

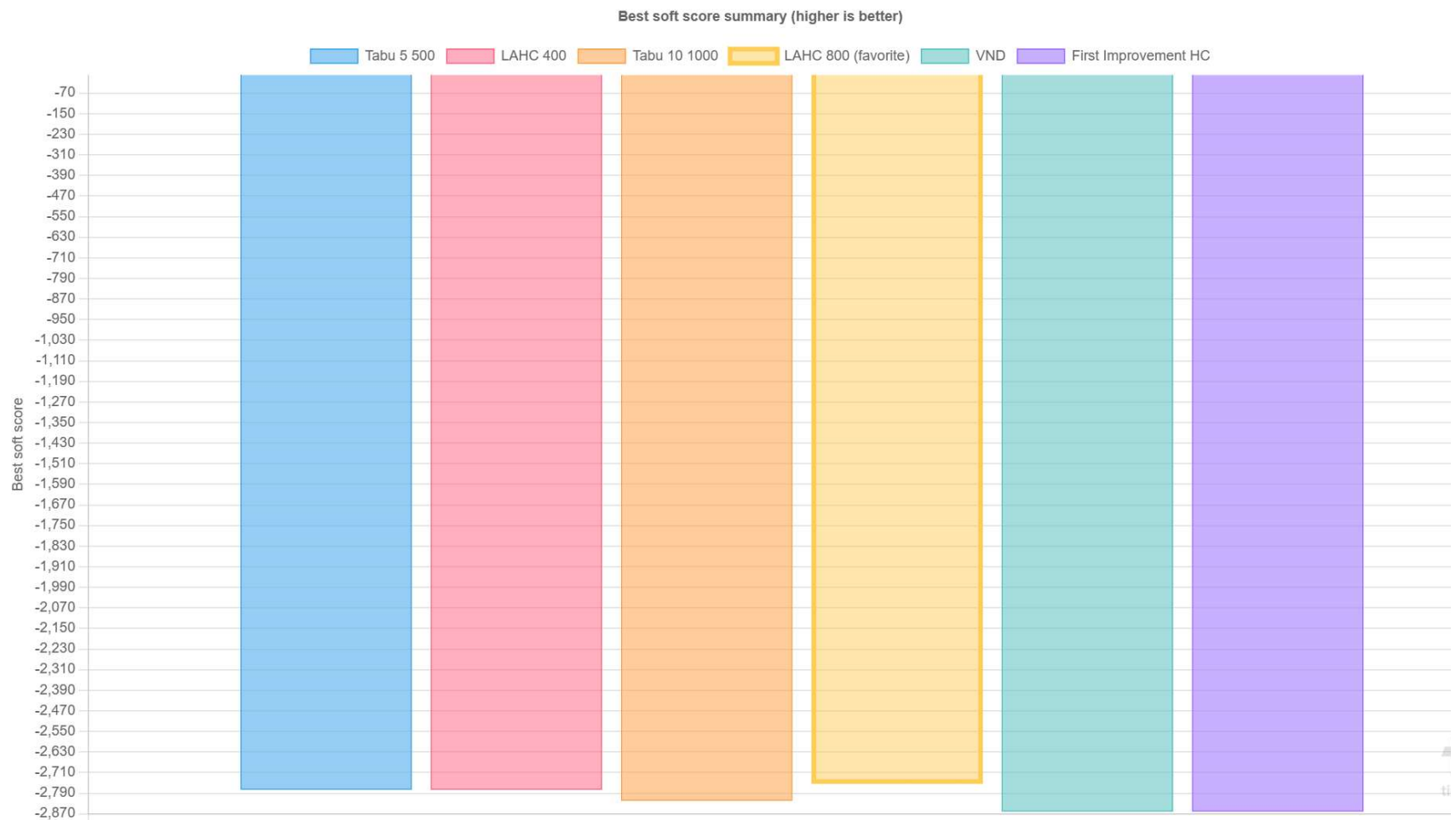
Benchmark Report

Result summary

3 benchmarks have failed!

Best score Best score scalability Best score distribution Winning score difference
Worst score difference percentage (ROI)

Useful for visualizing the best solver configuration.



airport_auto_example_3

Solver	Total	Average	Standard Deviation	Problem
				airport_auto_example_3
Tabu 5 500 1 !	-72hard/-2777soft	-72hard/-2777soft	0.0E0/0.0E0	-72hard/-2777soft 1 !
LAHC 400 1 !	-72hard/-2777soft	-72hard/-2777soft	0.0E0/0.0E0	-72hard/-2777soft 1 !
Simulated Annealing F				Failed
Great Deluge F				Failed
Tabu 10 1000 3 !	-72hard/-2820soft	-72hard/-2820soft	0.0E0/0.0E0	-72hard/-2820soft 3 !
LAHC 800 0 !	-72hard/-2754soft	-72hard/-2754soft	0.0E0/0.0E0	-72hard/-2754soft 0 !
VND 4 !	-72hard/-2862soft	-72hard/-2862soft	0.0E0/0.0E0	-72hard/-2862soft 4 !
First Improvement HC 4 !	-72hard/-2862soft	-72hard/-2862soft	0.0E0/0.0E0	-72hard/-2862soft 4 !
LAHC 400 Entity-focused F				Failed

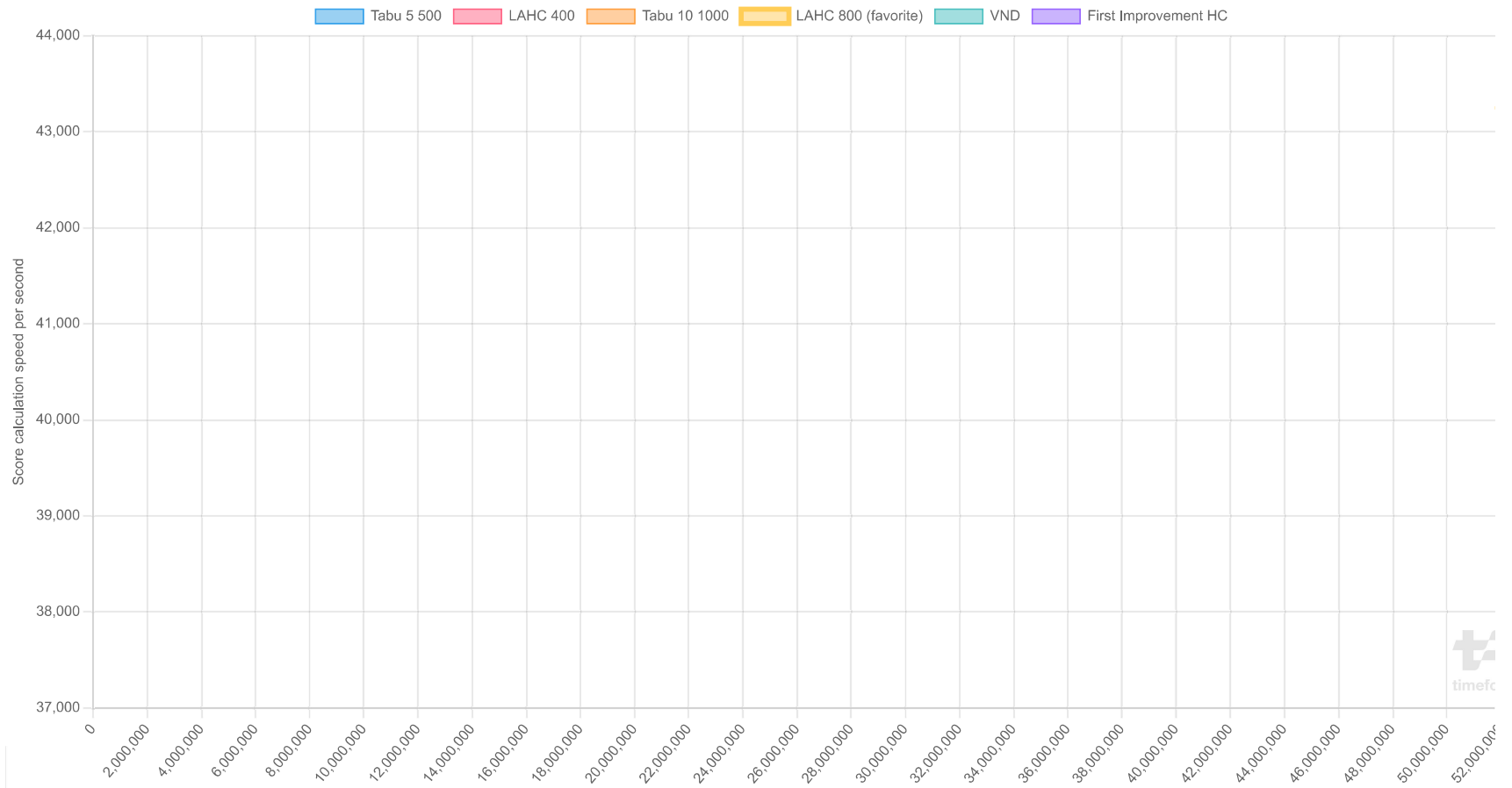
Performance summary

Score calculation speed Move evaluation speed Worst score calculation speed difference percentage Time spent

Time spent scalability Best score per time spent

Useful for comparing different score calculators and/or constraint implementations (presuming that the solver configurations do not differ otherwise). Also useful to measure the scalability cost of an extra constraint.

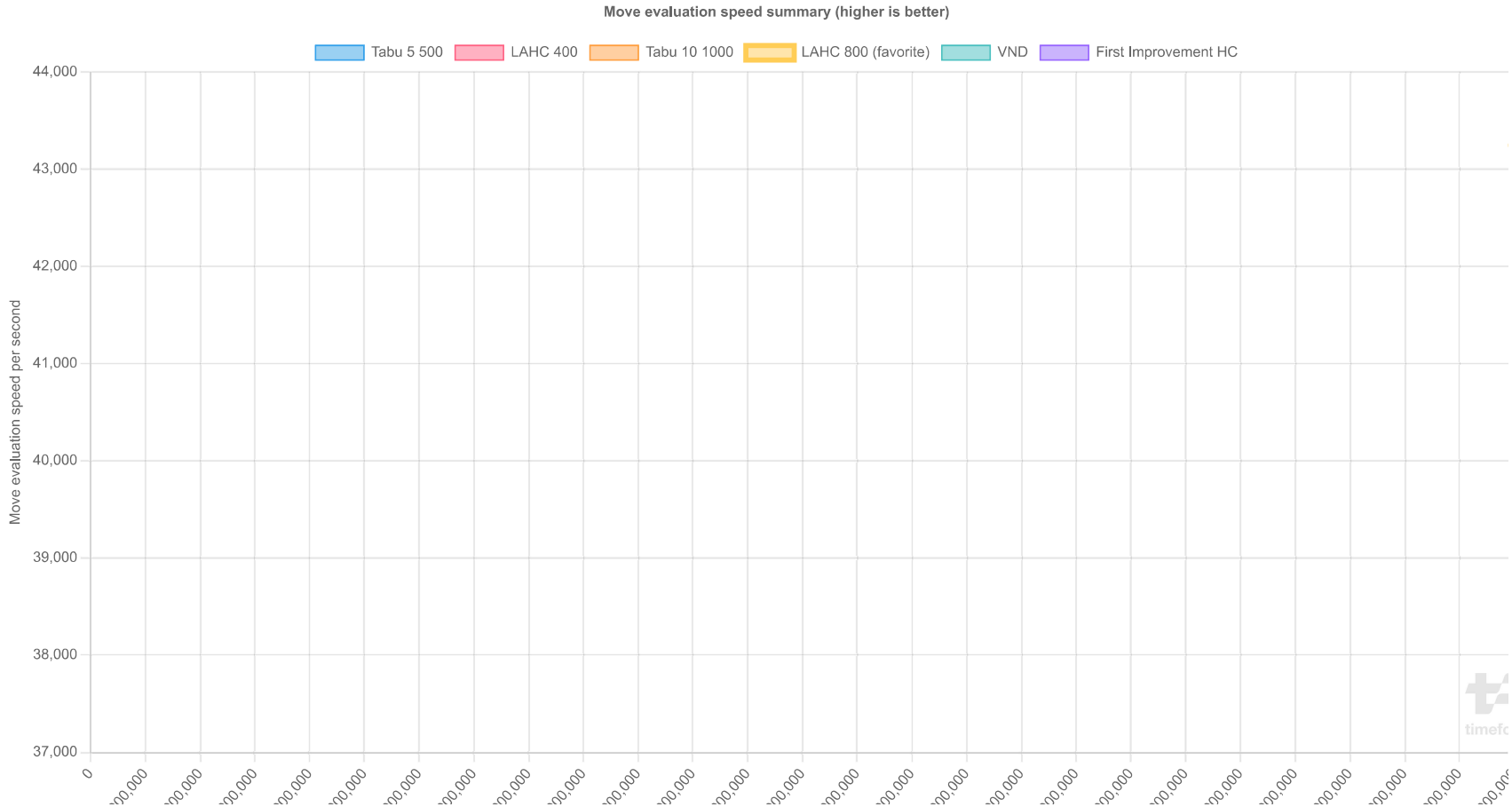
Score calculation speed summary (higher is better)



Solver	Average	airport_auto_example_3
Problem scale	52,002,995	52,002,995
Tabu 5 500 1 !	37,921/s	37,921/s 1 !
LAHC 400 1 !	40,998/s	40,998/s 1 !
Simulated Annealing F	/s	Failed
Great Deluge F	/s	Failed
Tabu 10 1000 3 !	43,730/s	43,730/s 3 !

Solver	Average	Problem
		airport_auto_example_3
Problem scale	52,002,995	52,002,995
LAHC 800 0 !	43,247/s	43,247/s 0 !
VND 4 !	43,686/s	43,686/s 4 !
First Improvement HC 4 !	43,872/s	43,872/s 4 !
LAHC 400 Entity-focused F	/s	Failed

Useful for comparing different score calculators and/or constraint implementations (presuming that the solver configurations do not differ otherwise). Also useful to measure the scalability cost of an extra constraint.



Problem scale		
Solver	Average	airport_auto_example_3
Problem scale	52,002,995	52,002,995
Tabu 5 500 1 !	37,921/s	37,921/s 1 !
LAHC 400 1 !	40,998/s	40,998/s 1 !
Simulated Annealing F	/s	Failed
Great Deluge F	/s	Failed
Tabu 10 1000 3 !	43,730/s	43,730/s 3 !
LAHC 800 0 !	43,247/s	43,247/s 0 !
VND 4 !	43,686/s	43,686/s 4 !
First Improvement HC 4 !	43,872/s	43,872/s 4 !
LAHC 400 Entity-focused F	/s	Failed

Problem benchmarks

airport_auto_example_3

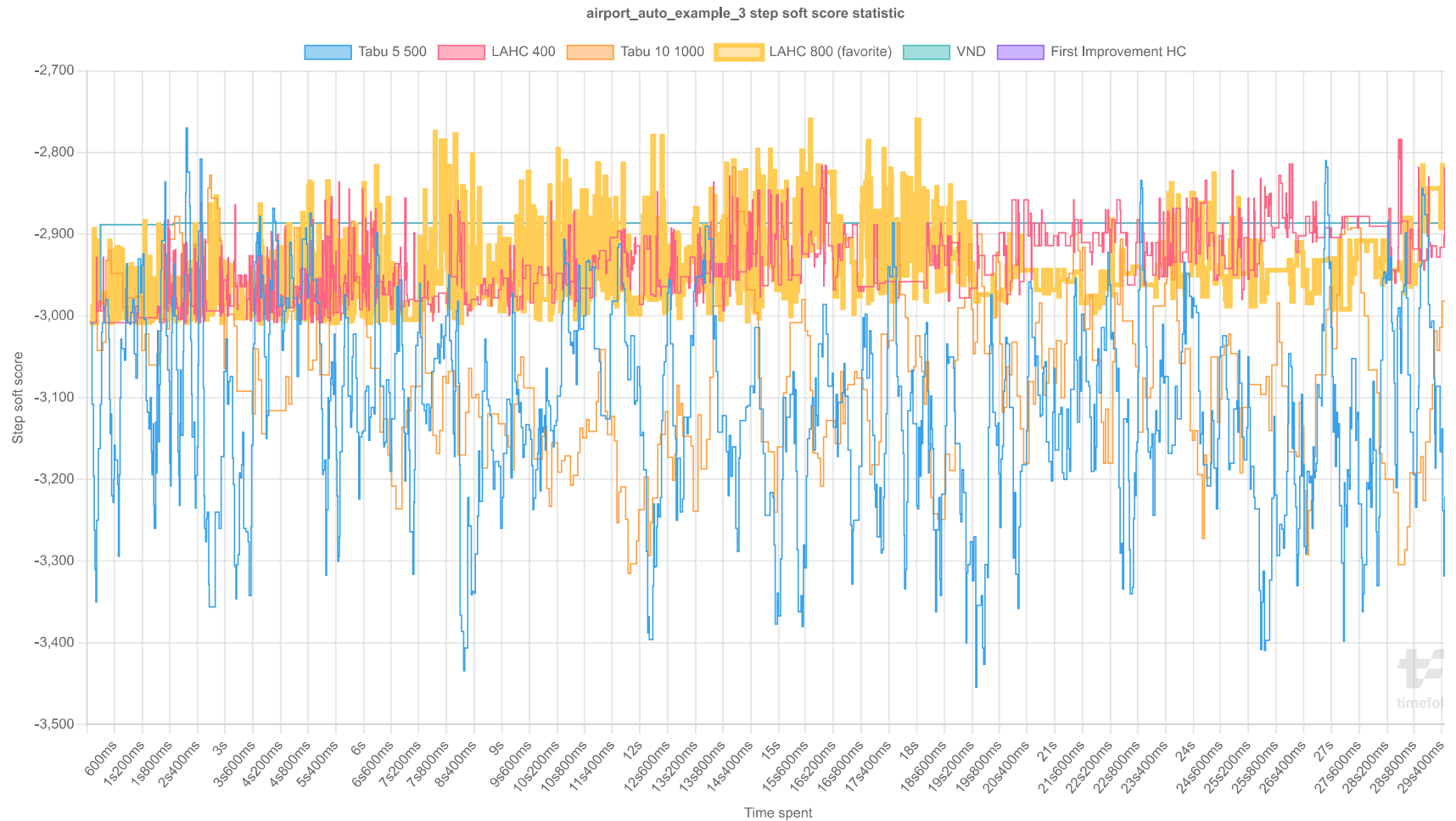
3 benchmarks have failed!

Entity count	4
Variable count	4
Maximum value count	40
Problem scale	52,002,995
Time to load input solution	0.001 s. (1 ms.)
Memory usage after loading input solution	11,806,905 bytes on average

Only the median sub single run of each solver is shown in the statistics below.

Step Score Best Score Picked Move Type Best Score Diff Constraint Match Total Best Score

Constraint Match Total Step Score



CSV files per solver: [↓](#) [↓](#) [↓](#) [↓](#) [↓](#) [↓](#) [↓](#) [↓](#) [↓](#)

airport_auto_example_3_Tabu 5 500

Only the median sub single run of each solver is shown in the statistics below.

Explanation of score (-72hard/-2770soft):

Constraint matches:

-72hard: constraint (Gate type mismatch) has 40 matches:
 -3hard: justified with ([null])
 -3hard: justified with ([null])
 ...
 -200soft: constraint (Company terminal mismatch) has 20 matches:
 -100soft: justified with ([null])
 -100soft: justified with ([null])
 ...
 -770soft: constraint (Total delay) has 20 matches:
 -96soft: justified with ([null])
 -92soft: justified with ([null])
 ...
 0: constraint (Arrival must finish before departure starts) has 0 matches:
 0: constraint (Must assign gate after scheduled time) has 0 matches:

Indictments (top 5 of 40):

-3hard/-142soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 -3hard/-118soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 -3hard/-112soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 -3hard/-108soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 -3hard/-106soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 ...

airport_auto_example_3_LAHC 400

Only the median sub single run of each solver is shown in the statistics below.

Explanation of score (-72hard/-2784soft):

Constraint matches:

-72hard: constraint (Gate type mismatch) has 40 matches:
 -3hard: justified with ([null])

```

-3hard: justified with ([null])
...
-180soft: constraint (Company terminal mismatch) has 18 matches:
-100soft: justified with ([null])
-100soft: justified with ([null])
...
-984soft: constraint (Total delay) has 20 matches:
-180soft: justified with ([null])
-102soft: justified with ([null])
...
0: constraint (Arrival must finish before departure starts) has 0 matches:
0: constraint (Must assign gate after scheduled time) has 0 matches:
Indictments (top 5 of 40):
-3hard/-142soft: indicted with (null) has 3 matches:
-3hard: constraint (Gate type mismatch)
-100soft: constraint (Company terminal mismatch)
...
-3hard/-118soft: indicted with (null) has 3 matches:
-3hard: constraint (Gate type mismatch)
-100soft: constraint (Company terminal mismatch)
...
-3hard/-108soft: indicted with (null) has 3 matches:
-3hard: constraint (Gate type mismatch)
-100soft: constraint (Company terminal mismatch)
...
-3hard/-106soft: indicted with (null) has 3 matches:
-3hard: constraint (Gate type mismatch)
-100soft: constraint (Company terminal mismatch)
...
-3hard/-102soft: indicted with (null) has 2 matches:
-3hard: constraint (Gate type mismatch)
-102soft: constraint (Total delay)
...

```

airport_auto_example_3_Simulated Annealing

3 benchmarks have failed!

airport_auto_example_3_Great Deluge

3 benchmarks have failed!

airport_auto_example_3_Tabu 10 1000

Only the median sub single run of each solver is shown in the statistics below.

Explanation of score (-72hard/-2818soft):

Constraint matches:

-72hard: constraint (**Gate** type mismatch) has 40 matches:
 -3hard: justified **with** ([**null**])
 -3hard: justified **with** ([**null**])
 ...
 -1600soft: constraint (**Company** terminal mismatch) has 16 matches:
 -100soft: justified **with** ([**null**])
 -100soft: justified **with** ([**null**])
 ...
 -1218soft: constraint (**Total** delay) has 20 matches:
 -224soft: justified **with** ([**null**])
 -180soft: justified **with** ([**null**])
 ...
 0: constraint (**Arrival** must finish before departure starts) has 0 matches:
 0: constraint (**Must** assign gate after scheduled time) has 0 matches:

Indictments (top 5 of 40):

-3hard/-142soft: indicted **with** (**null**) has 3 matches:
 -3hard: constraint (**Gate** type mismatch)
 -100soft: constraint (**Company** terminal mismatch)
 ...
 -3hard/-118soft: indicted **with** (**null**) has 3 matches:
 -3hard: constraint (**Gate** type mismatch)
 -100soft: constraint (**Company** terminal mismatch)
 ...
 -3hard/-108soft: indicted **with** (**null**) has 3 matches:
 -3hard: constraint (**Gate** type mismatch)
 -100soft: constraint (**Company** terminal mismatch)
 ...
 -3hard/-106soft: indicted **with** (**null**) has 3 matches:
 -3hard: constraint (**Gate** type mismatch)
 -100soft: constraint (**Company** terminal mismatch)
 ...
 -3hard/-102soft: indicted **with** (**null**) has 2 matches:
 -3hard: constraint (**Gate** type mismatch)
 -102soft: constraint (**Total** delay)
 ...

airport_auto_example_3_LAHC 800

Only the median sub single run of each solver is shown in the statistics below.

Explanation of score (-72hard/-2760soft):

Constraint matches:

-72hard: constraint (Gate type mismatch) has 40 matches:
 -3hard: justified with ([null])
 -3hard: justified with ([null])
 ...
 -1700soft: constraint (Company terminal mismatch) has 17 matches:
 -100soft: justified with ([null])
 -100soft: justified with ([null])
 ...
 -1060soft: constraint (Total delay) has 19 matches:
 -224soft: justified with ([null])
 -96soft: justified with ([null])
 ...
 0: constraint (Arrival must finish before departure starts) has 0 matches:
 0: constraint (Must assign gate after scheduled time) has 0 matches:

Indictments (top 5 of 40):

-3hard/-142soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 -3hard/-118soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 -3hard/-106soft: indicted with (null) has 3 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...
 -3hard/-100soft: indicted with (null) has 2 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 -3hard/-100soft: indicted with (null) has 2 matches:
 -3hard: constraint (Gate type mismatch)
 -100soft: constraint (Company terminal mismatch)
 ...

airport_auto_example_3_VND

Only the median sub single run of each solver is shown in the statistics below.

Explanation of score (-72hard/-2886soft):

Constraint matches:

-72hard: constraint (Gate type mismatch) has 40 matches:
 -3hard: justified with ([null])
 -3hard: justified with ([null])
 ...

```

-1900soft: constraint (Company terminal mismatch) has 19 matches:
  -100soft: justified with ([null])
  -100soft: justified with ([null])
  ...
-986soft: constraint (Total delay) has 21 matches:
  -180soft: justified with ([null])
  -96soft: justified with ([null])
  ...
0: constraint (Arrival must finish before departure starts) has 0 matches:
0: constraint (Must assign gate after scheduled time) has 0 matches:
Indictments (top 5 of 40):
-3hard/-178soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-118soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-112soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-108soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-106soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
  ...

```

airport_auto_example_3_First Improvement HC

Only the median sub single run of each solver is shown in the statistics below.

Explanation of score (-72hard/-2886soft):

Constraint matches:

```

-72hard: constraint (Gate type mismatch) has 40 matches:
  -3hard: justified with ([null])
  -3hard: justified with ([null])
  ...
-1900soft: constraint (Company terminal mismatch) has 19 matches:
  -100soft: justified with ([null])
  -100soft: justified with ([null])
  ...
-986soft: constraint (Total delay) has 21 matches:

```

```
-180soft: justified with ([null])
-96soft: justified with ([null])
...
0: constraint (Arrival must finish before departure starts) has 0 matches:
0: constraint (Must assign gate after scheduled time) has 0 matches:
Indictments (top 5 of 40):
-3hard/-178soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-118soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-112soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-108soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
-3hard/-106soft: indicted with (null) has 3 matches:
  -3hard: constraint (Gate type mismatch)
  -100soft: constraint (Company terminal mismatch)
  ...
...
```

airport_auto_example_3_LAHC 400 Entity-focused

3 benchmarks have failed!

Solver benchmarks

Tabu 5 500 1 ! LAHC 400 1 ! Simulated Annealing F Great Deluge F Tabu 10 1000 3 !
LAHC 800 0 ! VND 4 ! First Improvement HC 4 ! LAHC 400 Entity-focused F

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<solver xmlns="https://timefold.ai/xsd/solver">
  <environmentMode>PHASE_ASSERT</environmentMode>
  <monitoring>
    <metric>STEP_SCORE</metric>
    <metric>BEST_SCORE</metric>
    <metric>PICKED_MOVE_TYPE_BEST_SCORE_DIFF</metric>
    <metric>CONSTRAINT_MATCH_TOTAL_BEST_SCORE</metric>
    <metric>CONSTRAINT_MATCH_TOTAL_STEP_SCORE</metric>
```

```
</monitoring>
<solutionClass>lv.lu.eztf.dn.combopt.evrp.domain.EVRPsolution</solutionClass>
<entityClass>lv.lu.eztf.dn.combopt.evrp.domain.Gate</entityClass>
<entityClass>lv.lu.eztf.dn.combopt.evrp.domain.Visit</entityClass>
<scoreDirectorFactory>
  <constraintProviderClass>lv.lu.eztf.dn.combopt.evrp.solver.ConstraintStreamCostFunction</constraintProviderClass>
</scoreDirectorFactory>
<termination>
  <secondsSpentLimit>30</secondsSpentLimit>
</termination>
<constructionHeuristic/>
<localSearch>
  <unionMoveSelector>
    <subListChangeMoveSelector/>
    <listChangeMoveSelector/>
    <listSwapMoveSelector/>
    <kOptListMoveSelector/>
  </unionMoveSelector>
  <acceptor>
    <valueTabuSize>5</valueTabuSize>
  </acceptor>
  <forager>
    <acceptedCountLimit>500</acceptedCountLimit>
  </forager>
</localSearch>
</solver>
```

Environment Information

Name	2026-01-18_134729
Aggregation	false
Failure count	3
Starting timestamp	2026. gada 18. janv. 13:47:29
Warm-up time spent	0.030 s. (30 ms.)
Parallel benchmark count / available processors	1 / 8
Benchmark time spent	09:03.586 s. (543,586 ms.)
Environment mode	PHASE_ASSERT
Logging level for ai.timefold.solver.core	DEBUG
Solver ranking class	TotalScoreSolverRankingComparator

VM max memory (as in -Xmx but lower)	4,217,372,672 bytes
Timefold Solver version	Community Edition v1.27.0
Java version	Java 17.0.16 (Eclipse Adoptium)
Java VM	Java OpenJDK 64-Bit Server VM 17.0.16+8 (Eclipse Adoptium)
Operating system	Windows 11 amd64 10.0
Report locale	Unknown
Report timezone	Europe/Riga

[Timefold](#)[Documentation](#)[Code](#)[Support](#)