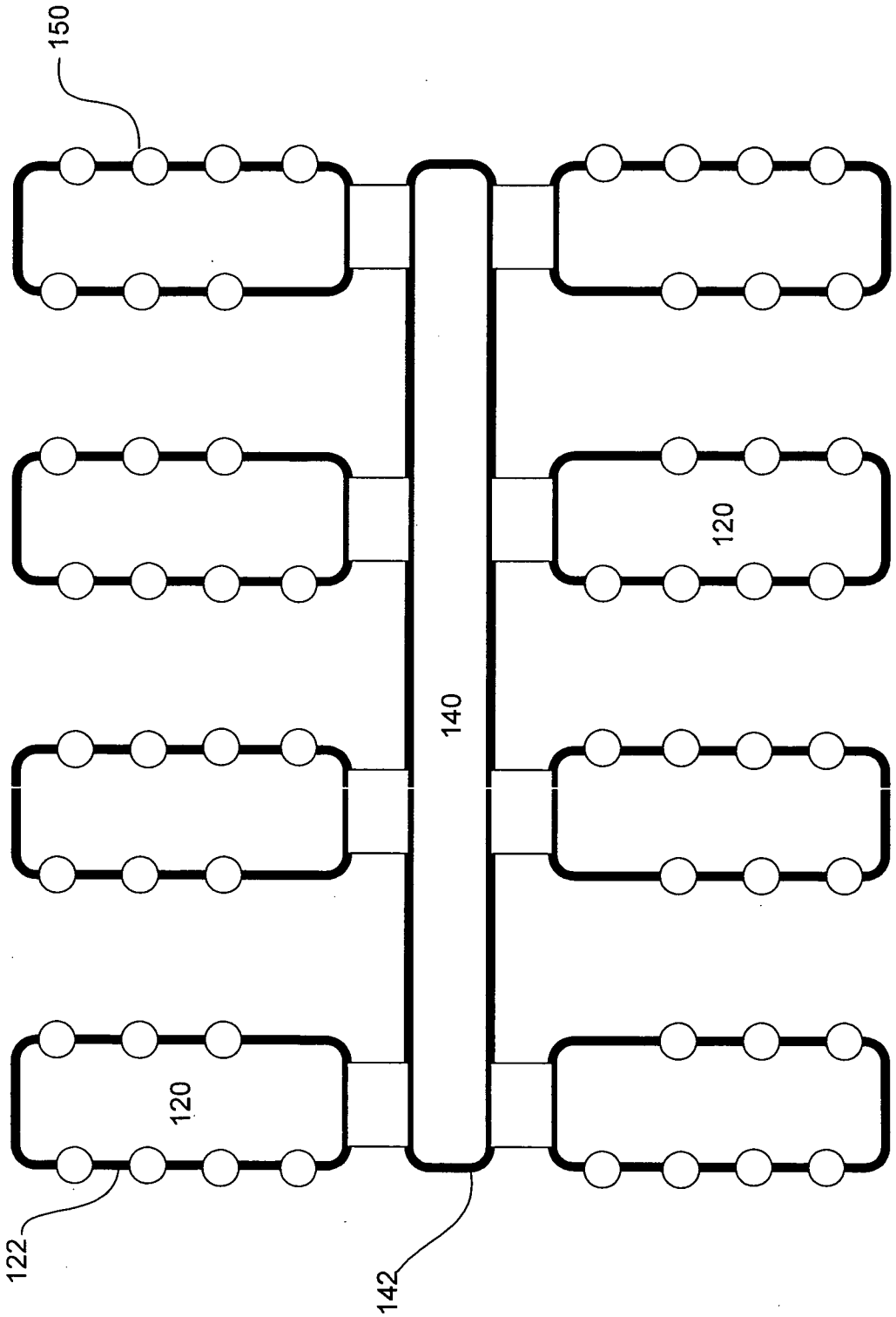


Prior Art
Figure 1

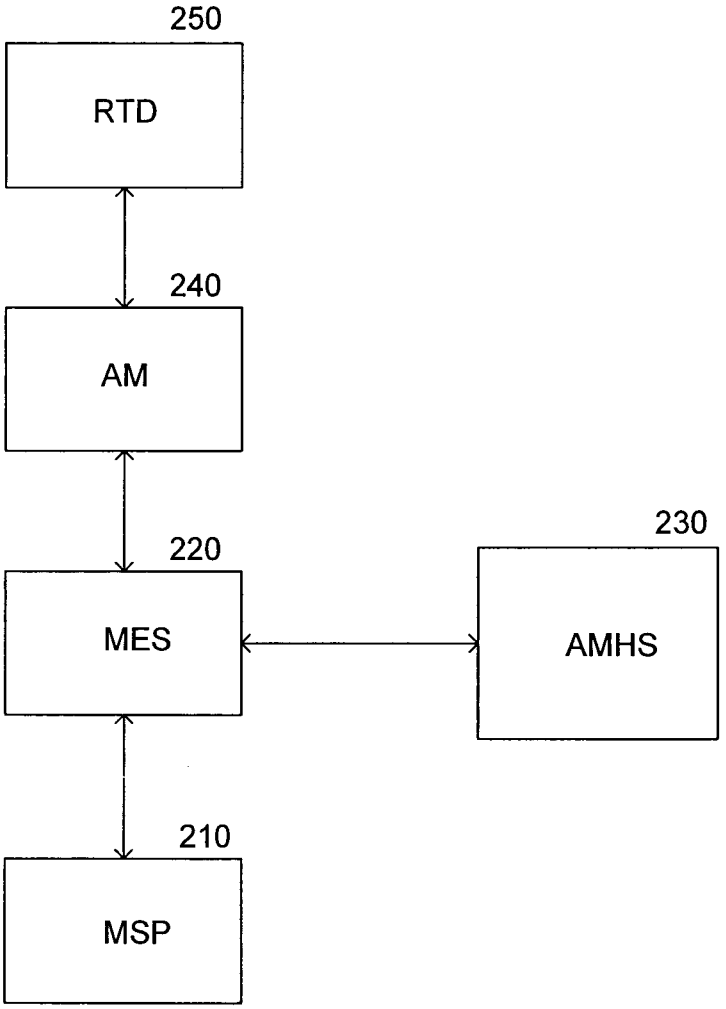


Figure 2

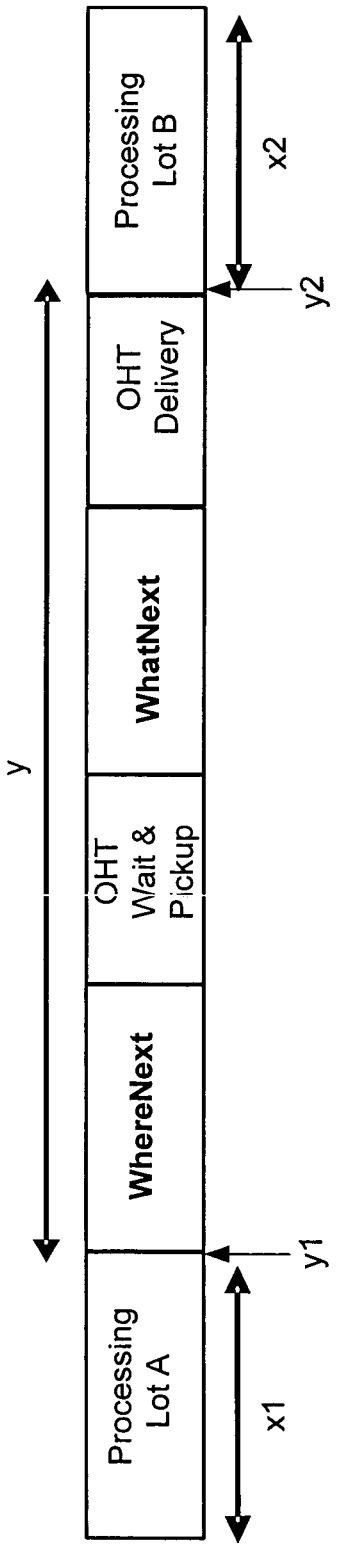

Processing Lot A
WhereNext
OHT Wait & Pickup
WhatNext
OHT Delivery
Processing Lot B
x1
x2
y
y1
y2

Figure 3

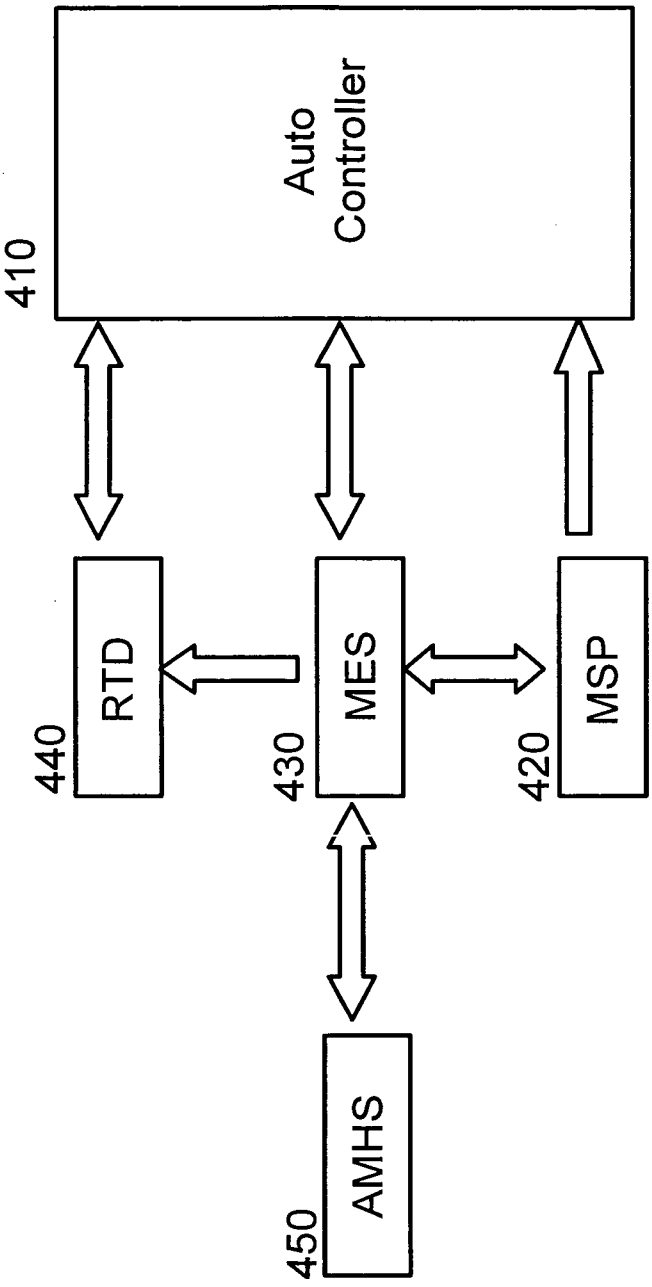


Figure 4

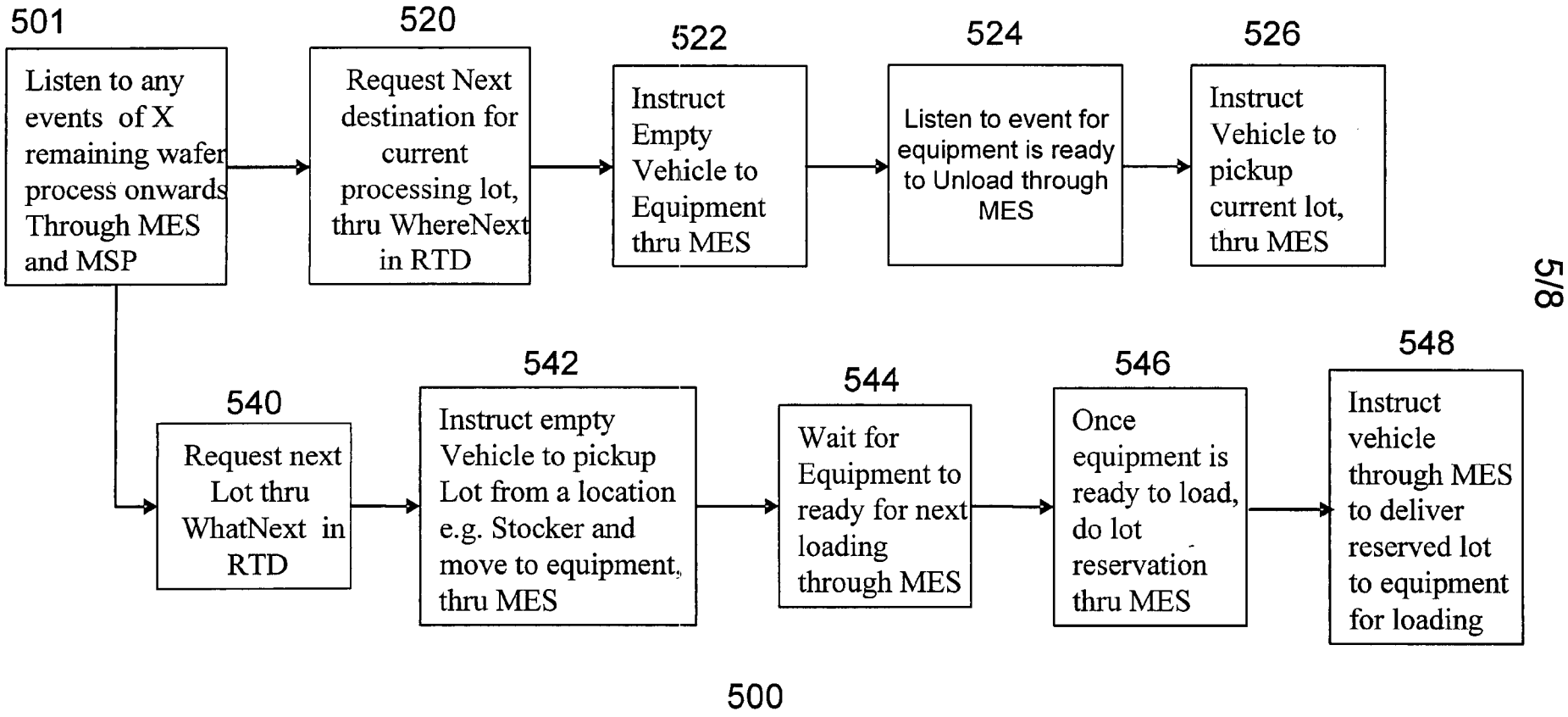

501
Listen to any events of X remaining wafer process onwards Through MES and MSP
520
Request Next destination for current processing lot, thru WhereNext in RTD
522
Instruct Empty Vehicle to Equipment thru MES
524
Listen to event for equipment is ready to Unload through MES
526
Instruct Vehicle to pickup current lot, thru MES
540
Request next Lot thru WhatNext in RTD
542
Instruct empty Vehicle to pickup Lot from a location e.g. Stocker and move to equipment, thru MES
544
Wait for Equipment to ready for next loading through MES
546
Once equipment is ready to load, do lot reservation thru MES
548
Instruct vehicle through MES to deliver reserved lot to equipment for loading
500

Figure 5a

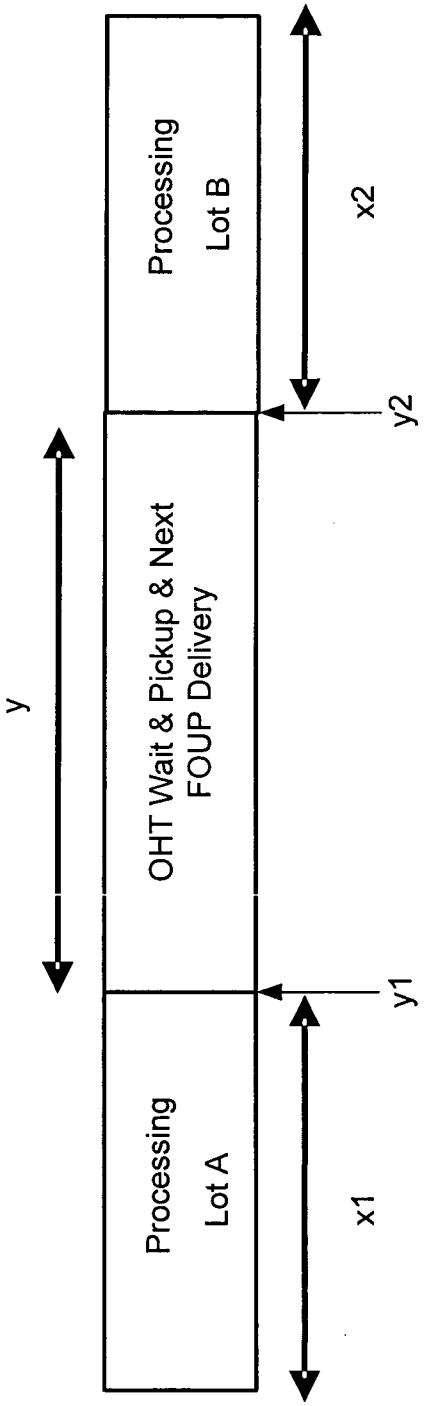

Processing
Lot B
x2
y2
y
OHT Wait & Pickup & Next
FOUP Delivery
y1
Processing
Lot A
x1

Figure 5b

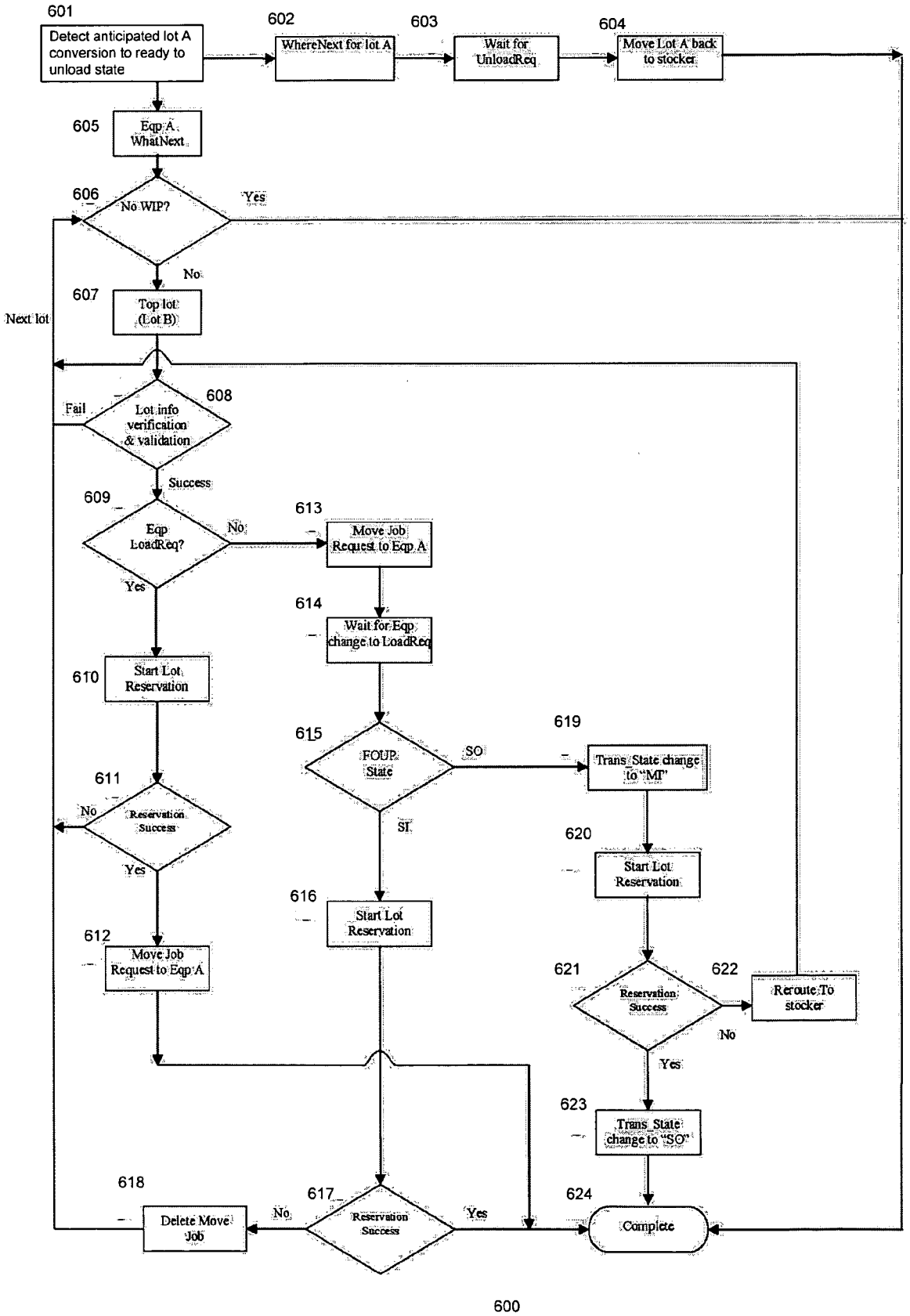

601
Detect anticipated lot A conversion to ready to unload state
602
WhereNext for lot A
603
Wait for UnloadReq
604
Move Lot A back to stocker
605
Eqp A WhatNext
606
No WIP?
Yes
No
607
Top lot (Lot B)
Next lot
608
Lot info verification & validation
Fail
Success
609
Eqp LoadReq?
No
Yes
613
Move Job Request to Eqp A
614
Wait for Eqp change to LoadReq
610
Start Lot Reservation
615
FOUP State
SO
SI
619
Trans State change to "MI"
620
Start Lot Reservation
611
Reservation Success
No
Yes
616
Start Lot Reservation
612
Move Job Request to Eqp A
621
Reservation Success
622
Reroute To stocker
No
Yes
623
Trans State change to "SO"
618
Delete Move Job
617
Reservation Success
No
Yes
624
Complete
600

Figure 6

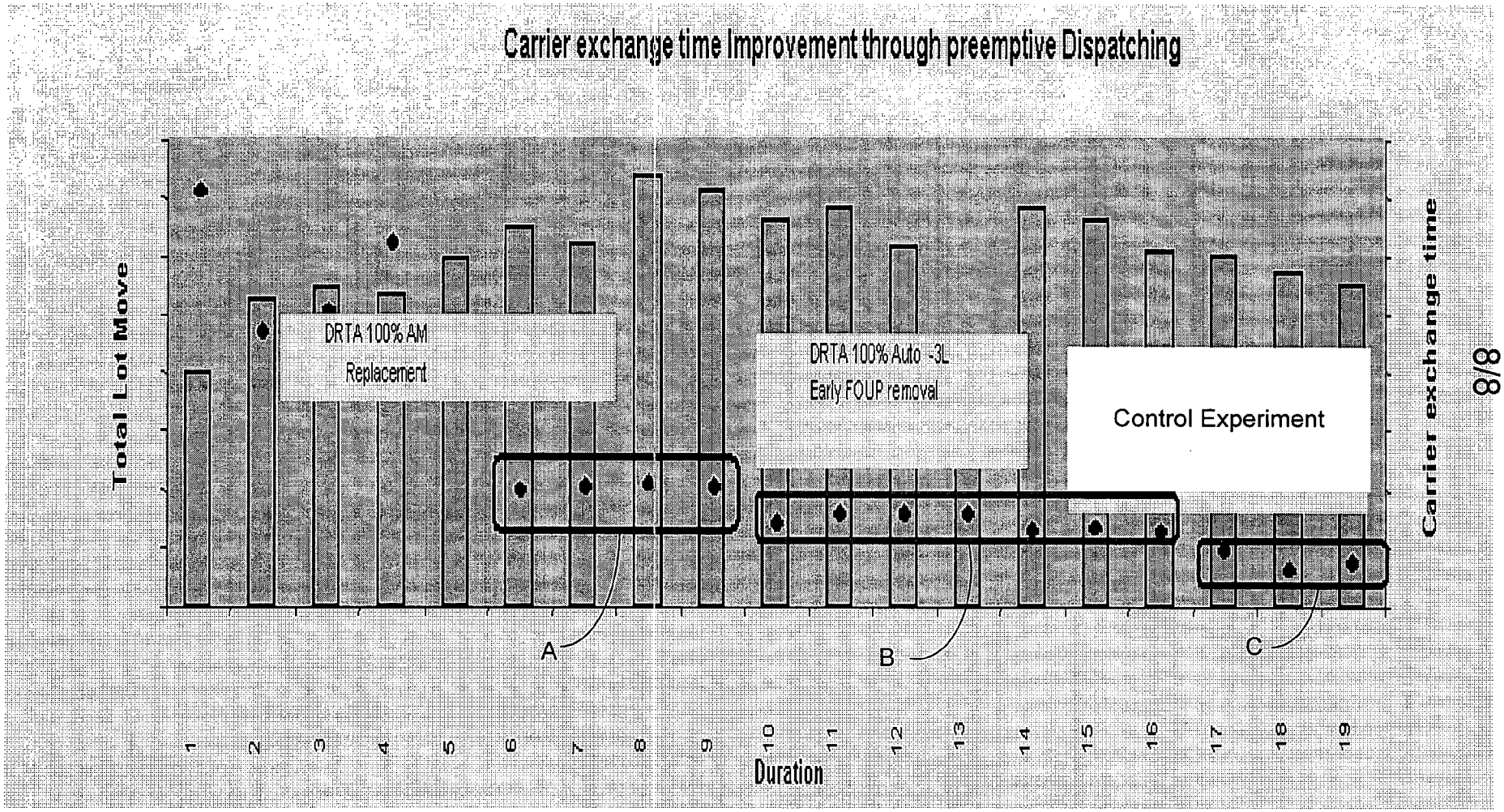

Carrier exchange time Improvement through preemptive Dispatching
Total Lot Move
DRTA 100% AM
Replacement
DRTA 100% Auto -3L
Early FOUP removal
Control Experiment
A
B
C
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Duration
Carrier exchange time

Figure 7