Using seed 836178962 for random automatic mode choice algorithm.

Initial state: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=charging, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=none, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=we\_can\_request, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=idle, Cart1.pp.execution\_summary=idle, Cart1.pp.is\_there\_a\_target=no\_target\_available, Cart1.pp.planning\_handler=no\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_stimulate

#2: event Cart1.brain.request\_picking

#3: event Cart1.brain.request\_storage

#4: event Cart1.brain.start\_charging

#5: event Cart1.brain.start\_lifting

#6: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.request\_storage

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=charging, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=none, Cart1.comms=storage, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=we\_can\_request, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=idle, Cart1.pp.execution\_summary=idle, Cart1.pp.is\_there\_a\_target=no\_target\_available, Cart1.pp.planning\_handler=no\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.denied\_storage

#2: event Cart1.brain.granted\_storage

#3: event Cart1.brain.infrared\_stimulate

#4: event Cart1.brain.start\_charging

#5: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.granted\_storage

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=charging, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=idle, Cart1.pp.execution\_summary=idle, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=no\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_stimulate

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_charging

#4: event Cart1.brain.start\_lifting

#5: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.plan\_standby

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=charging, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=idle, Cart1.pp.execution\_summary=idle, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=Standby\_Plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_stimulate

#2: event Cart1.brain.start\_charging

#3: event Cart1.brain.start\_lifting

#4: event Cart1.brain.start\_planning

#5: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.start\_planning

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=charging, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=idle, Cart1.pp.execution\_summary=idle, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=Planning, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.done\_planning

#2: event Cart1.brain.executing\_on\_standby

#3: event Cart1.brain.infrared\_stimulate

#4: event Cart1.brain.start\_charging

#5: event Cart1.brain.start\_lifting

#6: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.done\_planning

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=charging, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=idle, Cart1.pp.execution\_summary=idle, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.executing\_on\_standby

#2: event Cart1.brain.infrared\_stimulate

#3: event Cart1.brain.plan\_standby

#4: event Cart1.brain.start\_charging

#5: event Cart1.brain.start\_lifting

#6: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.executing\_on\_standby

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=charging, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Standby\_execution, Cart1.pp.execution\_summary=Standby\_execution, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_stimulate

#2: event Cart1.brain.start\_charging

#3: event Cart1.brain.start\_executing

#4: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.start\_executing

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Abort\_Prematurely, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.abort

#2: event Cart1.brain.do\_not\_abort

#3: event Cart1.brain.infrared\_stimulate

#4: event Cart1.brain.plan\_standby

#5: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.do\_not\_abort

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Check\_initial\_barcode, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.final\_location

#2: event Cart1.brain.infrared\_stimulate

#3: event Cart1.brain.not\_final\_location

#4: event Cart1.brain.plan\_standby

#5: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.not\_final\_location

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_stimulate

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

#6: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.infrared\_stimulate

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Processing, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=active, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.add\_emergency

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

Transition: event Cart1.brain.add\_emergency

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=1, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=EmergencyAck, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=active, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.done\_handling\_interruption

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=1, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Processed, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=active, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_unstimulate

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.touch\_stimulate

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=1, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Processed, Cart1.m5\_req.M5\_aux\_1=Processing, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=active, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=active, sup=\*

Possible transitions:

#1: event Cart1.brain.add\_emergency

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.add\_emergency

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=2, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Processed, Cart1.m5\_req.M5\_aux\_1=EmergencyAck, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=active, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=active, sup=\*

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.done\_handling\_interruption

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=2, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Processed, Cart1.m5\_req.M5\_aux\_1=Processed, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=active, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=active, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_unstimulate

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.touch\_unstimulate

Transition: event Cart1.brain.infrared\_unstimulate

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=2, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Resolved, Cart1.m5\_req.M5\_aux\_1=Processed, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=active, sup=\*

Possible transitions:

#1: event Cart1.brain.fix\_emergency

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.fix\_emergency

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=1, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=EmergencyLifted, Cart1.m5\_req.M5\_aux\_1=Processed, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=active, sup=\*

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.done\_handling\_interruption

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=1, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Processed, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=active, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_stimulate

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.touch\_unstimulate

Transition: event Cart1.brain.touch\_unstimulate

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=Emergency, Cart1.brain.Emergency\_handler.E\_count=1, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Resolved, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_on, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.fix\_emergency

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.fix\_emergency

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Handling\_interruption, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=EmergencyLifted, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

Transition: event Cart1.brain.done\_handling\_interruption

State: time=0.0, Cart1.battery.battery\_charging=not\_charging, Cart1.battery.battery\_level=battery\_full, Cart1.battery.guard\_discharge=false, Cart1.battery.high\_or\_full=true, Cart1.brain.current\_location=unknown, Cart1.brain.Emergency\_handler=No\_emergency, Cart1.brain.Emergency\_handler.E\_count=0, Cart1.brain.interrumption\_handler=Listening, Cart1.brain.last\_target\_type=storage, Cart1.comms=L0, Cart1.l1\_req=permissible\_storage\_request, Cart1.l3\_req=request\_has\_been\_granted, Cart1.lift=lift\_down, Cart1.m0\_req=Idle, Cart1.m4b\_req.M4\_aux\_1=Idle, Cart1.m5\_req.M5\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1=Idle, Cart1.m6\_req.M6\_aux\_1.battery\_needs\_changing=false, Cart1.motor.emergency\_breaks=ebreaks\_off, Cart1.motor.keep\_track\_of\_direction=idle, Cart1.pp.execution\_handler=Pathing, Cart1.pp.execution\_summary=Executing, Cart1.pp.is\_there\_a\_target=target\_available, Cart1.pp.planning\_handler=new\_plan, Cart1.sensors\_and\_cameras.infrared\_sensor=inactive, Cart1.sensors\_and\_cameras.Location\_barcode\_sensor=on\_top\_of\_barcode, Cart1.sensors\_and\_cameras.touch\_sensor=inactive, sup=\*

Possible transitions:

#1: event Cart1.brain.infrared\_stimulate

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

#6: event Cart1.brain.touch\_stimulate

# Summary 1

Transition: event Cart1.brain.request\_storage

Transition: event Cart1.brain.granted\_storage

Transition: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.start\_planning

Transition: event Cart1.brain.done\_planning

Transition: event Cart1.brain.executing\_on\_standby

Transition: event Cart1.brain.start\_executing

Transition: event Cart1.brain.do\_not\_abort

Transition: event Cart1.brain.not\_final\_location

Transition: event Cart1.brain.infrared\_stimulate

Possible transitions:

#1: event Cart1.brain.add\_emergency

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

Transition: event Cart1.brain.add\_emergency

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.done\_handling\_interruption

Transition: event Cart1.brain.touch\_stimulate

Transition: event Cart1.brain.add\_emergency

Transition: event Cart1.brain.done\_handling\_interruption

Transition: event Cart1.brain.infrared\_unstimulate

Transition: event Cart1.brain.fix\_emergency

Transition: event Cart1.brain.done\_handling\_interruption

Transition: event Cart1.brain.touch\_unstimulate

Possible transitions:

#1: event Cart1.brain.fix\_emergency

#2: event Cart1.brain.plan\_standby

Transition: event Cart1.brain.fix\_emergency

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

Transition: event Cart1.brain.done\_handling\_interruption

# Summary 2

request\_storage

granted\_storage

plan\_standby

start\_planning

done\_planning

executing\_on\_standby

start\_executing

do\_not\_abort

not\_final\_location

infrared\_stimulate

Possible transitions:

#1: event Cart1.brain.add\_emergency

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

add\_emergency

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

done\_handling\_interruption

touch\_stimulate

add\_emergency

done\_handling\_interruption

infrared\_unstimulate

fix\_emergency

done\_handling\_interruption

touch\_unstimulate

Possible transitions:

#1: event Cart1.brain.fix\_emergency

#2: event Cart1.brain.plan\_standby

fix\_emergency

Possible transitions:

#1: event Cart1.brain.done\_handling\_interruption

#2: event Cart1.brain.plan\_standby

#3: event Cart1.brain.start\_fw

#4: event Cart1.brain.start\_l

#5: event Cart1.brain.start\_r

Transition: event Cart1.brain.done\_handling\_interruption