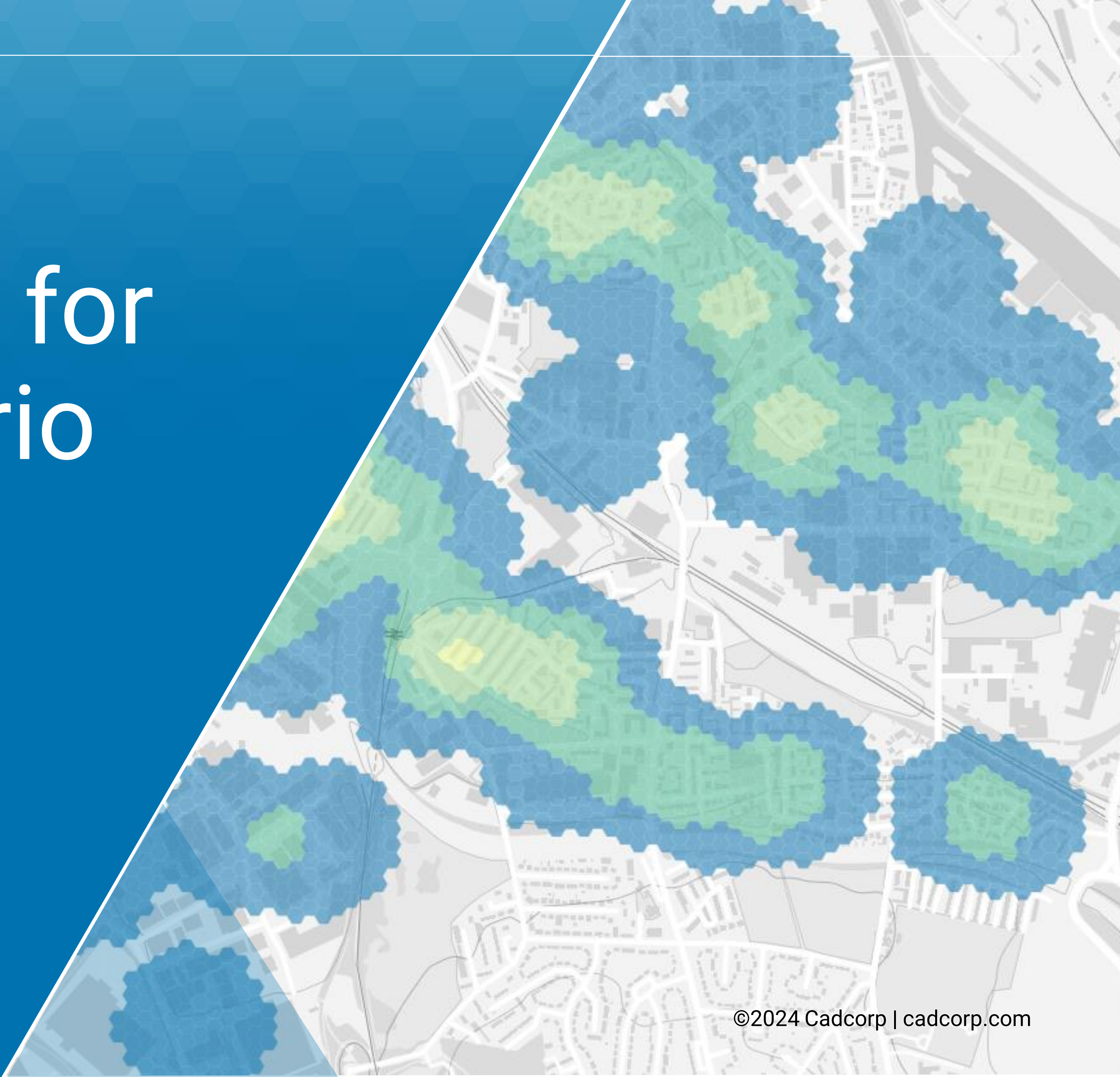
May 2024

Enhancements for realistic scenario modelling

Gemma Polmear and Simon Parker



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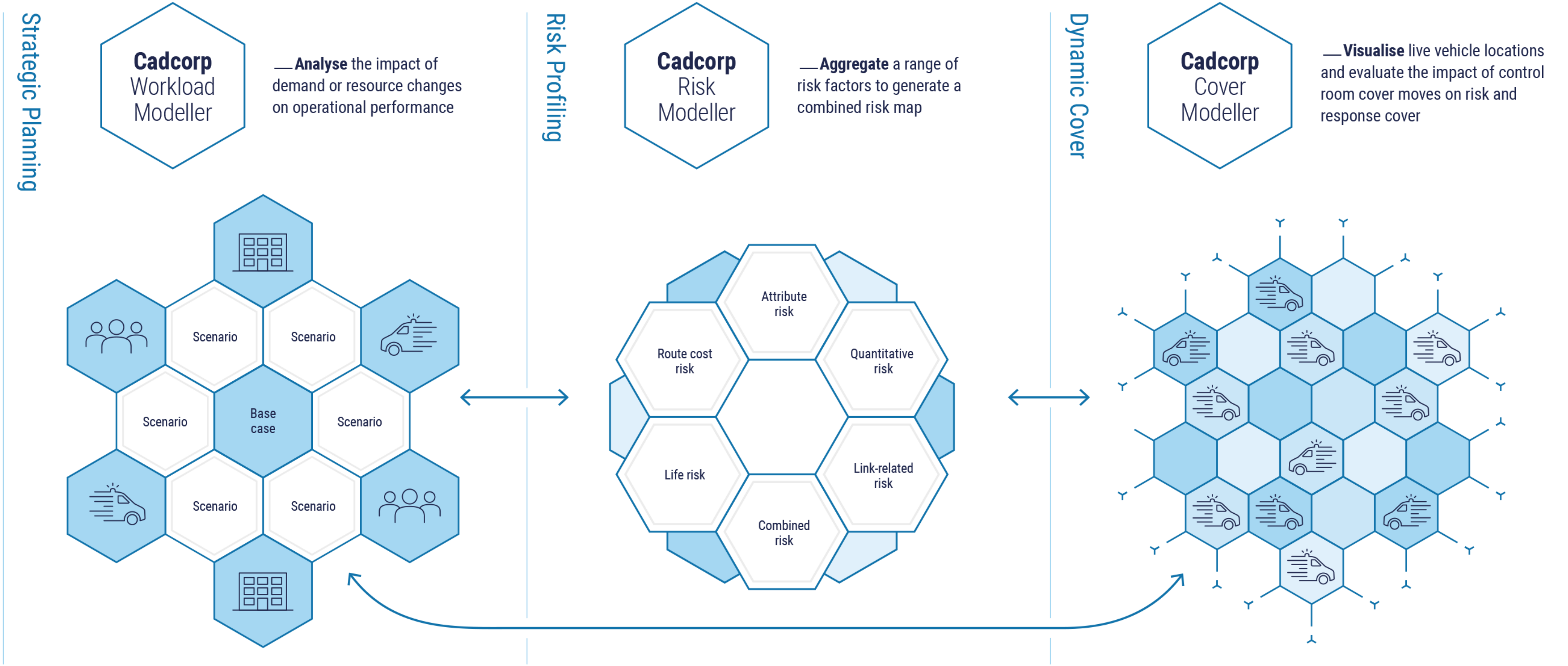
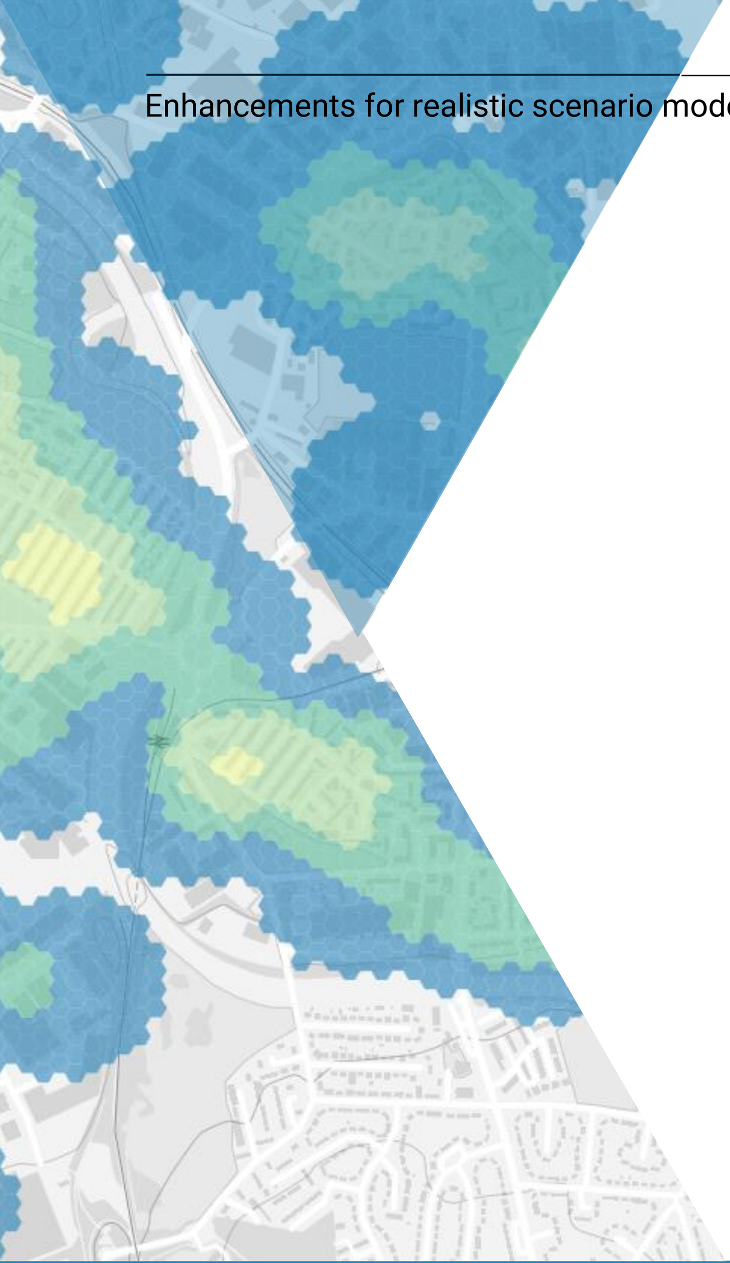




Workload Modeller

- **Integrated into SIS Desktop**
- **Scenario modelling: stations, appliances, shift patterns**
- **Analyse the impact of changes on performance**
- **Constantly evolving set of tools, driven by customer requests**
- **Many recent developments in 9.1**
  - Keep up to date with monthly preview builds on the Cadcorp Community

  https://community.cadcorp.com/t/sis-9-1-monthly-preview-builds-may-2024/1669

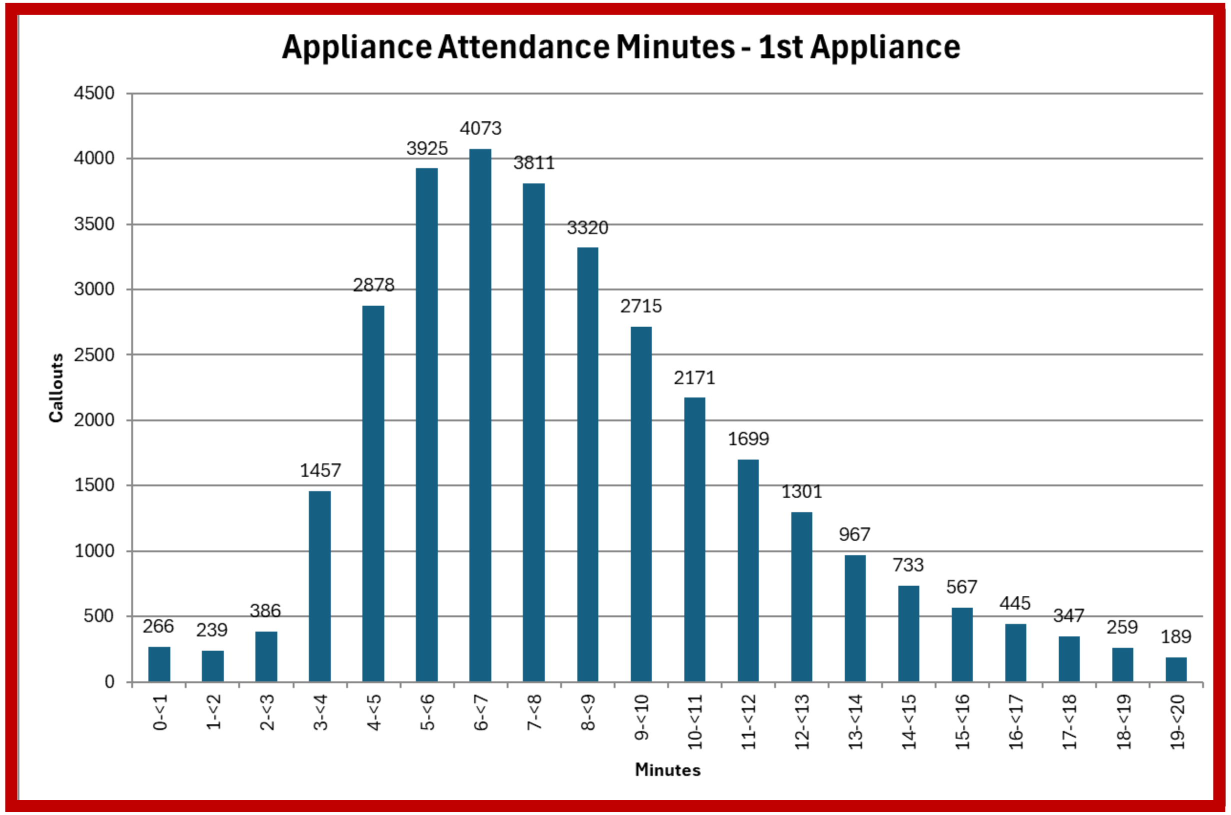
Updates: Analysis

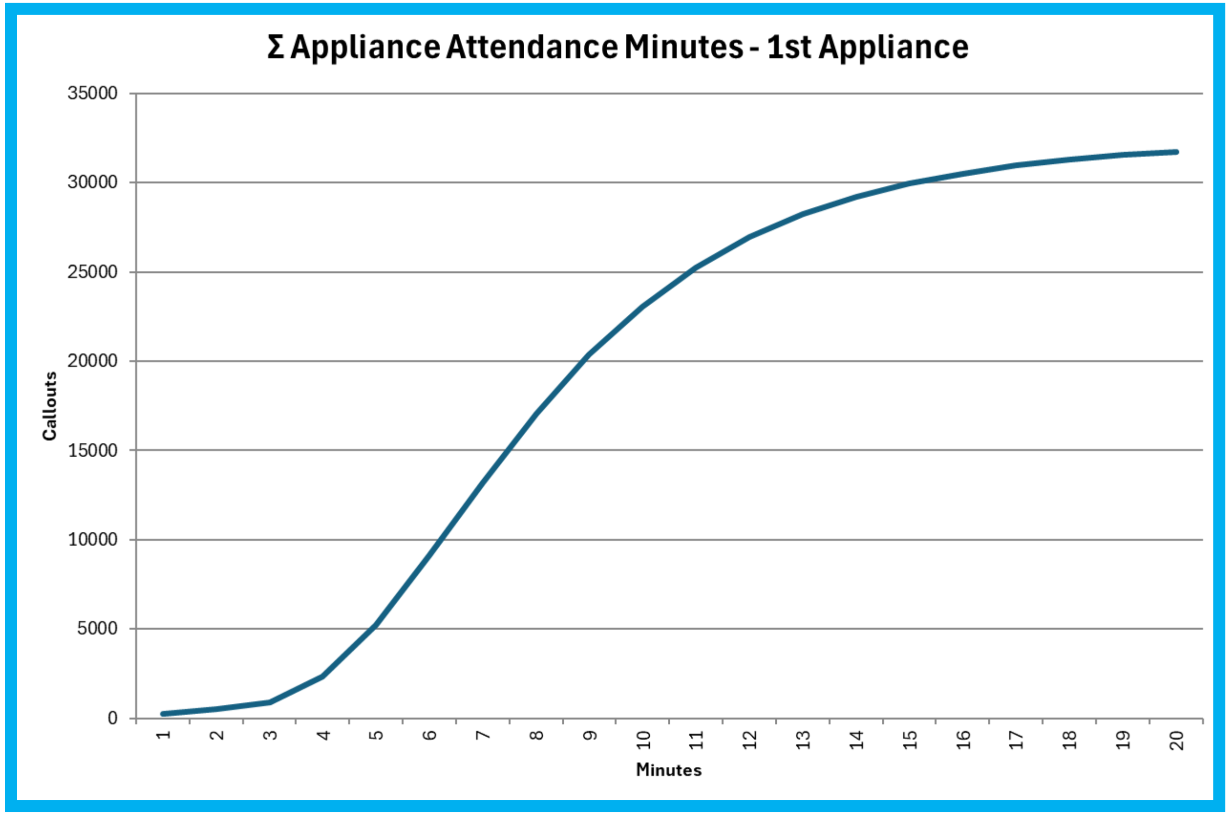
- **Standard Attendance Analysis now includes cumulative data and charts**

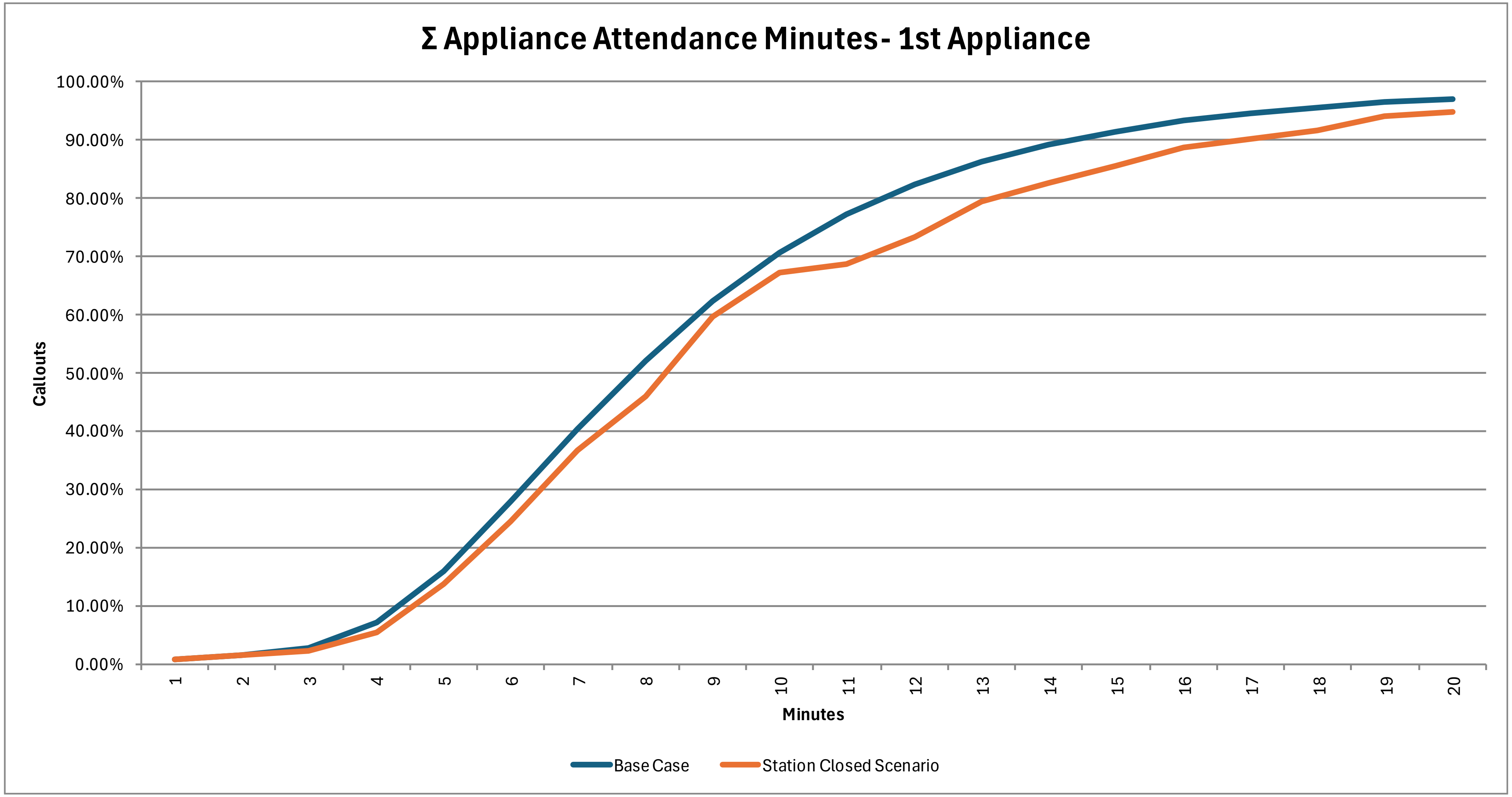
Enhancements for realistic scenario modelling

	A	B	C	D	E	F
1	Minutes	1st Appliance	% 1st Appliance	2nd Appliance	% 2nd Appliance	Lag
2	0-<1	266	0.81%	37	0.45%	1584
3	1-<2	239	0.73%	18	0.22%	1672
4	2-<3	386	1.18%	26	0.32%	1279
5	3-<4	1457	4.45%	100	1.22%	238
6	4-<5	2878	8.80%	191	2.34%	901
7	5-<6	3925	12.00%	253	3.09%	665
8	6-<7	4073	12.45%	351	4.29%	114
9	7-<8	3811	11.65%	516	6.31%	402
10	8-<9	3320	10.15%	668	8.17%	236
11	9-<10	2715	8.30%	727	8.89%	40
12	10-<11	2171	6.64%	769	9.40%	136
13	11-<12	1699	5.19%	757	9.26%	109
14	12-<13	1301	3.98%	656	8.02%	32
15	13-<14	967	2.96%	586	7.17%	67
16	14-<15	733	2.24%	435	5.32%	84
17	15-<16	567	1.73%	376	4.60%	62
18	16-<17	445	1.36%	333	4.07%	9
19	17-<18	347	1.06%	207	2.53%	44
20	18-<19	259	0.79%	183	2.24%	46
21	19-<20	189	0.58%	132	1.61%	18

G	H	I	J	K	L
	Minutes	Σ 1st Appliance	Σ % 1st Appliance	Σ 2nd Appliance	Σ % 2nd Appliance
	1	266	0.81%	37	0.45%
	2	505	1.54%	55	0.67%
	3	891	2.72%	81	0.99%
	4	2348	7.18%	181	2.21%
	5	5226	15.97%	372	4.55%
	6	9151	27.97%	625	7.64%
	7	13224	40.42%	976	11.93%
	8	17035	52.07%	1492	18.24%
	9	20355	62.21%	2160	26.41%
	10	23070	70.51%	2887	35.30%
	11	25241	77.15%	3656	44.71%
	12	26940	82.34%	4413	53.96%
	13	28241	86.32%	5069	61.98%
	14	29208	89.27%	5655	69.15%
	15	29941	91.51%	6090	74.47%
	16	30508	93.25%	6466	79.07%
	17	30953	94.61%	6799	83.14%
	18	31300	95.67%	7006	85.67%
	19	31559	96.46%	7189	87.91%
	20	31748	97.04%	7321	89.52%


Appliance Attendance Minutes - 1st Appliance
Callouts
Minutes
4500
4000
3500
3000
2500
2000
1500
1000
500
0
266
239
386
1457
2878
3925
4073
3811
3320
2715
2171
1699
1301
967
733
567
445
347
259
189
0-<1
1-<2
2-<3
3-<4
4-<5
5-<6
6-<7
7-<8
8-<9
9-<10
10-<11
11-<12
12-<13
13-<14
14-<15
15-<16
16-<17
17-<18
18-<19
19-<20

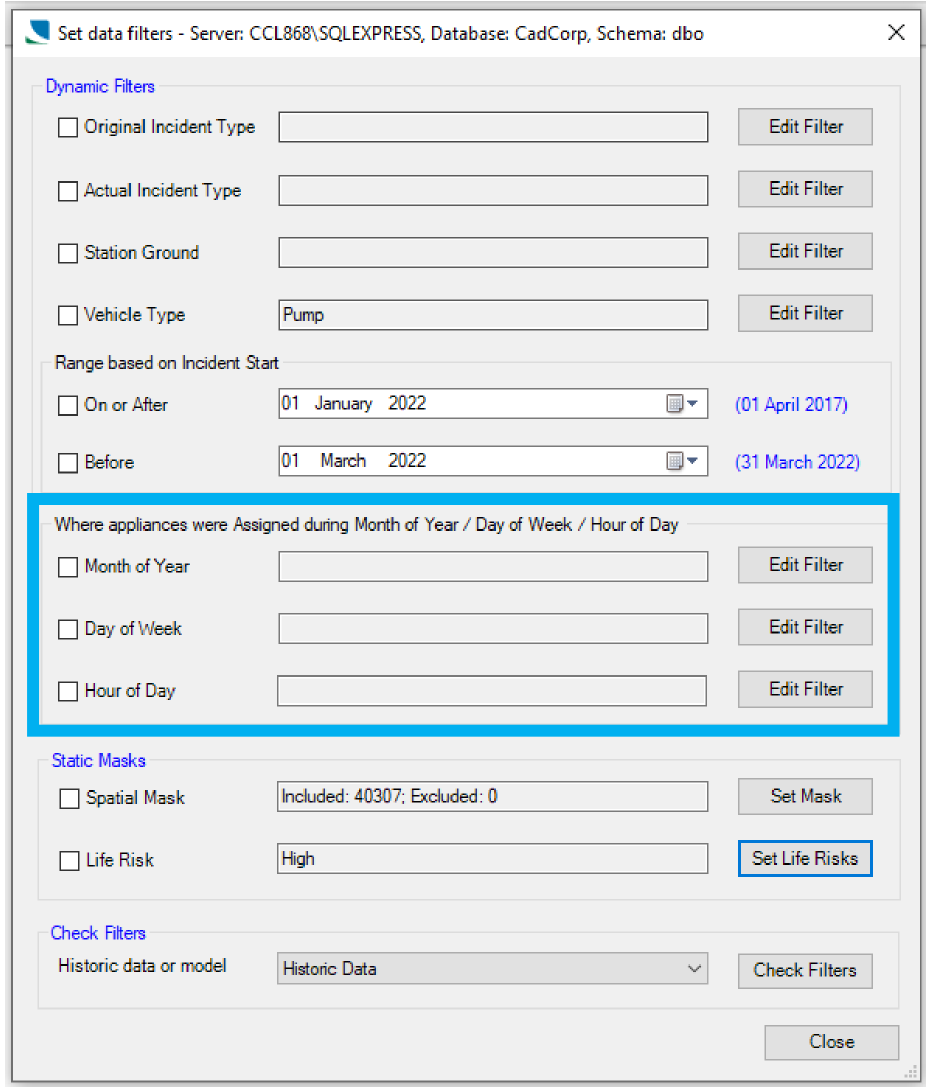

Σ Appliance Attendance Minutes - 1st Appliance
Callouts
Minutes
35000
30000
25000
20000
15000
10000
5000
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

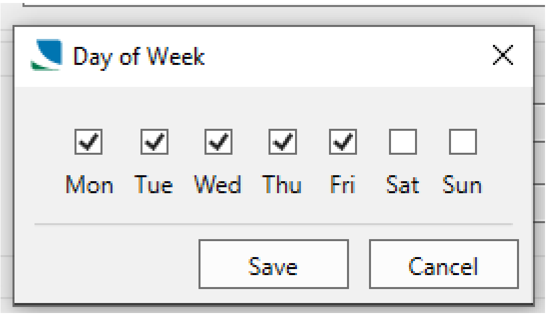

Σ Appliance Attendance Minutes- 1st Appliance
Callouts
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Minutes
Base Case
Station Closed Scenario

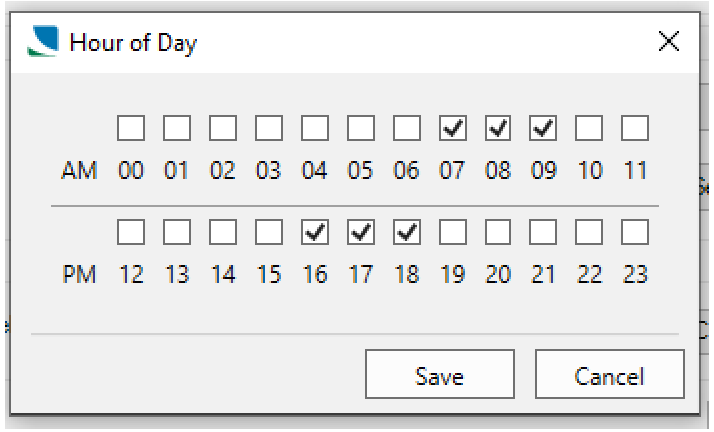
Updates: Analysis

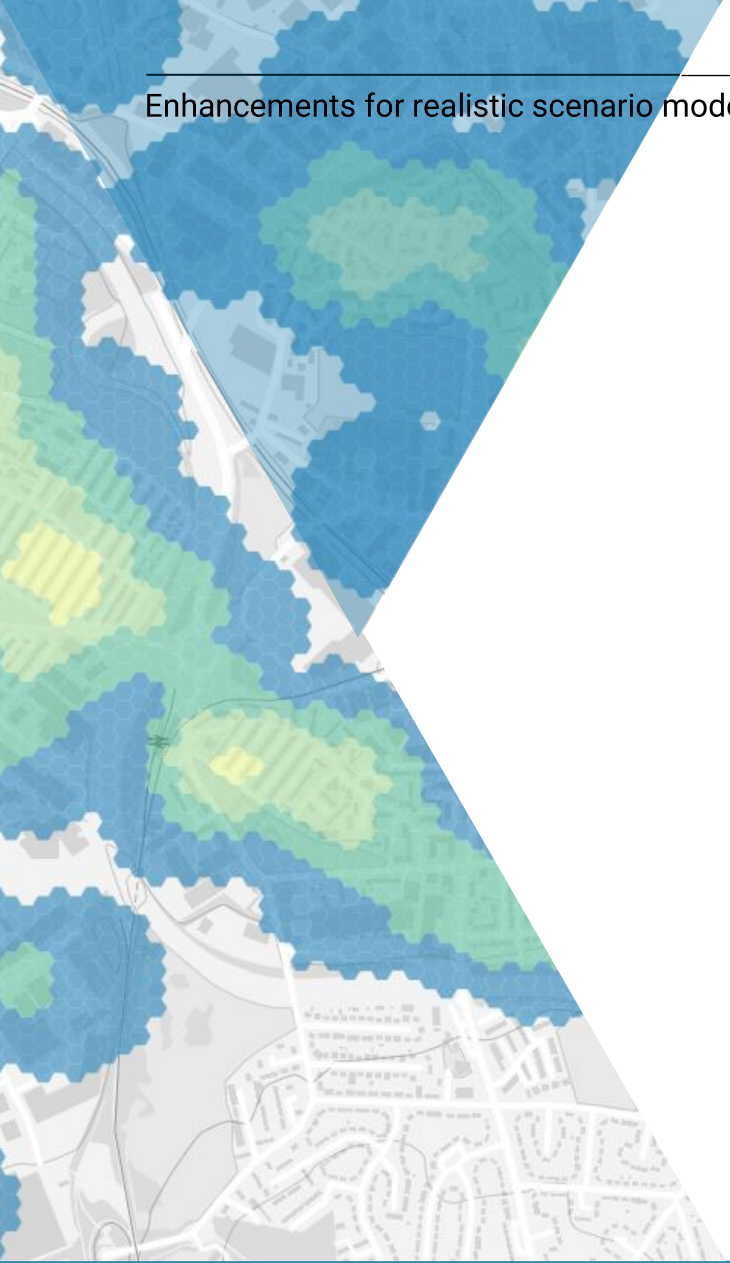
- Standard Attendance Analysis now includes cumulative data and charts
- More flexible time/date filters

Enhancements for realistic scenario modelling





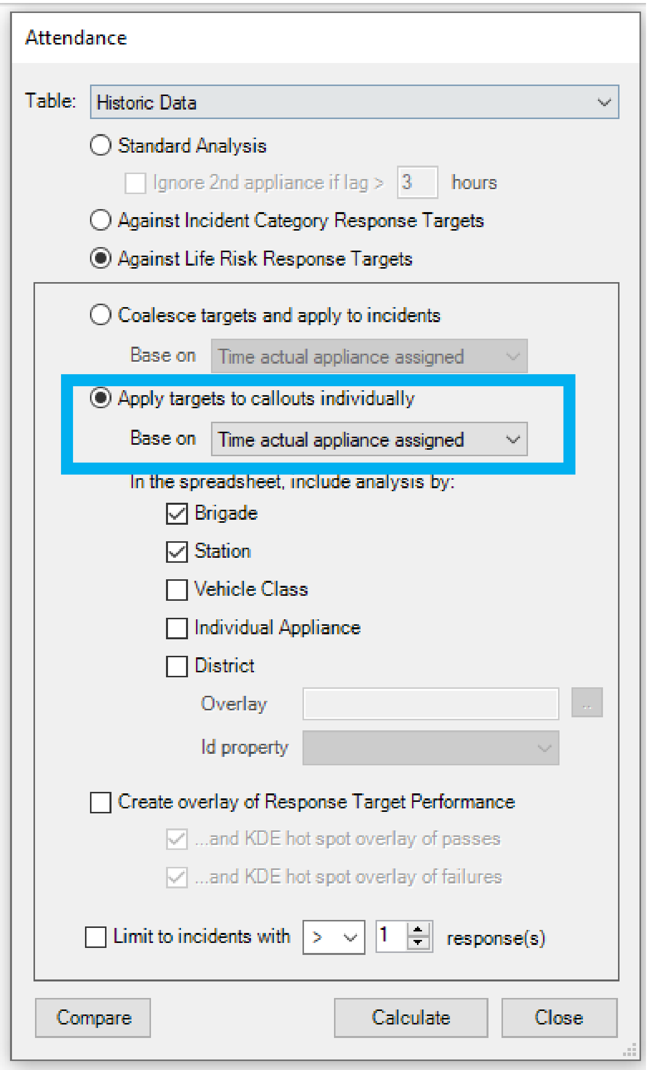




Updates: Analysis

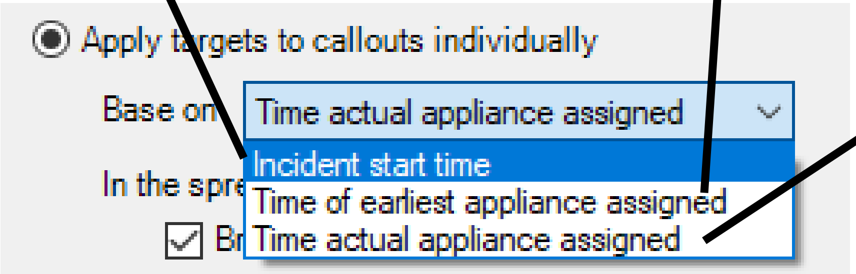
- **Standard Attendance Analysis now includes cumulative data and charts**
- **More flexible time/date filters**
- **Option to measure attendance against targets from Time of Call as well as Time of Send**

Enhancements for realistic scenario modelling

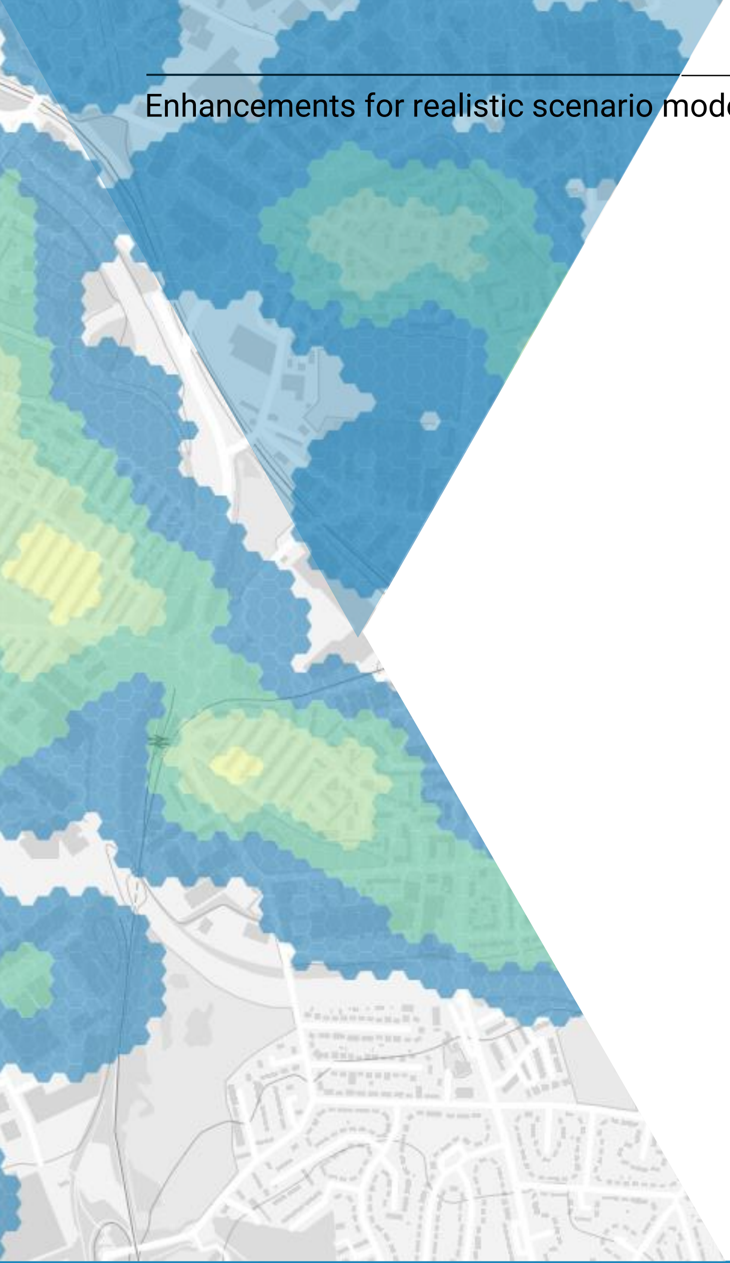


Clock starts at **incident start time**, from tblIncidents. Call handling time will therefore be included

Clock starts when **any** appliance for this incident was first assigned by the mobilising system

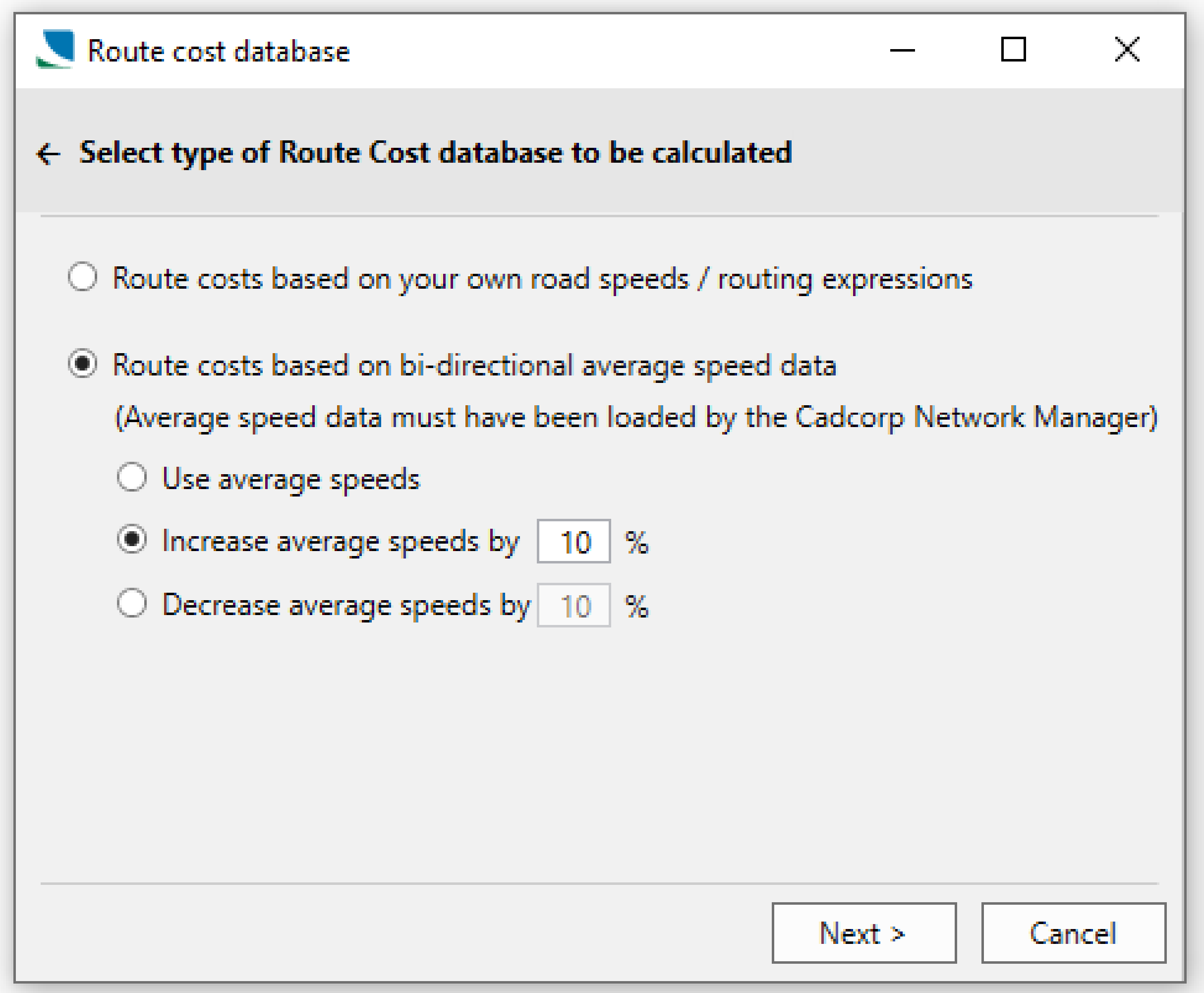


Clock starts when **the first arriving** appliance for this incident was first assigned by the mobilising system



Updates: Route Cost Database

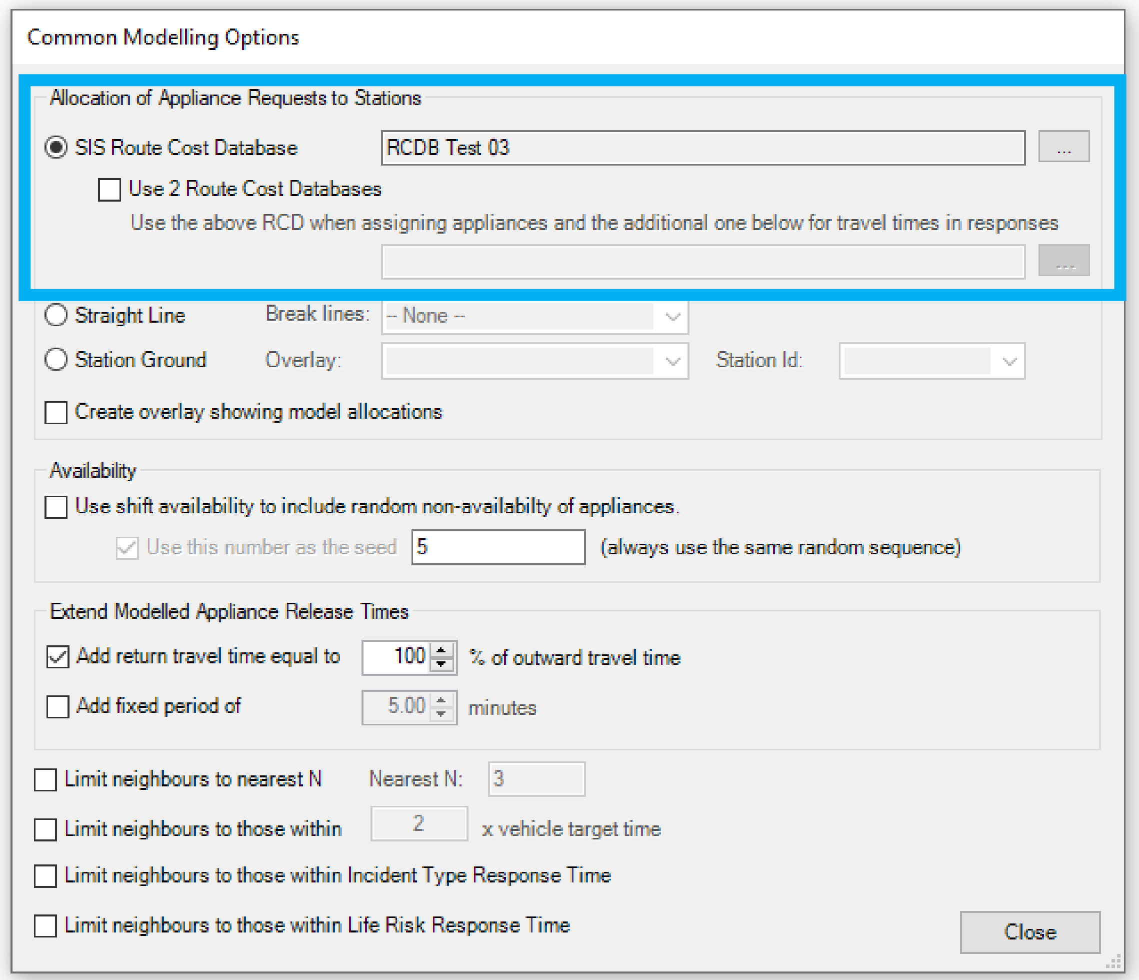
- **Support for bidirectional routing and variable time of day average speed data (OS Highways as OS NGD Roads)**
  - Data must have been loaded using the Cadcorp Network Manager tool available in SIS Desktop 9.1
  - Version 9.1.1850 or later of SIS Desktop (November 2023 Monthly Preview build)
- **Scale factor option for average speed calculations**

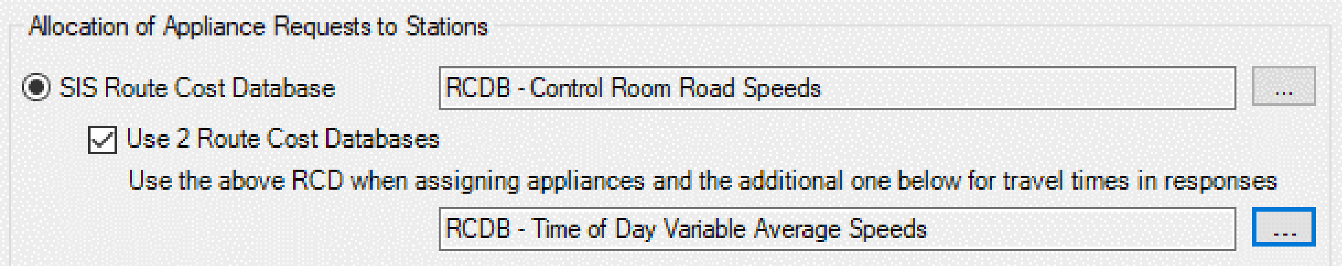

Route cost database
Select type of Route Cost database to be calculated
Route costs based on your own road speeds / routing expressions
Route costs based on bi-directional average speed data
(Average speed data must have been loaded by the Cadcorp Network Manager)
Use average speeds
Increase average speeds by 10 %
Decrease average speeds by 10 %
Next >
Cancel

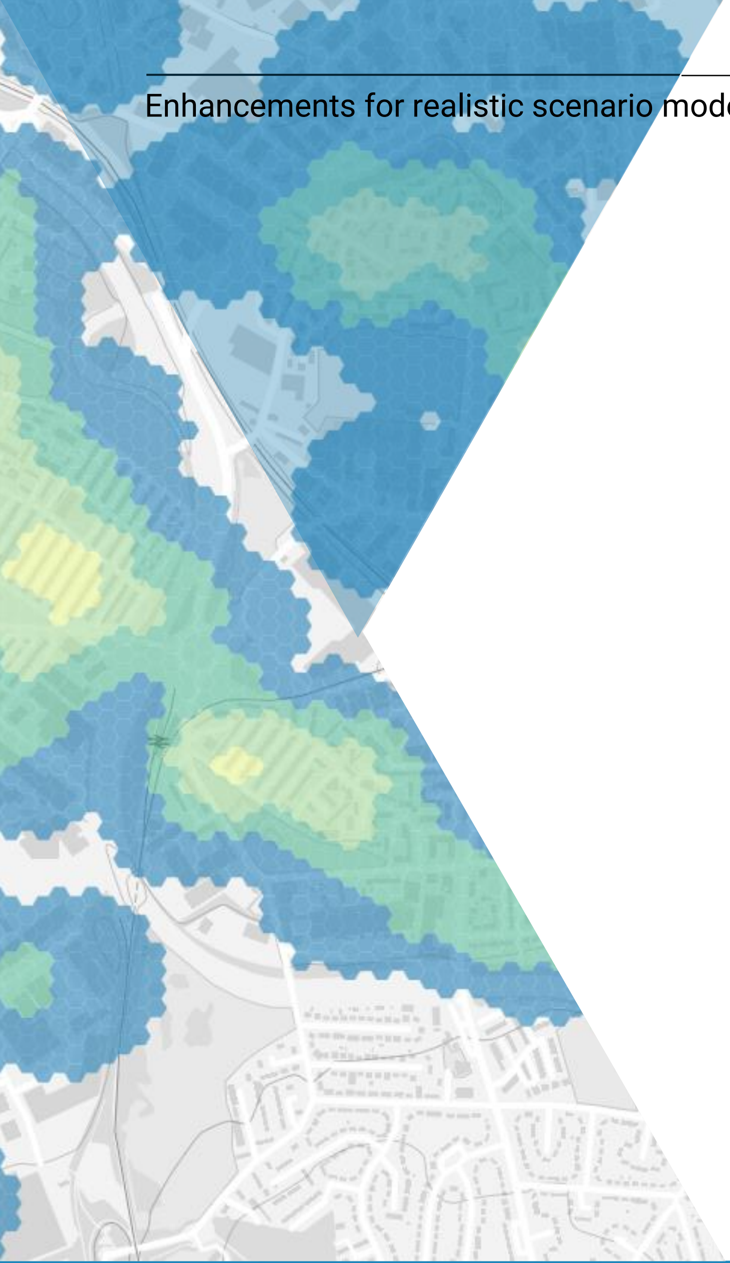
Updates: Modelling

- **Option to use a second route cost database**
  - RCDB 1: Used to make the decisions about who to send
  - RCDB 2: Used to calculate travel times for response

Enhancements for realistic scenario modelling



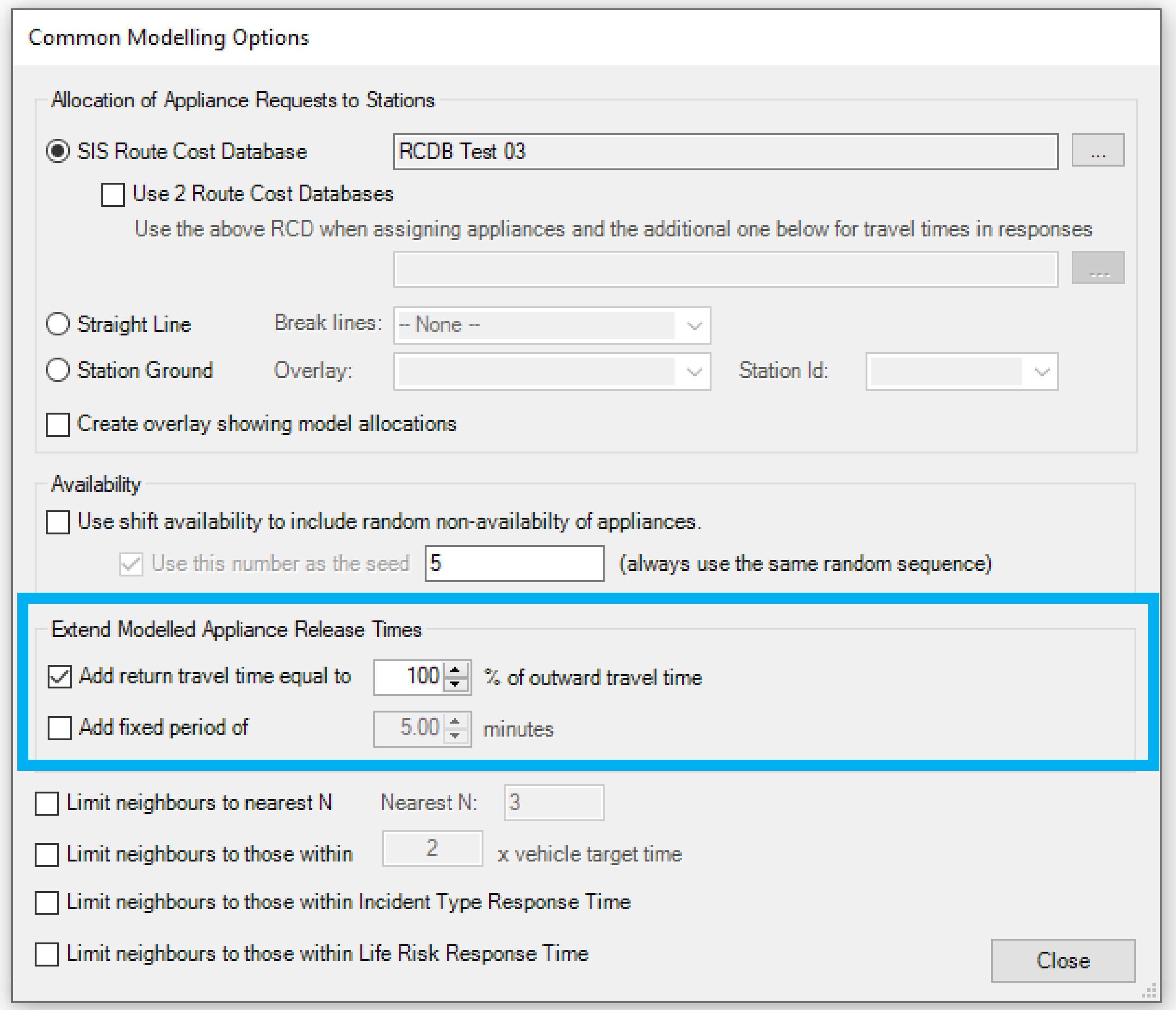


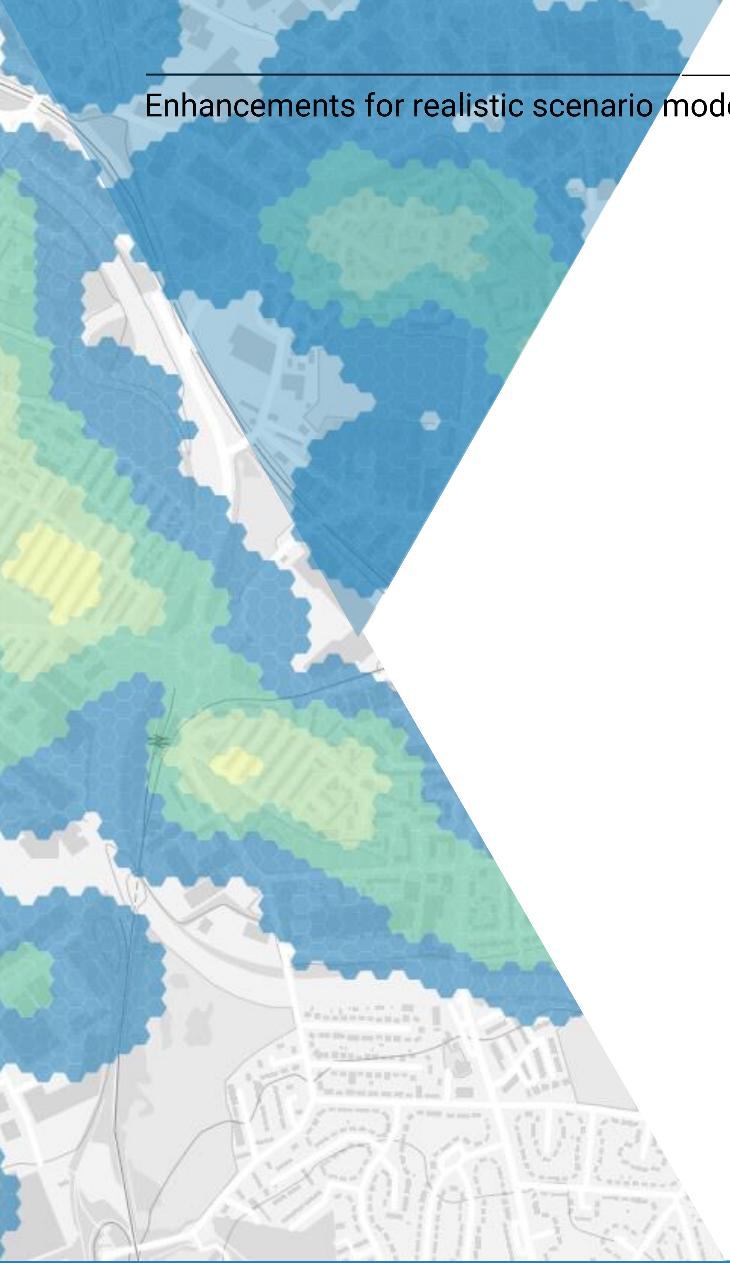


Updates: Modelling

- **Option to use a second route cost database**
  - RCDB 1: Used to make the decisions about who to send
  - RCDB 2: Used to calculate travel times for response
- **Option to extend release times**
  - Return journey to station
  - Fixed period of time for crew/appliance to be recommissioned

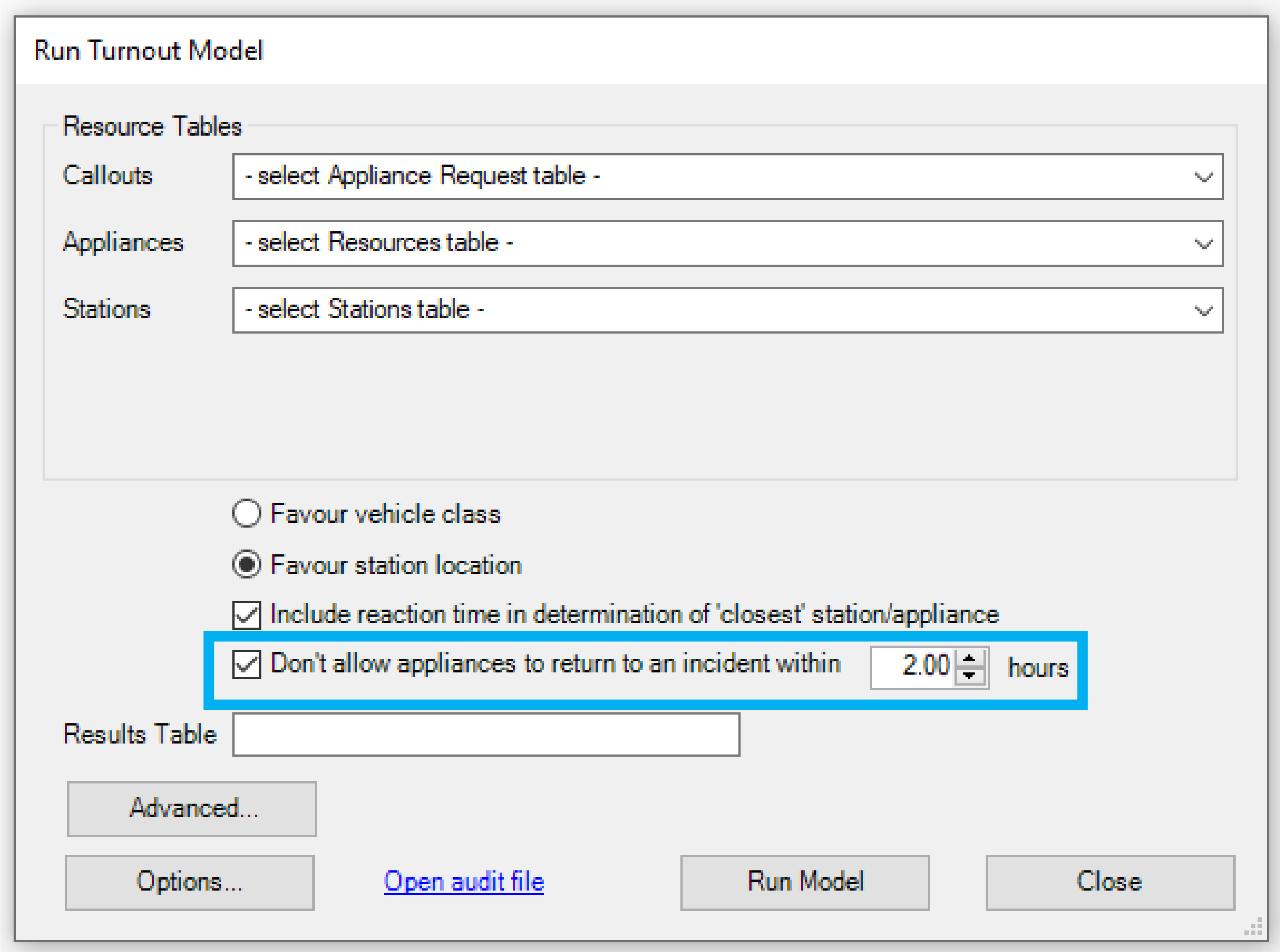
Enhancements for realistic scenario modelling





Updates: Modelling

- **Option to use a second route cost database**
  - RCDB 1: Used to make the decisions about who to send
  - RCDB 2: Used to calculate travel times for response
- **Option to extend release times**
  - Return journey to station
  - Time for crew/appliance to be recommissioned
- **Option to prevent an appliance from returning to an incident within a certain time**
  - Relief crews, degradation scenarios


Run Turnout Model
Resource Tables
Callouts
- select Appliance Request table -
Appliances
- select Resources table -
Stations
- select Stations table -
Favour vehicle class
Favour station location
Include reaction time in determination of 'closest' station/appliance
Don't allow appliances to return to an incident within
2.00
hours
Results Table
Advanced...
Options...
Open audit file
Run Model
Close

All ideas are welcome!

If you have any Workload Modeller functionality requests, suggestions, ideas or questions please let us know!

support@cadcorp.com