

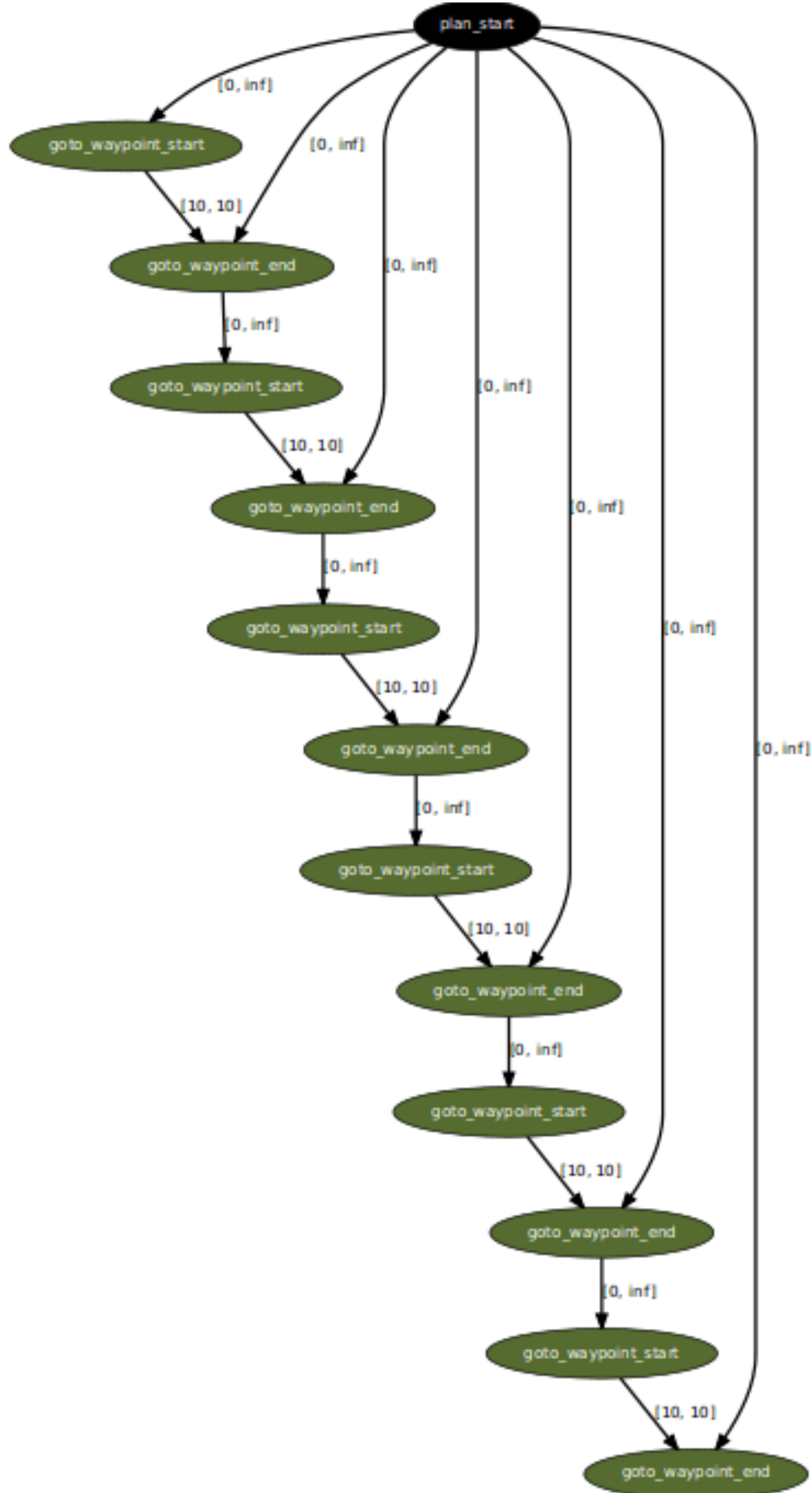
ROSPLAN TURTLEBOT EXAMPLE

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plan_graph example:

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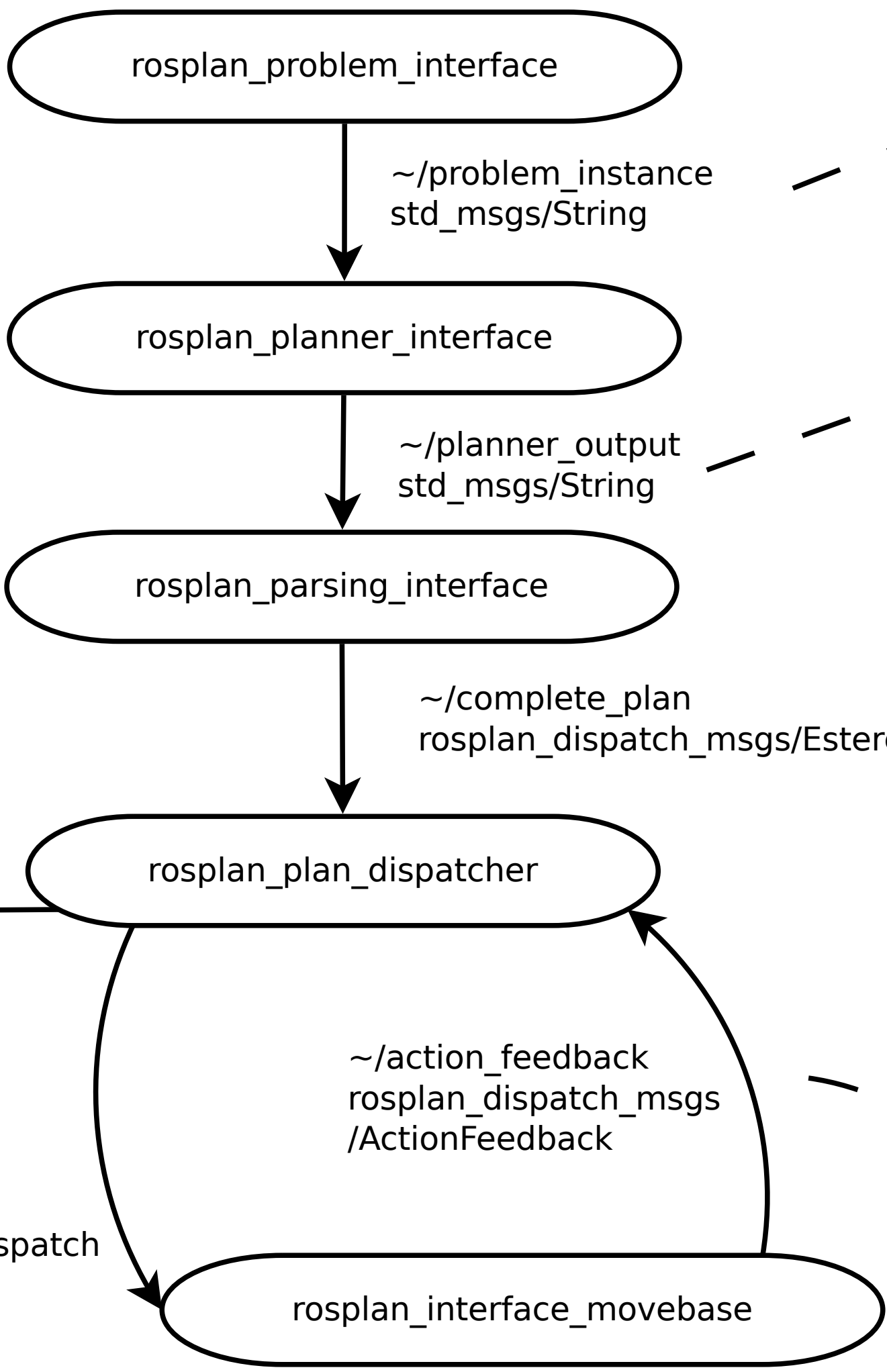
```
digraph plan {
0[label="plan_start",style=filled,fillcolor=black,fontcolor=white];
1[label="goto_waypoint_start",style=filled,fillcolor=darkolivegreen,fontcolor=white];
2[label="goto_waypoint_end",style=filled,fillcolor=darkolivegreen,fontcolor=white];
3[label="goto_waypoint_start",style=filled,fillcolor=darkolivegreen,fontcolor=white];
4[label="goto_waypoint_end",style=filled,fillcolor=darkolivegreen,fontcolor=white];
5[label="goto_waypoint_start",style=filled,fillcolor=darkolivegreen,fontcolor=white];
6[label="goto_waypoint_end",style=filled,fillcolor=darkolivegreen,fontcolor=white];
7[label="goto_waypoint_start",style=filled,fillcolor=darkolivegreen,fontcolor=white];
8[label="goto_waypoint_end",style=filled,fillcolor=darkolivegreen,fontcolor=white];
9[label="goto_waypoint_start",style=filled,fillcolor=darkolivegreen,fontcolor=white];
10[label="goto_waypoint_end",style=filled,fillcolor=darkolivegreen,fontcolor=white];
11[label="goto_waypoint_start",style=filled,fillcolor=darkolivegreen,fontcolor=white];
12[label="goto_waypoint_end",style=filled,fillcolor=darkolivegreen,fontcolor=white];
"0" -> "1" [label="[0, inf]", penwidth=2, color="black"]
"1" -> "2" [label="[10, 10]", penwidth=2, color="black"]
"0" -> "3" [label="[0, inf]", penwidth=2, color="black"]
"3" -> "4" [label="[10, 10]", penwidth=2, color="black"]
"0" -> "5" [label="[0, inf]", penwidth=2, color="black"]
"5" -> "6" [label="[10, 10]", penwidth=2, color="black"]
"0" -> "7" [label="[0, inf]", penwidth=2, color="black"]
"7" -> "8" [label="[10, 10]", penwidth=2, color="black"]
"0" -> "9" [label="[0, inf]", penwidth=2, color="black"]
"9" -> "10" [label="[10, 10]", penwidth=2, color="black"]
"0" -> "11" [label="[0, inf]", penwidth=2, color="black"]
"11" -> "12" [label="[10, 10]", penwidth=2, color="black"]
"0" -> "12" [label="[0, inf]", penwidth=2, color="black"]
}
```



action_dispatch example:

===

```
action_id: 5
name: "goto_waypoint"
parameters:
- key: "v"
  value: "kenny"
- key: "from"
  value: "wp4"
- key: "to"
  value: "wp5"
duration: 10.0
dispatch_time: 50.0050010681
```



action_feedback example:

===

```
action_id: 5
status: "action achieved"
information: []
```

planner output example:

===

```
0.000: (goto_waypoint kenny wp0 wp0) [10.000]
10.001: (goto_waypoint kenny wp0 wp1) [10.000]
20.002: (goto_waypoint kenny wp1 wp2) [10.000]
30.003: (goto_waypoint kenny wp2 wp3) [10.000]
40.004: (goto_waypoint kenny wp3 wp4) [10.000]
50.005: (goto_waypoint kenny wp4 wp5) [10.000]
```

complete_plan example:

===

```
nodes:
- node_type: 2
  node_id: 0
  name: "plan_start"
  action:
    action_id: 0
    name: ""
    parameters: []
    duration: 0.0
    dispatch_time: 0.0
    edges_out: [0, 2, 5, 8, 11, 14, 17]
    edges_in: []
- node_type: 0
  node_id: 1
  name: "goto_waypoint_start"
  action:
    action_id: 0
    name: "goto_waypoint"
    parameters:
      - key: "v"
        value: "kenny"
      - key: "from"
        value: "wp0"
      - key: "to"
        value: "wp0"
    duration: 10.0
    dispatch_time: 0.0
    edges_out: [1]
    edges_in: [0]
- node_type: 1
  node_id: 2
  name: "goto_waypoint_end"
  action:
    action_id: 0
    name: "goto_waypoint"
    parameters:
      - key: "v"
        value: "kenny"
      - key: "from"
        value: "wp0"
      - key: "to"
        value: "wp0"
    duration: 10.0
    dispatch_time: 0.0
    edges_out: [3]
    edges_in: [1, 2]
- node_type: 0
  node_id: 3
  name: "goto_waypoint_start"
  action:
    action_id: 1
```

edges:

```
- edge_id: 0
  edge_name: "edge_0"
  signal_type: 0
  source_ids: [0]
  sink_ids: [1]
  duration_lower_bound: 0.0
  duration_upper_bound: 1.79769313486e+308
- edge_id: 1
  edge_name: "edge_1"
  signal_type: 0
  source_ids: [1]
  sink_ids: [2]
  duration_lower_bound: 10.0
  duration_upper_bound: 10.0
- edge_id: 2
  edge_name: "edge_2"
  signal_type: 0
  source_ids: [0]
  sink_ids: [2]
  duration_lower_bound: 0.0
  duration_upper_bound: 1.79769313486e+308
- edge_id: 3
  edge_name: "edge_3"
  signal_type: 0
  source_ids: [2]
  sink_ids: [3]
  duration_lower_bound: 0.0
  duration_upper_bound: 1.79769313486e+308
- edge_id: 4
  edge_name: "edge_4"
  signal_type: 0
  source_ids: [3]
  sink_ids: [4]
  duration_lower_bound: 10.0
  duration_upper_bound: 10.0
- edge_id: 5
  edge_name: "edge_5"
  signal_type: 0
  source_ids: [0]
  sink_ids: [4]
  duration_lower_bound: 0.0
  duration_upper_bound: 1.79769313486e+308
- edge_id: 6
  edge_name: "edge_6"
  signal_type: 0
  source_ids: [4]
  sink_ids: [5]
  duration_lower_bound: 0.0
  duration_upper_bound: 1.79769313486e+308
- edge_id: 7
  edge_name: "edge_7"
  signal_type: 0
```

problem instance example:

===

```
(define (problem task)
(:domain turtlebot_demo)
(:objects
  wp0 wp1 wp2 wp3
  wp4 wp5 - waypoint
  kenny - robot
)
(:init
  (robot_at kenny wp0)
```

```
(connected wp0 wp1)
(connected wp0 wp2)
(connected wp0 wp3)
```

```
(connected wp0 wp4)
(connected wp0 wp5)
(connected wp1 wp0)
(connected wp1 wp2)
(connected wp1 wp4)
(connected wp1 wp5)
(connected wp2 wp0)
(connected wp2 wp1)
(connected wp2 wp4)
(connected wp2 wp5)
```

```
(connected wp3 wp0)
(connected wp3 wp5)
(connected wp4 wp0)
```

```
(connected wp4 wp1)
(connected wp4 wp2)
(connected wp5 wp0)
(connected wp5 wp1)
(connected wp5 wp2)
(connected wp5 wp3)
```

```
(= (distance wp0 wp1) 2)
(= (distance wp0 wp2) 1.45527)
(= (distance wp0 wp3) 3.67492)
```

```
(= (distance wp0 wp4) 2)
(= (distance wp0 wp5) 1.01366)
(= (distance wp1 wp0) 2)
(= (distance wp1 wp2) 2)
(= (distance wp1 wp4) 1.71505)
```

```
(= (distance wp1 wp5) 3.01159)
(= (distance wp2 wp0) 1.45527)
(= (distance wp2 wp1) 2)
(= (distance wp2 wp4) 2.99654)
(= (distance wp2 wp5) 2)
(= (distance wp3 wp0) 3.67492)
(= (distance wp3 wp5) 4.6614)
```

```
(= (distance wp4 wp0) 2)
(= (distance wp4 wp1) 1.71505)
(= (distance wp4 wp2) 2.99654)
(= (distance wp5 wp0) 1.01366)
(= (distance wp5 wp1) 3.01159)
(= (distance wp5 wp2) 2)
(= (distance wp5 wp3) 4.6614)
```

```
)
(:goal (and
  (visited wp0)
  (visited wp1)
  (visited wp2)
  (visited wp3)
  (visited wp4)
  (visited wp5)
))
)
```