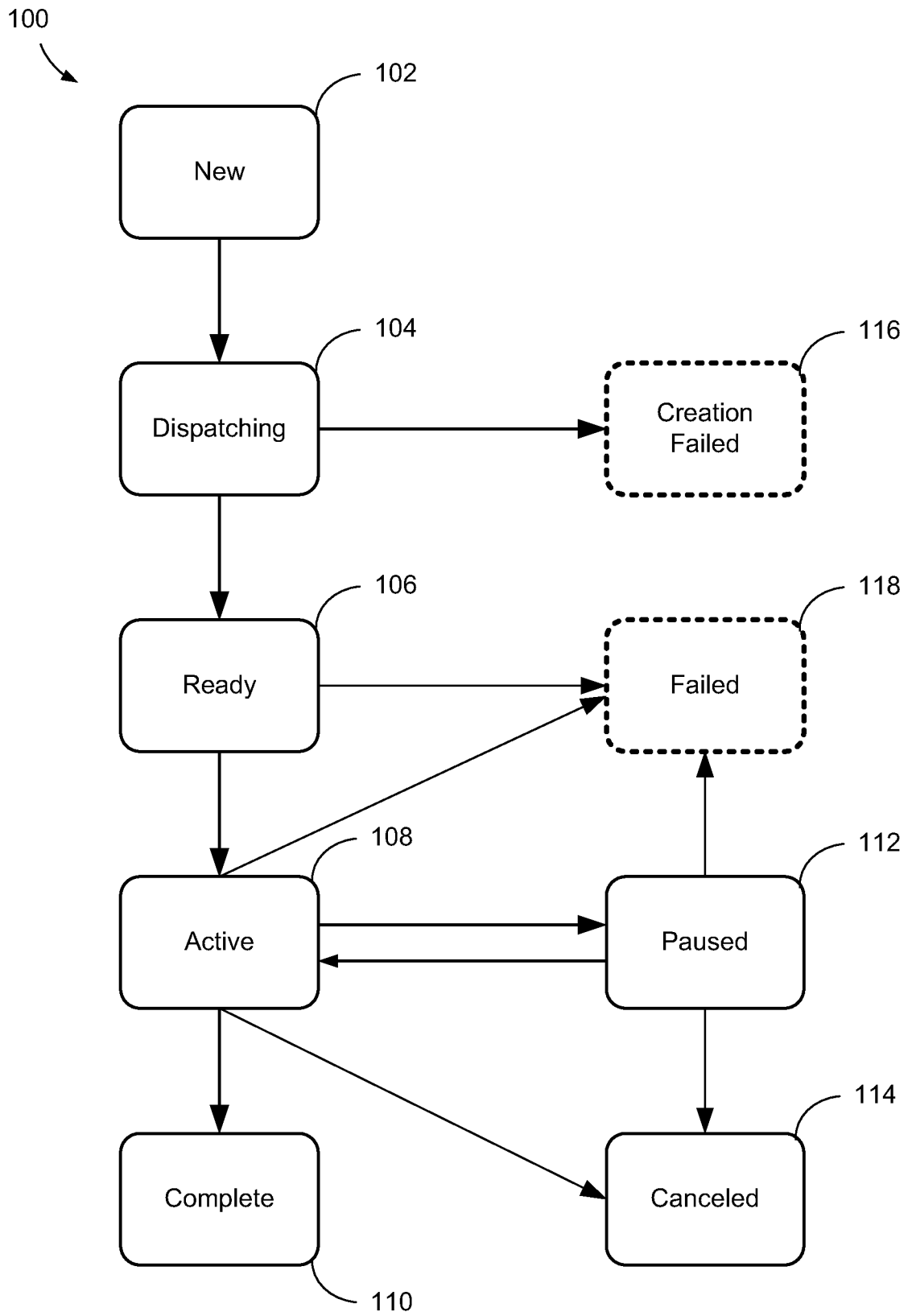
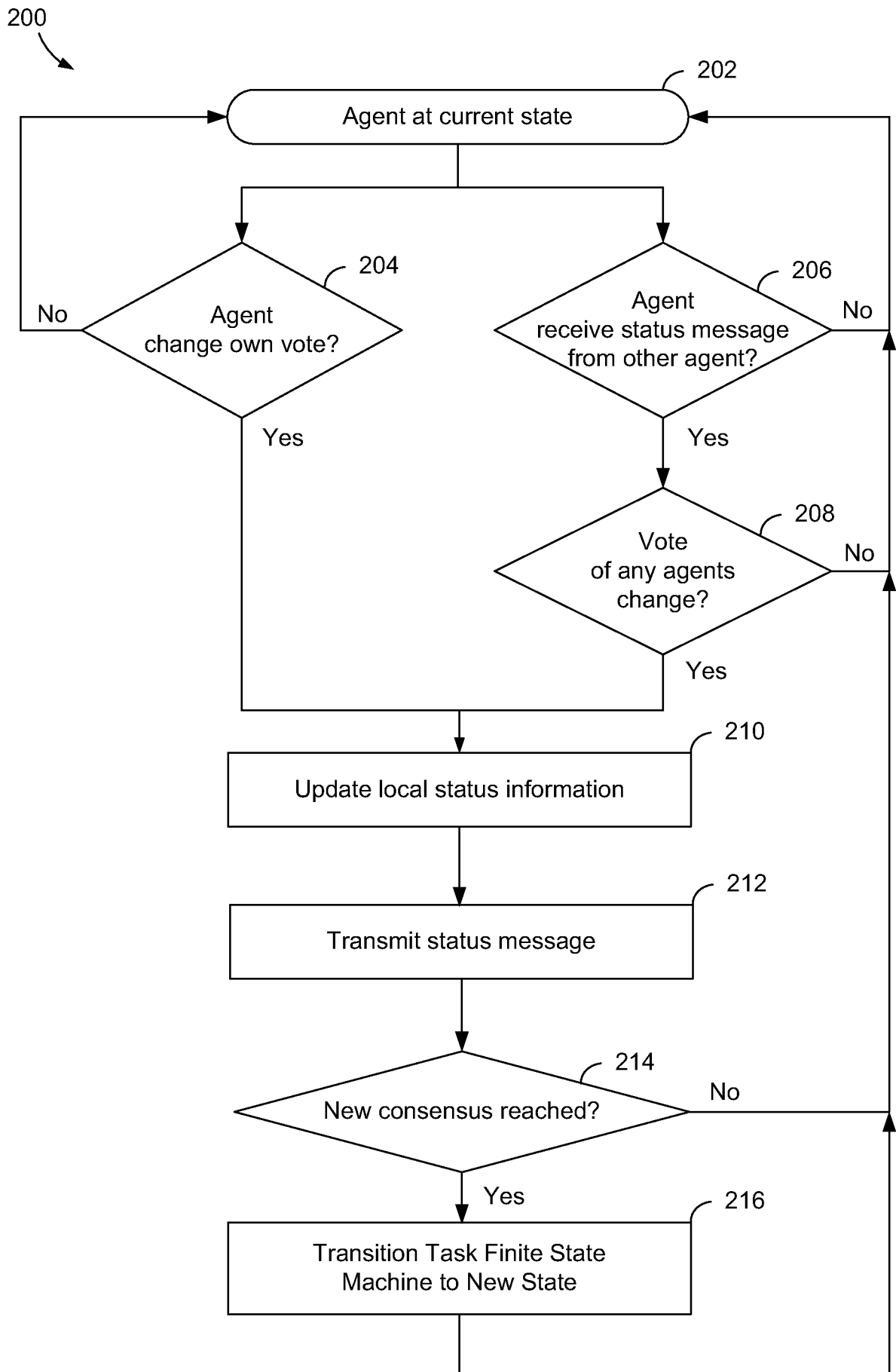


**FIG. 1**

**FIG. 2**

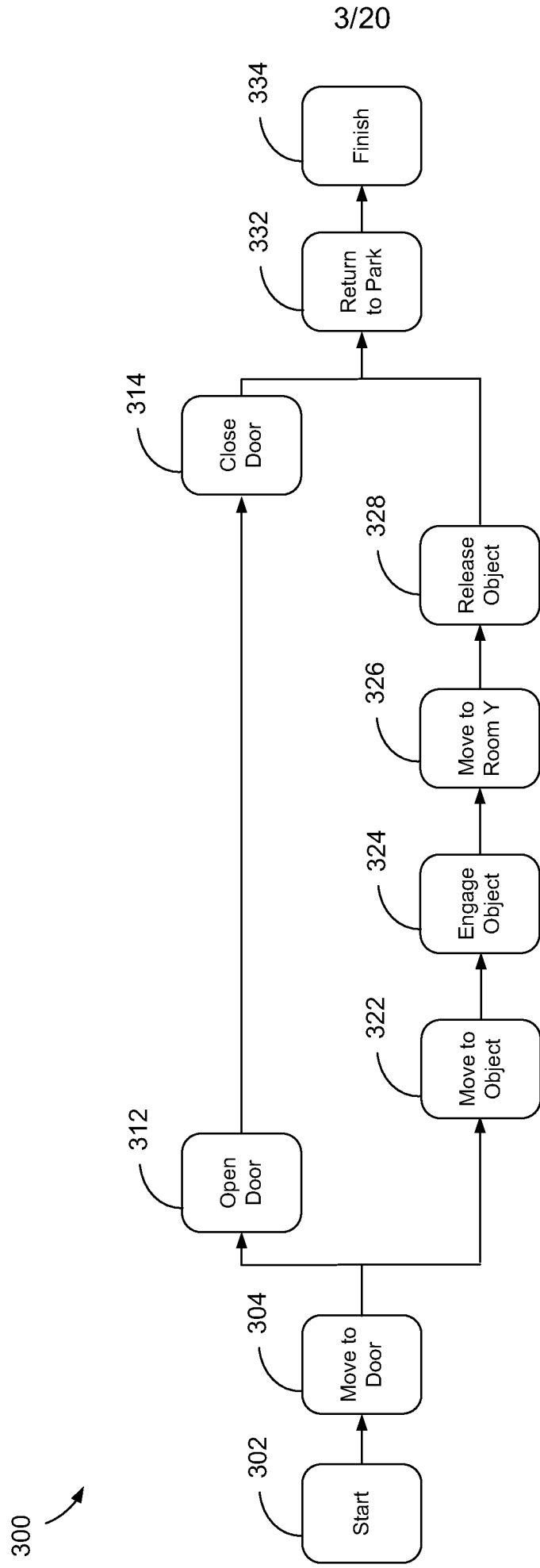


FIG. 3

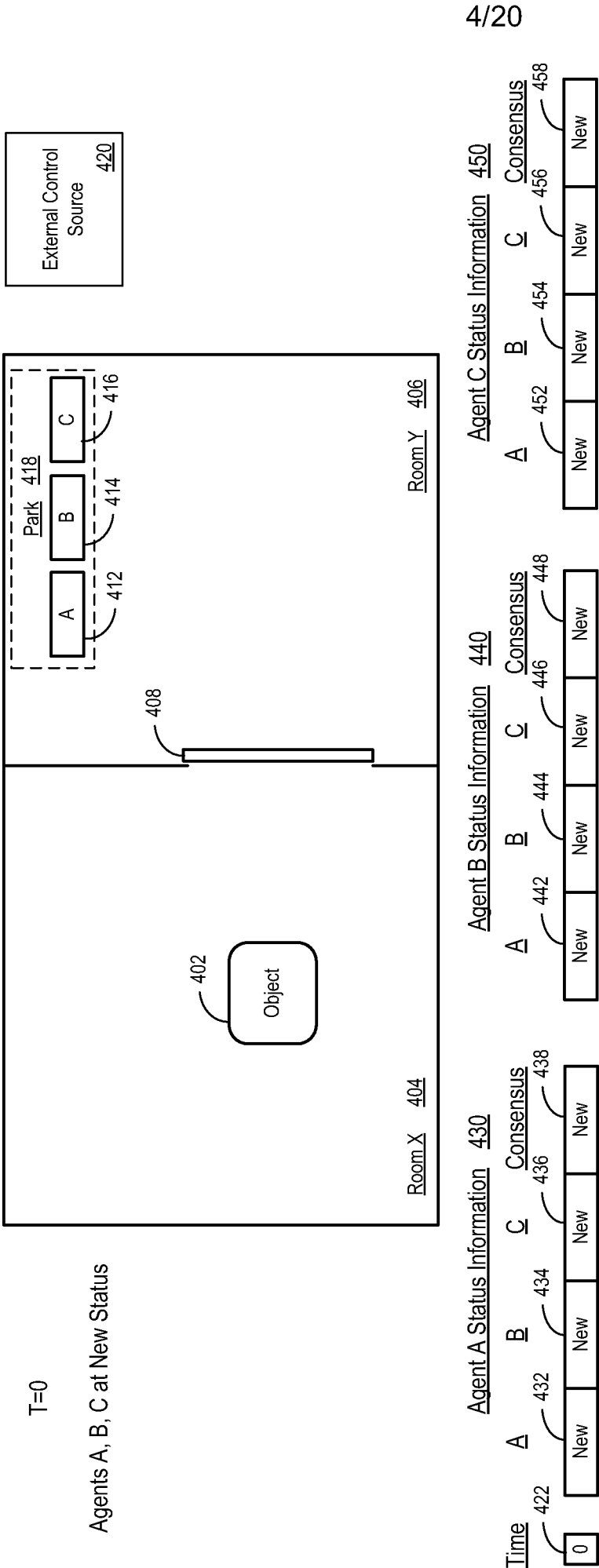
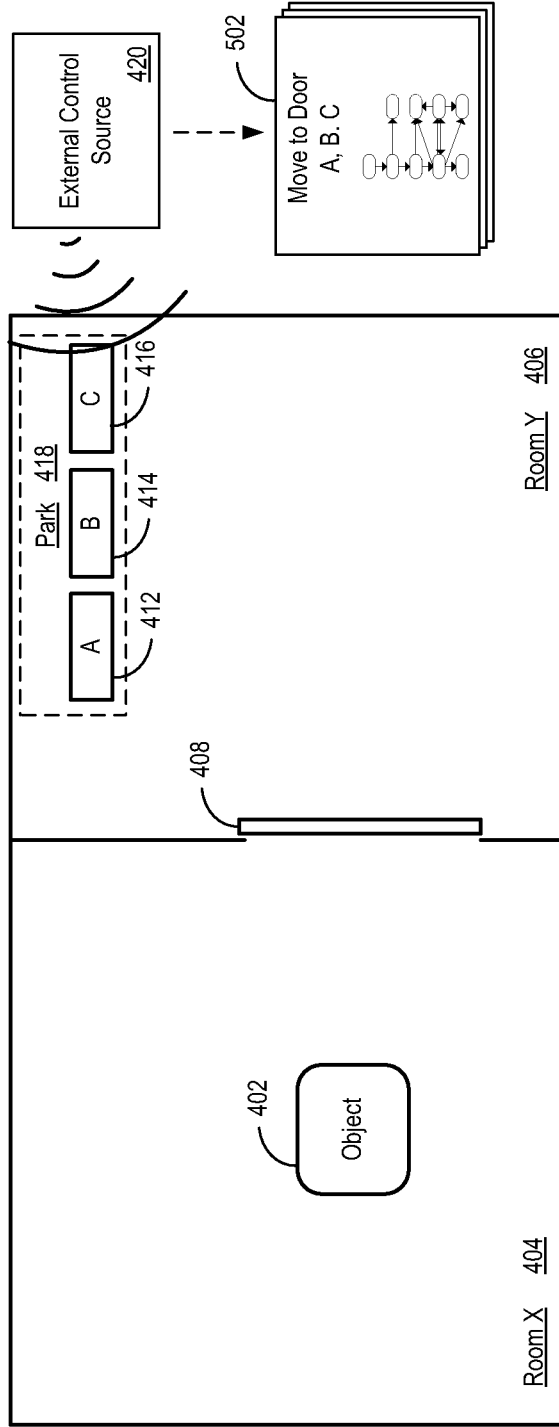


FIG. 4


$$T=1, 1', 1'', 1'''$$

Dispatching Task

Agents A, B, C (or a number or portion thereof) update status to dispatching

Time

Agent A Status Information 430

A B C Consensus

422 432 434 436 438

New New New New

0

442 444 446 448

New New New New

1

452 454 456 458

New New New New

1'

462 464 466 468

New New New New

1''

Agent B Status Information 440

A B C Consensus

442 444 446 448

New New New New

0

452 454 456 458

New New New New

1

462 464 466 468

New New New New

1'

472 474 476 478

New New New New

1''

Agent C Status Information 450

A B C Consensus

452 454 456 458

New New New New

0

462 464 466 468

New New New New

1

472 474 476 478

New New New New

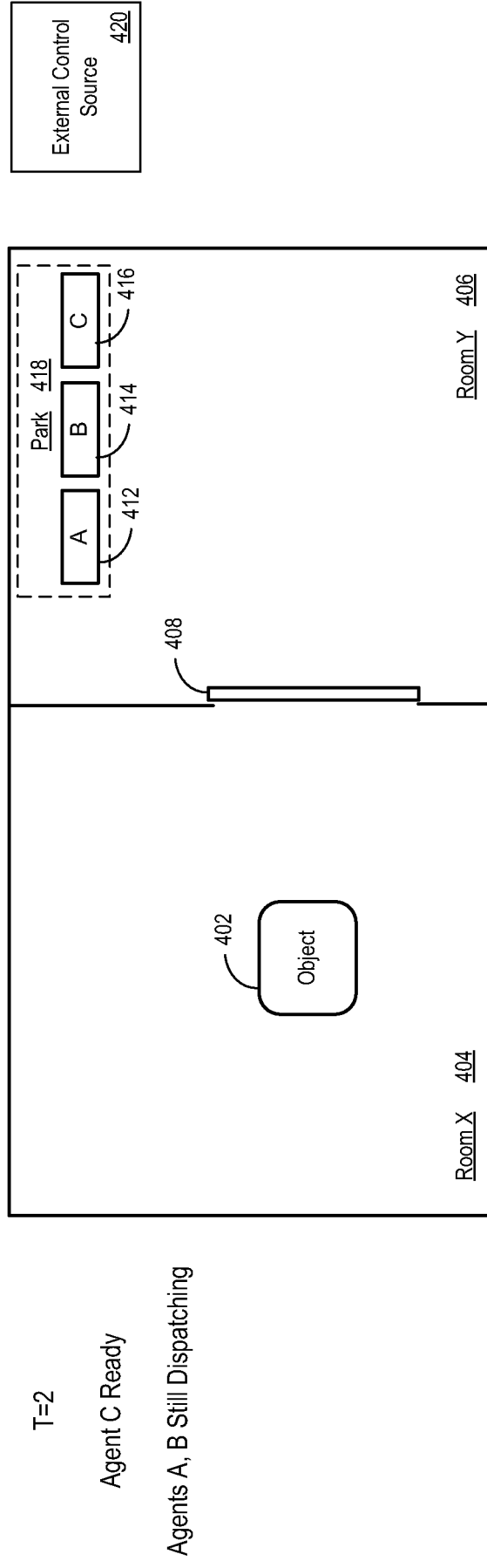
1'

482 484 486 488

New New New New

1''

FIG. 5



Time

Agent A Status Information 430

Agent B Status Information 440

Agent C Status Information 450

Time 0

A: New (422) → Consensus (430)

B: New (432) → Consensus (430)

C: New (434) → Consensus (430)

Time 1

A: Dispatching (522) → Consensus (538)

B: New (532) → Consensus (538)

C: New (534) → Consensus (538)

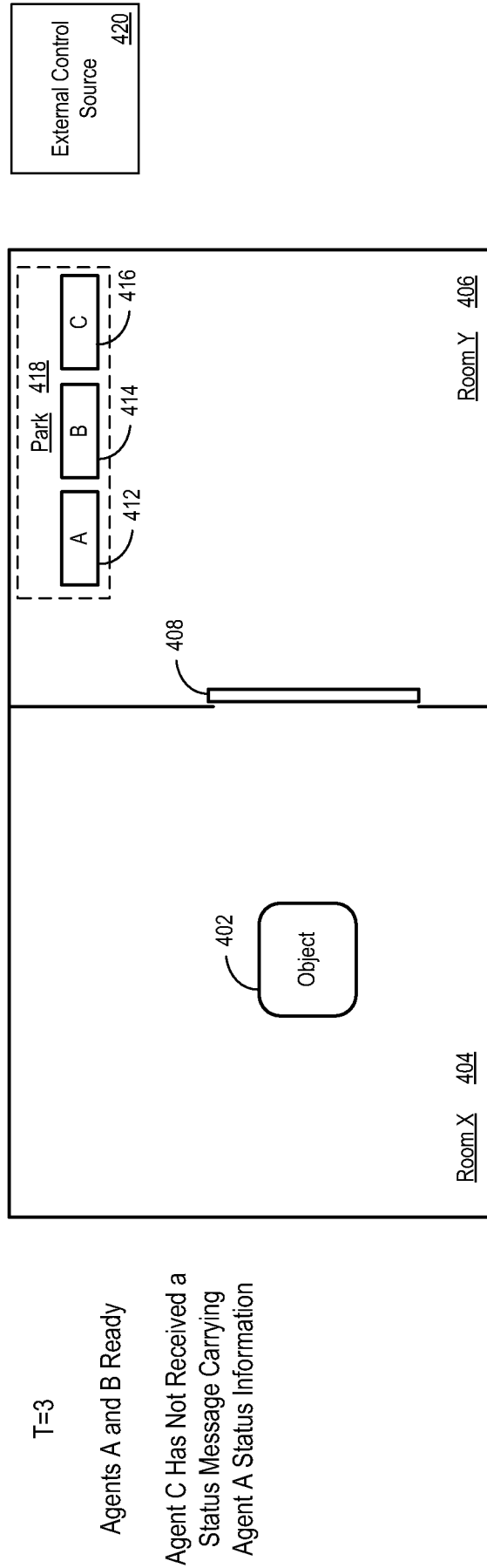
Time 2

A: Dispatching (622) → Consensus (636)

B: Ready (632) → Consensus (636)

C: Ready (634) → Consensus (636)

FIG. 6


$$T=3$$

Agents A and B Ready

Agent C Has Not Received a
Status Message Carrying
Agent A Status Information

The diagram illustrates the state transitions for Agent A's status information across four time steps (430, 440, 450, 458). Each time step shows the status of three items: A, B, and C.

Time	A	B	C	Consensus
430	New (432)	New (434)	New (436)	New (438)
440	Dispatching (522)	Dispatching (532)	Dispatching (534)	Dispatching (536)
450	Dispatching (622)	Dispatching (632)	Ready (634)	Dispatching (636)
458	Dispatching (722)	Ready (732)	Ready (734)	Ready (736)

Transitions between time steps are indicated by curved arrows showing the progression of time.

FIG. 7

Agents A, B, C Ready

The diagram illustrates a system architecture within a room. On the left, a rounded rectangle labeled "Object" (402) is positioned. A horizontal line (408) represents a door or partition. To the right of this line, three rectangular blocks labeled "A" (412), "B" (414), and "C" (416) are stacked vertically. These blocks are enclosed within a dashed rectangular boundary labeled "Park" (418). Above the blocks, the text "External Control Source" (420) is shown.

The diagram illustrates the execution of five processes (A, B, C) on a multiprocessor system with four processors. The processes are represented by horizontal bars, and their states (New, Dispatching, Ready) are indicated by the color of the bar segments. The time axis is shown on the left, with specific time points marked for each state transition.

Process A:

- State 0 (New):** Starts at 422, ends at 438.
- State 1 (Dispatching):** Starts at 522, ends at 538.
- State 2 (Ready):** Starts at 622, ends at 638.

Process B:

- State 0 (New):** Starts at 434, ends at 438.
- State 1 (Dispatching):** Starts at 534, ends at 538.
- State 2 (Ready):** Starts at 634, ends at 638.

Process C:

- State 0 (New):** Starts at 436, ends at 438.
- State 1 (Dispatching):** Starts at 536, ends at 538.
- State 2 (Ready):** Starts at 636, ends at 638.

The diagram shows that all three processes (A, B, and C) have the same duration for each state (16 units). The processes are scheduled across the four processors, with each processor executing one state of one of the processes. The diagram illustrates how the processes are scheduled across the four processors over time.

The diagram shows three parallel processes, A, B, and C, each with three tasks. The tasks are scheduled sequentially on a single processor, with gaps between them. The tasks and their durations are as follows:

- Process A:** New (442), New (444), New (448)
- Process B:** New (542), Dispatching (642), Dispatching (648)
- Process C:** New (546), Dispatching (646), Dispatching (748)

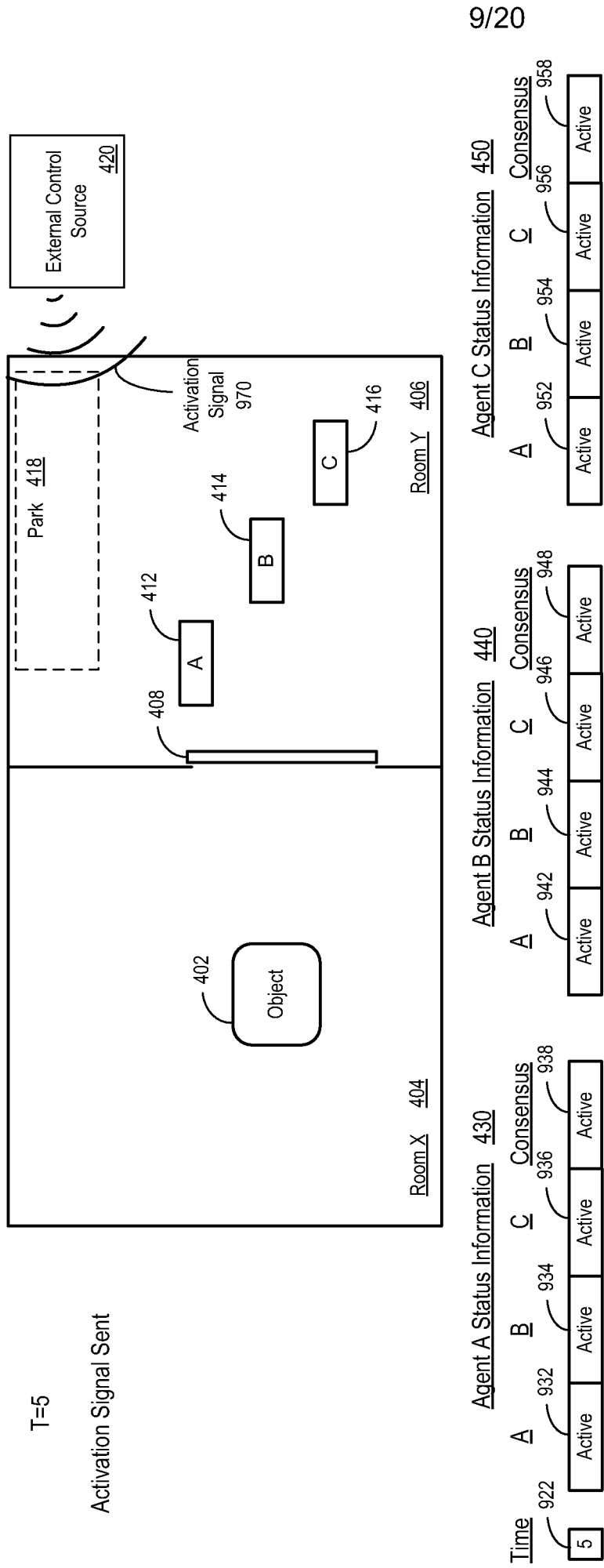


FIG. 9

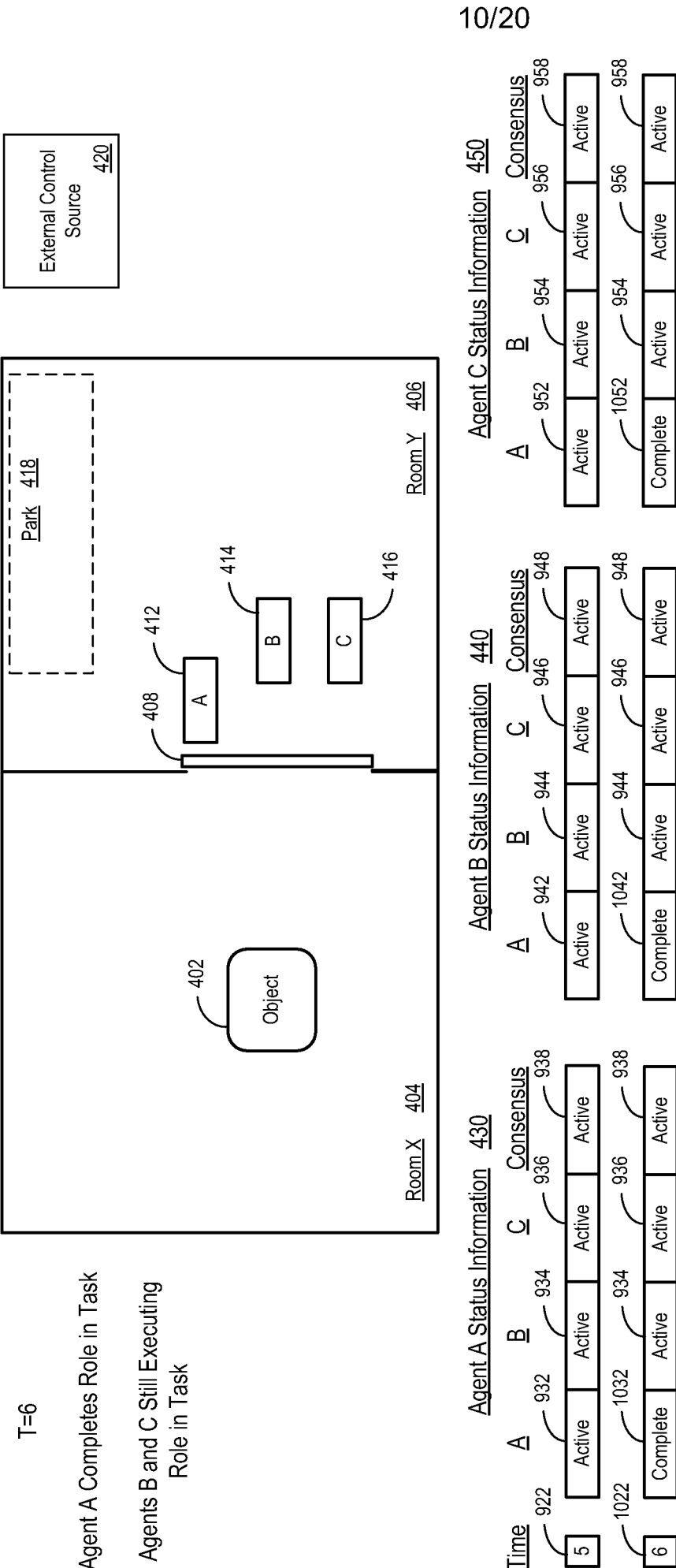


FIG. 10

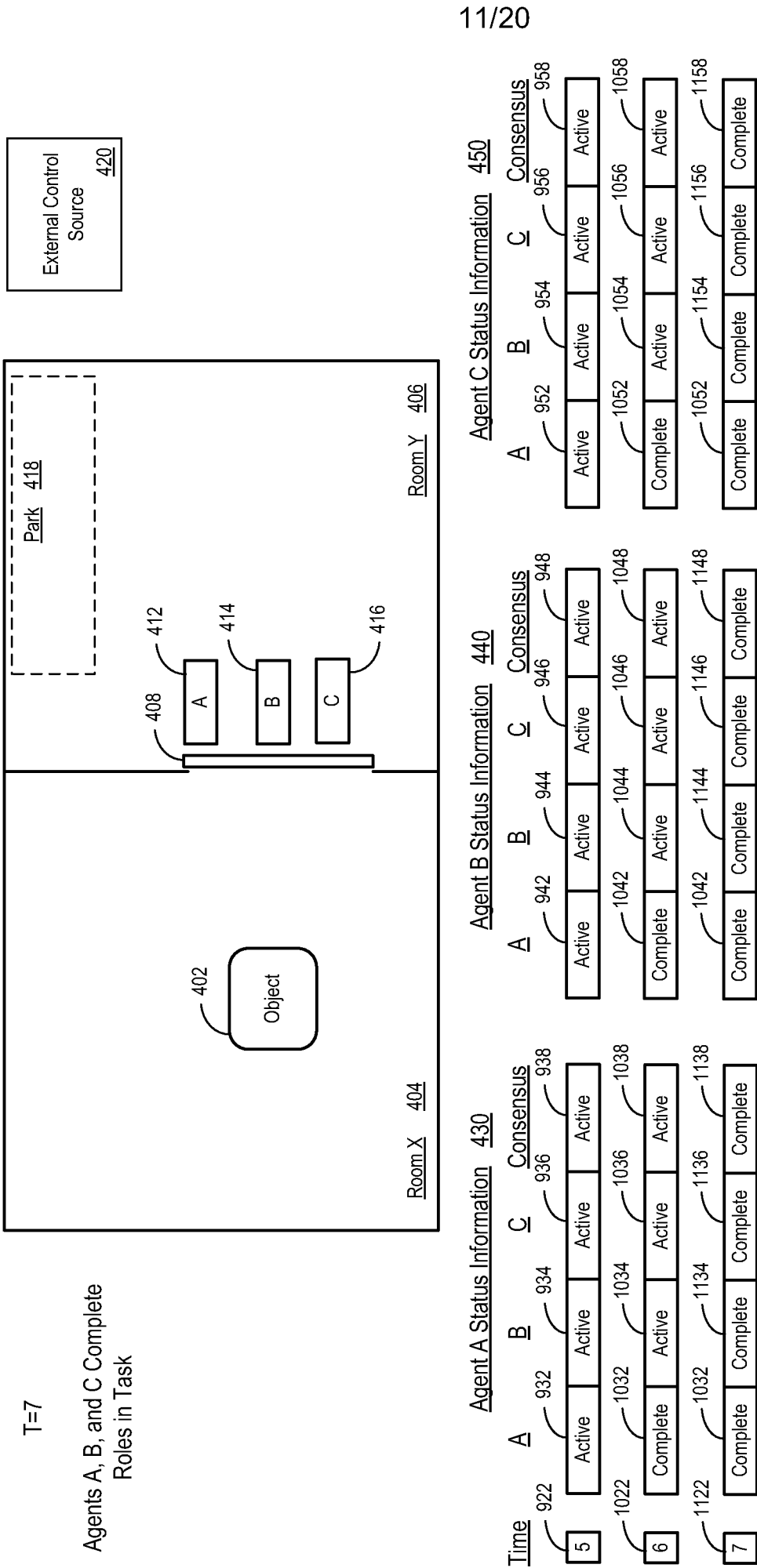
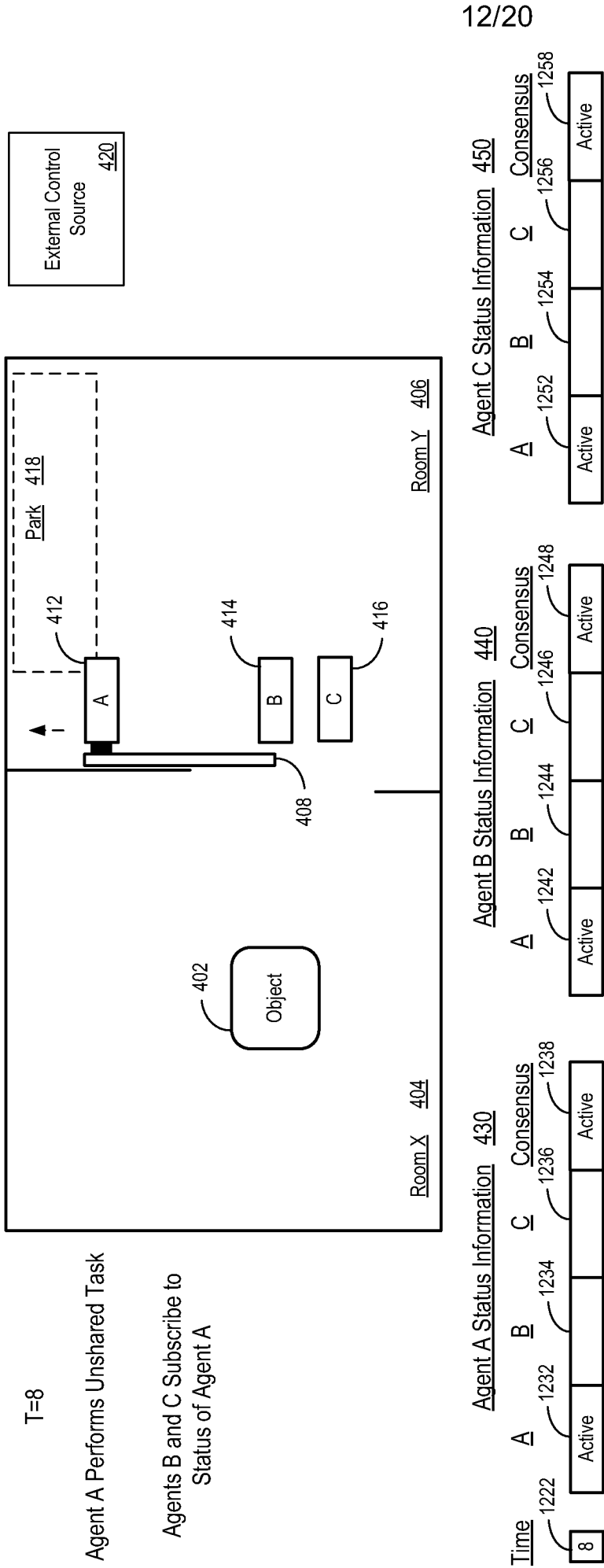
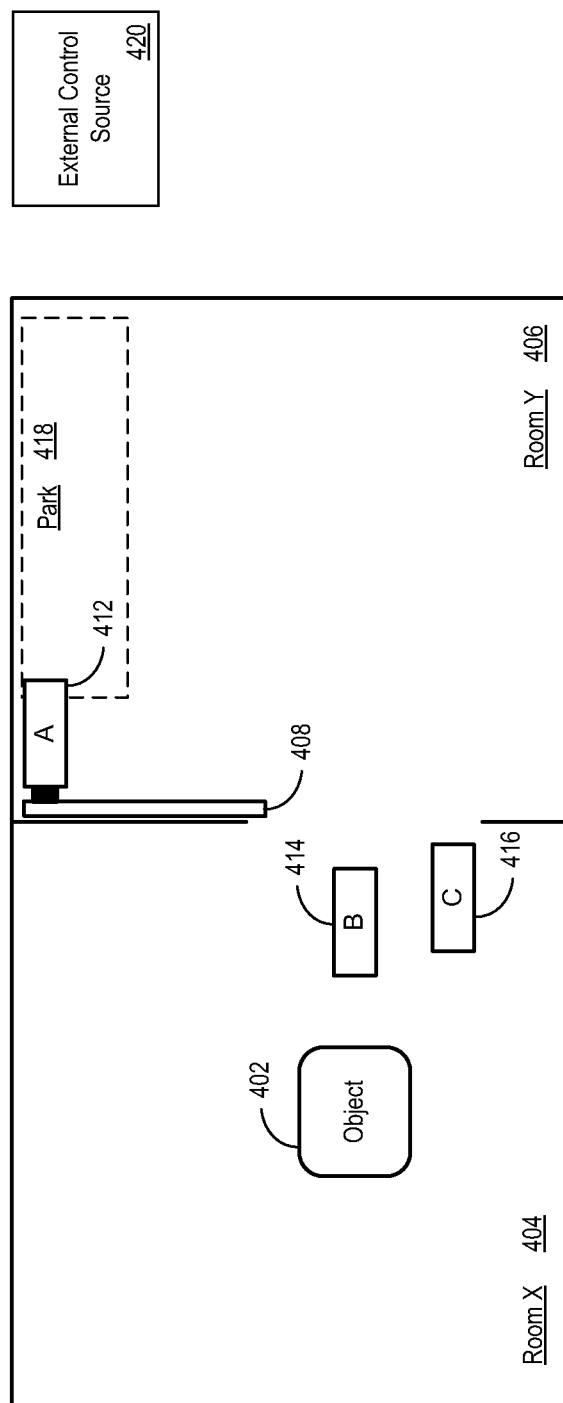


FIG. 11




$$T=9$$

Agent A Completes Task

Agents B and C Begin Next Task Dependent on Completion of Preceding Task

13/20

The diagram illustrates the execution of three parallel timelines for Agent A, Agent B, and Agent C. Each timeline is represented by a horizontal bar with a 'Time' axis on the left and a 'Consensus' axis on the right. The steps are labeled with their respective time values and are represented by boxes labeled 'Active'.

- Agent A Timeline:** Steps 1232, 1232, 1232, 1234, 1236, 1238.
- Agent B Timeline:** Steps 1242, 1242, 1244, 1246, 1248.
- Agent C Timeline:** Steps 1252, 1252, 1254, 1256, 1258.

FIG. 13

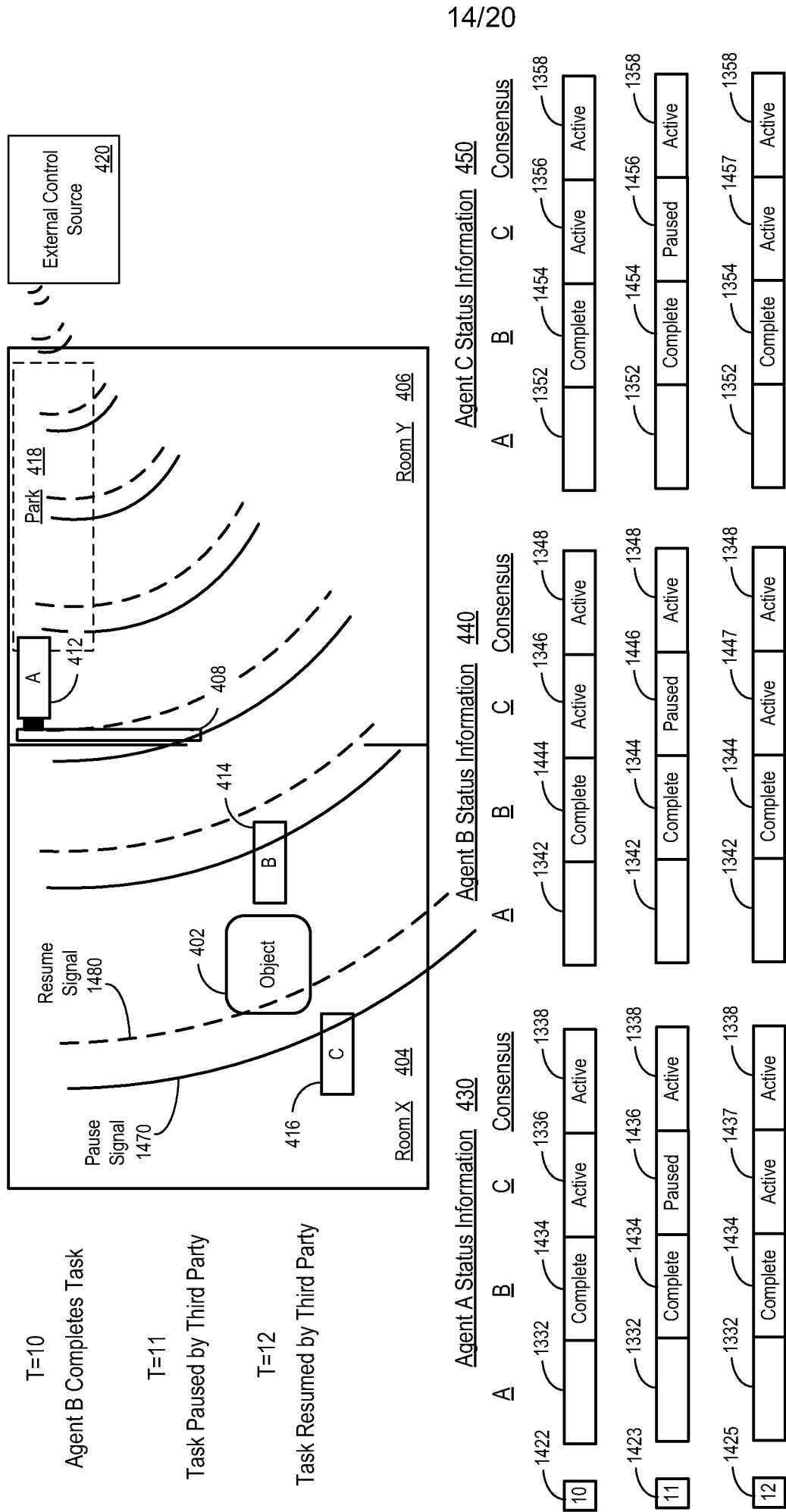
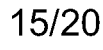


FIG. 14

Task Canceled by
External Control Source



A B C Consensus
 13 1522 1532 1534 1536 15
 Cancel Cancel Cancel Cancel Cancel

<u>A</u>	<u>B</u>	<u>C</u>	<u>Consensus</u>
Cancel	Cancel	Cancel	Cancel
1542	1544	1546	1548

A B C Consensus

Cancel	Cancel	Cancel	Cancel
--------	--------	--------	--------

1552 1554 1556 1558

FIG. 15

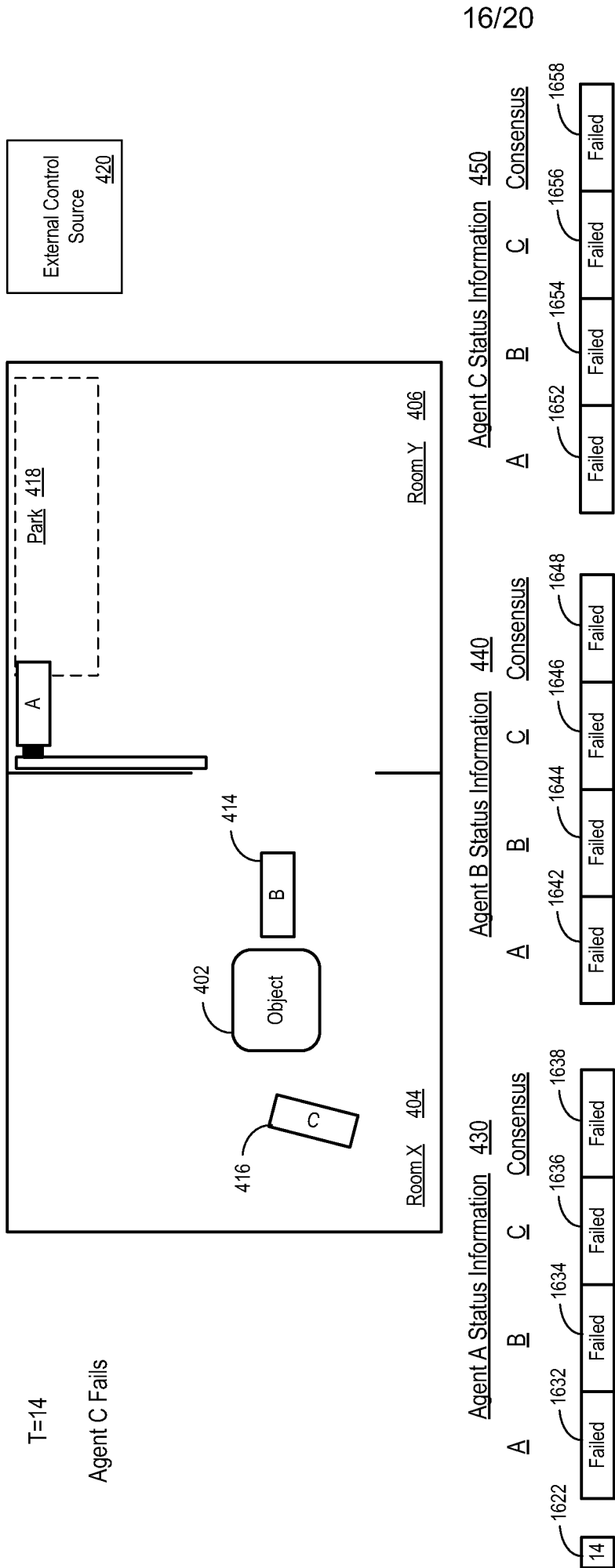


FIG. 16

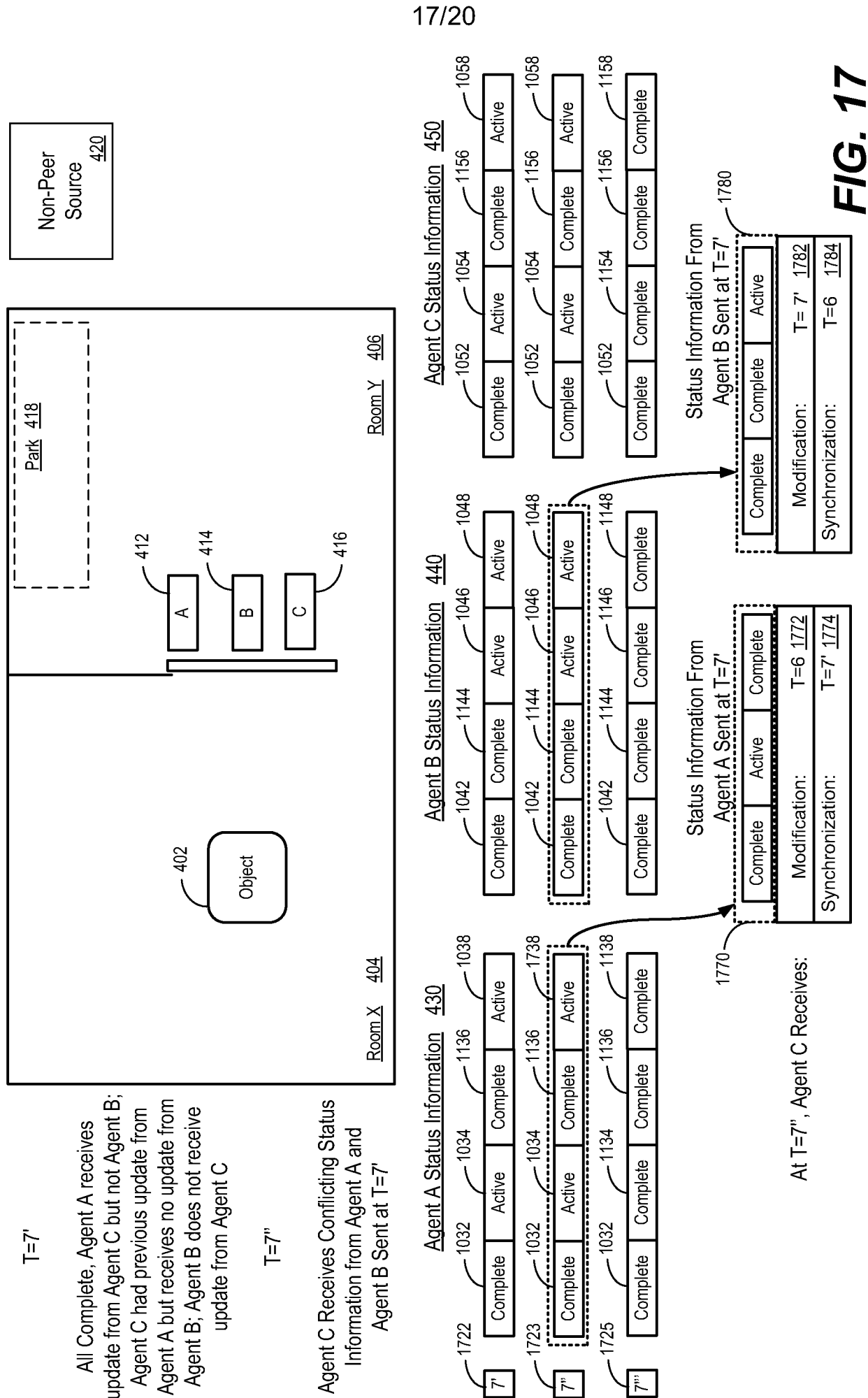
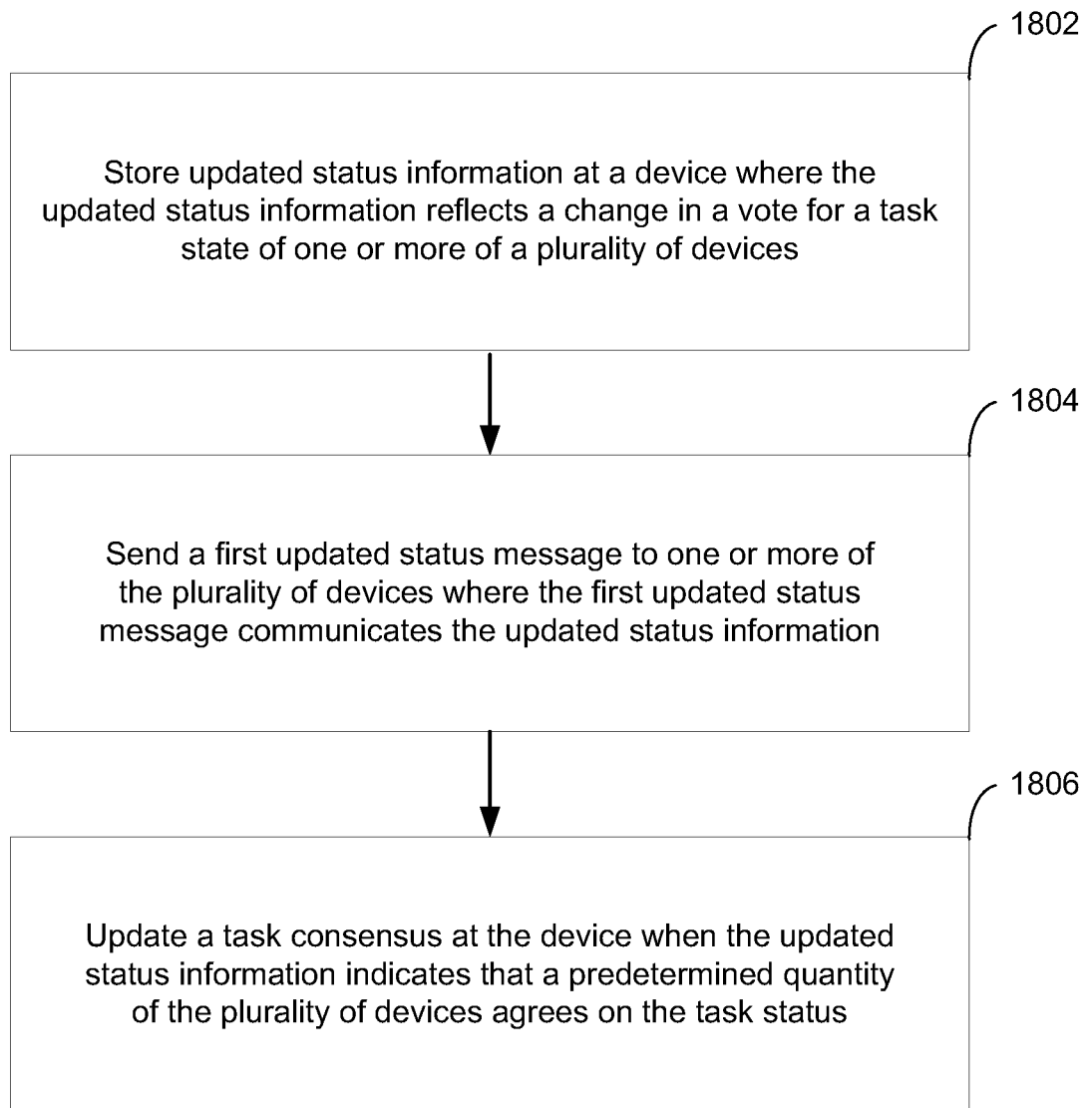


FIG. 17

1800

**FIG. 18**

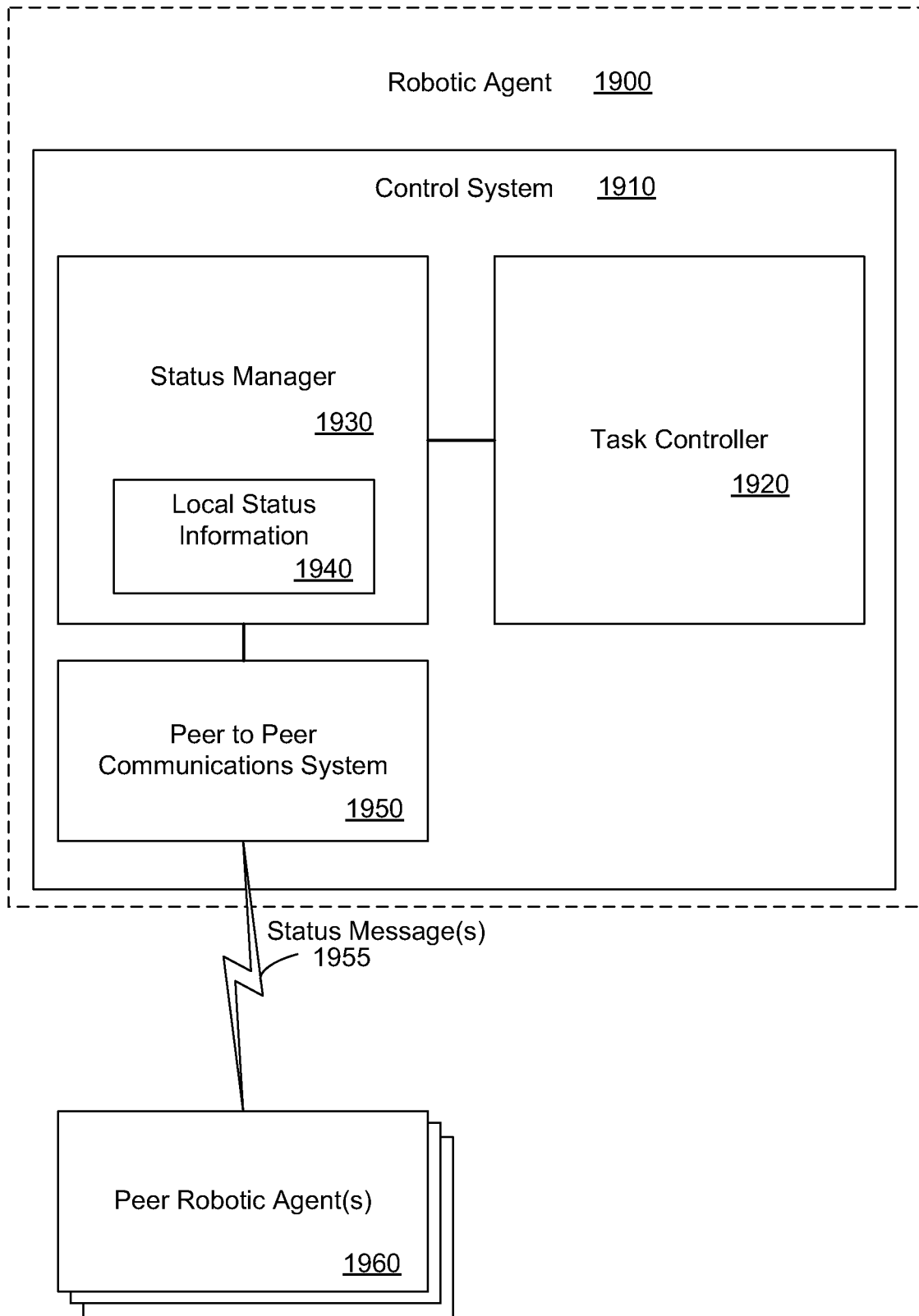
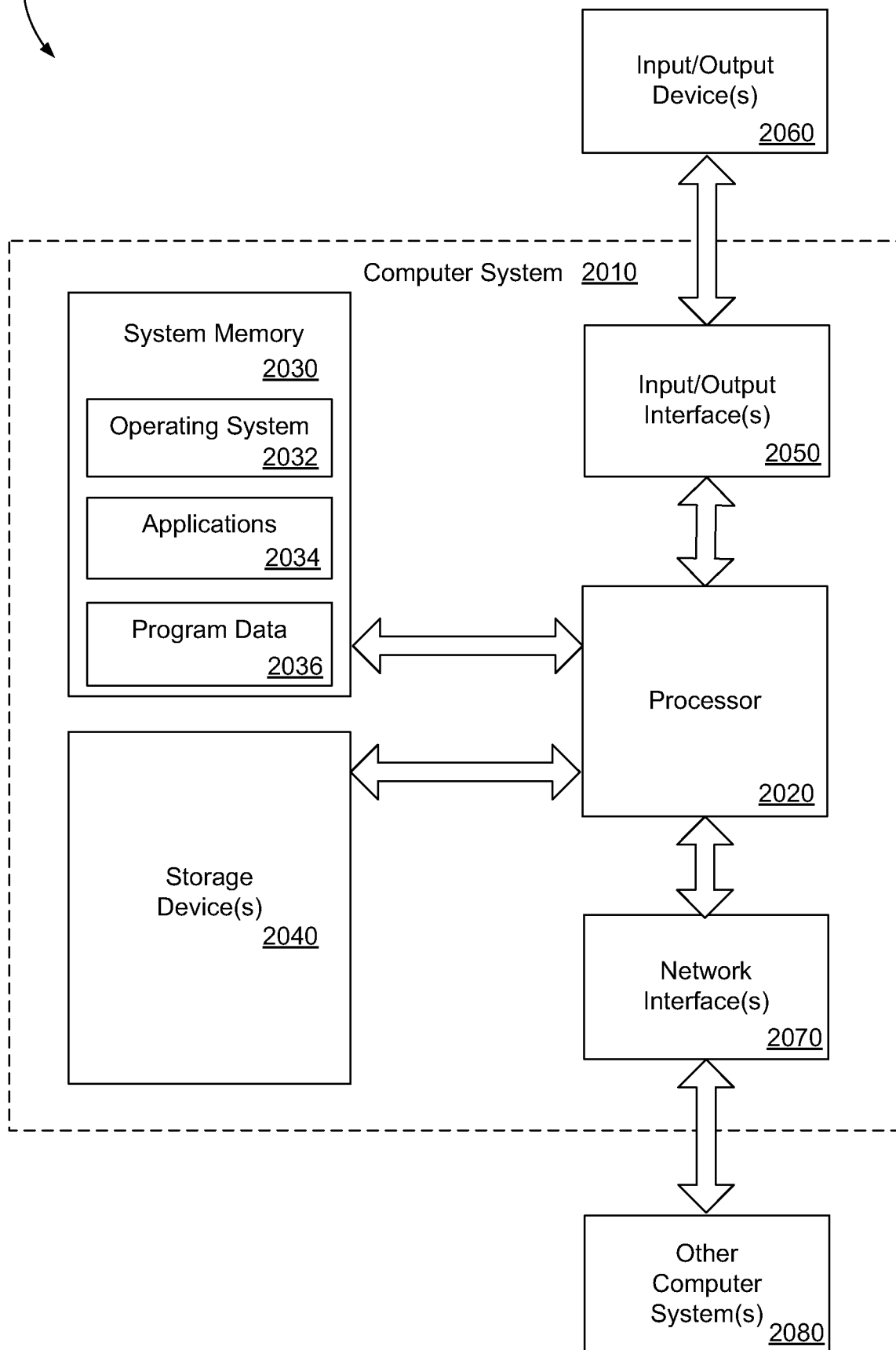


FIG. 19

2000

**FIG. 20**