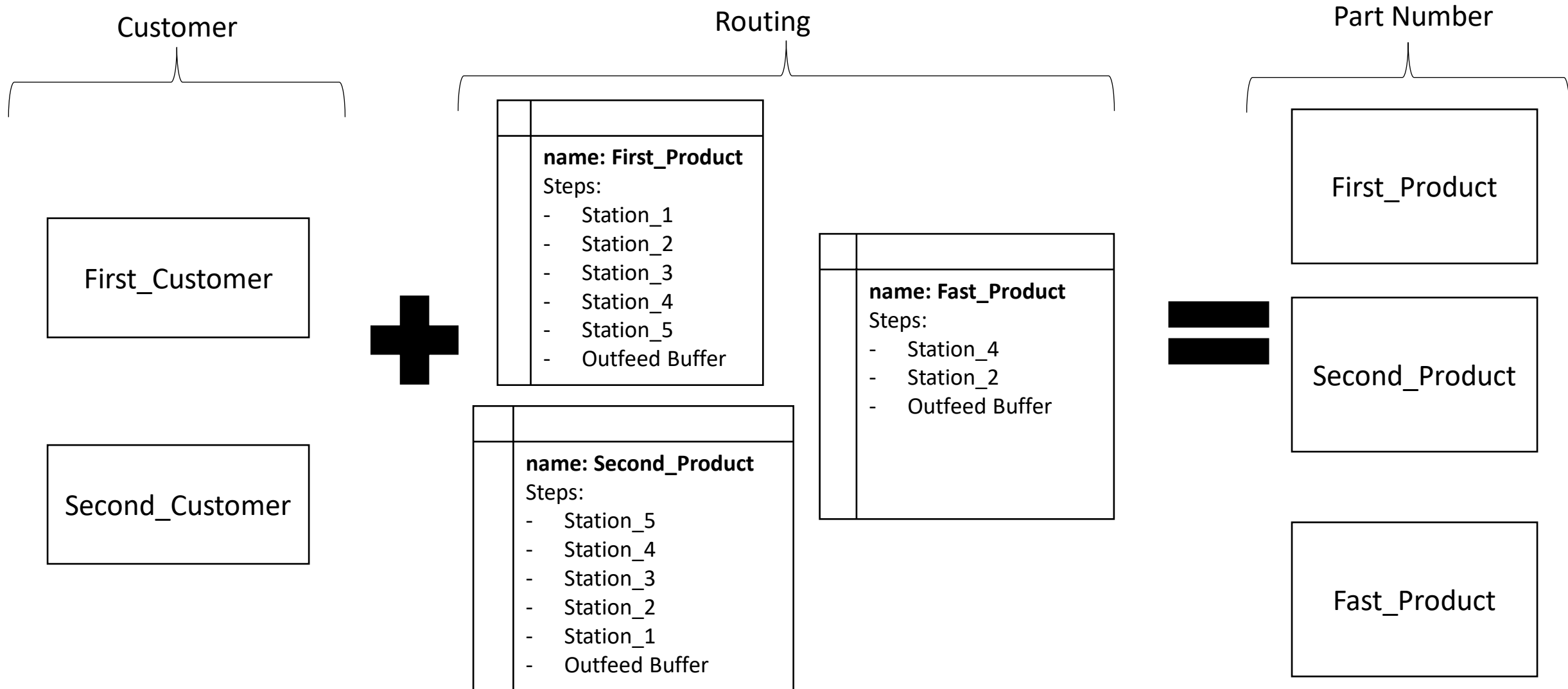


Workstations

Routings



Setting it up cont'd



Setting things in motion

Activate

Fast_Product

First_Product

First_Product

Fast_Product

Second_Product

Fast_Product

Assign

- PO identifier PO1
- Serial Number SN1

- PO identifier PO2
- Serial Number SN2

- PO identifier PO3
- Serial Number SN3

- PO identifier PO4
- Serial Number SN4

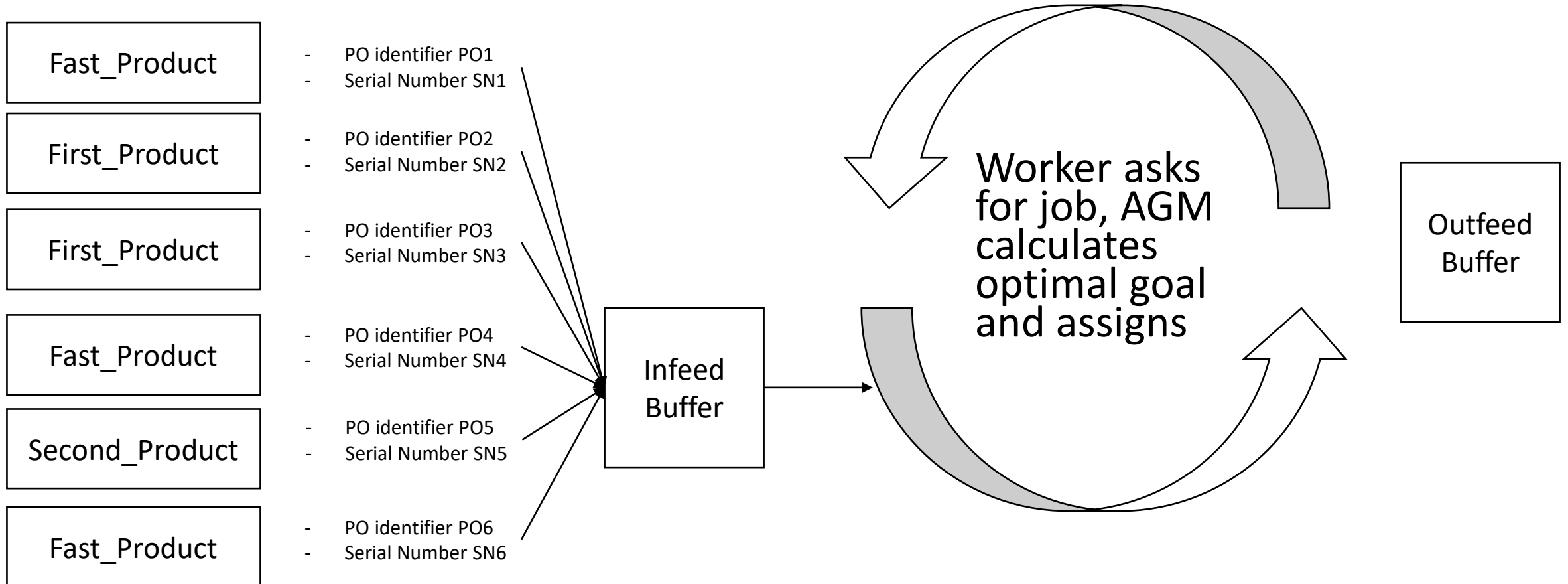
- PO identifier PO5
- Serial Number SN5

- PO identifier PO6
- Serial Number SN6

Infeed
Buffer

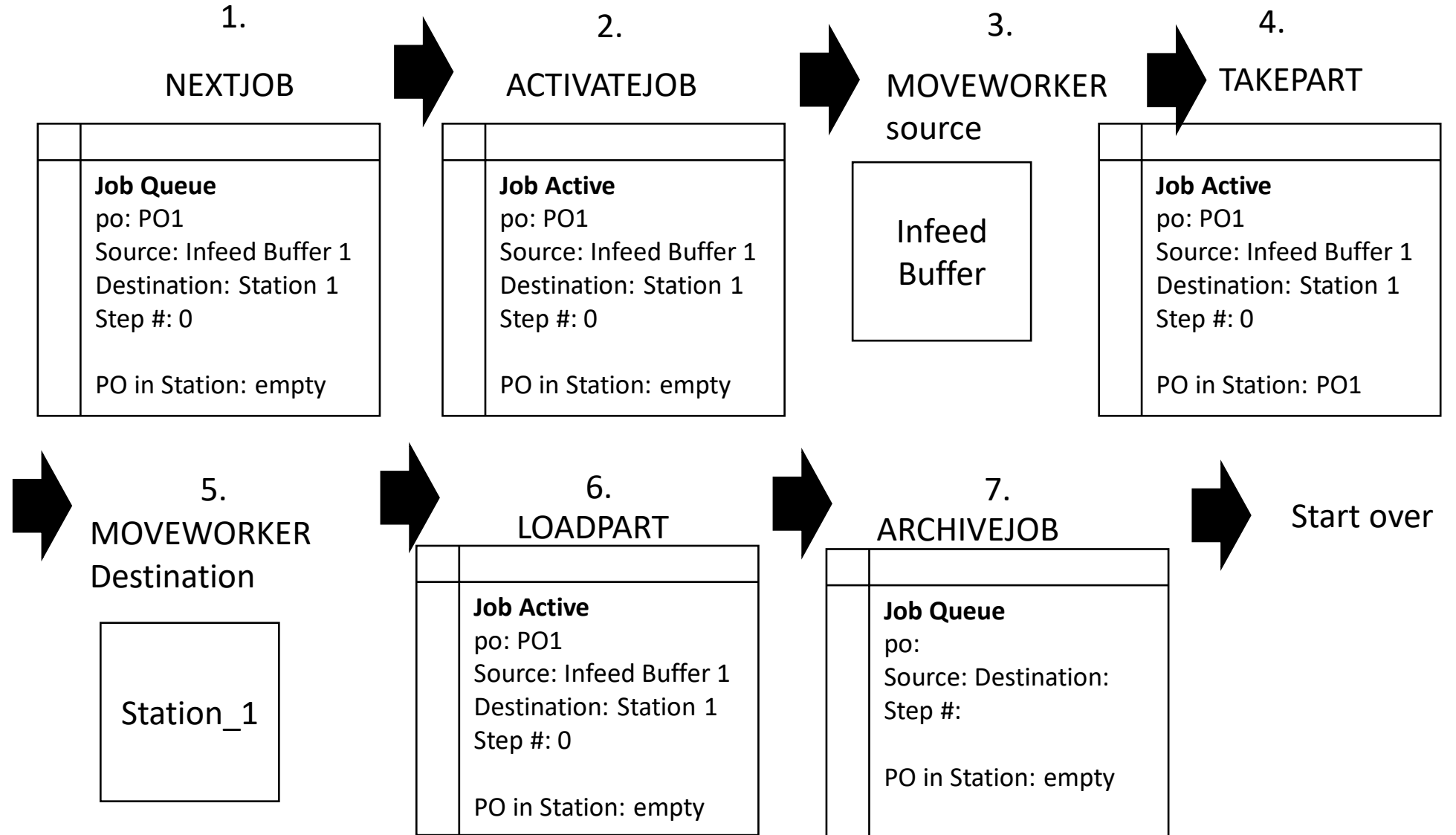
Worker asks
for job, AGM
calculates
optimal goal
and assigns

Outfeed
Buffer



How a worker knows what to do

Worker: Tesla



Example 2: Mixing multiple robots & jobs

Worker: Robot_Assemble



workerGroup: Inspection

Worker: Robo_Inspect



workerGroup: Inspection

Infeed
Buffer

Assembly

Inspection

Outfeed
Buffer

Worker: Robo_Mover



workerGroup: PO Movement

Questions/want to test/want to contribute

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