MAPC 2015 (base team)

LIP6 2015

Scenario

MAPC 2015

- Two competing teams of agents
- They complete jobs to earn money
- They have to decide which job to do

Jobs

- comprise: acquisitio
  transportation of go
- type: priced or aucti
- created by the simulator or teams
- demand resources
- gives some money
- requires coordination

attributes
goods to be produced
delivery place
deadline
price/auction

A

- Type: cars, drone,
  - team has 16 age
    Motorcycles and
- Features:
  - speed
  - how they move
  - battery capacity
  - volume of goods
  - which tools it can employ to craft goods

Car	Speed:	3
	Routes:	`roads`
	Battery capacity:	500
	Load capacity:	550
	Tools:	`tool1`, `tool2`
Drone	Speed:	5
	Routes:	`air` (moves in str
	Battery capacity:	250
	Load capacity:	100
	Tools:	`tool1`
Motorcycle	Speed:	4
	Routes:	`roads`
	Battery capacity:	350
	Load capacity:	300
	Tools:	`tool1`, `tool3`
Truck	Speed:	1
	Routes:	`roads`
	Battery capacity:	3000
	Load capacity:	1000
	Tools:	`tool2`, `tool3`

Goods

- can be bought, crafted, given to a teammate, stored, delivered as part of a job completion, recovered from a storage facility, and dumped
- the crafting of an item requires other goods
  - as prime matter
  - as tools
- Different tools may imply different agents and thus collaboration

Target places

- shop
  - each shop has some items with prices and stock
- charging stations
  - has limited slots with price and capacity
- storage
  - has capacity and price
- workshop
  - used to manufacture items
- dump
  - to get rid of items

Percepts

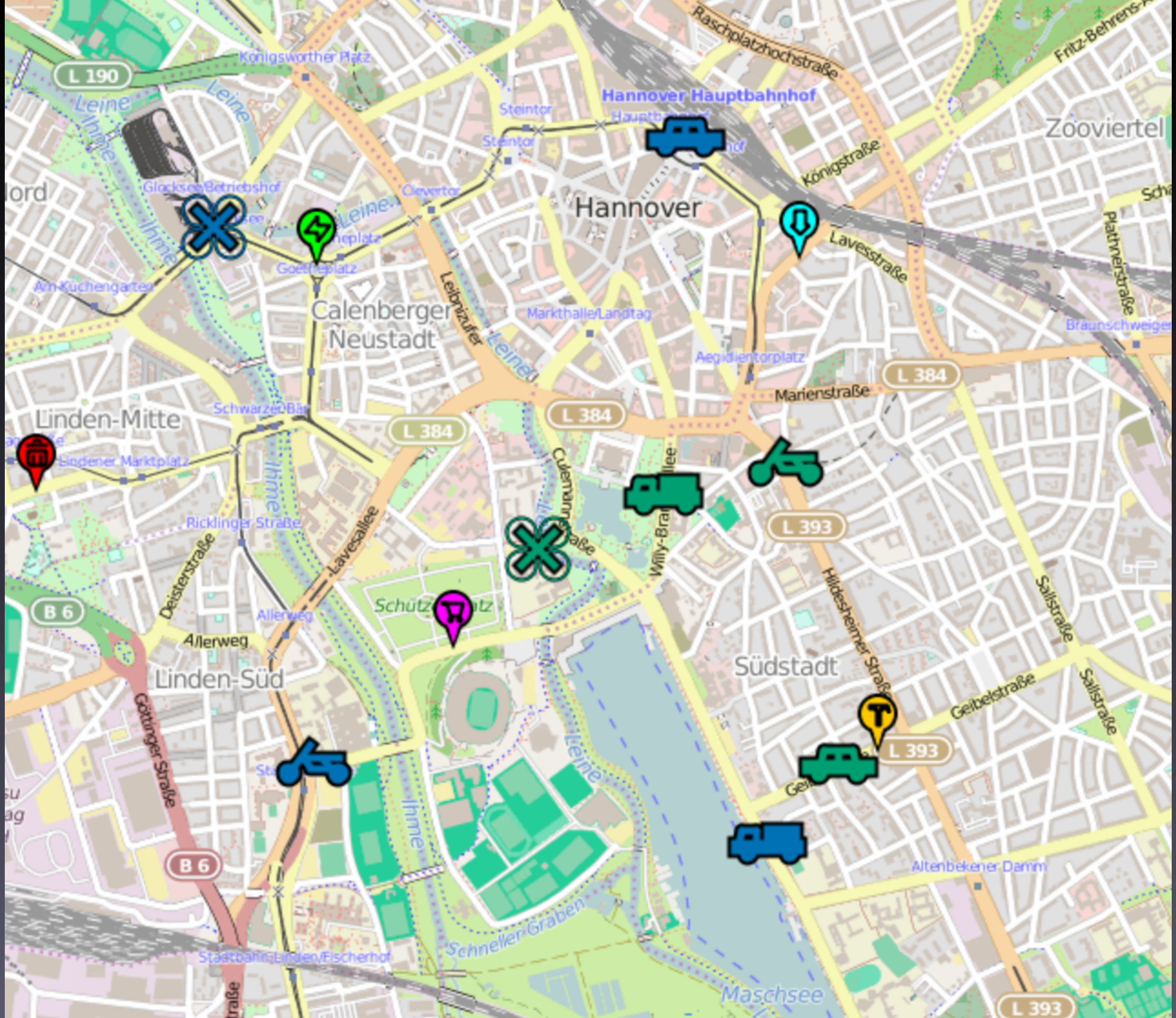
- current step
- state of the team (current money, jobs, …)
- state of the vehicle (battery,…)
- state of other vehicles
- nearby facilities
- jobs
- … more on protocol.pdf sec. 2.2.7

Actions

- goto(id facility/lat x long), may take several simulation steps
- buy(item id, amount): possible only at shops
- assemble(item id): possible only at a workshop
- deliver_job(job id): possible only at the job delivery facility
- …. more on readme.pdf pg 6…

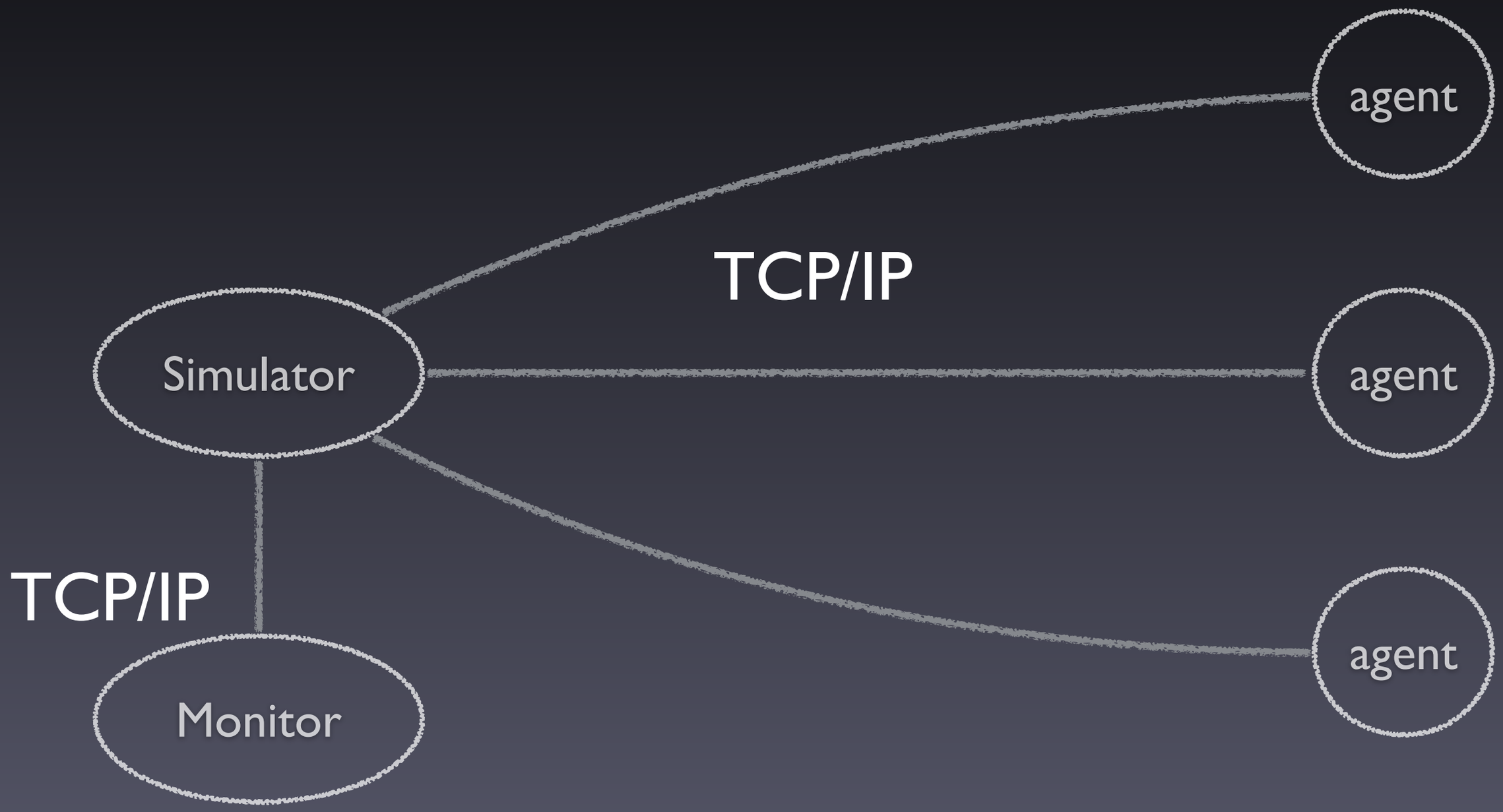
Example of interaction

- perceive a new job
- decide whether to take it or not
- coordinate the team to collect the required material and tools (possibly triggering auctions)
- deliver them in a workshop
- assemble
- deliver job good

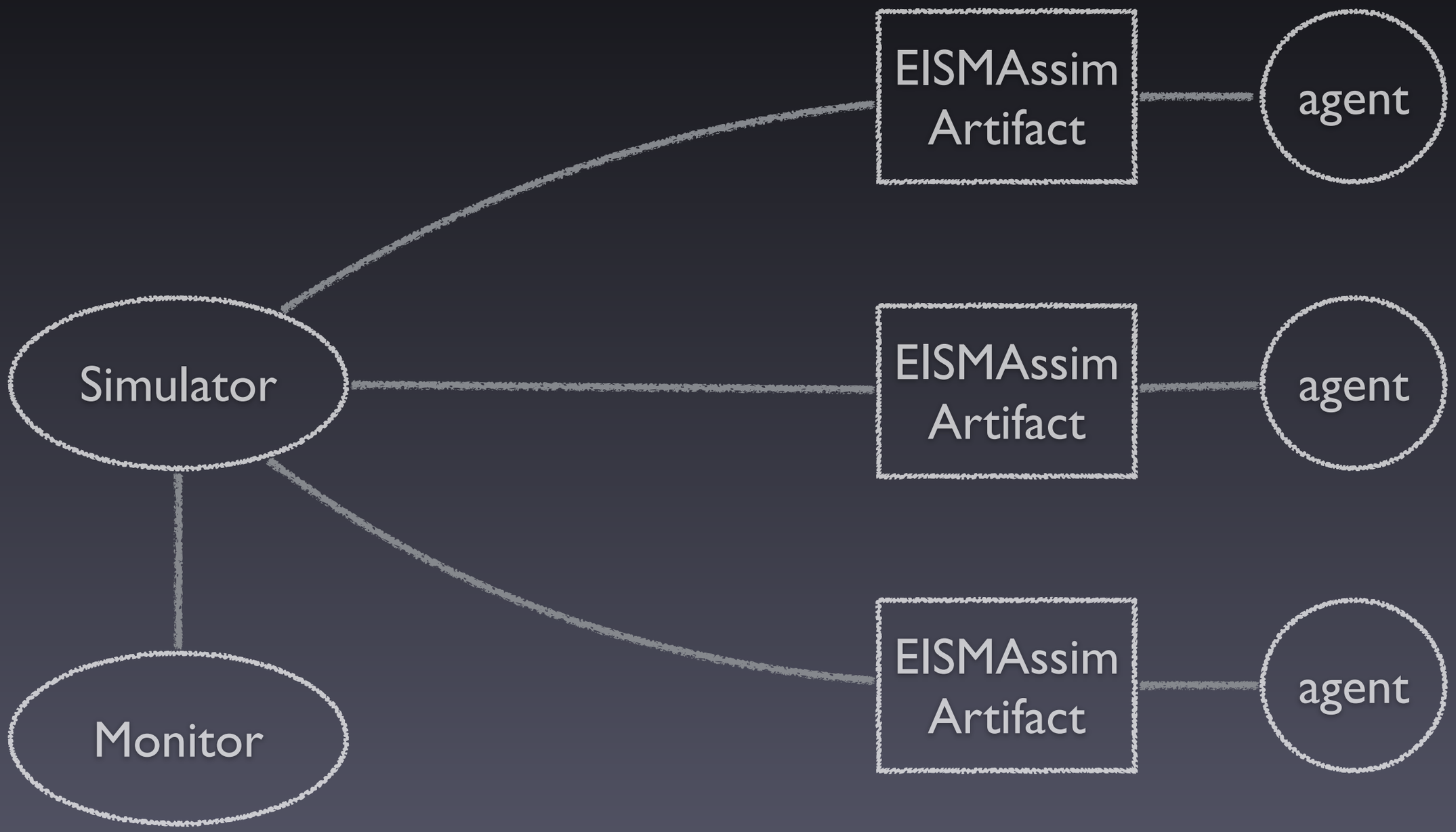

Hannover Hauptbahnhof
Hannover
Zooviertel
Calenberger Neustadt
Linden-Mitte
Linden-Süd
Südstadt
Königsworther Platz
Steintor
Clevertor
Goetheplatz
Markthalle/Landtag
Aegidientorplatz
Schwarzer Bär
Lindener Marktplatz
Ricklinger Straße
Allerweg
Schützenplatz
Stadtbahn Linden/Fischerhof
Altenbekener Damm
Raschplatzhochstraße
Fritz-Behrens-Allee
Königstraße
Lavesstraße
Leibnizufer
Marienstraße
Hildesheimer Straße
Geibelstraße
Sallstraße
Deisterstraße
Göttinger Straße
Willy-Brandt-Allee
Schneller Graben
Maschsee
Leine
Ihme
L 190
L 384
L 393
B 6

Architecture

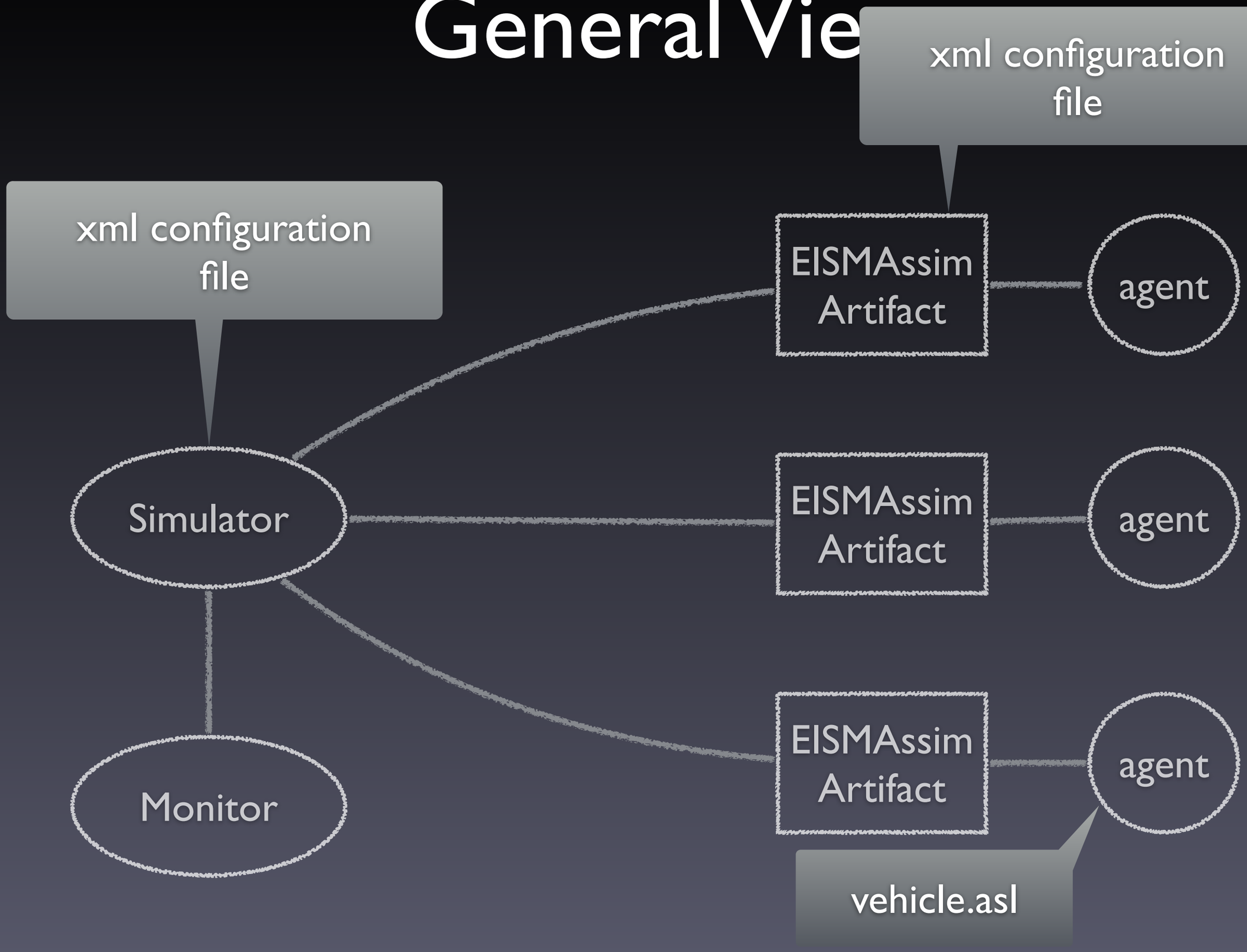
General View



General View



General Vie


xml configuration file
xml configuration file
EISMAssim Artifact
agent
Simulator
EISMAssim Artifact
agent
Monitor
EISMAssim Artifact
agent
vehicle.asl

Agent program

- Uses action and perception as described in eismassim.pdf pg 7…
- Filters some perception (see EISArtifact.java, method filter)
- … see the code of vehicle.asl

MAS Console - scenario1

EISArtifact_vehicle3

vehicle2

vehicle3

```
[vehicle2] Got role: Drone
[vehicle2] -------------------- BEGIN OF NEW ROUND ----------------
[vehicle2] Going to shop: shop2 to buy tool: tool1
[vehicle2] Doing goto(facility(shop2)) for step 0
[vehicle2] Doing continue for step 1
[vehicle2] Doing continue for step 2
[vehicle2] Doing continue for step 3
[vehicle2] Doing continue for step 4
[vehicle2] Doing continue for step 5
[vehicle2] Doing continue for step 6
[vehicle2] Doing continue for step 7
[vehicle2] Doing continue for step 8
[vehicle2] Doing continue for step 9
[vehicle2] Doing continue for step 10
[vehicle2] Doing continue for step 11
[vehicle2] Doing continue for step 12
[vehicle2] Doing continue for step 13
[vehicle2] Arrived at shop2
[vehicle2] Buying tool: tool1
[vehicle2] Doing buy(item(tool1),amount(1)) for step 14
[vehicle2] Doing skip for step 15
[vehicle2] Doing skip for step 16
[vehicle2] Doing skip for step 17
```

Clean | Stop | Pause | Debug | Sources | New agent | Kill agent | New REPL agent

Inspection of agent **vehicle2**

- Beliefs

charge(*110*)[...].
chargingStation(charging1,*51.508*,*-0.1337*,*80*,*1*,*2*)[...].
chargingStation(charging2,*51.4892*,*-0.1155*,*80*,*2*,*1*)[...].
chargingStation(charging3,*51.5146*,*-0.1071*,*50*,*2*,*4*)[...].
current_wsp(cobj_0,"default","b1f21574-5d33-4fb8-a5a7-3f17ac49375a")[...].
dump(dump2,*51.4923*,*-0.1668*,*300*)[...].
dump(dump1,*51.5068*,*-0.0993*,*300*)[...].
inFacility(shop2)[...].
item(tool1,*1*)[...].
load(*10*)[...].
product(base1,*10*,[])[...].
product(material1,*10*,[consumed(base1,*5*),tools(tool1,*1*)])[...].
product(tool1,*10*,[])[...].
product(base2,*100*,[])[...].
product(tool2,*100*,[])[...].
product(material2,*20*,[consumed(base1,*10*),tools(tool3,*1*)])[...].
product(material3,*100*,
[consumed(base2,*2*),consumed(base3,*1*),consumed(material1,*2*),tools(tool3,*1*),tools(tool2,*1*),tools(
product(tool3,*30*,[consumed(base1,*8*)])[...].
product(base3,*500*,[])[...].
role("Drone",*5*,*100*,*250*,[tool1])[...].
shop(shop2,*51.5053*,*-0.109*,
[item(base2,*170*,*58*,*3*),item(tool2,*1390*,*3*,*0*),item(base3,*2410*,*36*,*4*),item(tool1,*510*,*8*,*5*),item(base1,
shop(shop3,*51.5129*,*-0.1345*,
[item(base2,*0*,*0*,*0*),item(tool2,*0*,*0*,*0*),item(base3,*0*,*0*,*0*),item(tool1,*0*,*0*,*0*),item(base1,*0*,*0*,*0*)])[...].
shop(shop1,*51.4872*,*-0.1368*,
[item(base2,*0*,*0*,*0*),item(tool2,*0*,*0*,*0*),item(base3,*0*,*0*,*0*),item(tool1,*0*,*0*,*0*),item(base1,*0*,*0*,*0*)])[...].
step(*22*)[...].
steps(*200*)[...].
storage(storage1,*51.5178*,*-0.1021*,*3*,*10000*,*0*,[])[...].
storage(storage2,*51.5045*,*-0.1394*,*3*,*10000*,*0*,[])[...].
workshop(workshop2,*51.5183*,*-0.0822*,*300*)[...].