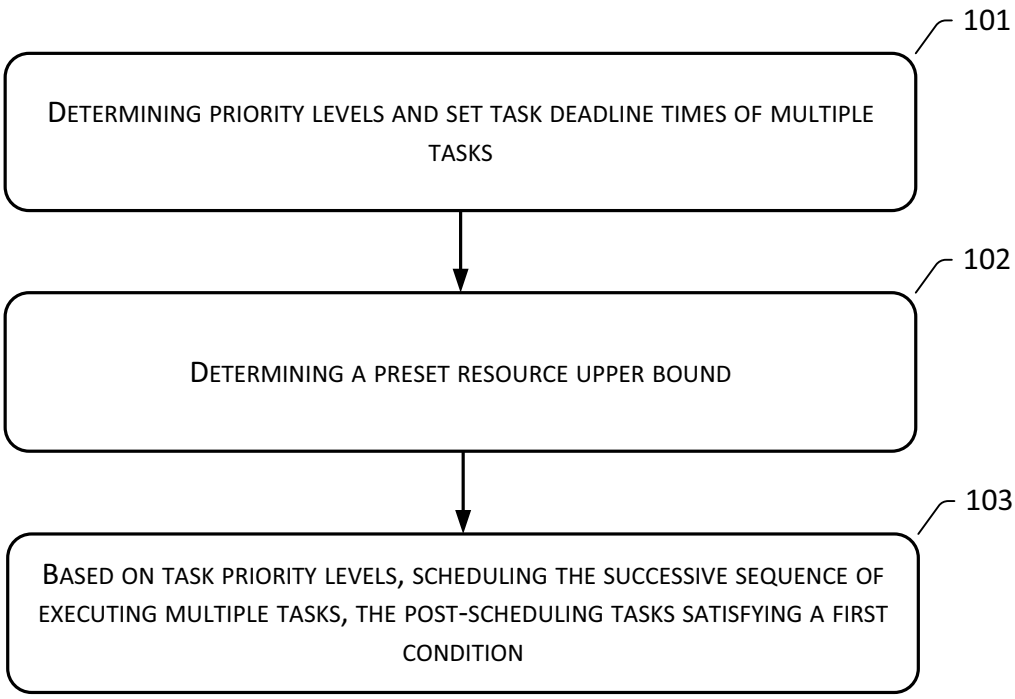

101
DETERMINING PRIORITY LEVELS AND SET TASK DEADLINE TIMES OF MULTIPLE TASKS
102
DETERMINING A PRESET RESOURCE UPPER BOUND
103
BASED ON TASK PRIORITY LEVELS, SCHEDULING THE SUCCESSIVE SEQUENCE OF EXECUTING MULTIPLE TASKS, THE POST-SCHEDULING TASKS SATISFYING A FIRST CONDITION

FIG. 1

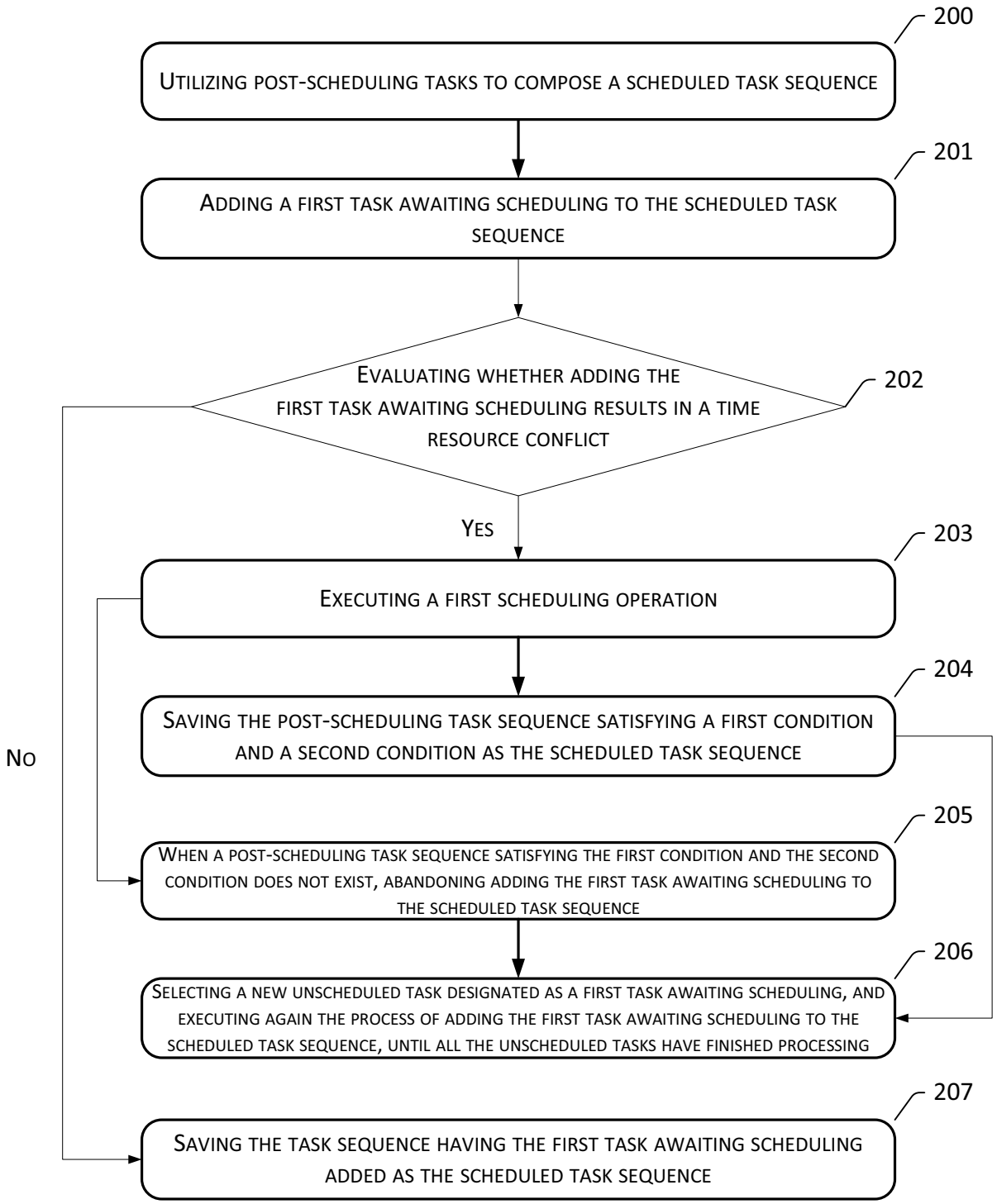

200
UTILIZING POST-SCHEDULING TASKS TO COMPOSE A SCHEDULED TASK SEQUENCE
201
ADDING A FIRST TASK AWAITING SCHEDULING TO THE SCHEDULED TASK SEQUENCE
EVALUATING WHETHER ADDING THE FIRST TASK AWAITING SCHEDULING RESULTS IN A TIME RESOURCE CONFLICT
202
YES
203
EXECUTING A FIRST SCHEDULING OPERATION
204
SAVING THE POST-SCHEDULING TASK SEQUENCE SATISFYING A FIRST CONDITION AND A SECOND CONDITION AS THE SCHEDULED TASK SEQUENCE
NO
205
WHEN A POST-SCHEDULING TASK SEQUENCE SATISFYING THE FIRST CONDITION AND THE SECOND CONDITION DOES NOT EXIST, ABANDONING ADDING THE FIRST TASK AWAITING SCHEDULING TO THE SCHEDULED TASK SEQUENCE
206
SELECTING A NEW UNSCHEDULED TASK DESIGNATED AS A FIRST TASK AWAITING SCHEDULING, AND EXECUTING AGAIN THE PROCESS OF ADDING THE FIRST TASK AWAITING SCHEDULING TO THE SCHEDULED TASK SEQUENCE, UNTIL ALL THE UNSCHEDULED TASKS HAVE FINISHED PROCESSING
207
SAVING THE TASK SEQUENCE HAVING THE FIRST TASK AWAITING SCHEDULING ADDED AS THE SCHEDULED TASK SEQUENCE

FIG. 2

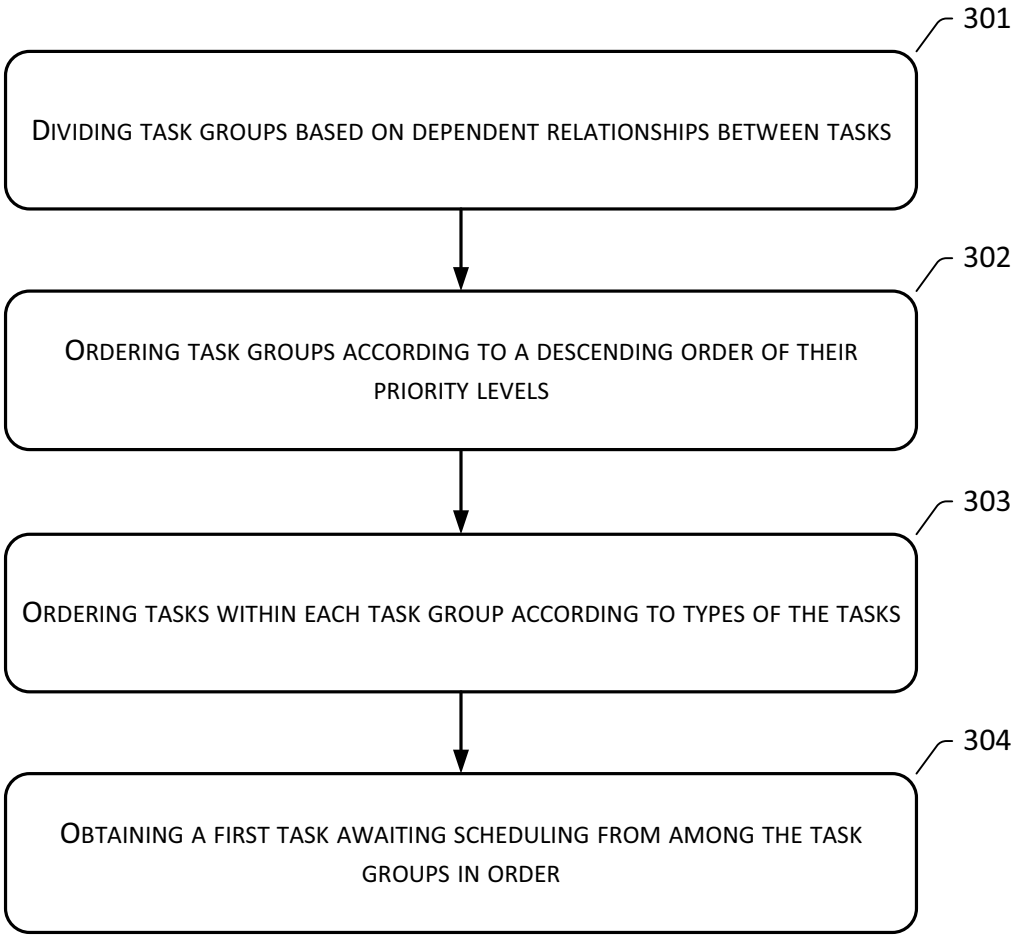

301
DIVIDING TASK GROUPS BASED ON DEPENDENT RELATIONSHIPS BETWEEN TASKS
302
ORDERING TASK GROUPS ACCORDING TO A DESCENDING ORDER OF THEIR PRIORITY LEVELS
303
ORDERING TASKS WITHIN EACH TASK GROUP ACCORDING TO TYPES OF THE TASKS
304
OBTAINING A FIRST TASK AWAITING SCHEDULING FROM AMONG THE TASK GROUPS IN ORDER

FIG. 3

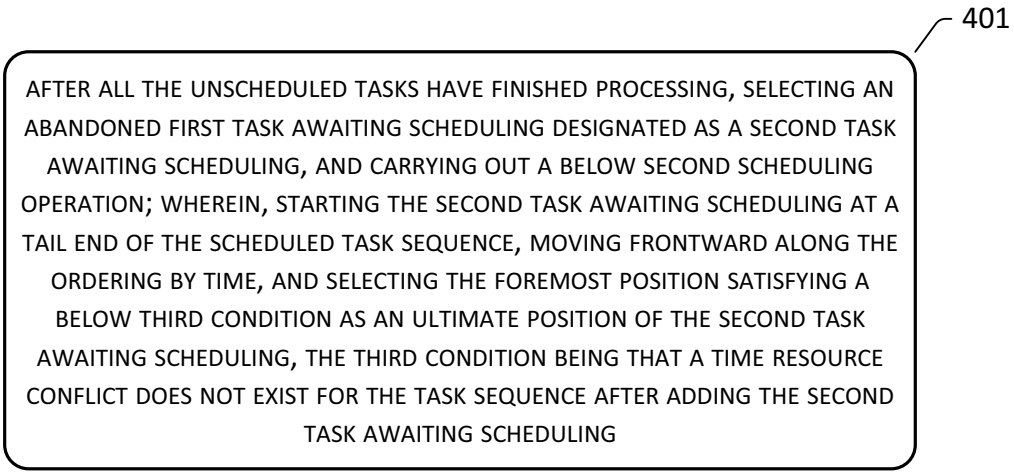

401
AFTER ALL THE UNSCHEDULED TASKS HAVE FINISHED PROCESSING, SELECTING AN ABANDONED FIRST TASK AWAITING SCHEDULING DESIGNATED AS A SECOND TASK AWAITING SCHEDULING, AND CARRYING OUT A BELOW SECOND SCHEDULING OPERATION; WHEREIN, STARTING THE SECOND TASK AWAITING SCHEDULING AT A TAIL END OF THE SCHEDULED TASK SEQUENCE, MOVING FRONTWARD ALONG THE ORDERING BY TIME, AND SELECTING THE FOREMOST POSITION SATISFYING A BELOW THIRD CONDITION AS AN ULTIMATE POSITION OF THE SECOND TASK AWAITING SCHEDULING, THE THIRD CONDITION BEING THAT A TIME RESOURCE CONFLICT DOES NOT EXIST FOR THE TASK SEQUENCE AFTER ADDING THE SECOND TASK AWAITING SCHEDULING

FIG. 4

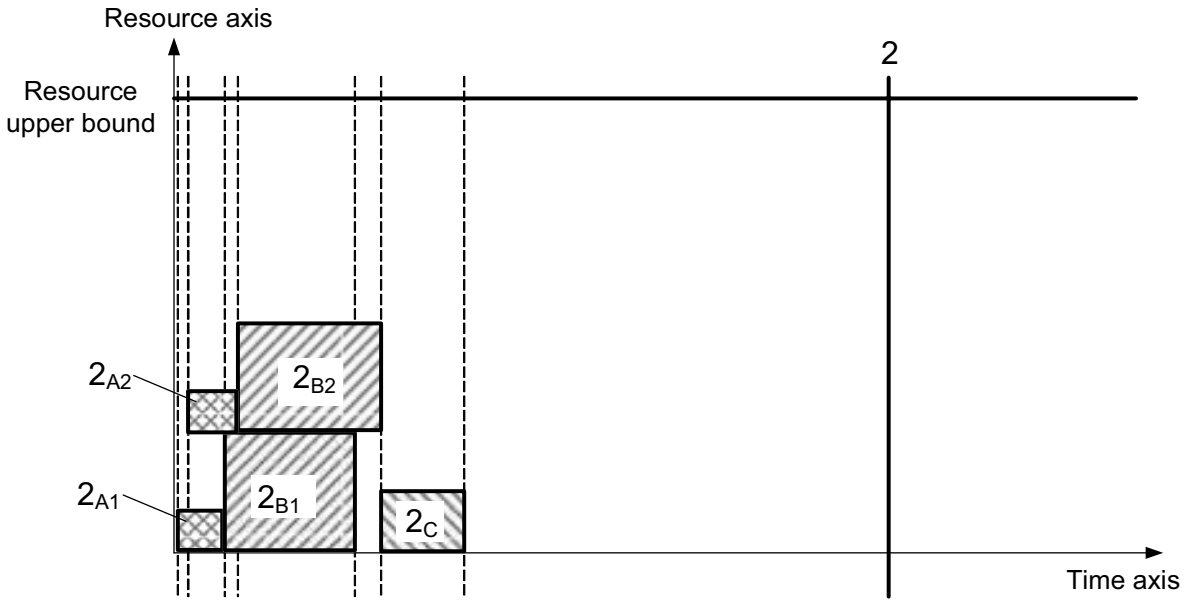

Resource axis
Resource upper bound
2
2_{A2}
2_{B2}
2_{A1}
2_{B1}
2_C
Time axis

FIG. 5

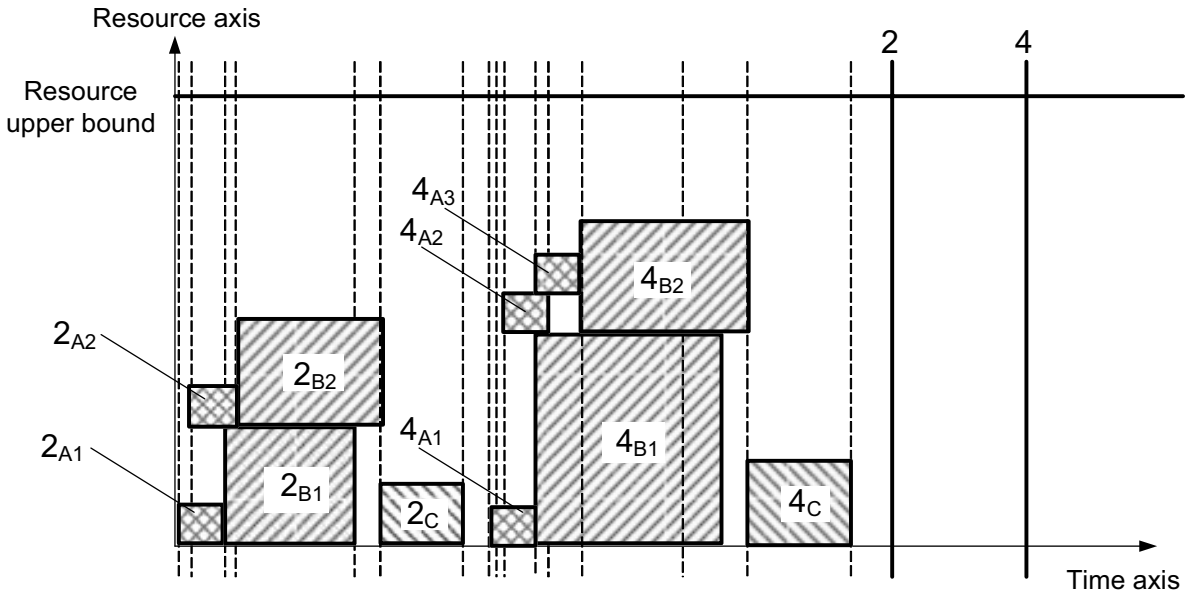

Resource axis
Resource upper bound
2
4
4_{A3}
4_{A2}
4_{B2}
2_{A2}
2_{B2}
2_{A1}
4_{A1}
4_{B1}
2_{B1}
2_C
4_C
Time axis

FIG. 6A

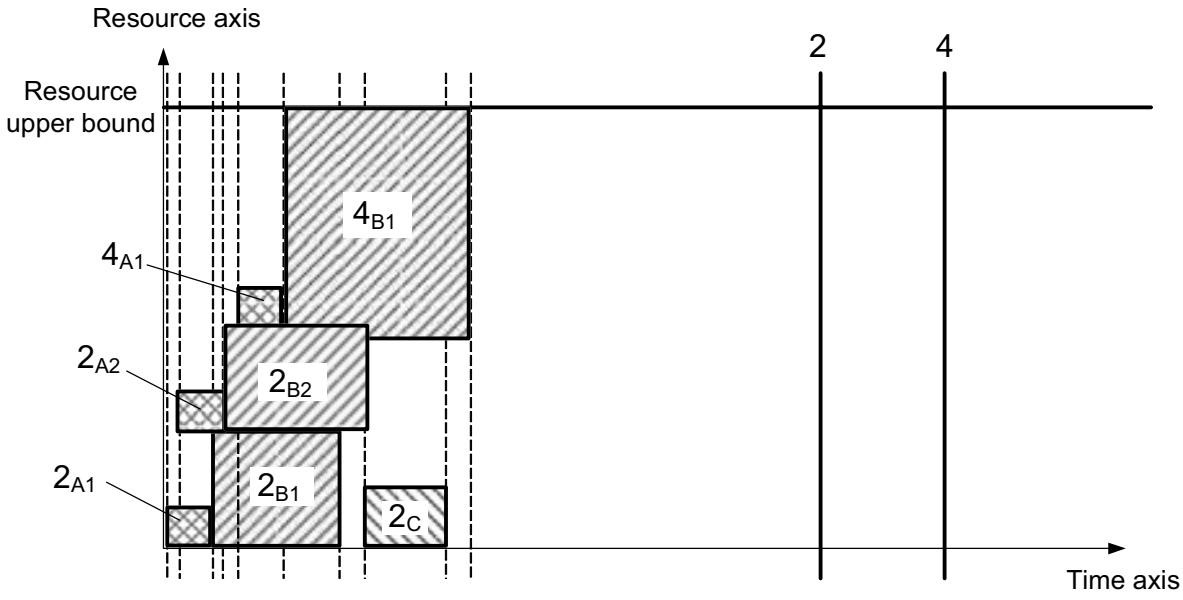

Resource axis
Resource upper bound
2
4
4_{B1}
4_{A1}
2_{A2}
2_{B2}
2_{A1}
2_{B1}
2_C
Time axis

FIG. 6B

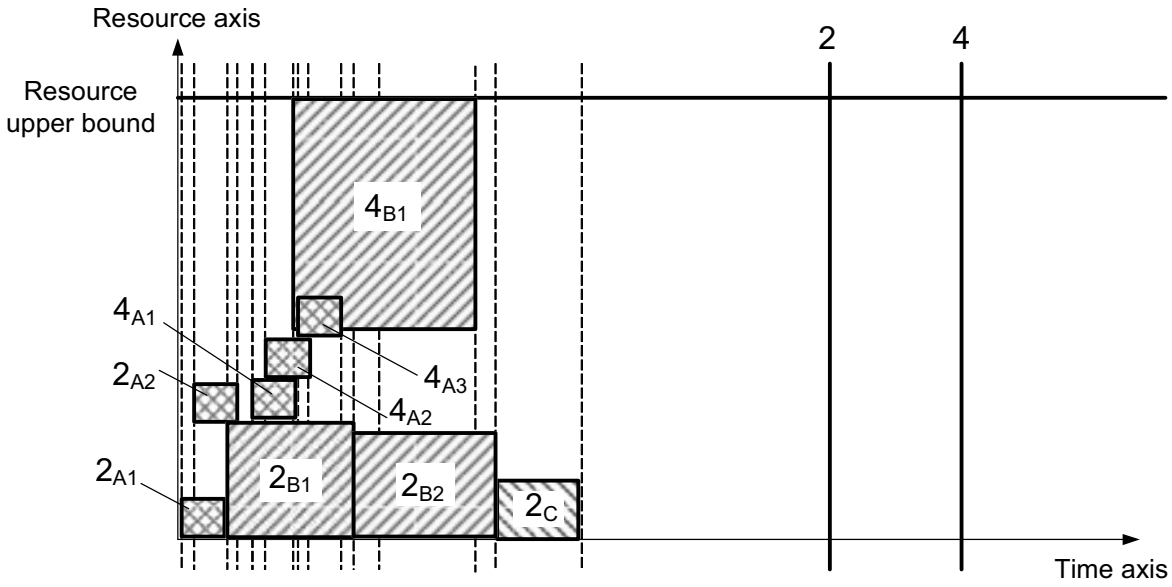

Resource axis
Resource upper bound
2
4
4_{B1}
4_{A1}
2_{A2}
4_{A3}
4_{A2}
2_{A1}
2_{B1}
2_{B2}
2_C
Time axis

FIG. 6C

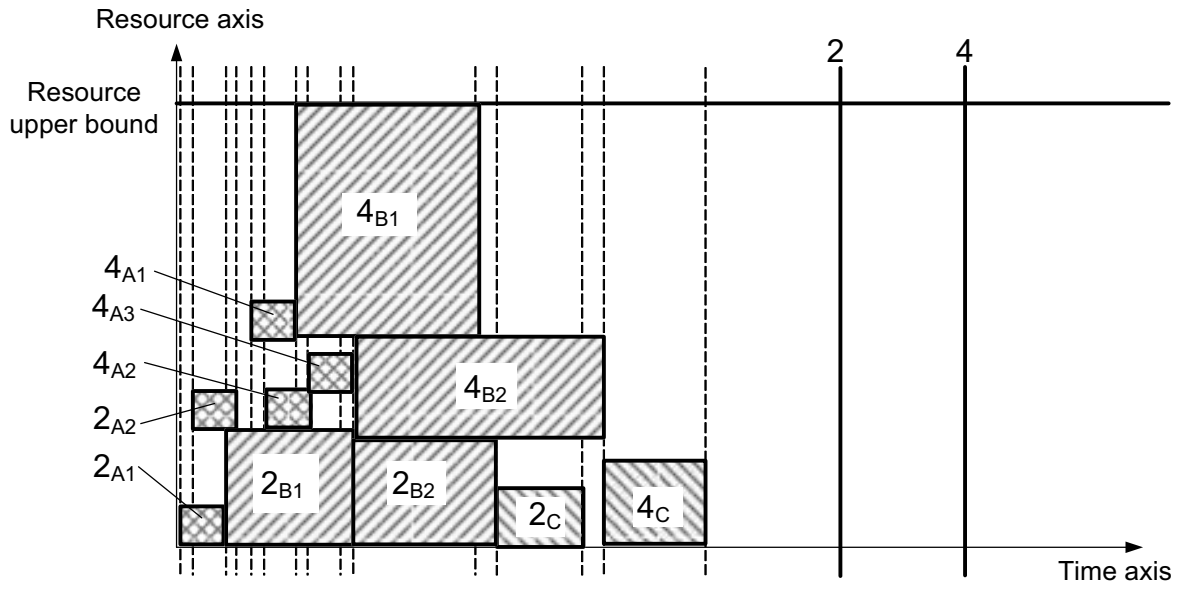

Resource axis
Resource upper bound
2
4
4_{B1}
4_{A1}
4_{A3}
4_{A2}
4_{B2}
2_{A2}
2_{A1}
2_{B1}
2_{B2}
2_C
4_C
Time axis

FIG. 6D

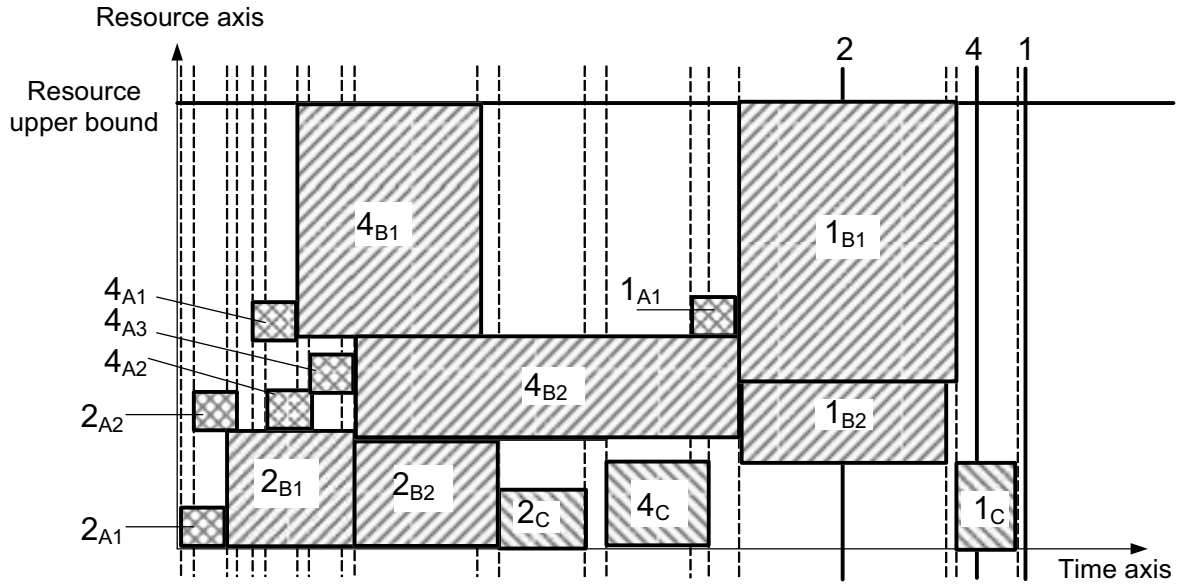

Resource axis
Resource upper bound
2
4
1
4_{B1}
1_{B1}
4_{A1}
4_{A3}
4_{A2}
1_{A1}
4_{B2}
1_{B2}
2_{A2}
2_{B1}
2_{B2}
2_{C}
4_{C}
1_{C}
2_{A1}
Time axis

FIG. 7A

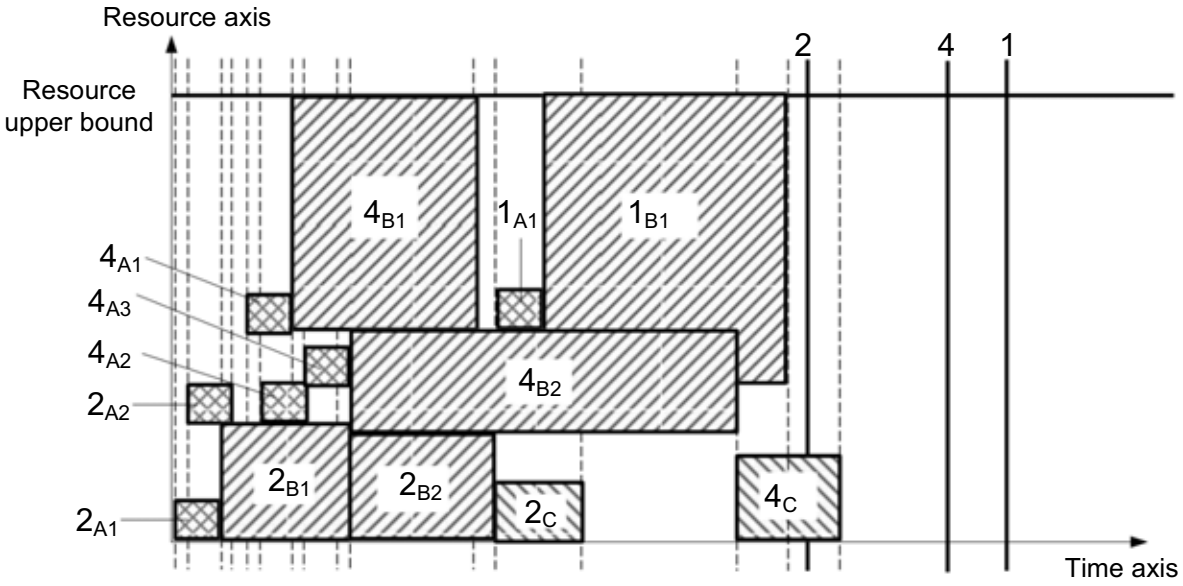

Resource axis
Resource upper bound
2
4
1
4_{B1}
1_{A1}
1_{B1}
4_{A1}
4_{A3}
4_{A2}
4_{B2}
2_{A2}
2_{B1}
2_{B2}
2_{C}
4_{C}
2_{A1}
Time axis

FIG. 7B

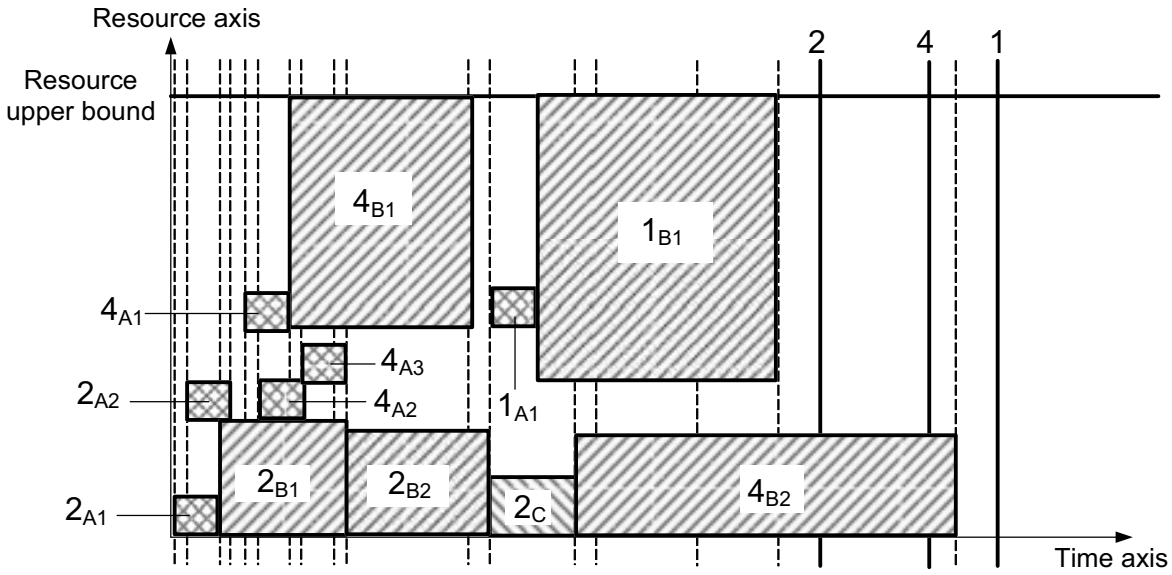

Resource axis
Resource upper bound
2
4
1
4_{B1}
1_{B1}
4_{A1}
4_{A3}
2_{A2}
4_{A2}
1_{A1}
2_{B1}
2_{B2}
2_{A1}
2_C
4_{B2}
Time axis

FIG. 7C

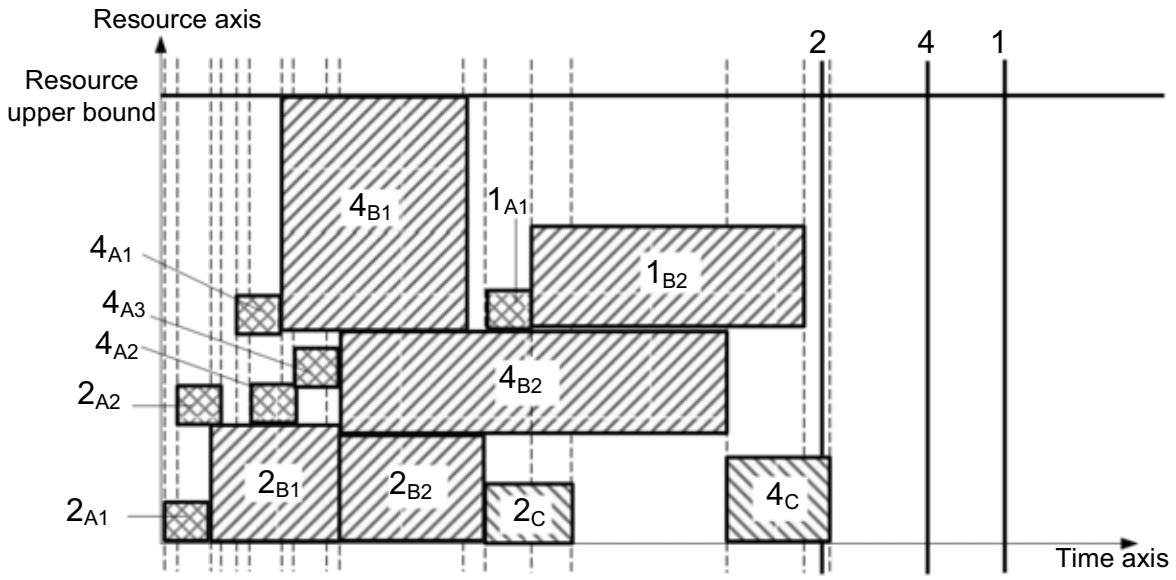

Resource axis
Resource upper bound
2
4
1
4_{B1}
1_{A1}
4_{A1}
1_{B2}
4_{A3}
4_{A2}
4_{B2}
2_{A2}
2_{B1}
2_{B2}
4_{C}
2_{A1}
2_{C}
Time axis

FIG. 7D

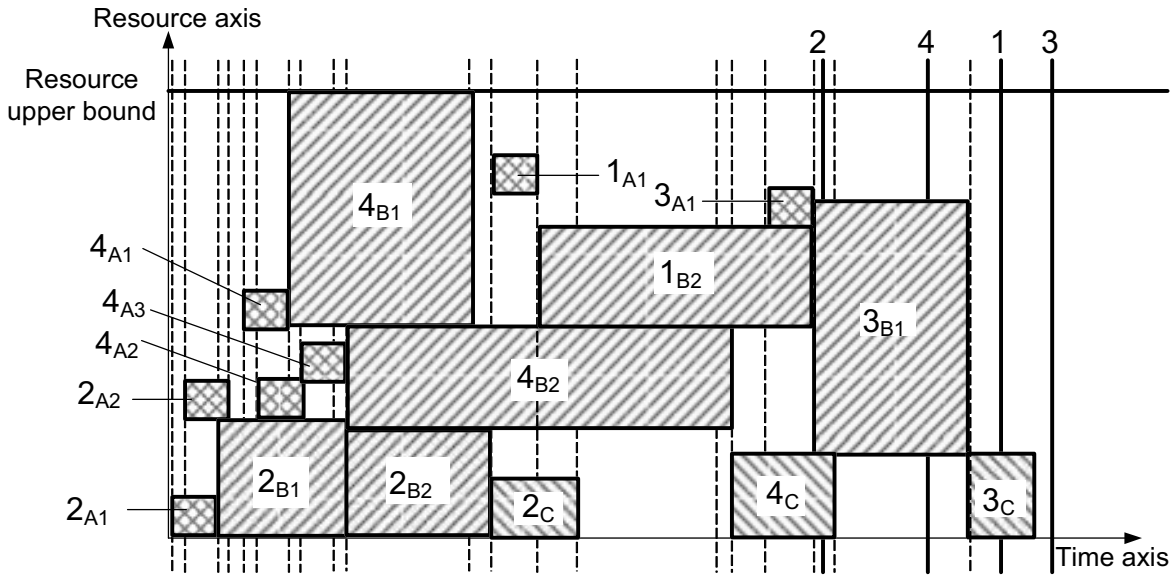

Resource axis
Resource upper bound
2
4
1
3
1_{A1}
3_{A1}
4_{B1}
4_{A1}
1_{B2}
4_{A3}
3_{B1}
4_{A2}
4_{B2}
2_{A2}
2_{B1}
2_{B2}
2_{C}
4_{C}
3_{C}
2_{A1}
Time axis

FIG. 8A

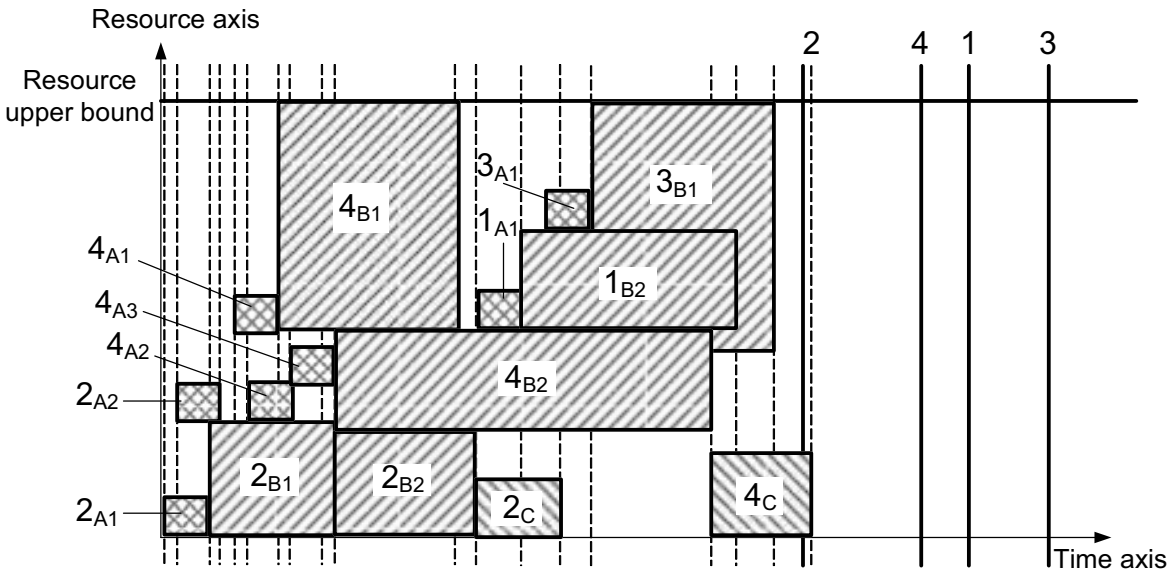

Resource axis
Resource upper bound
2
4
1
3
4_{B1}
3_{A1}
3_{B1}
1_{A1}
4_{A1}
1_{B2}
4_{A3}
4_{A2}
4_{B2}
2_{A2}
2_{B1}
2_{B2}
2_{C}
4_{C}
2_{A1}
Time axis

FIG. 8B

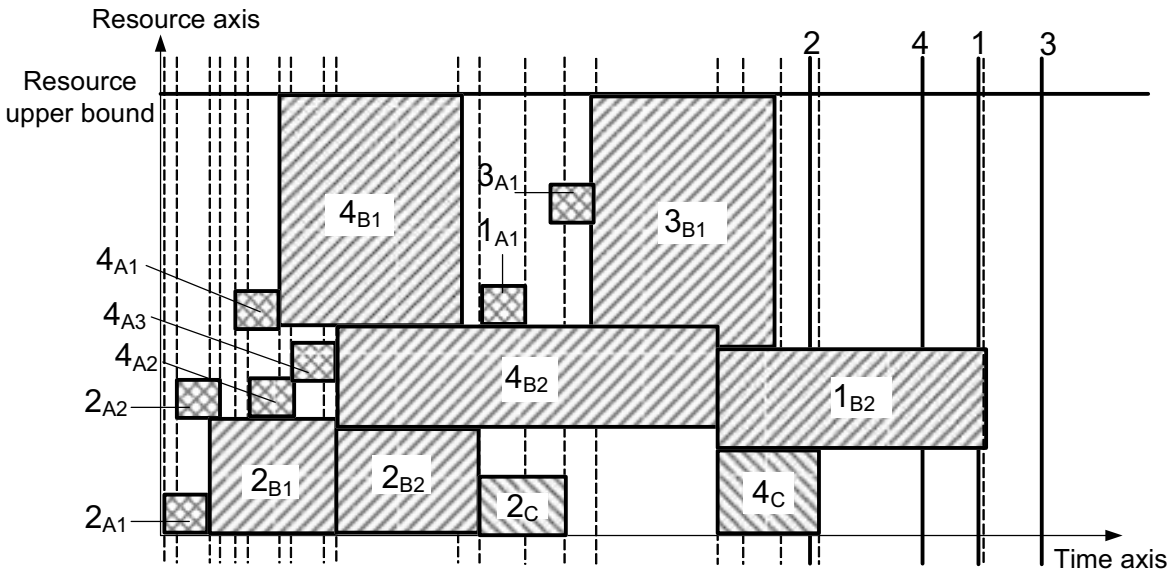

Resource axis
2
4
1
3
Resource
upper bound
3A1
4B1
1A1
3B1
4A1
4A3
4A2
4B2
1B2
2A2
2B1
2B2
2C
4C
2A1
Time axis

FIG. 8C

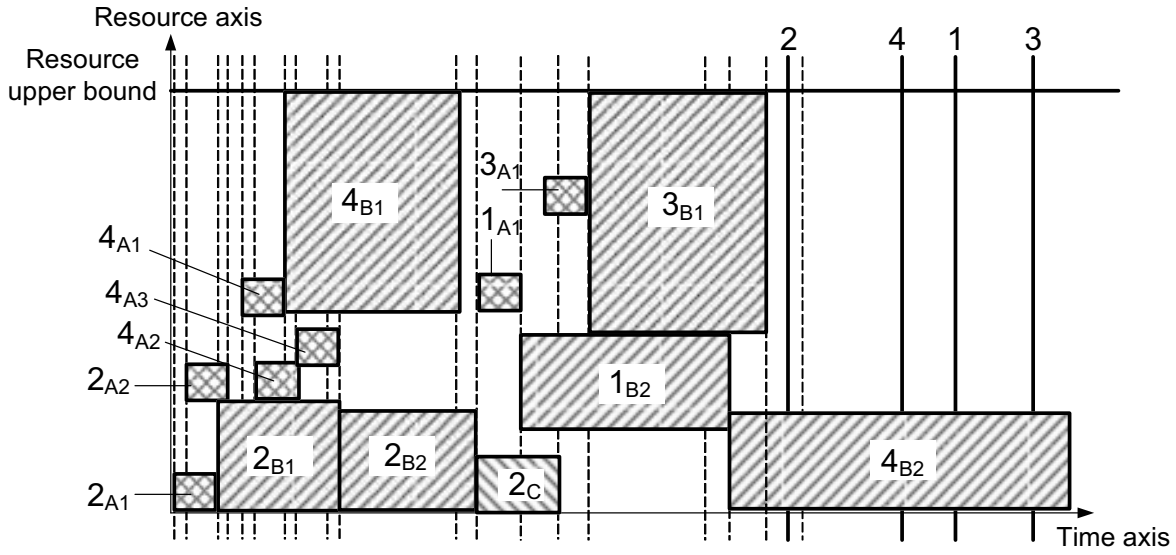

Resource axis
Resource upper bound
2
4
1
3
4_{B1}
3_{A1}
1_{A1}
3_{B1}
4_{A1}
4_{A3}
4_{A2}
2_{A2}
1_{B2}
2_{B1}
2_{B2}
2_{C}
4_{B2}
2_{A1}
Time axis

FIG. 8D

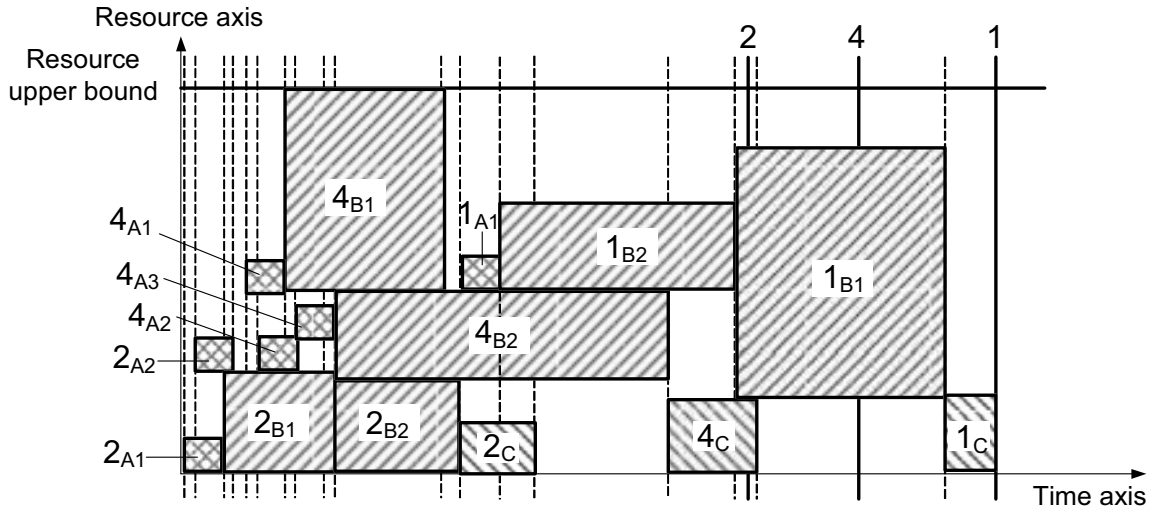

Resource axis
Resource upper bound
2
4
1
4_{B1}
1_{A1}
1_{B2}
1_{B1}
4_{A1}
4_{A3}
4_{A2}
4_{B2}
2_{A2}
2_{B1}
2_{B2}
2_{C}
4_{C}
1_{C}
2_{A1}
Time axis

FIG. 9A

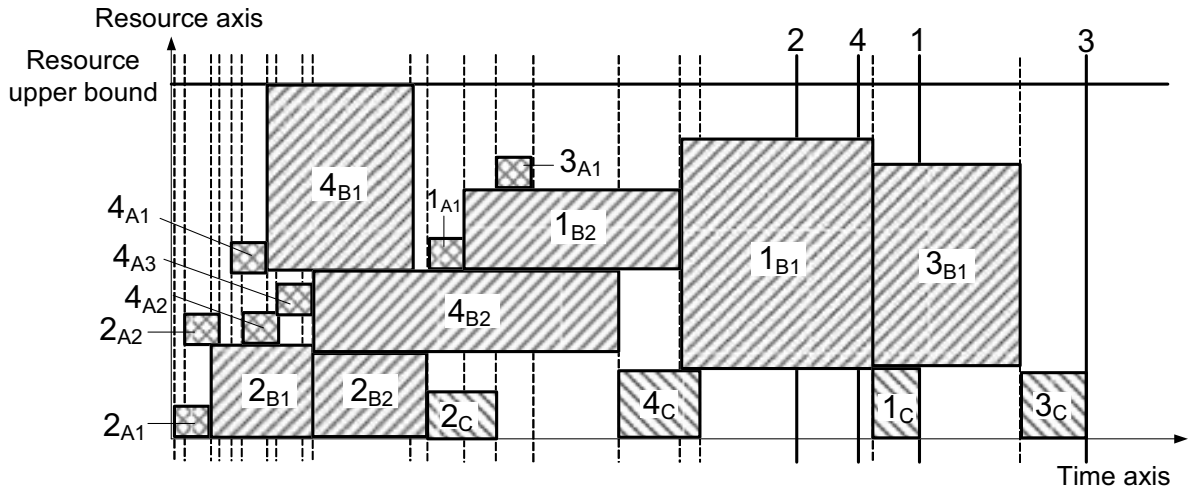

Resource axis
Resource upper bound
2
4
1
3
4_{B1}
3_{A1}
1_{A1}
1_{B2}
4_{A1}
4_{A3}
4_{A2}
2_{A2}
1_{B1}
3_{B1}
4_{B2}
2_{B1}
2_{B2}
2_{C}
4_{C}
1_{C}
3_{C}
2_{A1}
Time axis

FIG. 9B

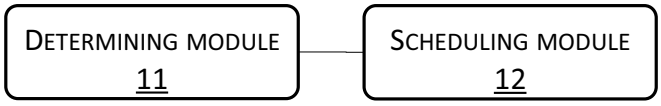


FIG. 10

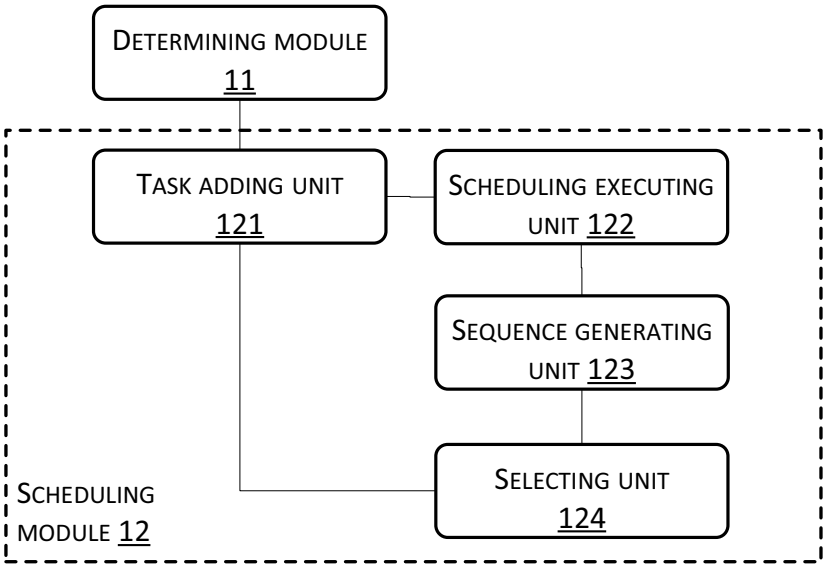

DETERMINING MODULE
11
TASK ADDING UNIT
121
SCHEDULING EXECUTING
UNIT 122
SEQUENCE GENERATING
UNIT 123
SELECTING UNIT
124
SCHEDULING
MODULE 12

FIG. 11

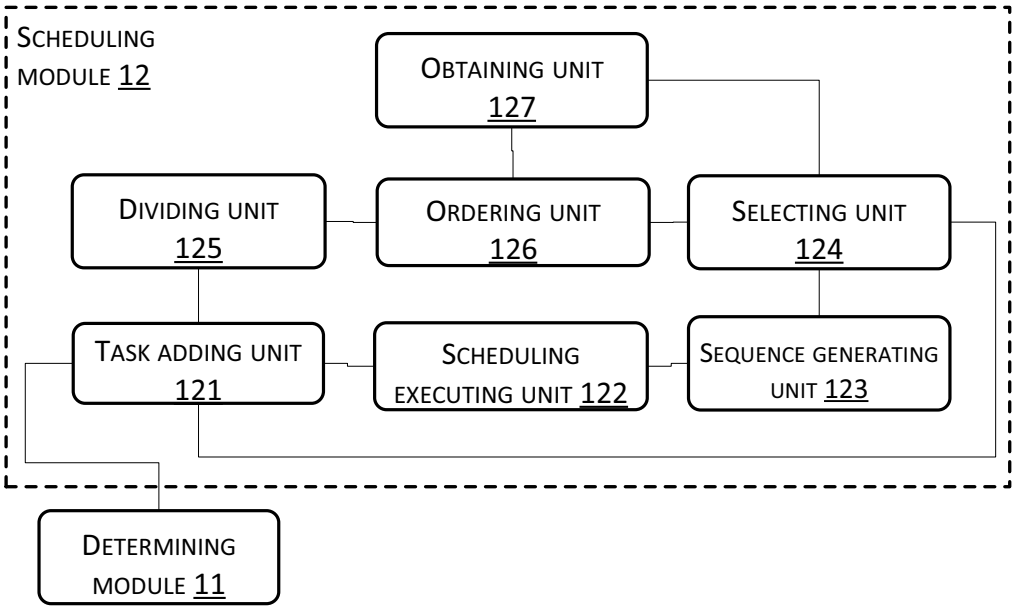

SCHEDULING MODULE 12
OBTAINING UNIT 127
DIVIDING UNIT 125
ORDERING UNIT 126
SELECTING UNIT 124
TASK ADDING UNIT 121
SCHEDULING EXECUTING UNIT 122
SEQUENCE GENERATING UNIT 123
DETERMINING MODULE 11

FIG. 12