Agileto®

Welcome to Agileto DEMO projects
(V4.04 / 29 Mar 2025)

This is **Agileto DEMO projects** *help file* and it makes references to Agileto **DEMO projects** delivered with Agileto setup kit for the DEMO and training purpose. The data delivered into the DEMO projects is virtual and has no connection with the reality.

The latest version of this document may be downloaded from here:

http://www.agileto.com/docs/Agileto_DEMO_PROJECT.pdf

http://www.agileto.com/pro/Agileto_DEMO_PROJECT.exe (containing all the DEMO data, too)

As complementary, Agileto Help file may be downloaded from here:

http://www.agileto.com/docs/Agileto_Help.pdf

CONTENTS:

What are Agileto DEMO projects ?

Agileto **DEMO projects** represent two Agileto projects delivered together with Agileto installation setup kit (**PRO_Setup.exe**) and they are making reference to the following Agileto projects:

a) **DEMO_PROJECT**

b) **DEMO_OMC_DUMP**

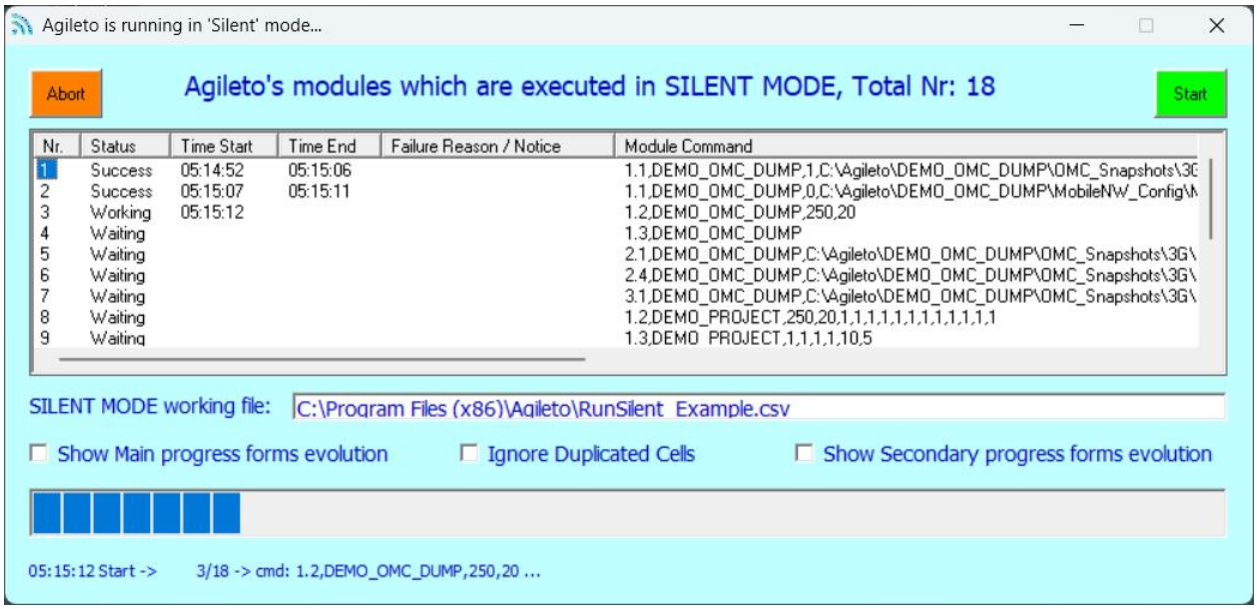
The above mentioned Agileto projects represent two folders with the same name as per mentioned above (each one containing a standard Agileto subfolder structure / project) which are extracted automatically by Agileto installation setup kit at the following path:

C:\Agileto

The data included into these Agileto **DEMO projects** represent Agileto inputs + outputs data files.

The main advantage of Agileto tool is that its input & output data may be shared between people who already use or not Agileto tool, therefore **Agileto DEMO projects** may be open by anyone, manually or from within Agileto tool interface according with the indications presented below.

The data (most of it) included into Agileto **DEMO projects** has been obtain after executing in ***SILENT MODE*** the input file ***RunSilent_Example.csv*** (delivered and executed automatically during Agileto installation process) like it is presented below.



Software tools requirements

Agileto outputs may be open by using Agileto software tool or manually, by hand.

In order to see these Agileto outputs you may need to have installed the following tools:

- **Google Earth Pro** (free of charge, to be installed from the link below):

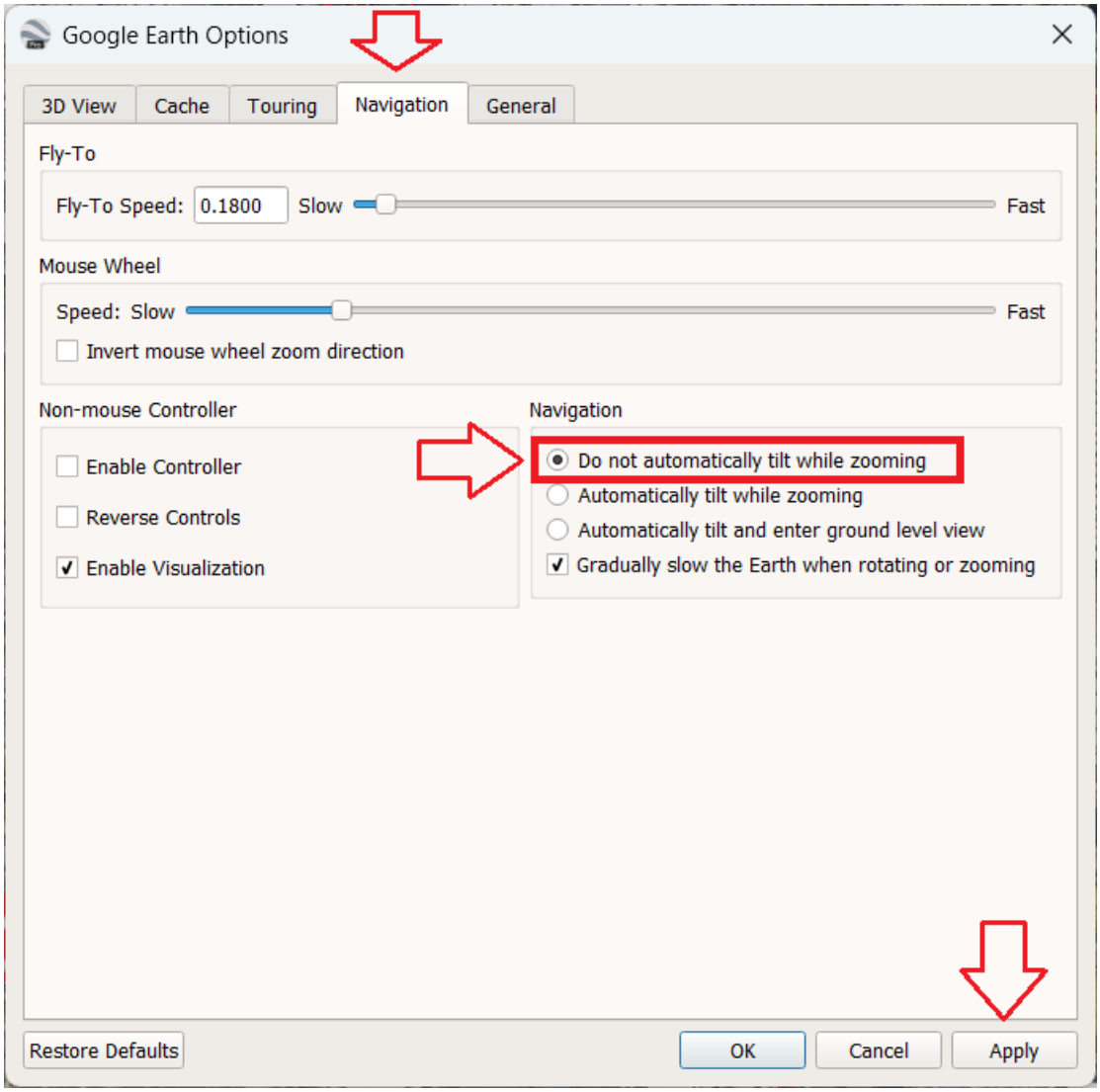
https://www.google.com/earth/about/versions/#download-pro

- **MS Excel** (optionally as part of MS Office suite in order to see Excel files {*.xls})
- **MapInfo** (optionally, to see outputs when you do not have access to internet).

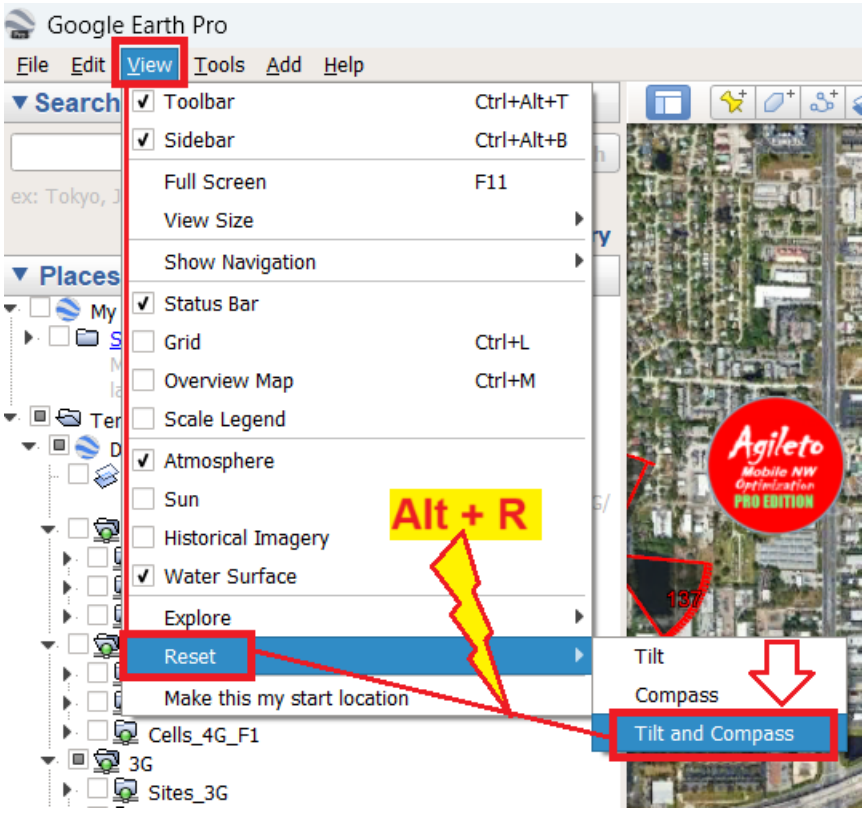
Google Earth settings:

In order to have always a good overview in Google Earth, before starting to view Agileto outputs please make sure that you have the following settings:

1) Do not automatically tilt while zooming (under the menu: Tools\Options\Navigation)



2) To **reset** the **tilt and compass** (View\Reset\Tilt and Compass) use the combination of keys: **Alt + R**



Agileto DEMO Projects help file content

This file contains three main sections, as following:

- SILENT MODE execution and syntax
- DEMO projects outputs
- Agileto DEMO Projects – access from within Agileto tool

SILENT MODE execution and syntax

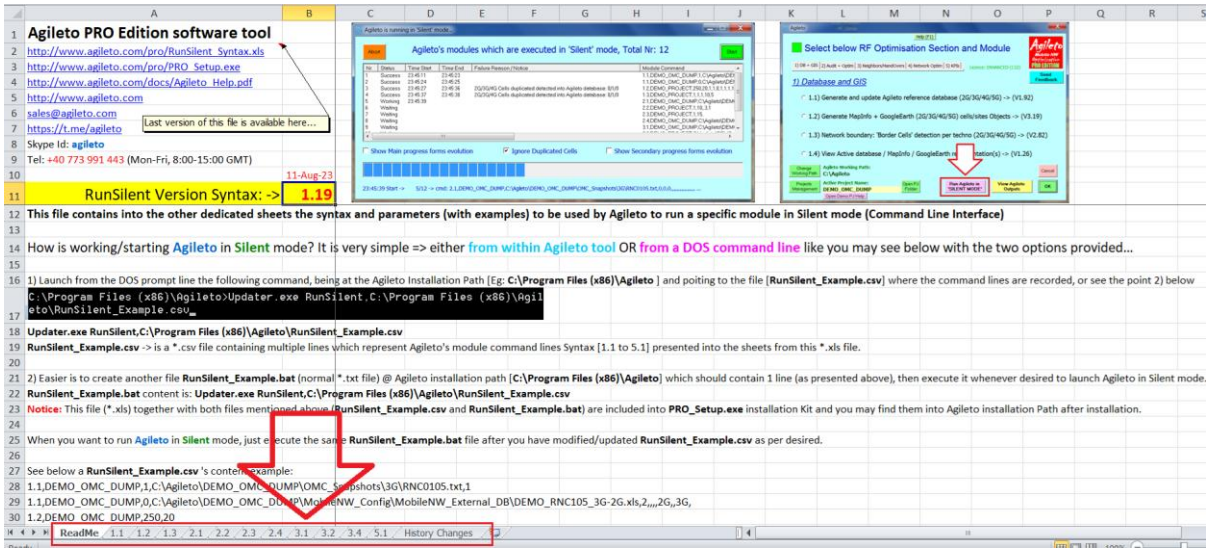
Agileto tool may run in ***NORMAL MODE*** by executing one specific module selected by the user which provides the necessary inputs as per required.

Agileto tool may run in ***SILENT MODE*** too, which means it performs automatically a series of modules one after the other one, each module representing a text line (included into an input *.csv file) having a specific syntax in order to ensure compatibility with the module's inputs when it is executed in NORMAL MODE.

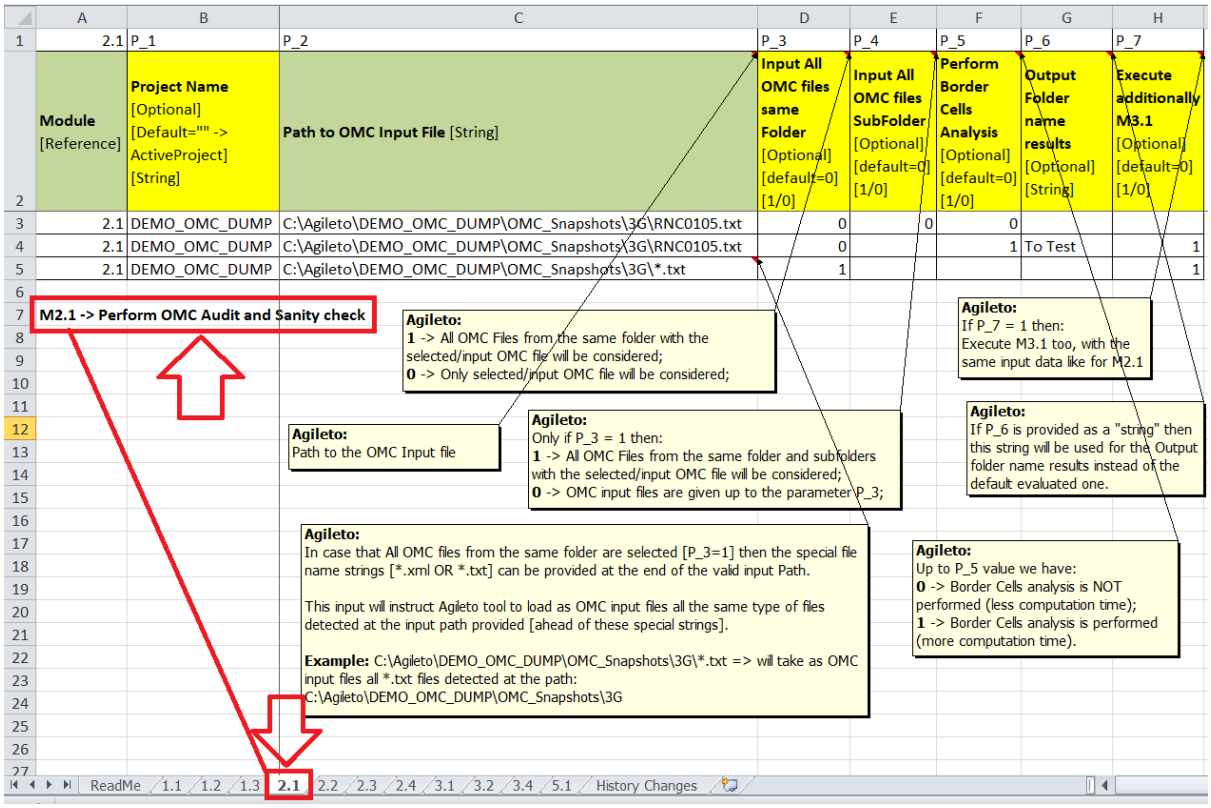
SILENT MODE file syntax

The file presenting the syntax to be used for each module executed in SILENT MODE is an Excel file containing for each module a dedicated sheet with examples and commentary about the syntax to be used. It may be downloaded from the following link:

http://www.agileto.com/pro/RunSilent_Syntax.xls



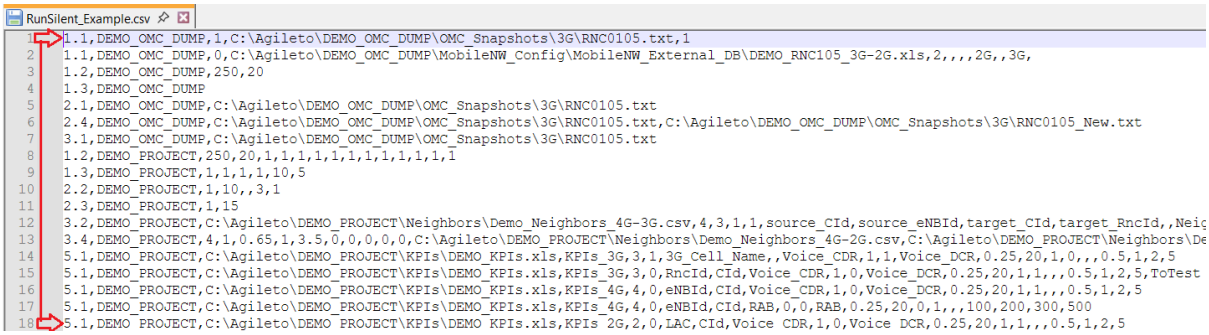
Example for the module M2.1:



SILENT MODE input file (.csv)*

SILENT MODE input file is a text *.csv file where each line represents the execution of a certain Agileto module with specific inputs.

Here below it is presented the content / each line of the SILENT MODE input file named **RunSilent_Example.csv** which has been used to generate Agileto outputs from the Agileto DEMO projects.


RunSilent_Example.csv

```
1.1,DEMO_OMC_DUMP,1,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt,1
1.1,DEMO_OMC_DUMP,0,C:\Agileto\DEMO_OMC_DUMP\MobileNW_Config\MobileNW_External_DB\DEMO_RNC105_3G-2G.xls,2,,,,2G,,3G,
1.2,DEMO_OMC_DUMP,250,20
1.3,DEMO_OMC_DUMP
2.1,DEMO_OMC_DUMP,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt
2.4,DEMO_OMC_DUMP,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105_New.txt
3.1,DEMO_OMC_DUMP,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt
1.2,DEMO_PROJECT,250,20,1,1,1,1,1,1,1,1,1,1,1
1.3,DEMO_PROJECT,1,1,1,1,10,5
2.2,DEMO_PROJECT,1,10,,3,1
2.3,DEMO_PROJECT,1,15
3.2,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-3G.csv,4,3,1,1,source_CId,source_eNBId,target_CId,target_RncId,,Neig
3.4,DEMO_PROJECT,4,1,0.65,1,3.5,0,0,0,0,0,C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-2G.csv,C:\Agileto\DEMO_PROJECT\Neighbors\De
5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_3G,3,1,3G_Cell_Name,,Voice_CDR,1,1,Voice_DCR,0.25,20,1,0,,,0.5,1,2,5
5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_3G,3,0,RncId,CId,Voice_CDR,1,0,Voice_DCR,0.25,20,1,1,,,0.5,1,2,5,ToTest
5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_4G,4,0,eNBId,CId,Voice_CDR,1,0,Voice_DCR,0.25,20,1,1,,,0.5,1,2,5
5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_4G,4,0,eNBId,CId,RAB,0,0,RAB,0.25,20,0,1,,,100,200,300,500
5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_2G,2,0,LAC,CId,Voice_CDR,1,0,Voice_DCR,0.25,20,1,1,,,0.5,1,2,5
```

1) 1.1,DEMO_OMC_DUMP,1,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt,1

   ⇨ Start initially with the **DEMO_OMC_DUMP** project and perform the following:

   ⇨ Parsing the input Snapshot file **RNC0105.txt** and generate Agileto database file.

2) 1.1,DEMO_OMC_DUMP,0,C:\Agileto\DEMO_OMC_DUMP\MobileNW_Config\MobileNW_External_DB\DEMO_RNC105_3G-2G.xls,2,,,,2G,,3G,

   ⇨ Update Agileto database file with the Geographically coordinates (Latitude/Longitude) + Azimuths of the Cells detected into external Excel file (**DEMO_RNC105_3G-2G.xls**).

3) 1.2,DEMO_OMC_DUMP,250,20

   ⇨ Generate the Mobile Network (Sites/Cells) in MapInfo and Google Earth having the 3G_F1 reference radius of **250**m and the radius difference between frequencies = **20**m.

4) 1.3,DEMO_OMC_DUMP

   ⇨ Evaluate the Border Cells for each Technology and frequency band (considering Antennas beamwidth increase = **0**% [default] and the distance to the Border Cells >= **7**Km [default]).

5) 2.1,DEMO_OMC_DUMP,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt

   ⇨ Perform Audit & Sanity Chech for the input snapshot file (**RNC0105.txt**).

6) 2.4,DEMO_OMC_DUMP,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105_New.txt

   ⇨ Perform a comparison between two input snapshot files (**RNC0105.txt** & **RNC0105_New.txt**)

7) 3.1,DEMO_OMC_DUMP,C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt

- ⇨ Map in Google Earth / MapInfo the neighbors detected (**IntraTechnology** [3G-3G]: **IntraFreq** + **InterFreq** & **InterTechnology** [3G-2G]) into the input snapshot file (**RNC0105.txt**).

8) 1.2,DEMO_PROJECT,250,20,1,1,1,1,1,1,1,1,1,1,1

- ⇨ Continue with the **DEMO_PROJECT** project and perform the following:
- ⇨ Generate the Mobile Network (Sites/Cells) in MapInfo and Google Earth [with the same standard colors, by considering all the cells detected into Agileto database in all Technologies (2G/3G/4G/5G) and not only those cells which have been detected into OMC].

9) 1.3,DEMO_PROJECT,1,1,1,1,10,5

- ⇨ Evaluate the Border Cells for each Technology and frequency band (considering the Antennas beamwidth increase with **10**% and the distance to the Border Cells >= **5**Km).

10) 2.2,DEMO_PROJECT,1,10,,3,1

- ⇨ Perform PSC Audit & Optimisation for 3G Technology.

11) 2.3,DEMO_PROJECT,1,15

- ⇨ Perform BCCH Audit & Optimisation for 2G Technology

12) 3.2,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-3G.csv,4,3,1,1,source_CId,source_eNBId,target_CId,target_RncId,,Neighbor Priority

- ⇨ Map in Google Earth / MapInfo the 4G neighbors included into the input file (**Demo_Neighbors_4G-3G.csv**)

13) 3.4,DEMO_PROJECT,4,1,0.65,1,3.5,0,0,0,0,0,C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-2G.csv,C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-3G.csv,C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-4G.csv

- ⇨ Evaluate / Calculate the optimum 4G neighbors over the entire Mobile Network (2G/3G/4G/5G) -> **ANR** (Automatic Neighbors Relationship) and compare them with the reference input neighbors files: **Demo_Neighbors_4G-2G.csv** / **Demo_Neighbors_4G-3G.csv** / **Demo_Neighbors_4G-4G.csv**

14) 5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_3G,3,1,3G_Cell_Name,,Voice_CDR,1,1,Voice_DCR,0.25,20,1,0,,,0.5,1,2,5

- ⇨ Map on Google Earth / MapInfo the **KPI** -> **Voice_DCR** on **3G** Technology (based on the input Cell_Name for the Cells reference).

15) 5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_3G,3,0,RncId,CId,Voice_CDR,1,0,Voice_DCR,0.25,20,1,1,,,0.5,1,2,5,ToTest

- ⇨ Map on Google Earth / MapInfo the **KPI** -> **Voice_DCR** on **3G** Technology (based on the input RncId + CId for the Cells reference) and output the results into the directory ending with '**ToTest**' ⇔ Voice_DCR_ToTest.

16) 5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_4G,4,0,eNBId,CId,Voice_CDR,1,0,Voice_DCR,0.25,20,1,1,,,0.5,1,2,5

    ⇨ Map on Google Earth / MapInfo the **KPI** -> **Voice_DCR** on **4G** Technology (based on the input eNBId + CId for the Cells reference)

17) 5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_4G,4,0,eNBId,CId,RAB,0,0,RAB,0.25,20,0,1,,,100,200,300,500

    ⇨ Map on Google Earth / MapInfo the **KPI** -> **RAB** on **4G** Technology (based on the input eNBId + CId for the Cells reference)

18) 5.1,DEMO_PROJECT,C:\Agileto\DEMO_PROJECT\KPIs\DEMO_KPIs.xls,KPIs_2G,2,0,LAC,CId,Voice_CDR,1,0,Voice_DCR,0.25,20,1,1,,,0.5,1,2,5

    ⇨ Map on Google Earth / MapInfo the **KPI** -> **Voice_DCR** on **2G** Technology (based on the input LAC + CId for the Cells reference)

Agileto DEMO Projects to be open "manually"

This section will present how to open Agileto output files by hand, without using Agileto tool. This way, by clicking the links to the files provided below will open manually those files.

DEMO Projects outputs

On this section are presented Agileto outputs after the execution of different modules based on the input data included into Agileto DEMO projects.

These Agileto DEMO projects outputs may be open from within Agileto software tool (like there will be presented later on here) but they may be open as well, manually, by the people who do not have Agileto software tool already installed.

On the next chapters we will present initially how to open **manually** Agileto DEMO projects outputs in order to provide a quick overview about Agileto software tool capabilities even for people who are not familiar with Agileto usage.

DEMO_OMC_DUMP

On DEMO_OMC_DUMP project the following outputs may be open:

M1.1 Mobile Network Agileto database

C:\Agileto\DEMO_OMC_DUMP\MobileNW_Config\MobileNW_Config.xls

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Cell_Code	Local_CID	RNC_ID	Cell_ID	Frequency_ Layer	Long_WGS84	Lat_WGS84	Azimuth	Sector_ ID	Cell_Name	NodeB_ Name	PSC	RNC_Name	LAC
11	F105.44_33	10500044	105	44	3	27.98982602	-26.21972242	185	3	U50869C	N50869	228	RNC0105	20051
12	F105.4375_33	10504375	105	4375	3	28.08679149	-26.24395524	240	3	U50023C	N50023	111	RNC0105	20051
13	F105.4374_23	10504374	105	4374	3	28.08679149	-26.24395524	120	2	U50023B	N50023	106	RNC0105	20051
14	F105.4372_13	10504372	105	4372	3	28.08679149	-26.24395524	0	1	U50023A	N50023	101	RNC0105	20051
15	F105.43_23	10500043	105	43	3	27.98982602	-26.21972242	70	2	U50869B	N50869	196	RNC0105	20051
16	F105.42_13	10500042	105	42	3	27.98982602	-26.21972242	320	1	U50869A	N50869	188	RNC0105	20051
17	F105.4395_33	10504395	105	4395	3	28.09814477	-26.14308736	230	3	U50309C	N50309	460	RNC0105	20051
18	F105.4394_23	10504394	105	4394	3	28.09814477	-26.14308736	100	2	U50309B	N50309	455	RNC0105	20051
19	F105.4392_13	10504392	105	4392	3	28.09814477	-26.14308736	330	1	U50309A	N50309	450	RNC0105	20051
20	W105.17365_31	10517365	105	17365	1	28.09814477	-26.14308736	230	3	W50309C	N50309	460	RNC0105	20051
21	W105.17364_21	10517364	105	17364	1	28.09814477	-26.14308736	100	2	W50309B	N50309	455	RNC0105	20051
22	W105.17363_11	10517363	105	17363	1	28.09814477	-26.14308736	330	1	W50309A	N50309	450	RNC0105	20051
23	F105.20658_33	10520658	105	20658	3	27.62673005	-26.38756705	315	3	U52240C	N52240	287	RNC0105	20051
24	F105.20657_23	10520657	105	20657	3	27.62673005	-26.38756705	135	2	U52240B	N52240	272	RNC0105	20051
25	F105.20656_13	10520656	105	20656	3	27.62673005	-26.38756705	45	1	U52240A	N52240	266	RNC0105	20051
26	F105.10756_11	10510756	105	10756	3	28.24536213	-26.2504097	240	3	U52411C	N52411	78	RNC0105	20051

2G 3G 4G 5G

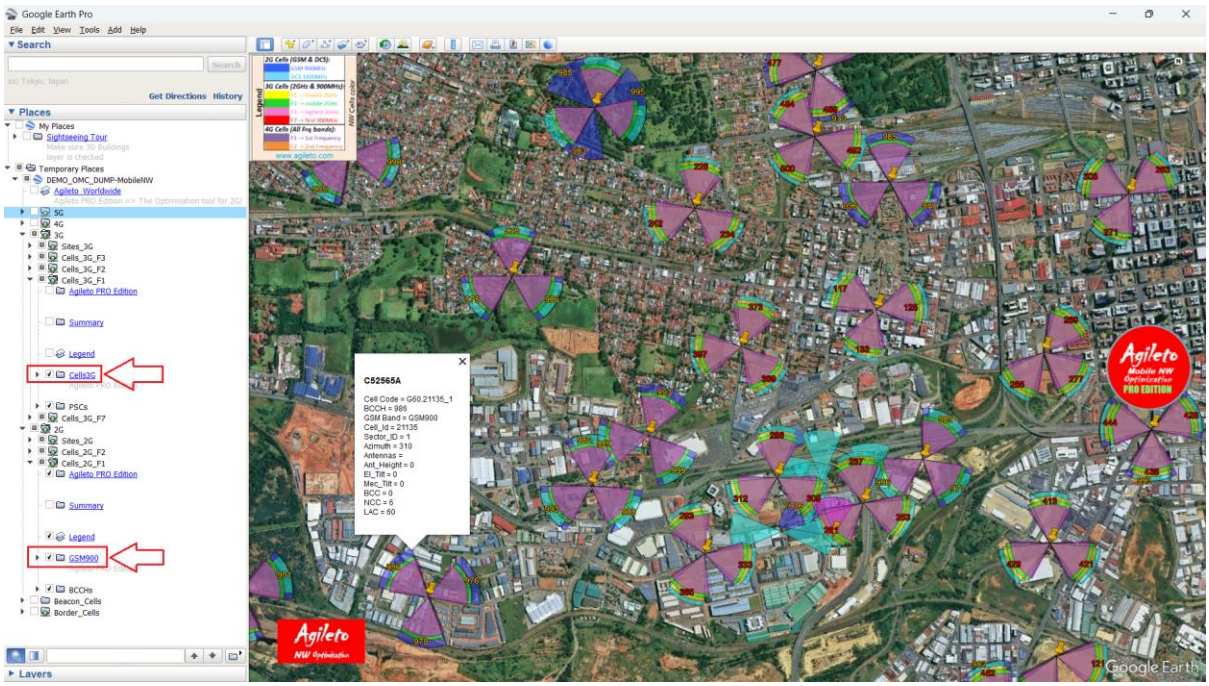
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Cell_Code	Cell_ID	LAC	Long_WGS84	Lat_WGS84	Azimuth	Sector_ID	Site_Name	Cell_Name	BSC_Name	bcch	ncc	bcc	bsic
843	G60.50467_1	50467	60	28.03059832	-26.22567182	340	1		C55290A		982	6	2	
844	G60.50468_2	50468	60	28.03059832	-26.22567182	90	2		C55290B		984	6	0	
845	G60.50469_3	50469	60	28.03059832	-26.22567182	220	3		C55290C		975	6	1	
846	G617.50479_1	50479	617	27.84709898	-26.38089936	30	1		C52719A		1015	5	6	
847	G617.50480_2	50480	617	27.84709898	-26.38089936	150	2		C52719B		1017	6	0	
848	G617.50481_3	50481	617	27.84709898	-26.38089936	270	3		C52719C		975	6	2	
849	G616.50534_2	50534	616	27.37016386	-26.29498331	120	2		C52693B		987	7	2	
850														
851	Last updated today: 19Jan2025 00:11, 2G cells updated from 2G 'External' Excel file: C:\Agileto\DEMO_OMC_DUMP\MobileNW_Config\MobileNW_External_DB\DEMO_RNC105_3G-2G.xls													
852	Last updated: 19Jan2025 00:12, with the data from the OMC 3G snapshot file: C:\Agileto\DEMO_OMC_DUMP\OMC_Snapshots\3G\RNC0105.txt													
853	2G Cells detected into 2G Excel config file: 848 [17 cells with missing coordinates]													
854	2G Cells detected into OMC snapshot file: 848 (including duplicated 2G cells into many RNCs)													
855	2G Cells detected in common (Excel & OMC) files: 848													
856	2G Cells detected in common (Excel & OMC) files with discrepancies: 0													
857	2G Cells detected only in OMC snapshot file: 0													
858	Last updated 2G data: 19Jan2025 00:11 [2G cells updated from 2G 'External' Excel file: C:\Agileto\DEMO_OMC_DUMP\MobileNW_Config\MobileNW_External_DB\DEMO_RNC105_3G-2G.x													
859	Agileto - www.agileto.com © 2025 All rights reserved (support@agileto.com), Module: Generate and update reference database (2G/3G/4G/5G), Version: V1.92													

2G 3G 4G 5G

M1.2 Mobile Network Mapping in GoogleEarth & MapInfo

Google Earth:

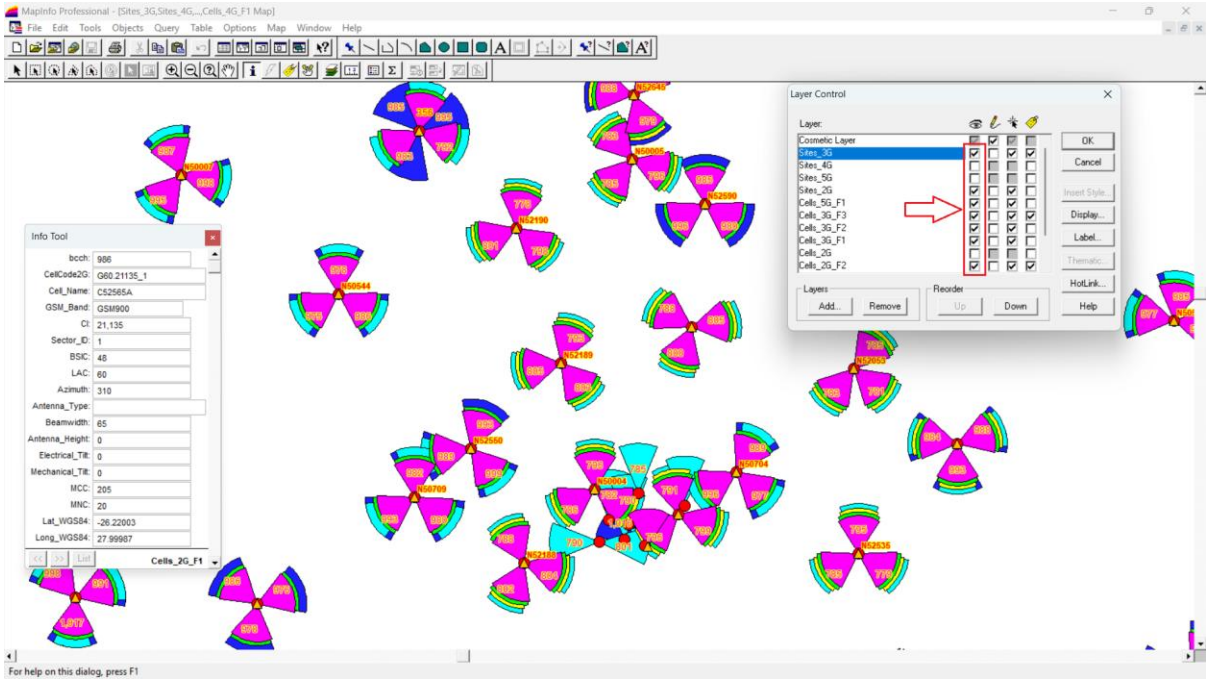
C:\Agileto\DEMO_OMC_DUMP\GoogleEarth\MobileNW.kmz



Notice: From the left panel is selected the info to be displayed.

MapInfo:

C:\Agileto\DEMO_OMC_DUMP\MapInfo\MobileNW.wor



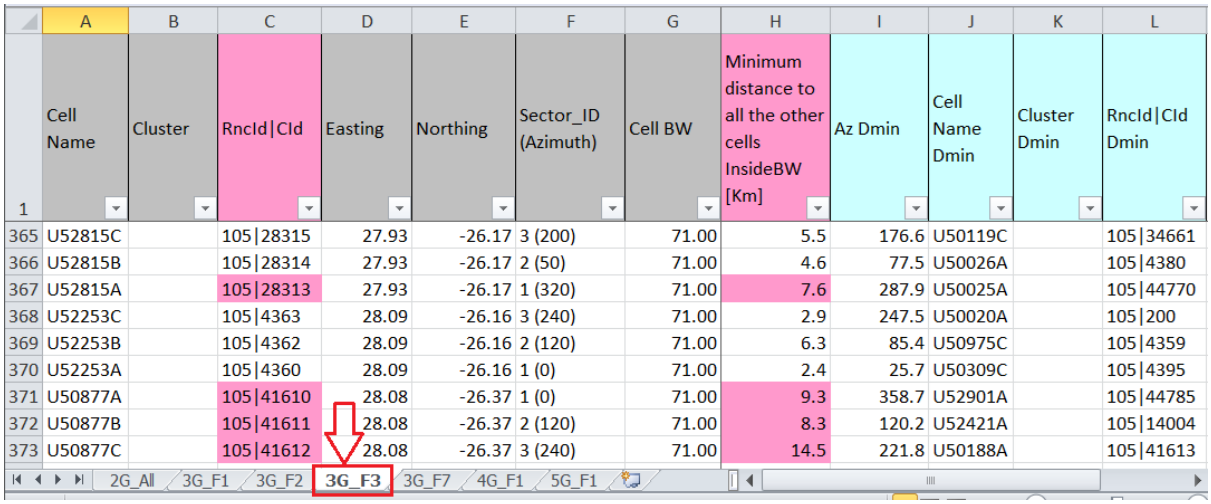
Notice: The desired layer is selected to be displayed.

M1.3 Border Cells evaluation

C:\Agileto\DEMO_OMC_DUMP\Audit_SanityCheck\DEMO_OMC_DUMP_Border_Cells-D7.0Km_BwExt10.xls

	A	B	C	D	E	F	G	H	I	J	K	L
1	Cell Name	Cluster	LAC|CId	Easting	Northing	Sector_ID (Azimuth)	Cell BW	Minimum distance to all the other cells InsideBW [Km]	Az Dmin	Cell Name Dmin	Cluster Dmin	LAC|CId Dmin
846	C52719A		617|50479	27.85	-26.38	1 (30)	71.00	12	19.3	C50834A		617|22102
847	C52719B		617|50480	27.85	-26.38	2 (150)	71.00	7.3	118.3	C50344B		617|20713
848	C52719C		617|50481	27.85	-26.38	3 (270)	71.00	10.9	242.2	C52826A		617|16634
849	C52693B		616|50534	27.37	-26.29	2 (120)	71.00	4.3	88.3	C50800B		616|22001
850												
851	Agileto => www.agileto.com © 2025 All rights reserved (support@agileto.com) [M1.3|V2.83] => Network boundary: 'Border Cells' detection p											
852	User Login: Agileto | Run Time: 11Feb2025 23:52:20-23:52:23 [3sec]											
853	2G [All GSM900 + DCS1800] cells BW Extended = 10%, MaxDist Border Cells = 7Km											
854	Note: All 2G Cells declared into Agileto's database (not necessary detected into OMC snapshot) have been used for the calculation											

2G_All | 3G_F1 | 3G_F2 | 3G_F3 | 3G_F7 | 4G_F1 | 5G_F1



	A	B	C	D	E	F	G	H	I	J	K	L
1	Cell Name	Cluster	RncId|CId	Easting	Northing	Sector_ID (Azimuth)	Cell BW	Minimum distance to all the other cells InsideBW [Km]	Az Dmin	Cell Name Dmin	Cluster Dmin	RncId|CId Dmin
365	U52815C		105|28315	27.93	-26.17	3 (200)	71.00	5.5	176.6	U50119C		105|34661
366	U52815B		105|28314	27.93	-26.17	2 (50)	71.00	4.6	77.5	U50026A		105|4380
367	U52815A		105|28313	27.93	-26.17	1 (320)	71.00	7.6	287.9	U50025A		105|44770
368	U52253C		105|4363	28.09	-26.16	3 (240)	71.00	2.9	247.5	U50020A		105|200
369	U52253B		105|4362	28.09	-26.16	2 (120)	71.00	6.3	85.4	U50975C		105|4359
370	U52253A		105|4360	28.09	-26.16	1 (0)	71.00	2.4	25.7	U50309C		105|4395
371	U50877A		105|41610	28.08	-26.37	1 (0)	71.00	9.3	358.7	U52901A		105|44785
372	U50877B		105|41611	28.08	-26.37	2 (120)	71.00	8.3	120.2	U52421A		105|14004
373	U50877C		105|41612	28.08	-26.37	3 (240)	71.00	14.5	221.8	U50188A		105|41613

2G_All | 3G_F1 | 3G_F2 | 3G_F3 | 3G_F7 | 4G_F1 | 5G_F1

There is generated Border Cells on Google Earth (see link below) which is automatically linked within the general Mobile Network representation in Google Earh):

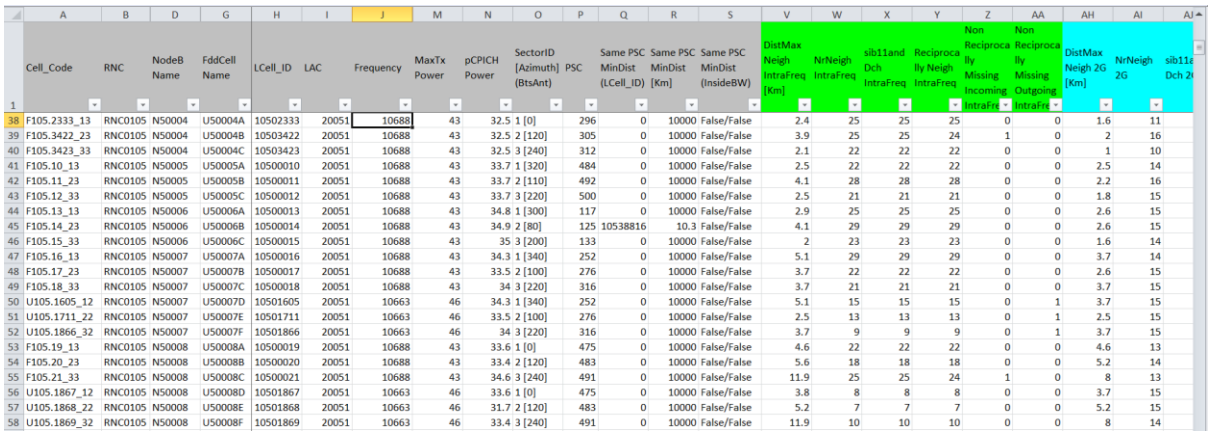
C:\Agileto\DEMO_OMC_DUMP\GoogleEarth\Border_Cells.kmz

For more details about the Border Cells representation in Google Earth check here.

M2.1 Audit and Sanity Check [snapshot file *.txt/*.xml]

C:\Agileto\DEMO_OMC_DUMP\Audit_SanityCheck\3G\RNC0105

C:\Agileto\DEMO_OMC_DUMP\Audit_SanityCheck\3G\RNC0105\Audit_SanityCheck-3G_RNC0105.xls



	A	B	D	G	H	I	J	M	N	O	P	Q	R	S	V	W	X	Y	Z	AA	AH	AI	AJ
1	Cell_Code	RNC	NodeB Name	FddCell Name	LCell_ID	LAC	Frequency	MaxTx Power	pCPICH Power	SectorID (Azimuth) (BtsAnt)	PSC	Same PSC MinDist (LCell_ID)	Same PSC MinDist [Km]	Same PSC MinDist (InsideBW)	DistMax Neigh IntraFreq [Km]	NrNeigh IntraFreq	sib11and Dch IntraFreq	Reciprocally Neigh IntraFreq	Non Reciprocally Missing Incoming IntraFre	Non Reciprocally Missing Outgoing IntraFr	DistMax Neigh 2G [Km]	NrNeigh 2G	sib11 Dch 2
38	F105.2333_13	RNC0105	N50004	U50004A	10502333	20051	10688	43	32.5	1 [0]	296	0	10000	False/False	2.4	25	25	25	0	0	1.6	11	
39	F105.3422_23	RNC0105	N50004	U50004B	10503422	20051	10688	43	32.5	2 [120]	305	0	10000	False/False	3.9	25	25	24	1	0	2	16	
40	F105.3423_33	RNC0105	N50004	U50004C	10503423	20051	10688	43	32.5	3 [240]	312	0	10000	False/False	2.1	22	22	22	0	0	1	10	
41	F105.10_13	RNC0105	N50005	U50005A	10500010	20051	10688	43	33.7	1 [320]	484	0	10000	False/False	2.5	22	22	22	0	0	2.5	14	
42	F105.11_23	RNC0105	N50005	U50005B	10500011	20051	10688	43	33.7	2 [110]	492	0	10000	False/False	4.1	28	28	28	0	0	2.2	16	
43	F105.12_33	RNC0105	N50005	U50005C	10500012	20051	10688	43	33.7	3 [220]	500	0	10000	False/False	2.5	21	21	21	0	0	1.8	15	
44	F105.13_13	RNC0105	N50006	U50006A	10500013	20051	10688	43	34.8	1 [300]	117	0	10000	False/False	2.9	25	25	25	0	0	2.6	15	
45	F105.14_23	RNC0105	N50006	U50006B	10500014	20051	10688	43	34.9	2 [80]	125	10538816	10.3	False/False	4.1	29	29	29	0	0	2.6	15	
46	F105.15_33	RNC0105	N50006	U50006C	10500015	20051	10688	43	35	3 [200]	133	0	10000	False/False	2	23	23	23	0	0	1.6	14	
47	F105.16_13	RNC0105	N50007	U50007A	10500016	20051	10688	43	34.3	1 [340]	252	0	10000	False/False	5.1	29	29	29	0	0	3.7	14	
48	F105.17_23	RNC0105	N50007	U50007B	10500017	20051	10688	43	33.5	2 [100]	276	0	10000	False/False	3.7	22	22	22	0	0	2.6	15	
49	F105.18_33	RNC0105	N50007	U50007C	10500018	20051	10688	43	34	3 [220]	316	0	10000	False/False	3.7	21	21	21	0	0	3.7	15	
50	U105.1605_12	RNC0105	N50007	U50007D	10501605	20051	10663	46	34.3	1 [340]	252	0	10000	False/False	5.1	15	15	15	0	1	3.7	15	
51	U105.1711_22	RNC0105	N50007	U50007E	10501711	20051	10663	46	33.5	2 [100]	276	0	10000	False/False	2.5	13	13	13	0	1	2.5	15	
52	U105.1866_32	RNC0105	N50007	U50007F	10501866	20051	10663	46	34	3 [220]	316	0	10000	False/False	3.7	9	9	9	0	1	3.7	15	
53	F105.19_13	RNC0105	N50008	U50008A	10500019	20051	10688	43	33.6	1 [0]	475	0	10000	False/False	4.6	22	22	22	0	0	4.6	13	
54	F105.20_23	RNC0105	N50008	U50008B	10500020	20051	10688	43	33.4	2 [120]	483	0	10000	False/False	5.6	18	18	18	0	0	5.2	14	
55	F105.21_33	RNC0105	N50008	U50008C	10500021	20051	10688	43	34.6	3 [240]	491	0	10000	False/False	11.9	25	25	24	1	0	8	13	
56	U105.1867_12	RNC0105	N50008	U50008D	10501867	20051	10663	46	33.6	1 [0]	475	0	10000	False/False	3.8	8	8	8	0	0	3.7	15	
57	U105.1868_22	RNC0105	N50008	U50008E	10501868	20051	10663	46	31.7	2 [120]	483	0	10000	False/False	5.2	7	7	7	0	0	5.2	15	
58	U105.1869_32	RNC0105	N50008	U50008F	10501869	20051	10663	46	33.4	3 [240]	491	0	10000	False/False	11.9	10	10	10	0	0	8	14	

M2.2 Audit and Optim [3G - PSC]

C:\Agileto\DEMO_OMC_DUMP\Audit_SanityCheck\3G\DEMO_OMC_DUMP_PSCs_AuditOptim-RadKm15.xls

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Cell_Code	Cluster	RNC Id	NodeB Name	Cell Name [Source]	Local_CId	SectorID [Azimuth]	PSC Ini	Same PSC MinDist Ini (Local_Cid)	Same PSC MinDist Ini [Km]	Same PSC MinDist Ini (InsideBW)	PSC Opt	Same PSC MinDist Opt (Local_Cid)	Same PSC MinDist Opt [Km]	Same PSC MinDist Opt (InsideBW)	Different PSC	Cell Position	Site Position	Site Priority	Nr Sites inside Radius of 15Km	Inter Sites Distance Avg [Km]
95	W105.18752_31		105	N50812	W50812C	10518752	3 [262]	125	10517318	10.3	0|0	220	0	10000	0|0	Yes	776	146	77	76	10.19084
96	W105.17365_31		105	N50309	W50309C	10517365	3 [230]	460	0	10000	0|0	224	0	10000	0|0	Yes	19	1	79	76	10.38649
97	W105.17364_21		105	N50309	W50309B	10517364	2 [100]	455	0	10000	0|0	225	0	10000	0|0	Yes	20	1	79	76	10.38649
98	W105.17363_11		105	N50309	W50309A	10517363	1 [330]	450	0	10000	0|0	226	0	10000	0|0	Yes	21	1	79	76	10.38649
99	W105.17408_11		105	N50971	W50971A	10517408	1 [345]	57	0	10000	0|0	230	0	10000	0|0	Yes	828	152	81	73	10.62697
100	W105.17454_21		105	N50971	W50971B	10517454	2 [95]	64	0	10000	0|0	231	0	10000	0|0	Yes	829	152	81	73	10.62697
101	W105.17455_31		105	N50971	W50971C	10517455	3 [215]	77	0	10000	0|0	232	0	10000	0|0	Yes	830	152	81	73	10.62697
102	W105.18753_11		105	N52250	W52250A	10518753	1 [353]	150	0	10000	0|0	233	0	10000	0|0	Yes	766	144	82	69	10.35891
103	W105.18754_21		105	N52250	W52250B	10518754	2 [113]	155	0	10000	0|0	234	0	10000	0|0	Yes	767	144	82	69	10.35891
104	W105.18755_31		105	N52250	W52250C	10518755	3 [233]	160	0	10000	0|0	235	0	10000	0|0	Yes	768	144	82	69	10.35891
105	W105.18756_11		105	N52903	W52903A	10518756	1 [0]	391	0	10000	0|0	236	0	10000	0|0	Yes	816	151	83	67	10.50664
106	W105.18757_21		105	N52903	W52903B	10518757	2 [120]	487	0	10000	0|0	237	0	10000	0|0	Yes	817	151	83	67	10.50664
107	W105.18758_31		105	N52903	W52903C	10518758	3 [240]	144	0	10000	0|0	238	0	10000	0|0	Yes	818	151	83	67	10.50664
108	W105.17383_11		105	N50834	W50834A	10517383	1 [0]	233	0	10000	0|0	265	0	10000	0|0	Yes	809	150	92	45	11.45991
109	W105.17384_21		105	N50834	W50834B	10517384	2 [120]	328	0	10000	0|0	263	0	10000	0|0	Yes	810	150	92	45	11.45991
110	W105.17385_31		105	N50834	W50834C	10517385	3 [240]	344	0	10000	0|0	264	0	10000	0|0	Yes	811	150	92	45	11.45991
111																					
112	Agileto => www.agileto.com © 2025 All rights reserved (support@agileto.com) [M2.2|V2.01] => 3G(PSCs) / 4G(PCIs) / 5G(PCIs) allocation -> Audit + Optimisation																				
113	User Login: Agileto | Run Time: 01Feb2025 08:56:27-08:56:31 [4sec]																				
114	Frequency Layer=1, UARFCN=10639																				
115	Note: All 3G Cells existing into Agileto's database (not necessary detected into OMC 3G) have been used for this audit																				
116	External PSCs reservations list provided: False																				
117	The same PSCs have been kept for all the CoSector Twin Cells on all frequency layers: True																				

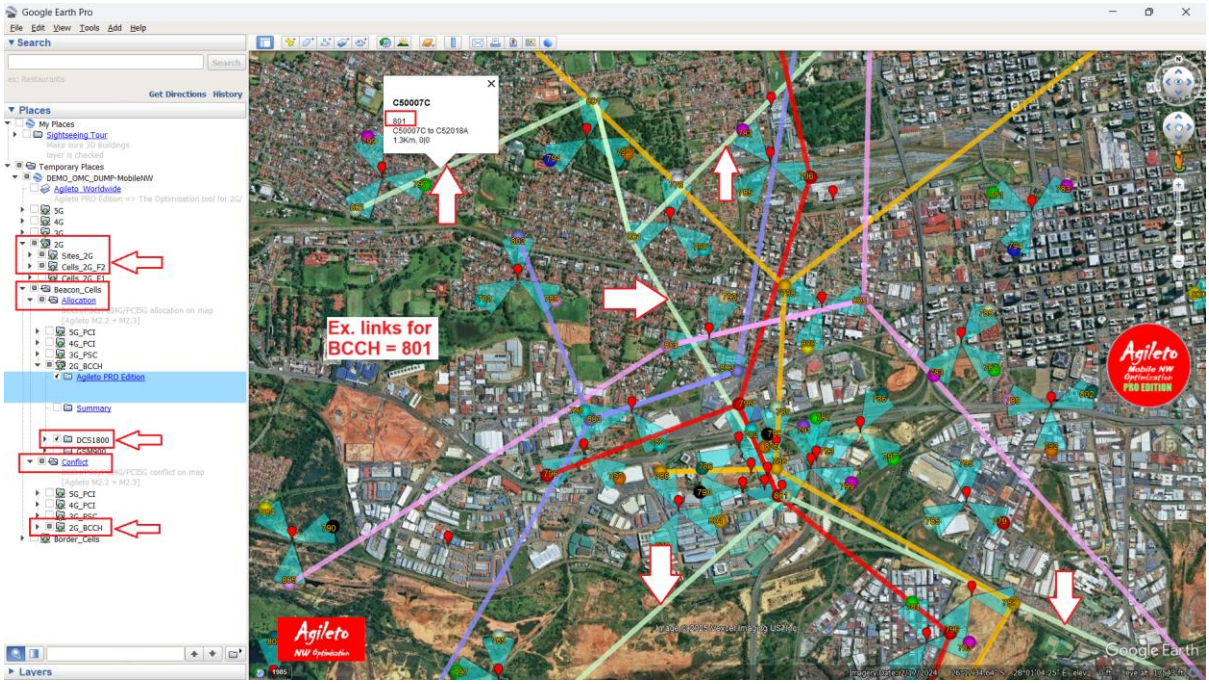
M2.3 Audit and Optim [2G - BCCH]

C:\Agileto\DEMO_OMC_DUMP\Audit_SanityCheck\2G\DEMO_OMC_DUMP_BCCHs_AuditOptim-RadKm15.xls

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1	Site Name	Cell Name	Cell ID	Azimuth	Cell LAC	Cell BCCH	CoChan + CoBSIC	CoChan DistMin [Km]	CoChan InBeam S|T	CoChan Cell Name	CoChan Cell ID	CoChan Cell Azim	CoChan LAC	AdjCh Inf BCCH	AdjChInf DistMin [Km]	AdjChInf InBeam S|T	AdjChInf Cell Name	AdjChInf Cell ID	AdjChInf Cell Azim	AdjChInf LAC	AdjChSup BCCH	AdjChSup DistMin [Km]	AdjCh Sup InBeam S|T	AdjChSup Cell Name	AdjChSup Cell ID	AdjChSup Cell Azim	AdjChSup LAC
480		C52257B	21883	165	284	1015	FALSE	47.8	0|0	C55417A	38625	10	60	1014	30.8	0|0	C52248A	21855	320	60	1016	34.6	0|0	C52027A	21153	0	64
481		C52540B	22978	140	284	1022	FALSE	38.2	0|0	C55206C	15169	240	284	1014	7.5	1|0	C55475C	38690	225	284							
482		C55475B	38689	105	284	983	FALSE	30.3	0|1	C52016C	21122	304	60	982	26.1	0|0	C52245C	21848	210	60	984	28	1|0	C55717A	21276	0	60
483		C55475C	38690	225	284	1014	FALSE	50.9	0|0	C55727B	21061	85	617	1013	21.1	0|0	C55537B	38671	100	60	1015	40.5	0|0	C52243C	21842	260	617
484		C55770A	21459	40	67	1014	FALSE	50	1|0	C55023A	38406	20	616	1013	72	1|1	C55718C	22485	205	617	1015	33.5	1|0	C55642B	38737	90	67
485		C55770B	21460	140	67	975	FALSE	46.1	0|0	C52492B	15760	120	67								976	87.9	0|0	C55432B	38566	175	617
486		C55770C	21461	270	67	977	FALSE	30.7	0|0	C52655A	21525	60	67	976	87.9	0|0	C55432B	38566	175	617	978	34.8	0|0	C55748C	21452	310	67
487		C52656B	38758	180	284	980	FALSE	33.6	1|0	C55670B	24998	80	64	979	23.2	0|0	C50195B	20479	115	284	981	21.2	1|0	C54235B	15784	100	64
488		C52541B	22960	170	284	1012	FALSE	41.9	1|0	C50197C	20486	290	64	1011	64.9	0|0	C52657A	15347	20	64	1013	36.8	0|0	C54237C	16414	240	64
489		C52541C	22961	290	284	985	FALSE	34.8	0|0	C55706A	24694	60	64	984	20.6	0|0	C52515A	22974	310	64	986	23.1	1|0	C52172C	21629	240	284
490		C55279C	38723	230	64	977	FALSE	31.1	0|0	C52442A	16227	0	64	976	24.5	0|0	C55709A	24541	30	64	978	22.9	0|0	C55739C	24624	230	64
491		C55210C	38750	240	67	1019	FALSE	16.4	1|0	C55431C	38648	240	67	1018	25.3	0|0	C52743A	16517	60	67	1020	29.5	1|0	C55504B	21268	110	67
492		C55030B	22771	80	40	985	TRUE	49.1	0|1	C55705A	21723	320	60	984	21.6	0|0	C52422B	38479	180	616	986	20.4	0|0	C52245B	21847	90	60
493																											
494	Agileto => www.agileto.com © 2025 All rights reserved (support@agileto.com) [M2.3|V1.28] => 2G(BCCHs) allocation -> Audit + Optimisation																										
495	User Login: Agileto | Run Time: 01Feb2025 09:14:27-09:14:38 [11sec]																										
496	2G Frequency band = GSM900																										
497	Agileto Project: DEMO_OMC_DUMP => This is the BCCH audit over the entire 2G Network.																										
498	Note: All 2G Cells existing into Agileto's database have been used for this audit (not necessary detected into OMC)																										
499	External BCCHs reservations list provided: False																										

	A	B	C	D	E	F	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	Site Name	Cell Name	Cell ID	Azimuth	Cell LAC	Cell BCCH	BCCH Optim	BCCH Optim CoChan coBSIC	BCCH Optim CoChan MinDist [Km]	BCCH Optim CoChan Cell Name	BCCH Optim CoChan (InsideBW)	Different BCCH	BCCH OptimF	BCCH OptimF CoChan coBSIC	BCCH OptimF CoChan MinDist [Km]	BCCH OptimF CoChan Cell Name	BCCH OptimF CoChan (InsideBW)	Different BCCH	Cell Position	Site Position	Site Priority	Nr Sites inside Radius of 15Km	Inter Sites Distance Avg [Km]
480		C52257B	21883	165	284	1015	1014	FALSE	48.9	C52115A	1|0	Yes	1008	FALSE	48.9	C52115B	1|0	Yes	476	186	263	2	10.36057
481		C52540B	22978	140	284	1022	990	FALSE	54.2	C52685A	1|1	Yes	999	FALSE	56	C55001C	1|0	Yes	640	240	264	2	10.62948
482		C55475B	38689	105	284	983	1021	FALSE	48	C55007C	0|0	Yes	1021	FALSE	48	C55007C	0|0	Yes	764	272	265	2	10.97846
483		C55475C	38690	225	284	1014	987	FALSE	45.2	C55082C	0|0	Yes	1008	FALSE	45.7	C52420C	0|0	Yes	765	272	265	2	10.97846
484		C55770A	21459	40	67	1014	1018	FALSE	66.6	C52773A	1|0	Yes	996	FALSE	69.1	C55714C	1|1	Yes	378	150	266	1	4.10866
485		C55770B	21460	140	67	975	992	FALSE	64.8	C50805A	0|0	Yes	1005	FALSE	69.1	C55714A	0|0	Yes	379	150	266	1	4.10866
486		C55770C	21461	270	67	977	994	FALSE	64.8	C50805B	0|1	Yes	1007	FALSE	69.1	C55714B	0|0	Yes	380	150	266	1	4.10866
487		C52656B	38758	180	284	980	1000	FALSE	52.5	C52950A	1|0	Yes	989	FALSE	52.5	C52950C	1|0	Yes	777	276	268	1	6.096042
488		C52541B	22960	170	284	1012	1012	FALSE	48.3	C52445A	1|0	No	1012	FALSE	48.3	C52445A	1|0	No	635	238	269	1	12.0268
489		C52541C	22961	290	284	985	1007	FALSE	46.2	C55153B	0|0	Yes	1007	FALSE	46.2	C55153B	0|0	Yes	636	238	269	1	12.0268
490		C55279C	38723	230	64	977	993	FALSE	46.5	C52445B	0|0	Yes	1011	FALSE	52.2	C55706A	0|0	Yes	767	273	270	1	12.64553
491		C55210C	38750	240	67	1019	984	FALSE	85.6	C55002A	0|0	Yes	1009	FALSE	88.8	C52826A	0|0	Yes	776	275	272	1	13.81016
492		C55030B	22771	80	40	985	992	FALSE	43.3	C52685B	0|0	Yes	993	FALSE	42.7	C52412A	0|0	Yes	606	225	273	0	15.39611
493																							
494	Agileto => www.agileto.com © 2025 All rights reserved (supp																						
495	User Login: Agileto | Run Time: 01Feb2025 09:14:27-09:14:3																						
496	2G Frequency band = GSM900																						
497	Agileto Project: DEMO_OMC_DUMP => This is the BCCH audi																						
498	Note: All 2G Cells existing into Agileto's database have been																						
499	External BCCHs reservations list provided: False																						

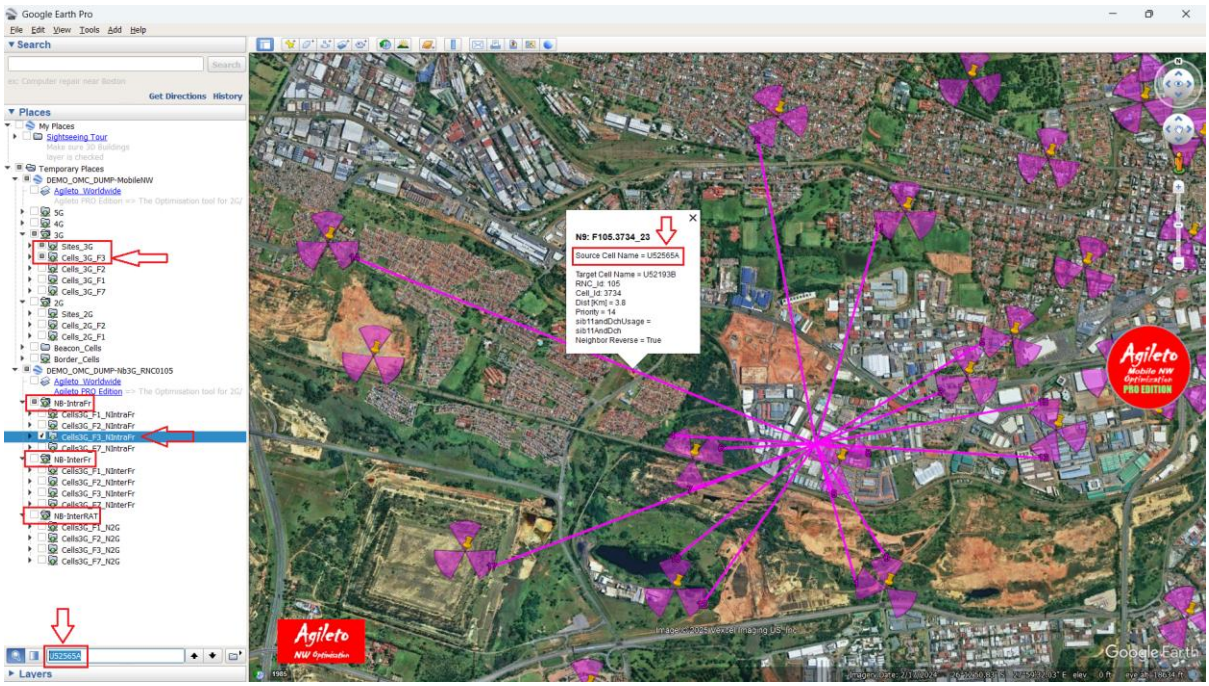
There is a Mapping representation in Google Earth related to the BCCH conflict allocation presenting a line to the closest cell sharing the same BCCH. This is presented into the image below related to the dedicated *.kmz file linked automatically with the general Mobile Network:



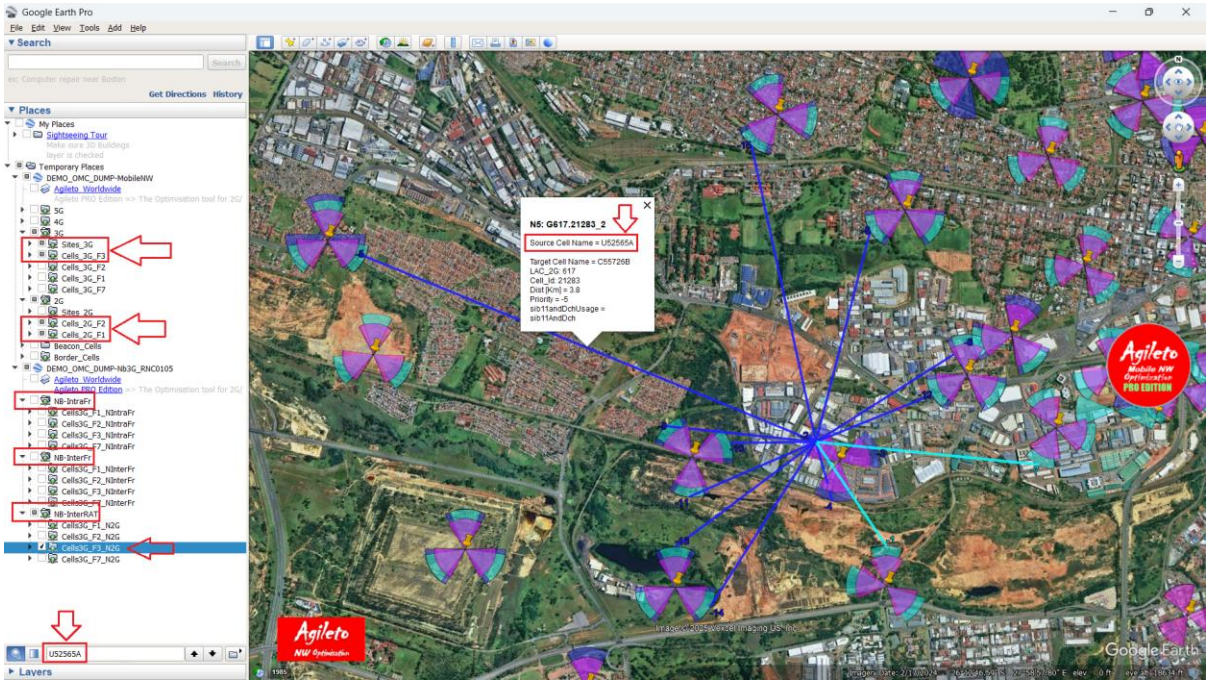
M3.1 Snapshot [xml/txt] => Neighbors in Google Earth

C:\Agileto\DEMO_OMC_DUMP\GoogleEarth\Neigh_GE\Nb3G_RNC0105\Neighbors.kmz

IntraFreq [3G-3G]:

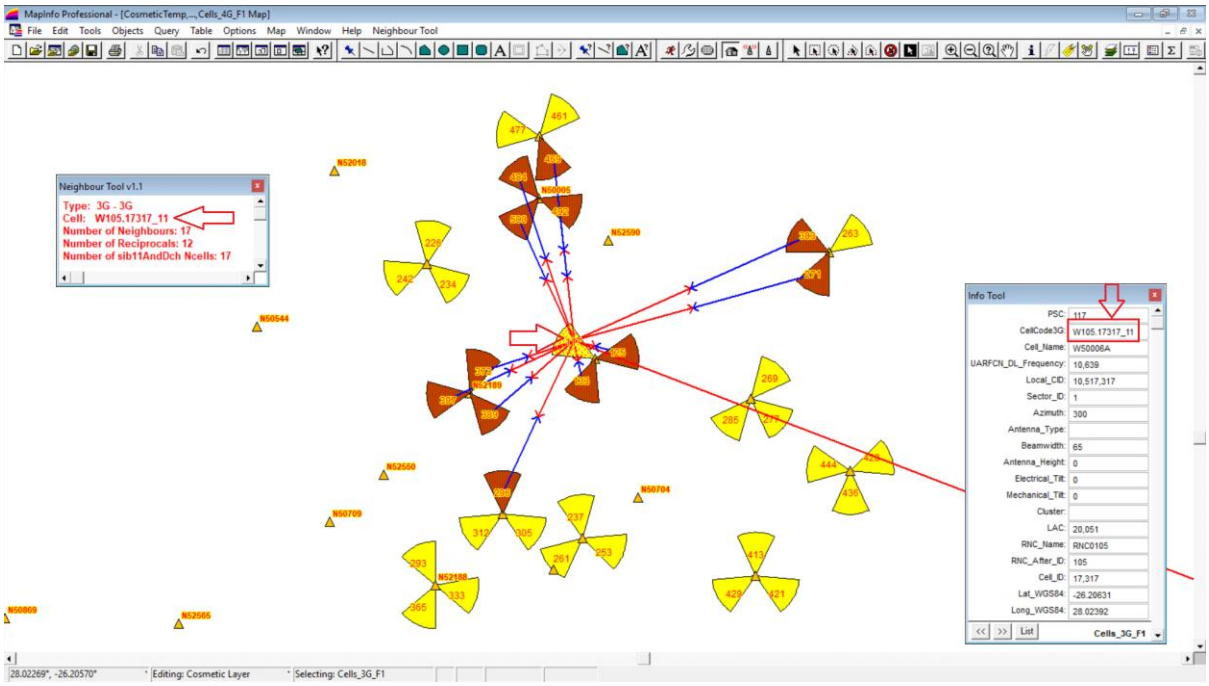


InterRAT [3G-2G]:

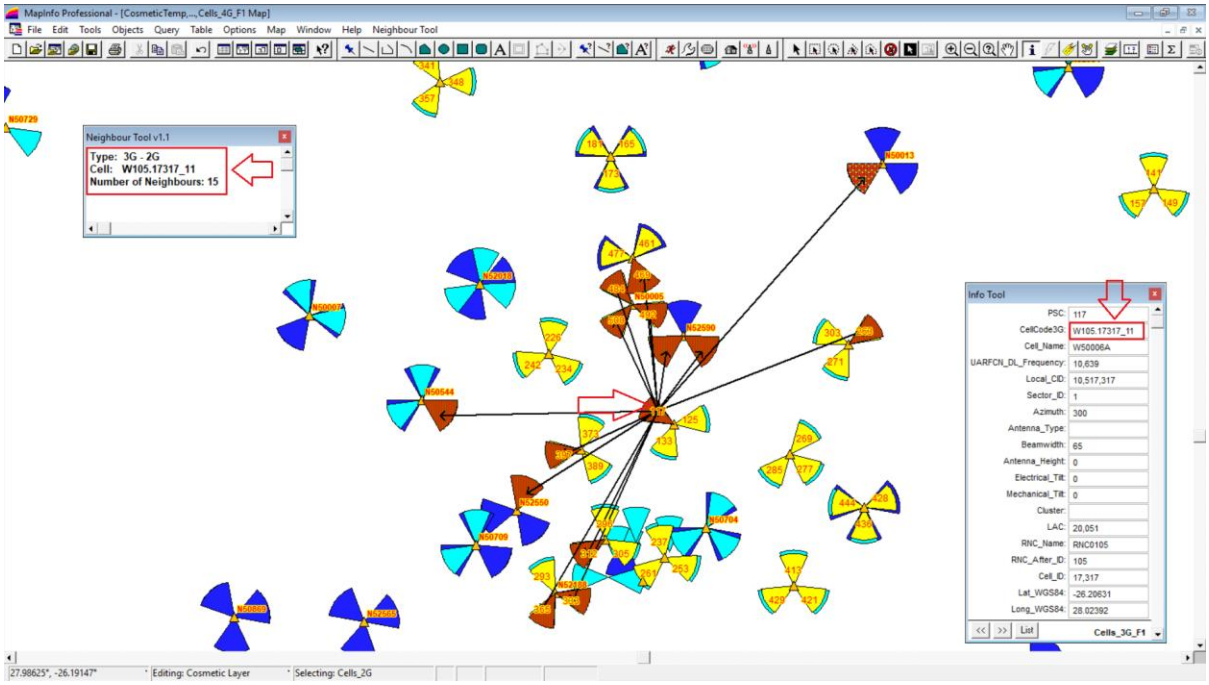


M3.3 Neighbors in MapInfo

IntraFreq [3G-3G]:

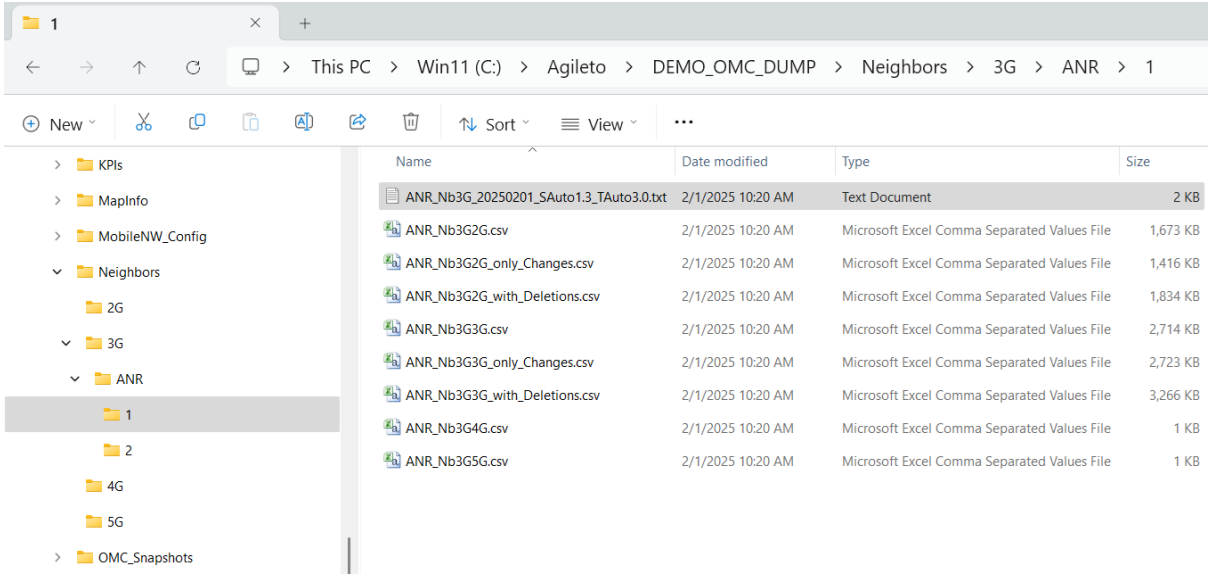


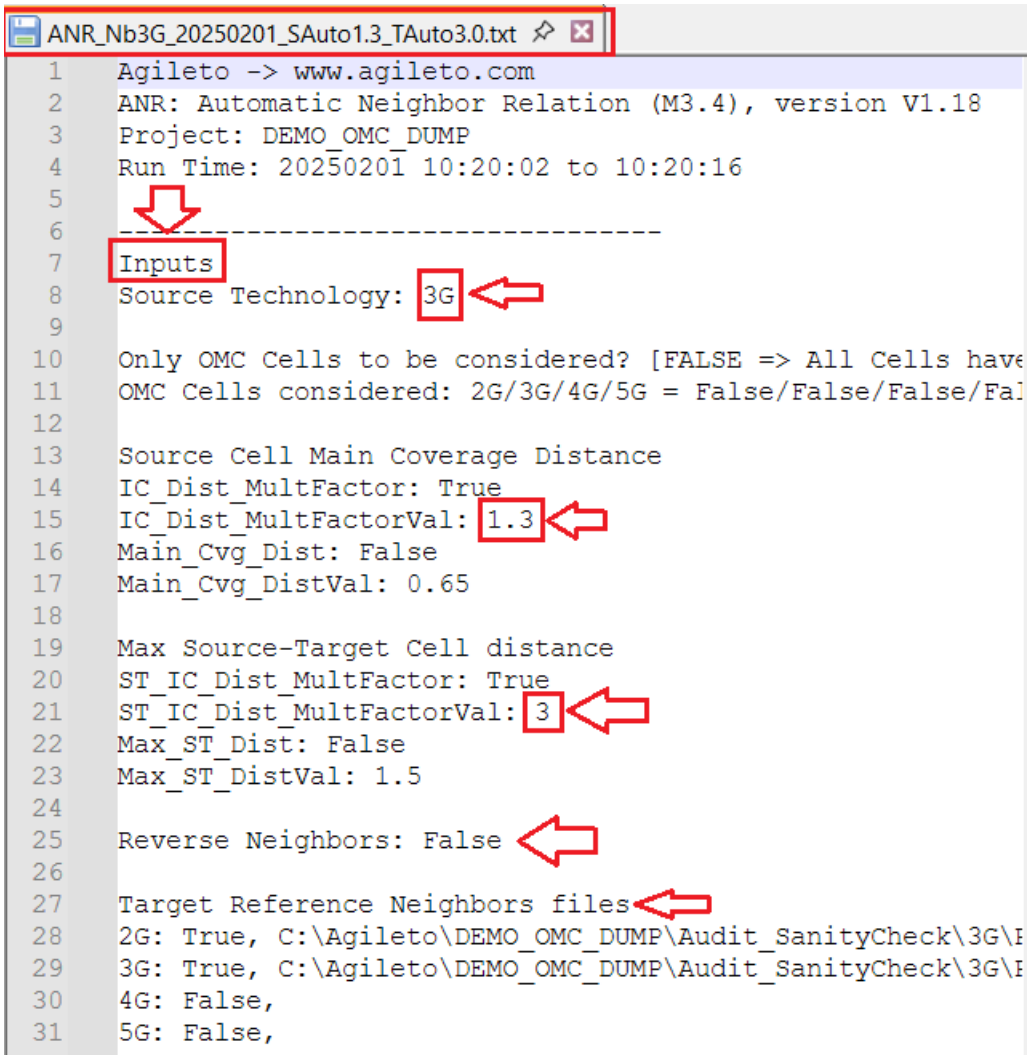
InterRAT [3G-2G]:



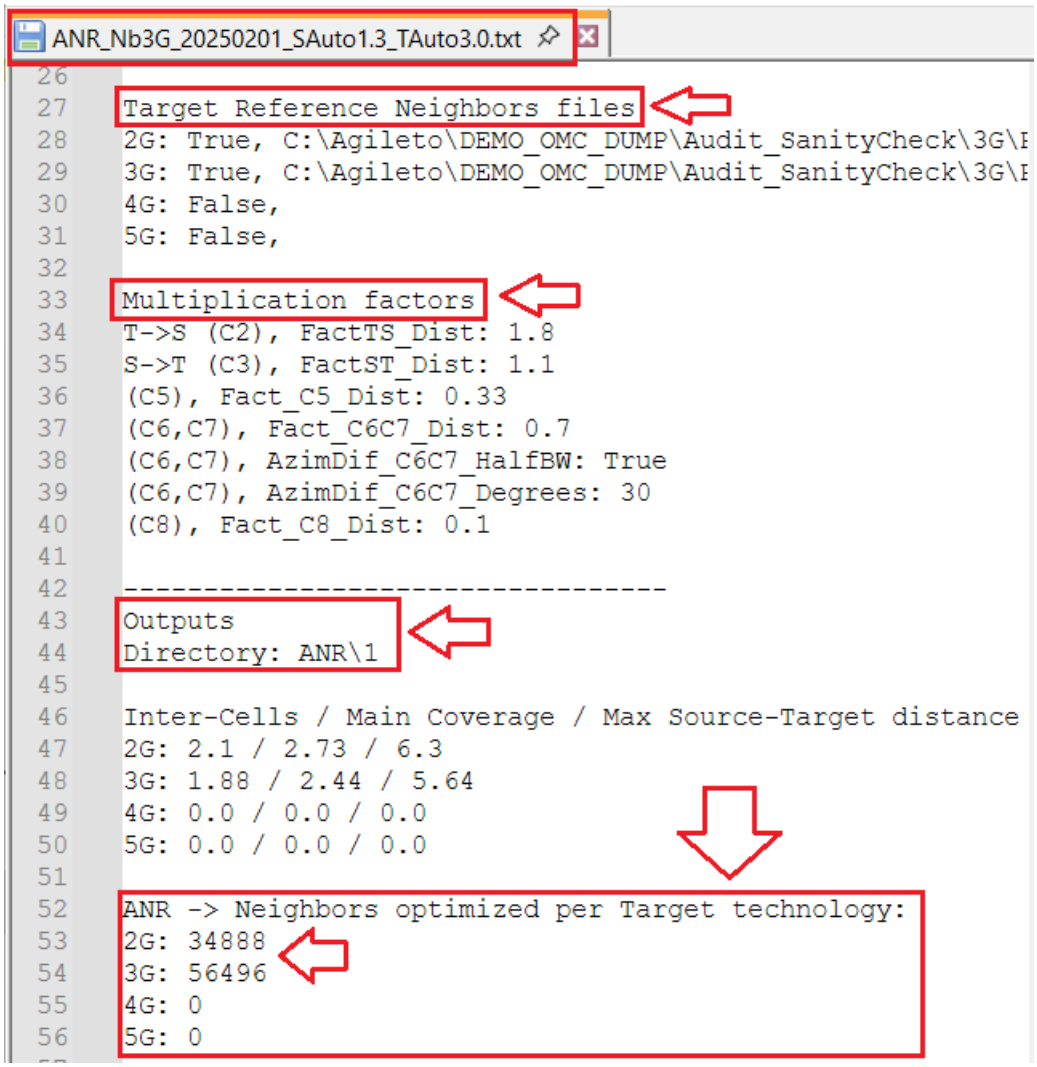
M3.4 Automatic Neighbors Relationship [ANR]

C:\Agileto\DEMO_OMC_DUMP\Neighbors\3G\ANR\1




ANR_Nb3G_20250201_SAuto1.3_TAuto3.0.txt

```
1   Agileto -> www.agileto.com
2   ANR: Automatic Neighbor Relation (M3.4), version V1.18
3   Project: DEMO_OMC_DUMP
4   Run Time: 20250201 10:20:02 to 10:20:16
5
6   ---------------------------------
7   Inputs
8   Source Technology: 3G
9
10  Only OMC Cells to be considered? [FALSE => All Cells have
11  OMC Cells considered: 2G/3G/4G/5G = False/False/False/Fal
12
13  Source Cell Main Coverage Distance
14  IC_Dist_MultFactor: True
15  IC_Dist_MultFactorVal: 1.3
16  Main_Cvg_Dist: False
17  Main_Cvg_DistVal: 0.65
18
19  Max Source-Target Cell distance
20  ST_IC_Dist_MultFactor: True
21  ST_IC_Dist_MultFactorVal: 3
22  Max_ST_Dist: False
23  Max_ST_DistVal: 1.5
24
25  Reverse Neighbors: False
26
27  Target Reference Neighbors files
28  2G: True, C:\Agileto\DEMO_OMC_DUMP\Audit_SanityCheck\3G\F
29  3G: True, C:\Agileto\DEMO_OMC_DUMP\Audit_SanityCheck\3G\F
30  4G: False,
31  5G: False,
```



DEMO_PROJECT

On DEMO_PROJECT project the following outputs may be open:

M1.1 Mobile Network Agileto database

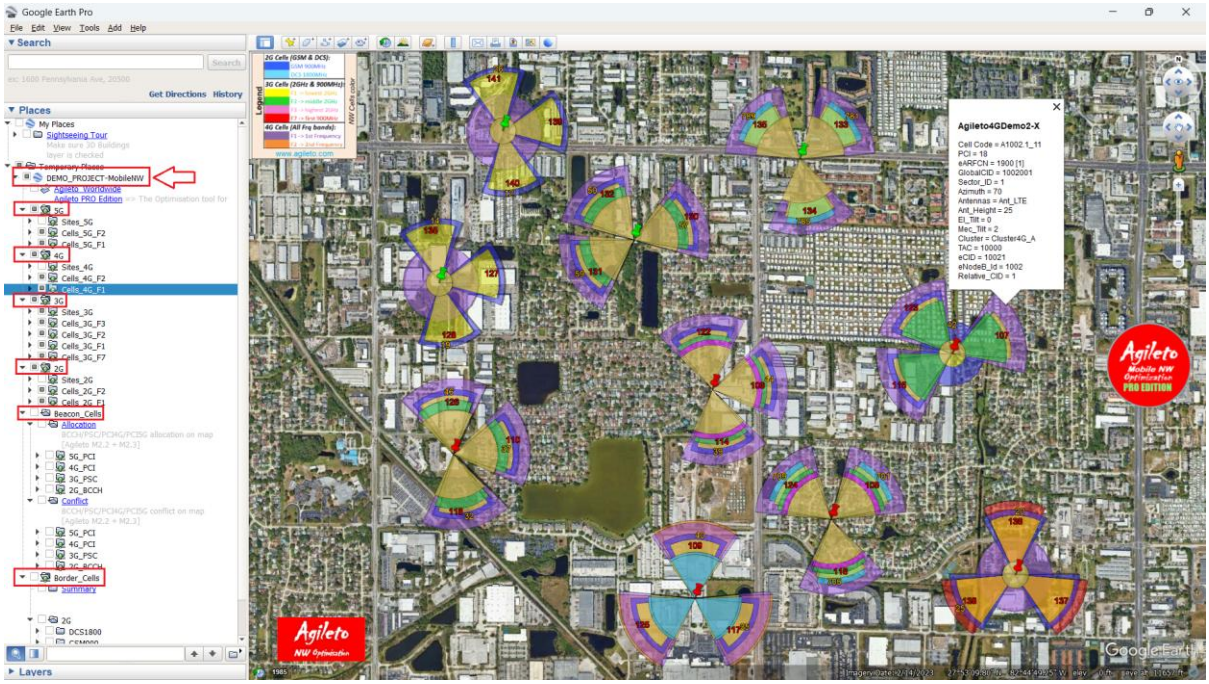
C:\Agileto\DEMO_PROJECT\MobileNW_Config\MobileNW_Config.xls

Agileto database structure is similar like it was presented above (here).

M1.2 Mobile Network Mapping in GoogleEarth & MapInfo

Google Earth:

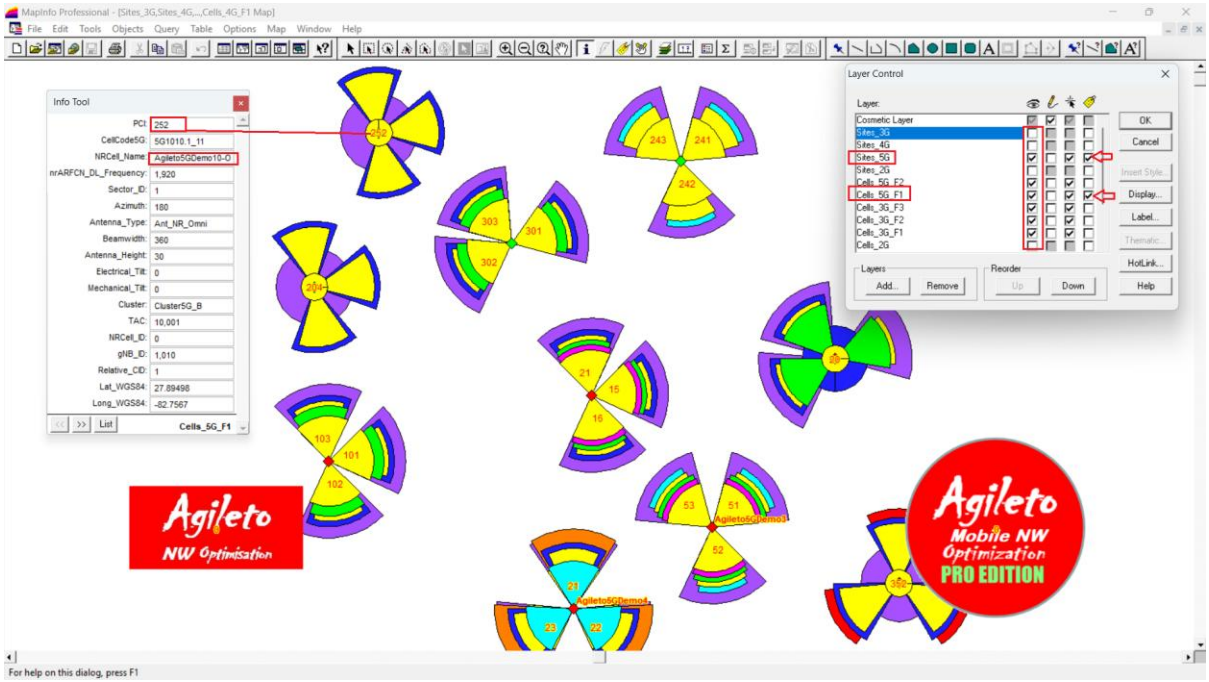
C:\Agileto\DEMO_PROJECT\GoogleEarth\MobileNW.kmz



Notice: From the left panel is selected the info to be displayed.

MapInfo:

C:\Agileto\DEMO_PROJECT\MapInfo\MobileNW.wor



Notice: The desired layer is selected to be displayed.

M1.3 Border Cells evaluation

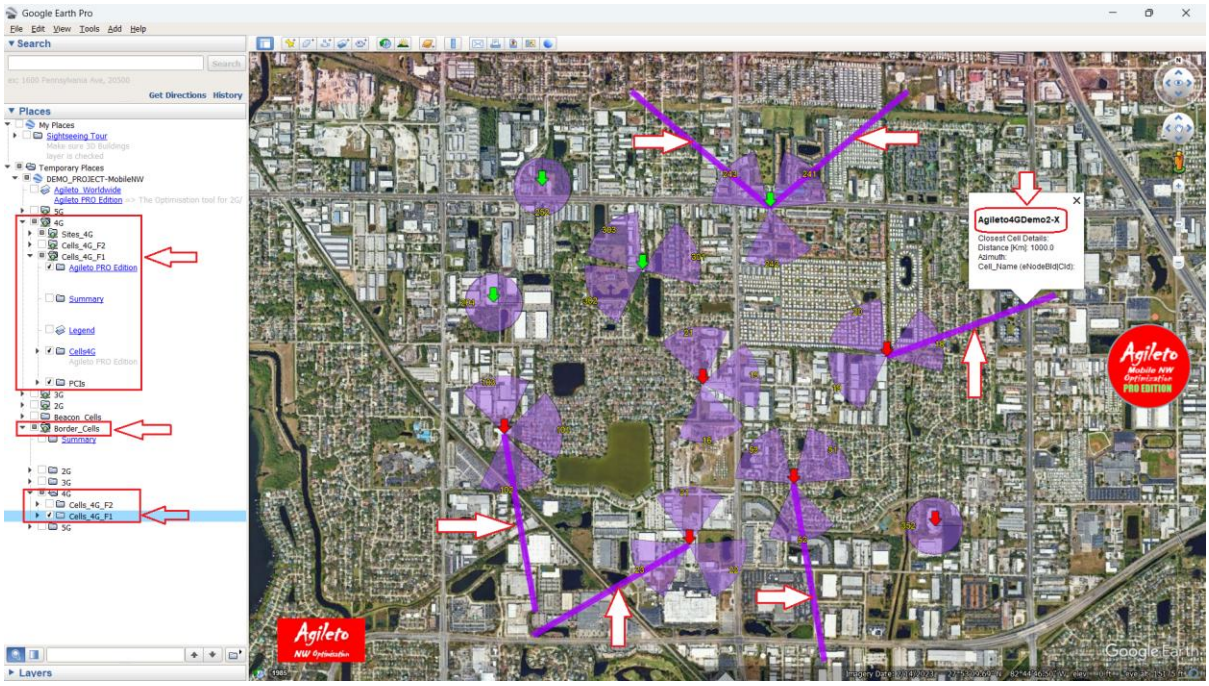
C:\Agileto\DEMO_PROJECT\Audit_SanityCheck\DEMO_PROJECT_Border_Cells-D5.0Km_BwExt10.xls

The structure of the above Border Cell Excel file is similar like it was presented on the OMC_DEMO_PROJECT (here).

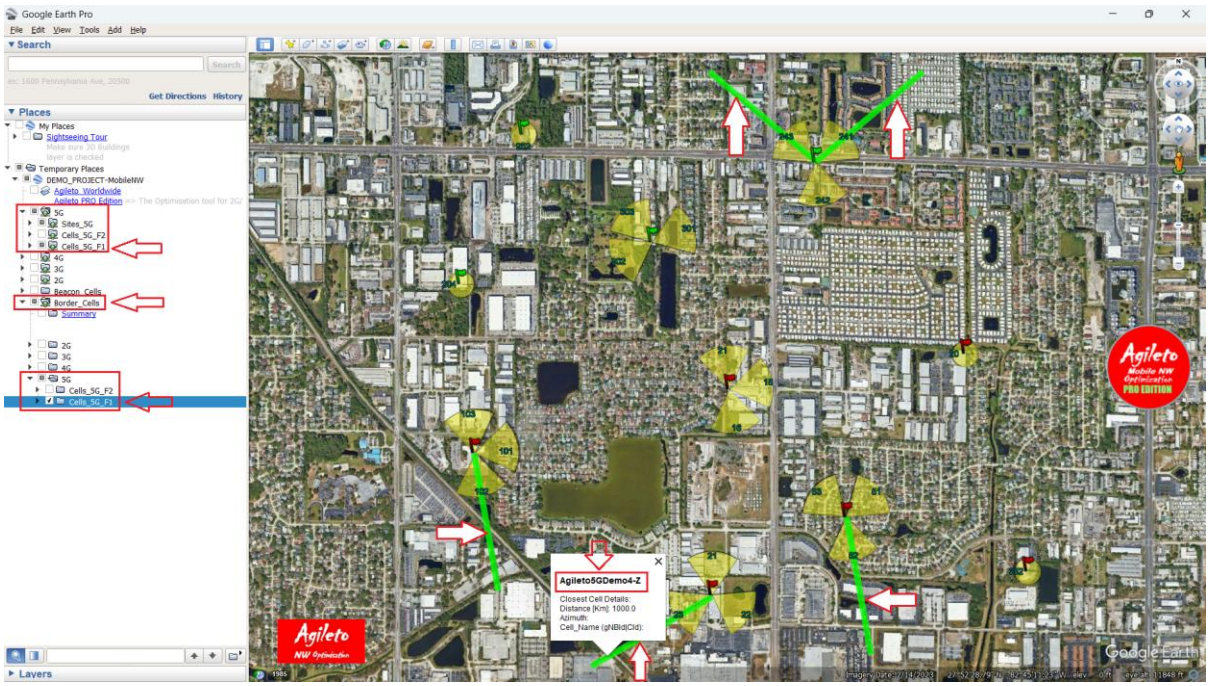
It is updated the Border Cells GoogleEarth file (which is linked with the general Mobile Network):

C:\Agileto\DEMO_PROJECT\GoogleEarth\Border_Cells.kmz

Display Border Cells for the 4G F1 layer:



Display Border Cells for the 5G F1 layer:

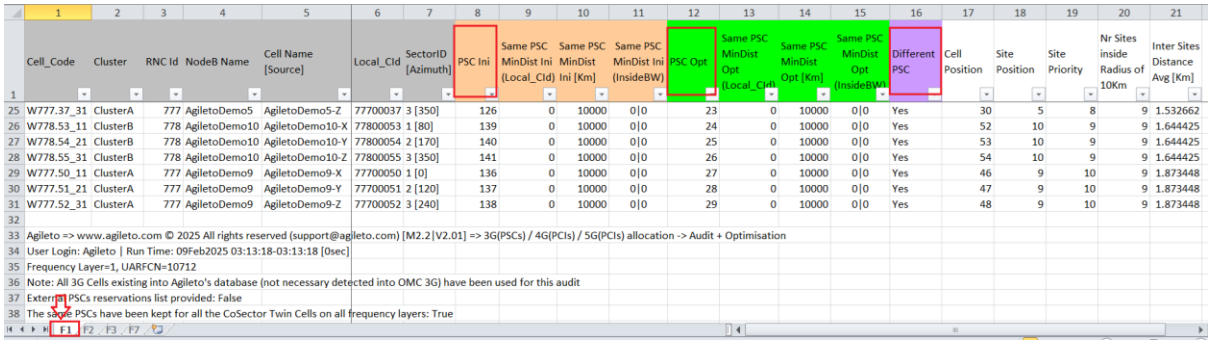


M2.2 Audit and Optim [3G /4G /5G]

The structure of the next files is similar like it was presented above (here).

1) 3G PSC Audit and Optimisation:

C:\Agileto\DEMO_PROJECT\Audit_SanityCheck\3G\DEMO_PROJECT_PSCs_AuditOptim-RadKm10.xls



	Cell_Code	Cluster	RNC Id	NodeB Name	Cell Name [Source]	Local_CId	SectorID [Azimuth]	PSC Ini	Same PSC MinDist Ini (Local_CId)	Same PSC MinDist Ini [Km]	Same PSC MinDist Ini (InsideBW)	PSC Opt	Same PSC MinDist Opt (Local_CId)	Same PSC MinDist Opt [Km]	Same PSC MinDist Opt (InsideBW)	Different PSC	Cell Position	Site Position	Site Priority	Nr Sites inside Radius of 10Km	Inter Sites Distance Avg [Km]
25	W777.37_31	ClusterA	777	AgiletoDemo5	AgiletoDemo5-Z	77700037	3 [350]	126	0	10000	0|0	23	0	10000	0|0	Yes	30	5	8	9	1.532662
26	W778.53_11	ClusterB	778	AgiletoDemo10	AgiletoDemo10-X	77800053	1 [80]	139	0	10000	0|0	24	0	10000	0|0	Yes	52	10	9	9	1.644425
27	W778.54_21	ClusterB	778	AgiletoDemo10	AgiletoDemo10-Y	77800054	2 [170]	140	0	10000	0|0	25	0	10000	0|0	Yes	53	10	9	9	1.644425
28	W778.55_31	ClusterB	778	AgiletoDemo10	AgiletoDemo10-Z	77800055	3 [350]	141	0	10000	0|0	26	0	10000	0|0	Yes	54	10	9	9	1.644425
29	W777.50_11	ClusterA	777	AgiletoDemo9	AgiletoDemo9-X	77700050	1 [0]	136	0	10000	0|0	27	0	10000	0|0	Yes	46	9	10	9	1.873448
30	W777.51_21	ClusterA	777	AgiletoDemo9	AgiletoDemo9-Y	77700051	2 [120]	137	0	10000	0|0	28	0	10000	0|0	Yes	47	9	10	9	1.873448
31	W777.52_31	ClusterA	777	AgiletoDemo9	AgiletoDemo9-Z	77700052	3 [240]	138	0	10000	0|0	29	0	10000	0|0	Yes	48	9	10	9	1.873448
32																					
33	Agileto => www.agileto.com © 2025 All rights reserved (support@agileto.com) [M2.2|V2.01] => 3G(PSCs) / 4G(PCIs) / 5G(PCIs) allocation -> Audit + Optimisation																				
34	User Login: Agileto | Run Time: 09Feb2025 03:13:18-03:13:18 [0sec]																				
35	Frequency Layer=1, UARFCN=10712																				
36	Note: All 3G Cells existing into Agileto's database (not necessary detected into OMC 3G) have been used for this audit																				
37	External PSCs reservations list provided: False																				
38	The same PSCs have been kept for all the CoSector Twin Cells on all frequency layers: True																				

Similar evaluations are for the 4G & 5G Technologies.

2) 4G PCI Audit and Optimisation:

C:\Agileto\DEMO_PROJECT\Audit_SanityCheck\4G\DEMO_PROJECT_PCIs_AuditOptim-RadKm15.xls

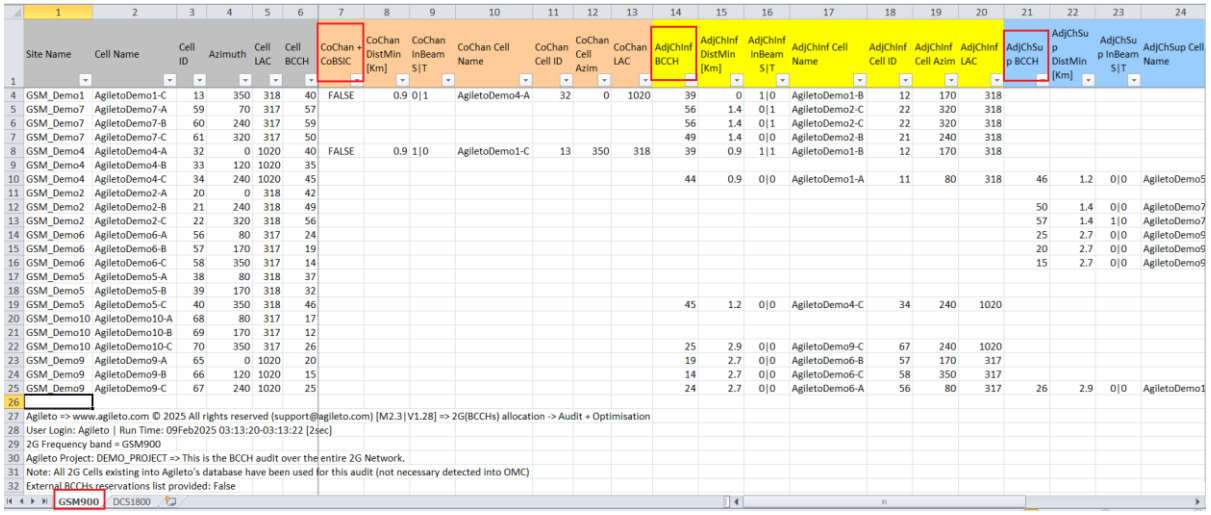
3) 5G PCI Audit and Optimisation:

C:\Agileto\DEMO_PROJECT\Audit_SanityCheck\5G\DEMO_PROJECT_PCIs_AuditOptim-RadKm15.xls

M2.3 Audit and Optim [2G BCCHs]

2G BCCHs Audit and Optimisation:

C:\Agileto\DEMO_PROJECT\Audit_SanityCheck\2G\DEMO_PROJECT_BCCHs_AuditOptim-RadKm15.xls



	Site Name	Cell Name	Cell ID	Azimuth	Cell LAC	Cell BCCH	CoChan + CoBSIC	CoChan DistMin [Km]	CoChan InBeam S|T	CoChan Cell Name	CoChan Cell ID	CoChan Cell Azim	CoChan Cell LAC	AdjChInf BCCH	AdjChInf DistMin [Km]	AdjChInf InBeam S|T	AdjChInf Cell Name	AdjChInf Cell ID	AdjChInf Cell Azim	AdjChInf LAC	AdjChSup BCCH	AdjChSup DistMin [Km]	AdjChSup InBeam S|T	AdjChSup Cell Name
4	GSM_Demo1	AgiletoDemo1-C	13	350	318	40	FALSE	0.9	0|1	AgiletoDemo4-A	32	0	1020	39	0	1|0	AgiletoDemo1-B	12	170	318				
5	GSM_Demo7	AgiletoDemo7-A	59	70	317	57								56	1.4	0|1	AgiletoDemo2-C	22	320	318				
6	GSM_Demo7	AgiletoDemo7-B	60	240	317	59								56	1.4	0|1	AgiletoDemo2-C	22	320	318				
7	GSM_Demo7	AgiletoDemo7-C	61	320	317	50								49	1.4	0|0	AgiletoDemo2-B	21	240	318				
8	GSM_Demo4	AgiletoDemo4-A	32	0	1020	40	FALSE	0.9	1|0	AgiletoDemo1-C	13	350	318	39	0.9	1|1	AgiletoDemo1-B	12	170	318				
9	GSM_Demo4	AgiletoDemo4-B	33	120	1020	35																		
10	GSM_Demo4	AgiletoDemo4-C	34	240	1020	45								44	0.9	0|0	AgiletoDemo1-A	11	80	318	46	1.2	0|0	AgiletoDemo5
11	GSM_Demo2	AgiletoDemo2-A	20	0	318	42																		
12	GSM_Demo2	AgiletoDemo2-B	21	240	318	49															50	1.4	0|0	AgiletoDemo7
13	GSM_Demo2	AgiletoDemo2-C	22	320	318	56															57	1.4	1|0	AgiletoDemo7
14	GSM_Demo6	AgiletoDemo6-A	56	80	317	24															25	2.7	0|0	AgiletoDemo9
15	GSM_Demo6	AgiletoDemo6-B	57	170	317	19															20	2.7	0|0	AgiletoDemo9
16	GSM_Demo6	AgiletoDemo6-C	58	350	317	14															15	2.7	0|0	AgiletoDemo9
17	GSM_Demo5	AgiletoDemo5-A	38	80	318	37																		
18	GSM_Demo5	AgiletoDemo5-B	39	170	318	32																		
19	GSM_Demo5	AgiletoDemo5-C	40	350	318	46								45	1.2	0|0	AgiletoDemo4-C	34	240	1020				
20	GSM_Demo10	AgiletoDemo10-A	68	80	317	17																		
21	GSM_Demo10	AgiletoDemo10-B	69	170	317	12																		
22	GSM_Demo10	AgiletoDemo10-C	70	350	317	26								25	2.9	0|0	AgiletoDemo9-C	67	240	1020				
23	GSM_Demo9	AgiletoDemo9-A	65	0	1020	20								19	2.7	0|0	AgiletoDemo6-B	57	170	317				
24	GSM_Demo9	AgiletoDemo9-B	66	120	1020	15								14	2.7	0|0	AgiletoDemo6-C	58	350	317				
25	GSM_Demo9	AgiletoDemo9-C	67	240	1020	25								24	2.7	0|0	AgiletoDemo6-A	56	80	317	26	2.9	0|0	AgiletoDemo1
26																								
27	Agileto => www.agileto.com © 2025 All rights reserved (support@agileto.com) [M2.3|V1.28] => 2G(BCCHs) allocation -> Audit + Optimisation																							
28	User Login: Agileto | Run Time: 09Feb2025 03:13:20-03:13:22 [2sec]																							
29	2G Frequency band = GSM900																							
30	Agileto Project: DEMO_PROJECT => This is the BCCH audit over the entire 2G Network.																							
31	Note: All 2G Cells existing into Agileto's database have been used for this audit (not necessary detected into OMC)																							
32	External BCCHs reservations list provided: False																							

	Site Name	Cell Name	Cell ID	Azimuth	Cell LAC	Cell BCCH	AdjChSup BCCH	AdjChSup DistMin [Km]	AdjChSup InBeam S|T	AdjChSup Cell Name	AdjChSup Cell ID	AdjChSup Cell Azim	AdjChSup LAC	BCCH OptimF	BCCH OptimF CoChan coBSIC	BCCH OptimF CoChan MinDist [Km]	BCCH OptimF CoChan Cell Nar	BCCH OptimF CoChan (InsideBW)	Different BCCH	Cell Position	Site Position	Site Priority	Nr Sites inside Radius of 15Km	Inter Sites Distance Avg [Km]
4	GSM_Demo1	AgiletoDemo1-C	13	350	318	40								16	FALSE	10000		0|0	Yes	3	1	1	9	1.08117628
5	GSM_Demo7	AgiletoDemo7-A	59	70	317	57								13	FALSE	10000		0|0	Yes	19	7	2	9	1.20522332
6	GSM_Demo7	AgiletoDemo7-B	60	240	317	59								15	FALSE	10000		0|0	Yes	20	7	2	9	1.20522332
7	GSM_Demo7	AgiletoDemo7-C	61	320	317	50								17	FALSE	10000		0|0	Yes	21	7	2	9	1.20522332
8	GSM_Demo4	AgiletoDemo4-A	32	0	1020	40								18	FALSE	10000		0|0	Yes	10	4	4	9	1.44239688
9	GSM_Demo4	AgiletoDemo4-B	33	120	1020	35								20	FALSE	10000		0|0	Yes	11	4	4	9	1.44239688
10	GSM_Demo4	AgiletoDemo4-C	34	240	1020	45	46	1.2	0|0	AgiletoDemo5-C	40	350	318	22	FALSE	10000		0|0	Yes	12	4	4	9	1.44239688
11	GSM_Demo2	AgiletoDemo2-A	20	0	318	42								19	FALSE	10000		0|0	Yes	4	2	6	9	1.48493314
12	GSM_Demo2	AgiletoDemo2-B	21	240	318	49	50	1.4	0|0	AgiletoDemo7-C	61	320	317	21	FALSE	10000		0|0	Yes	5	2	6	9	1.48493314
13	GSM_Demo2	AgiletoDemo2-C	22	320	318	56	57	1.4	1|0	AgiletoDemo7-A	59	70	317	23	FALSE	10000		0|0	Yes	6	2	6	9	1.48493314
14	GSM_Demo6	AgiletoDemo6-A	56	80	317	24	25	2.7	0|0	AgiletoDemo9-C	67	240	1020	24	FALSE	10000		0|0	No	16	6	7	9	1.52724183
15	GSM_Demo6	AgiletoDemo6-B	57	170	317	19	20	2.7	0|0	AgiletoDemo9-A	65	0	1020	26	FALSE	10000		0|0	Yes	17	6	7	9	1.52724183
16	GSM_Demo6	AgiletoDemo6-C	58	350	317	14	15	2.7	0|0	AgiletoDemo9-B	66	120	1020	28	FALSE	10000		0|0	Yes	18	6	7	9	1.52724183
17	GSM_Demo5	AgiletoDemo5-A	38	80	318	37								25	FALSE	10000		0|0	Yes	13	5	8	9	1.53266203
18	GSM_Demo5	AgiletoDemo5-B	39	170	318	32								27	FALSE	10000		0|0	Yes	14	5	8	9	1.53266203
19	GSM_Demo5	AgiletoDemo5-C	40	350	318	46								29	FALSE	10000		0|0	Yes	15	5	8	9	1.53266203
20	GSM_Demo10	AgiletoDemo10-A	68	80	317	17								30	FALSE	10000		0|0	Yes	28	10	9	9	1.6444248
21	GSM_Demo10	AgiletoDemo10-B	69	170	317	12								32	FALSE	10000		0|0	Yes	29	10	9	9	1.6444248
22	GSM_Demo10	AgiletoDemo10-C	70	350	317	26								34	FALSE	10000		0|0	Yes	30	10	9	9	1.6444248
23	GSM_Demo9	AgiletoDemo9-A	65	0	1020	20								31	FALSE	10000		0|0	Yes	25	9	10	9	1.87344801
24	GSM_Demo9	AgiletoDemo9-B	66	120	1020	15								33	FALSE	10000		0|0	Yes	26	9	10	9	1.87344801
25	GSM_Demo9	AgiletoDemo9-C	67	240	1020	25	26	2.9	0|0	AgiletoDemo10-C	70	350	317	35	FALSE	10000		0|0	Yes	27	9	10	9	1.87344801
26																								
27	Agileto => www.agileto.com © 2025 All rights reserved (support@																							
28	User Login: Agileto | Run Time: 09Feb2025 03:13:20-03:13:22 [2s																							
29	2G Frequency band = GSM900																							
30	Agileto Project: DEMO_PROJECT => This is the BCCH audit over the																							
31	Note: All 2G Cells existing into Agileto's database have been used f																							
32	External BCCHs reservations list provided: False																							

GSM900 | DCS1800

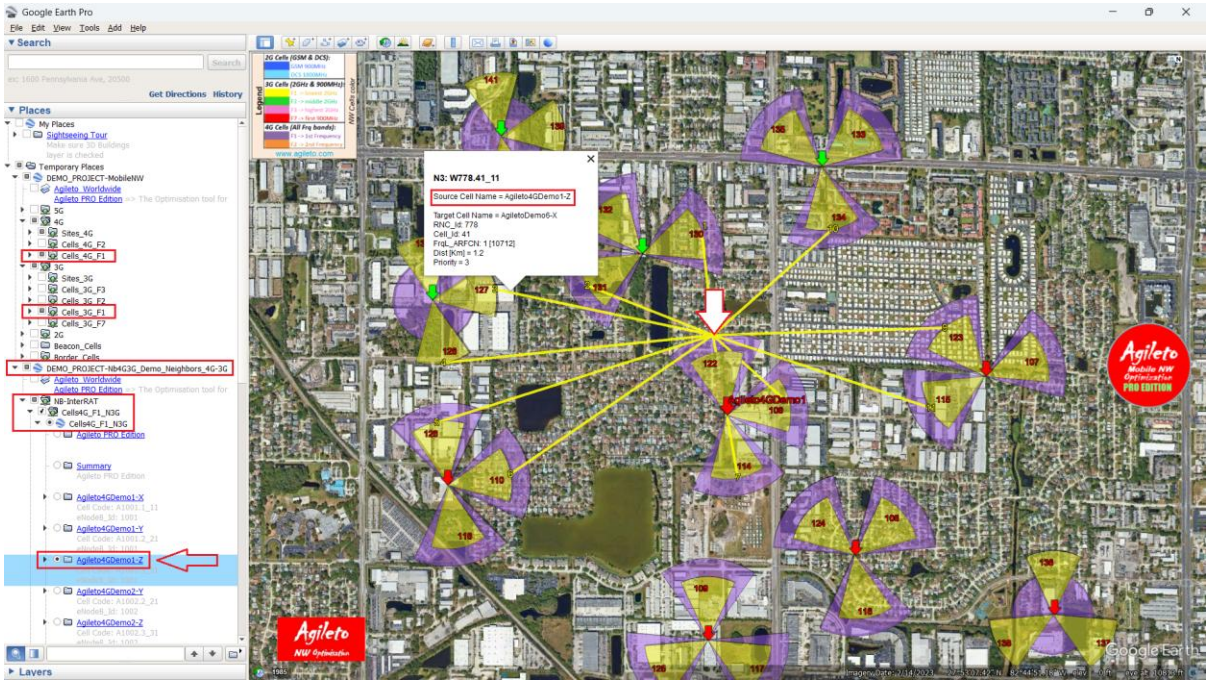
M3.2 Neighbors database to Google Earth / MapInfo

Input Neighbors files [Ex: 4G-3G]:

C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-3G.csv

Output Google Earth file [4G-3G]:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Neigh_GE\Nb4G3G_Demo_Neighbors_4G-3G\Neighbors.kmz

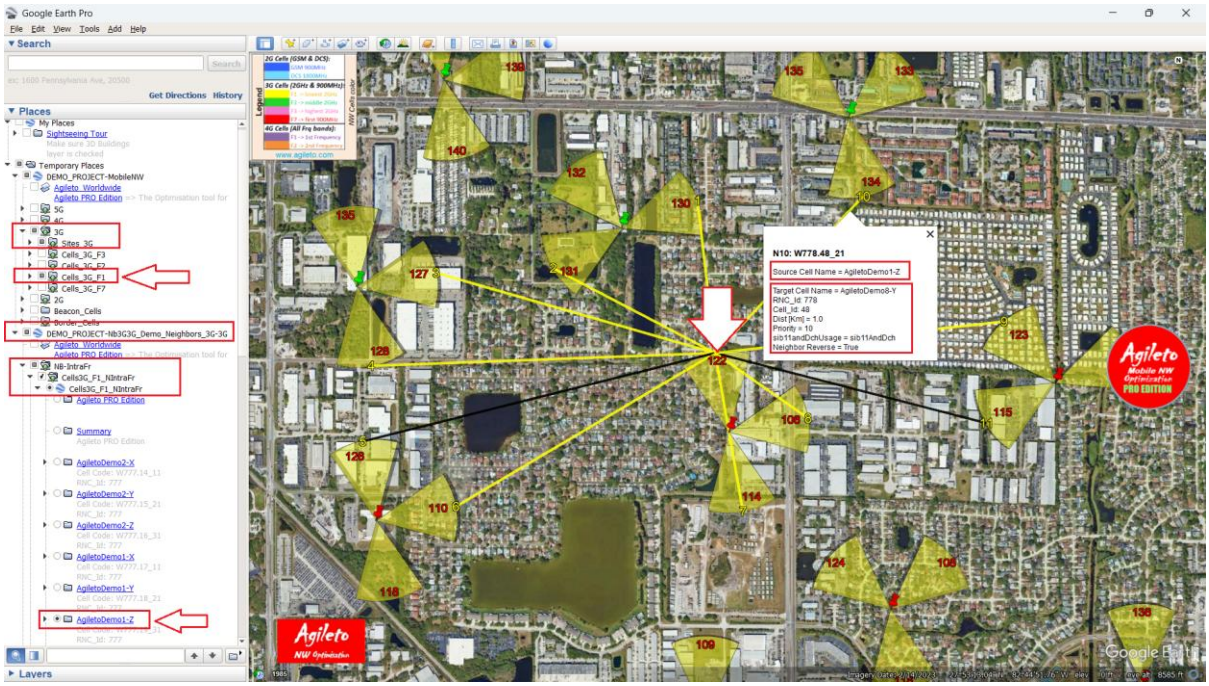


Input Neighbors files [Ex: 3G-3G]:

C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_3G-3G.csv

Output Google Earth file [3G-3G]:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Neigh_GE\Nb3G3G_Demo_Neighbors_3G-3G\Neighbors.kmz



Similar are many other neighbors represented related to IntraTechnology (IntraFreq/InterFreq) and InterTechnology (IRAT):

Inputs:

C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_2G-2G.csv

C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_3G-2G.csv

C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-4G.csv

C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_5G-5G.csv

C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_5G-4G.csv

Outputs:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Neigh_GE\Nb2G2G_Demo_Neighbors_2G-2G\Neighbors.kmz

C:\Agileto\DEMO_PROJECT\GoogleEarth\Neigh_GE\Nb3G2G_Demo_Neighbors_3G-2G\Neighbors.kmz

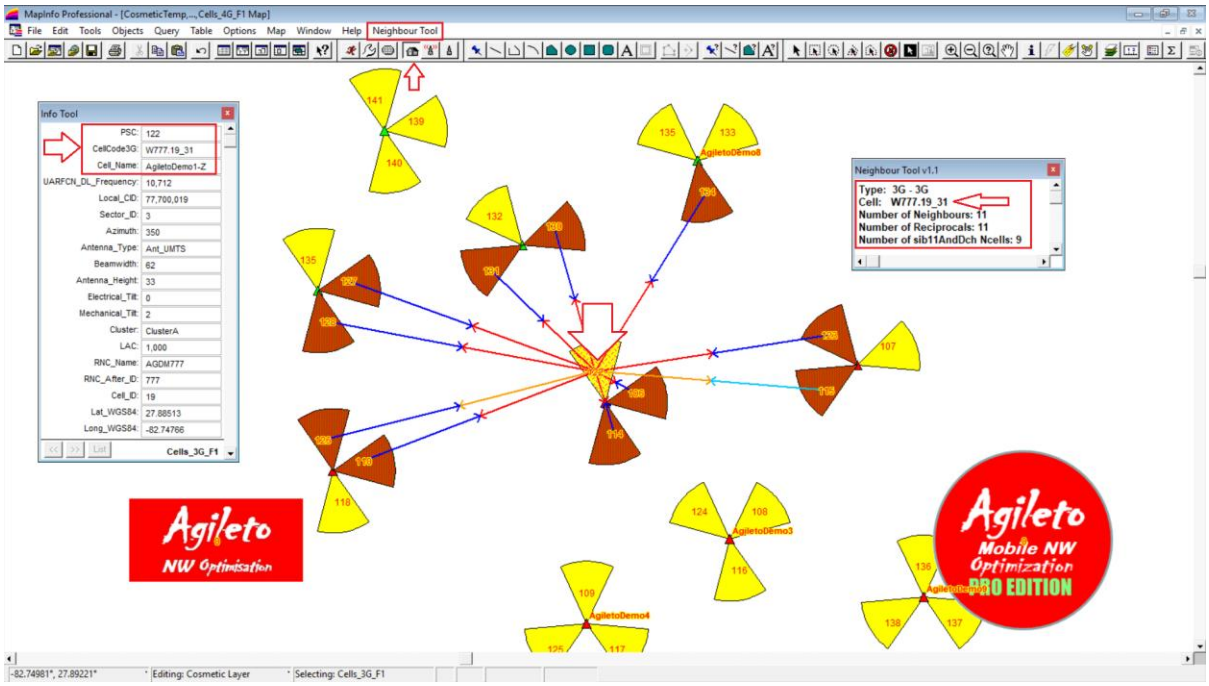
C:\Agileto\DEMO_PROJECT\GoogleEarth\Neigh_GE\Nb4G4G_Demo_Neighbors_4G-4G\Neighbors.kmz

C:\Agileto\DEMO_PROJECT\GoogleEarth\Neigh_GE\Nb5G5G_Demo_Neighbors_5G-5G\Neighbors.kmz

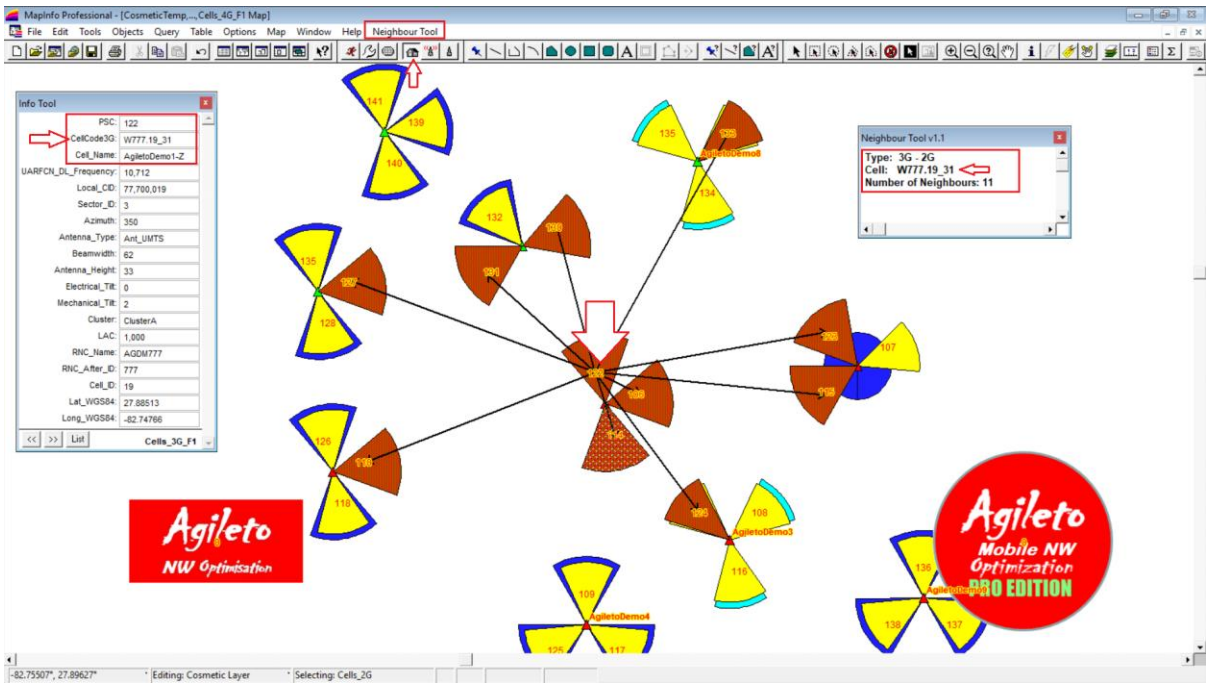
C:\Agileto\DEMO_PROJECT\GoogleEarth\Neigh_GE\Nb5G4G_Demo_Neighbors_5G-4G\Neighbors.kmz

M3.3 Neighbors 3G to MapInfo

Ex. Neighbors 3G-3G IntraFreq:

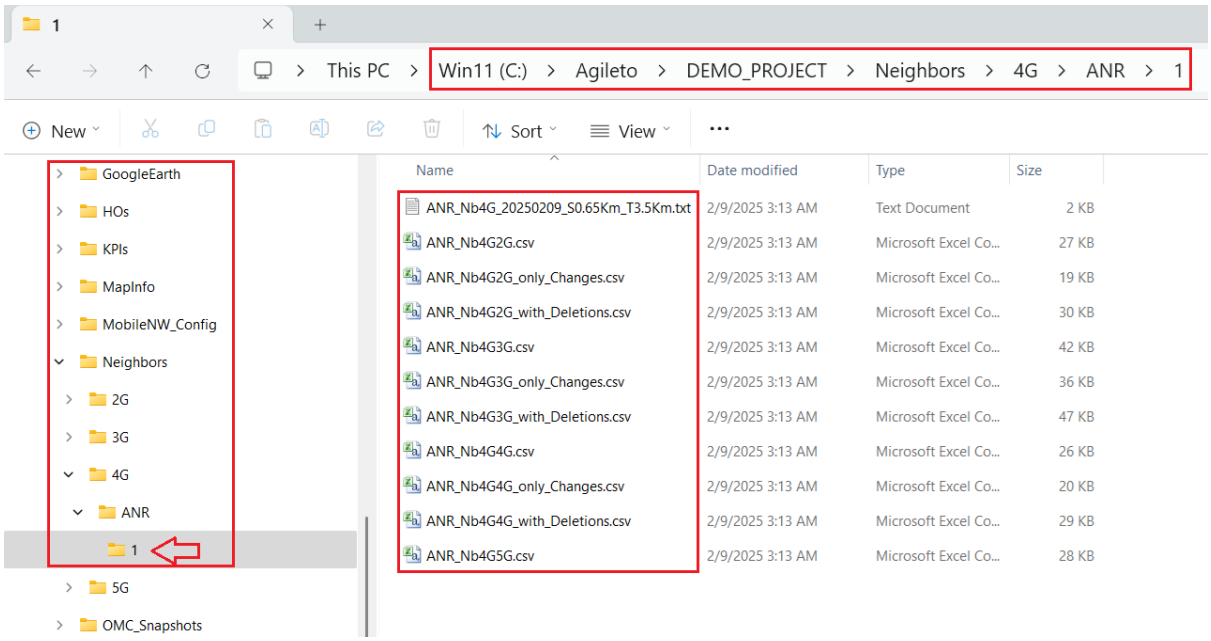


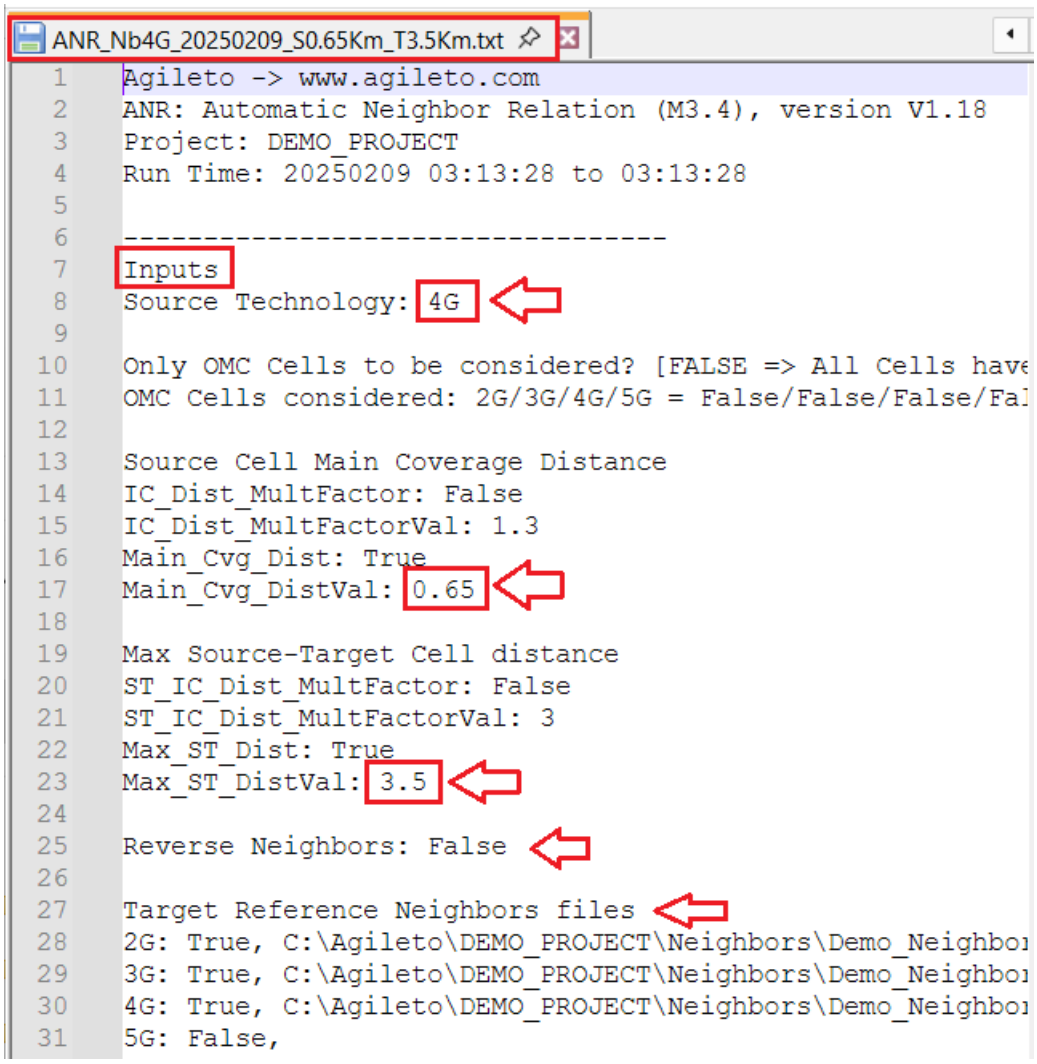
Ex. Neighbors 3G-2G InterRAT:

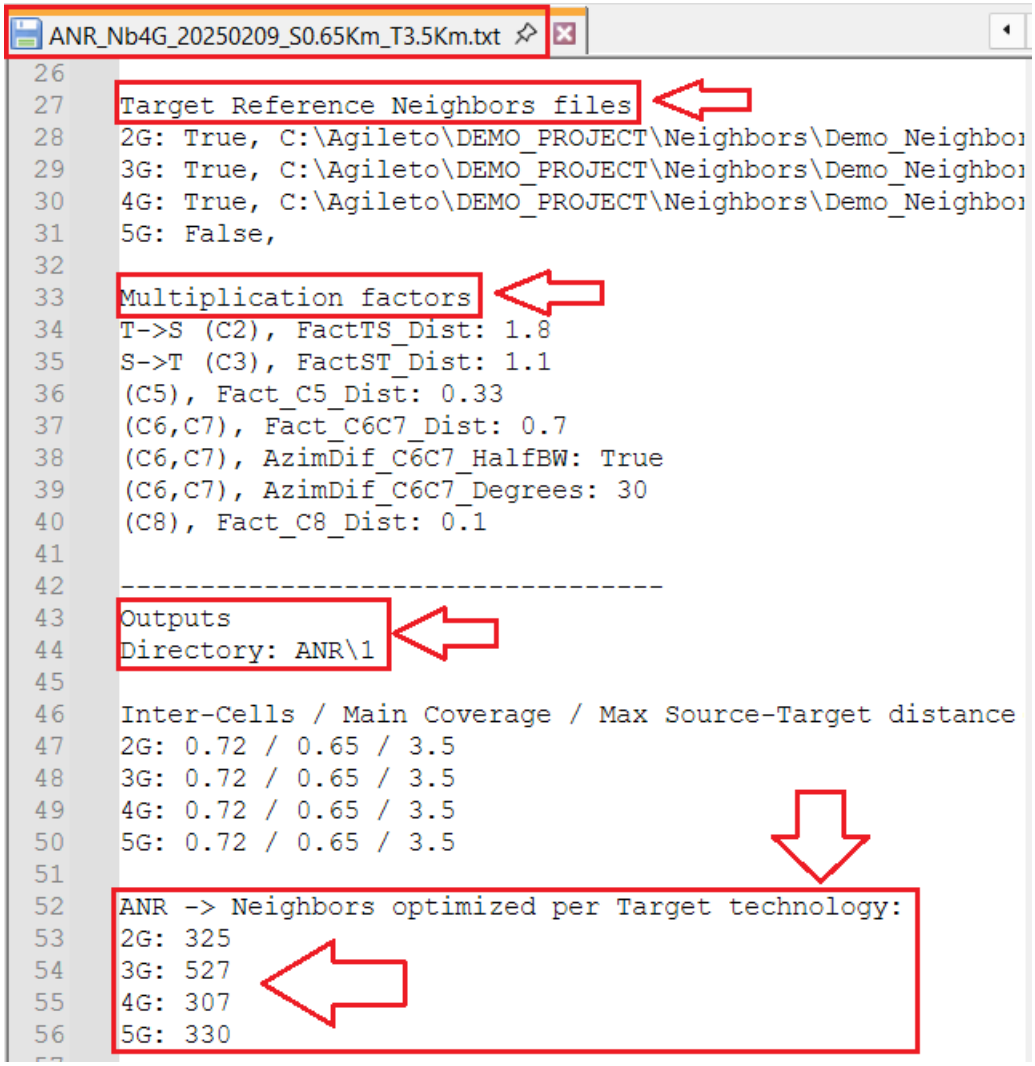


M3.4 Automatic Neighbors Relationship [ANR]

C:\Agileto\DEMO_PROJECT\Neighbors\4G\ANR\1







M5.1 Mapping KPIs on Google Earth and MapInfo

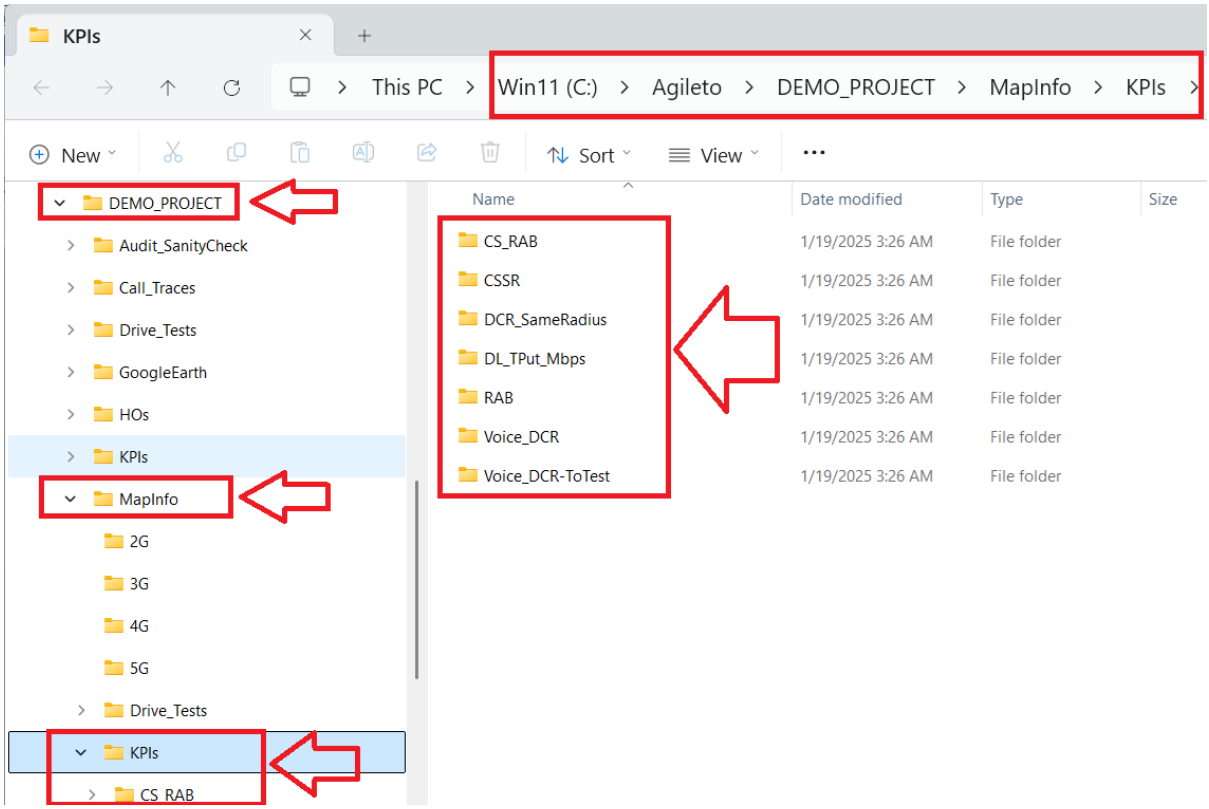
There are several KPIs from all technologies (2G/3G/4G/5G) which are available to be viewed in both Google Earth and MapInfo.

We are going to present here only few of them, however the others may be open in the similar way like it is presented below for the selected ones.

The places where these KPIs are stored are as following:

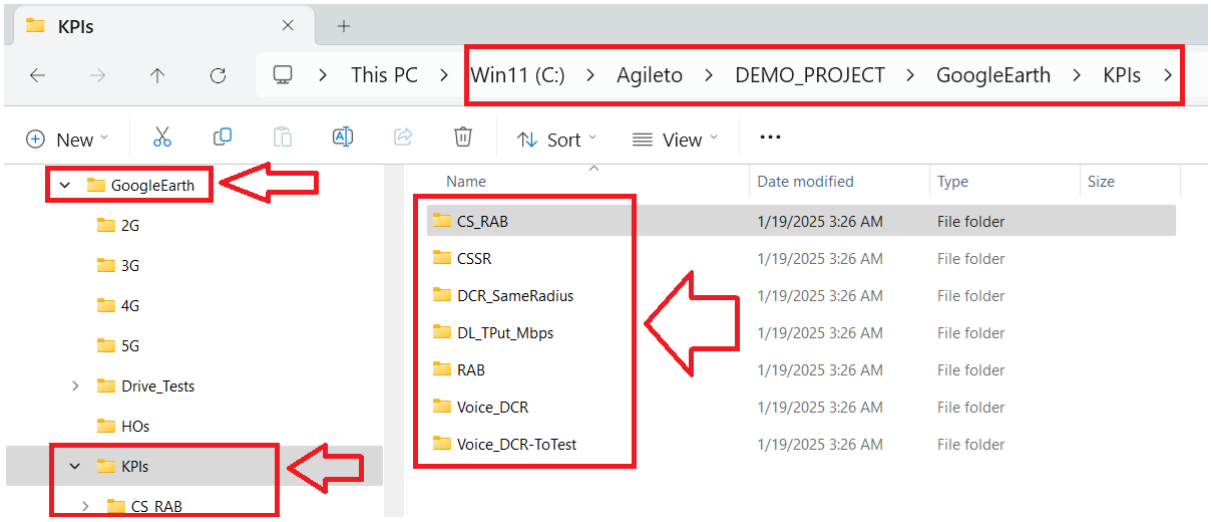
MapInfo:

C:\Agileto\DEMO_PROJECT\MapInfo\KPIs



Google Earth:

C:\Agileto\DEMO_PROJECT\GoogleEarth\KPIs



Examples of several KPIs to be open in Google Earth and MapInfo:

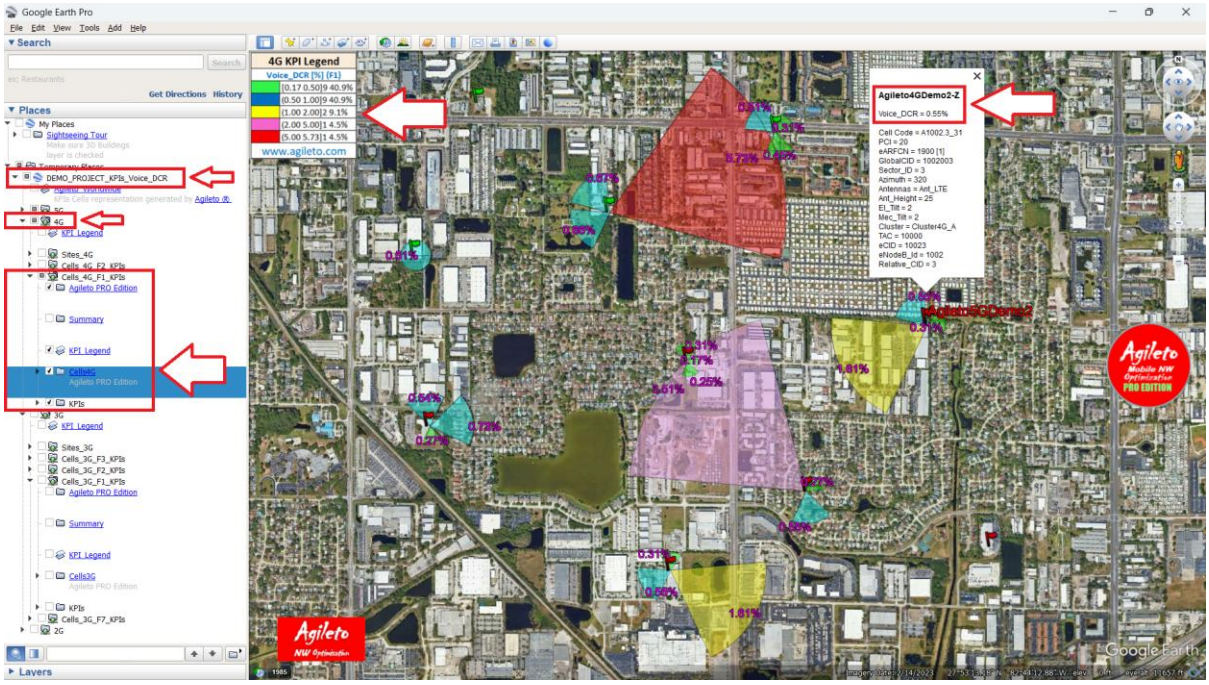
1) Voice_DCR:

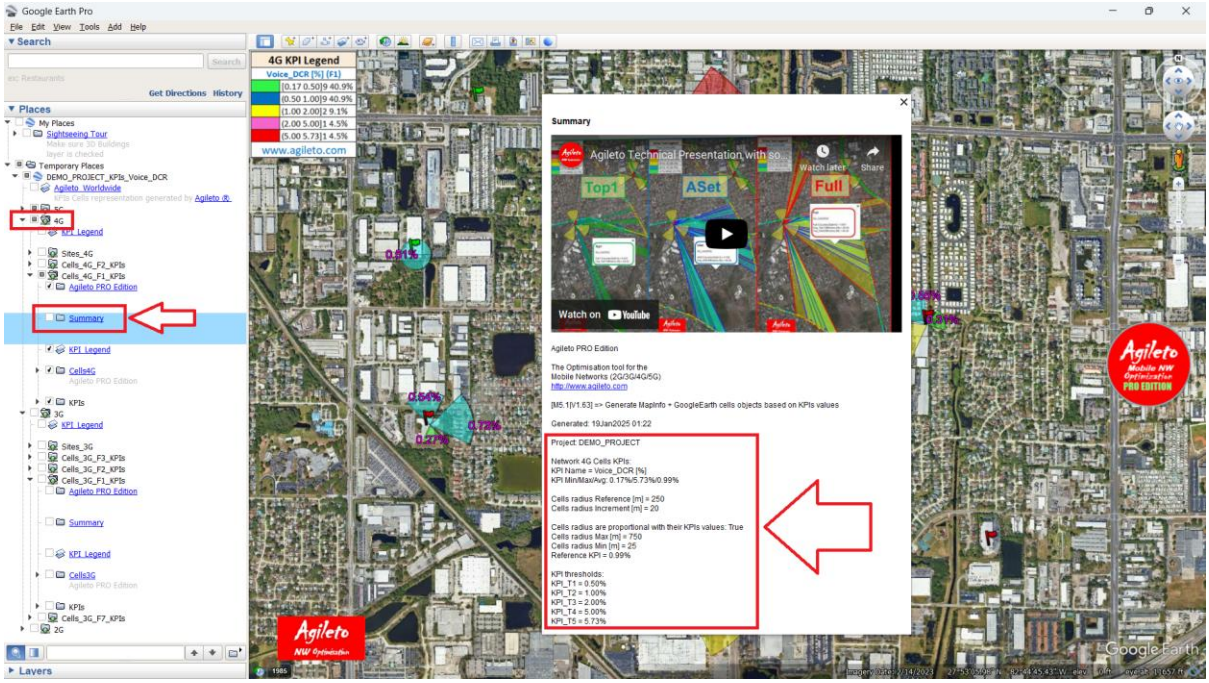
Google Earth:

C:\Agileto\DEMO_PROJECT\GoogleEarth\KPIs\Voice_DCR\MobileNW_KPIs.kmz

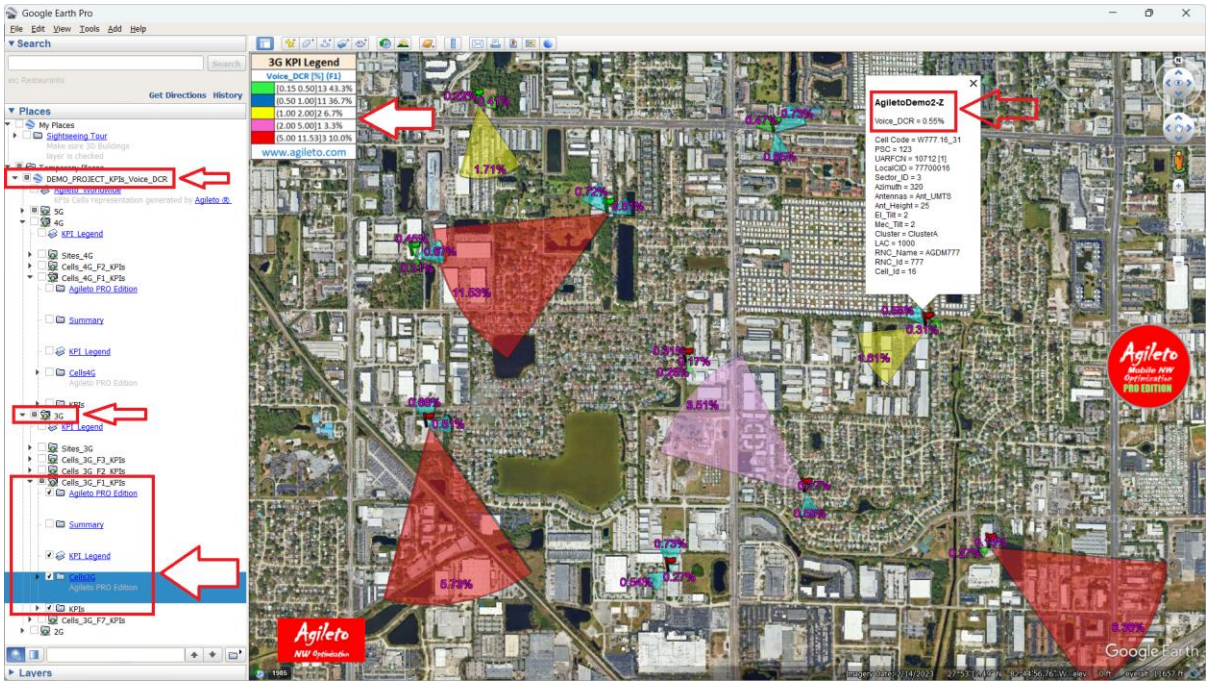
If the same KPI name is available for more technologies then all of them are available (at once) in Google Earth and from Google Earth interface (left panel) is selected the desired technology.

4G Technology:

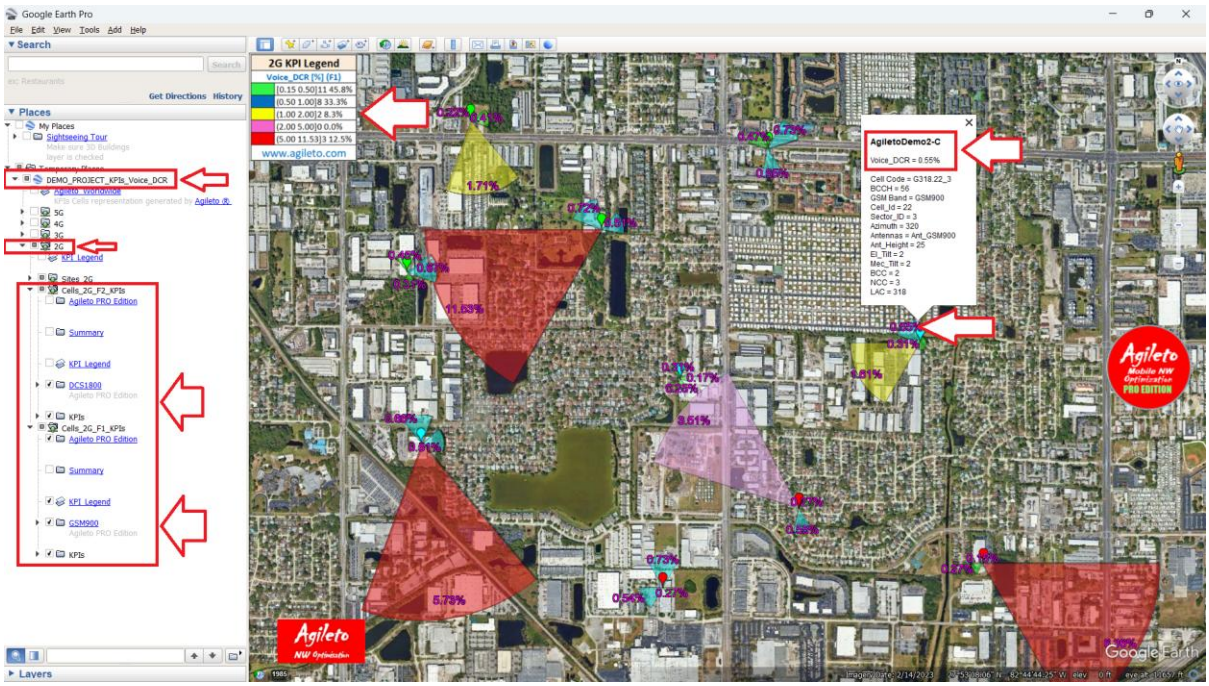




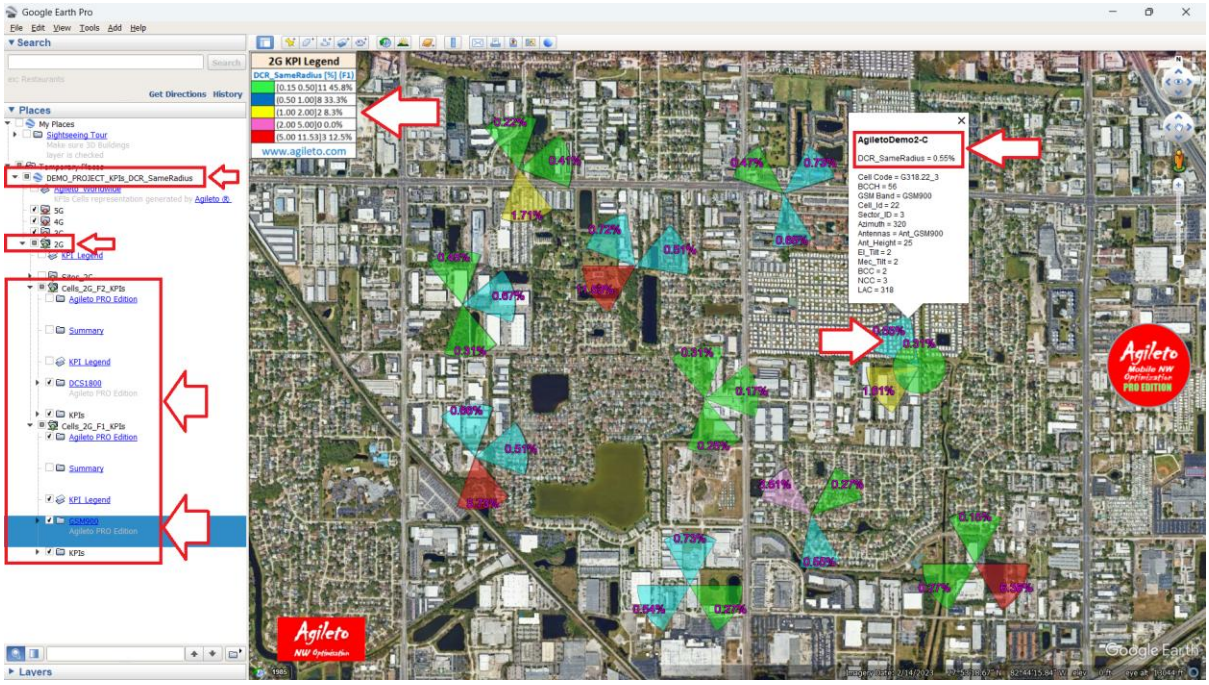
3G Technology:

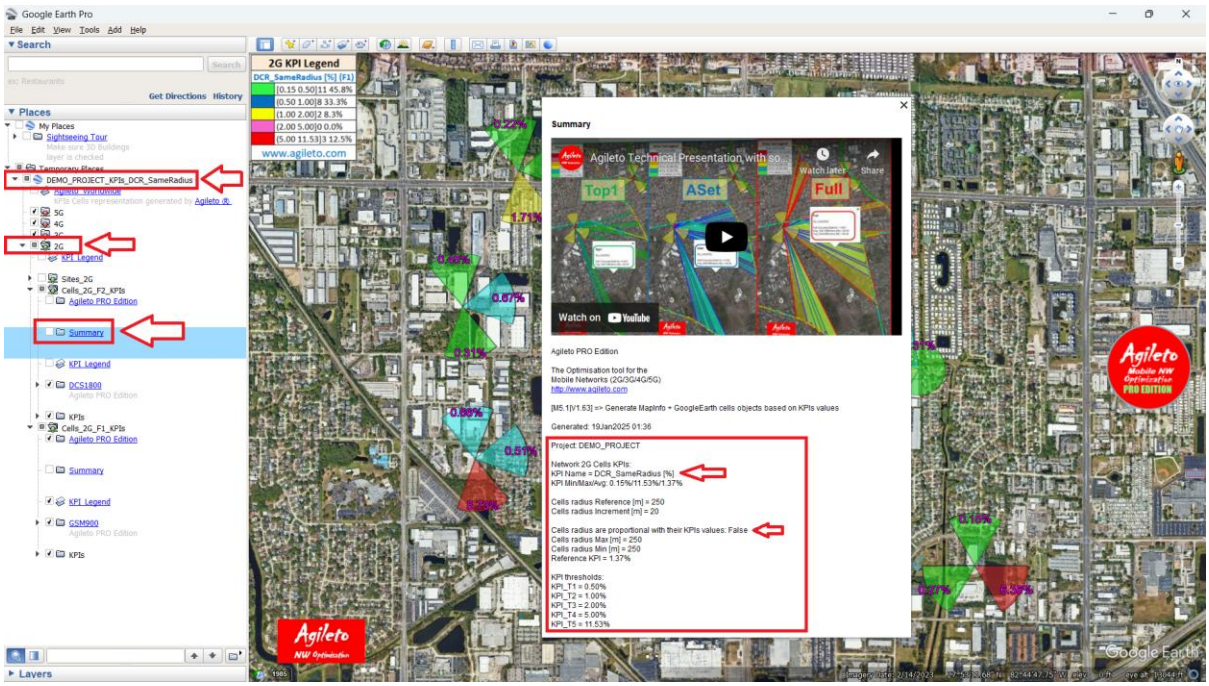


2G Technology:



The next is the representation of the same 2G KPI (DCR) as above but with the same Cells radius:

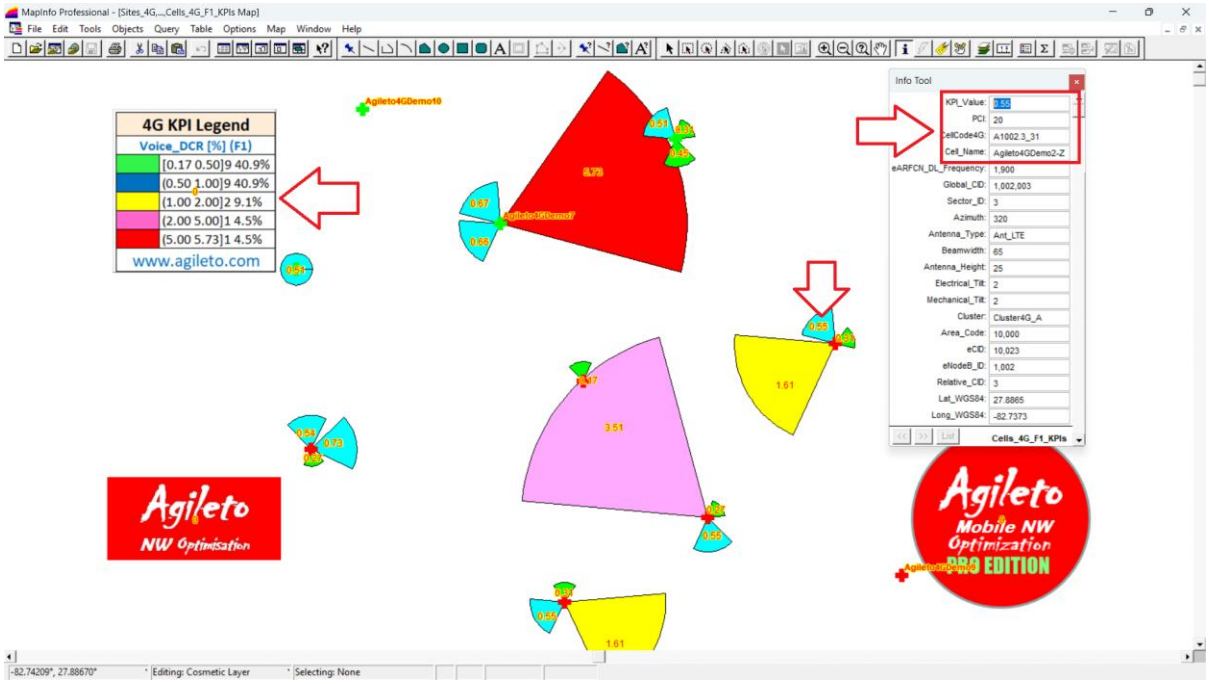




MapInfo:

C:\Agileto\DEMO_PROJECT\MapInfo\KPIs\Voice_DCR\4G\MobileNW_4G_KPIs.wor

In comparison with Google Earth KPIs outputs those for MapInfo are available only separately by technology, so in order to view a specific technology you need to open the workspace file (*.wor) that is available under the desired technology folder (ex for this case => **4G**).

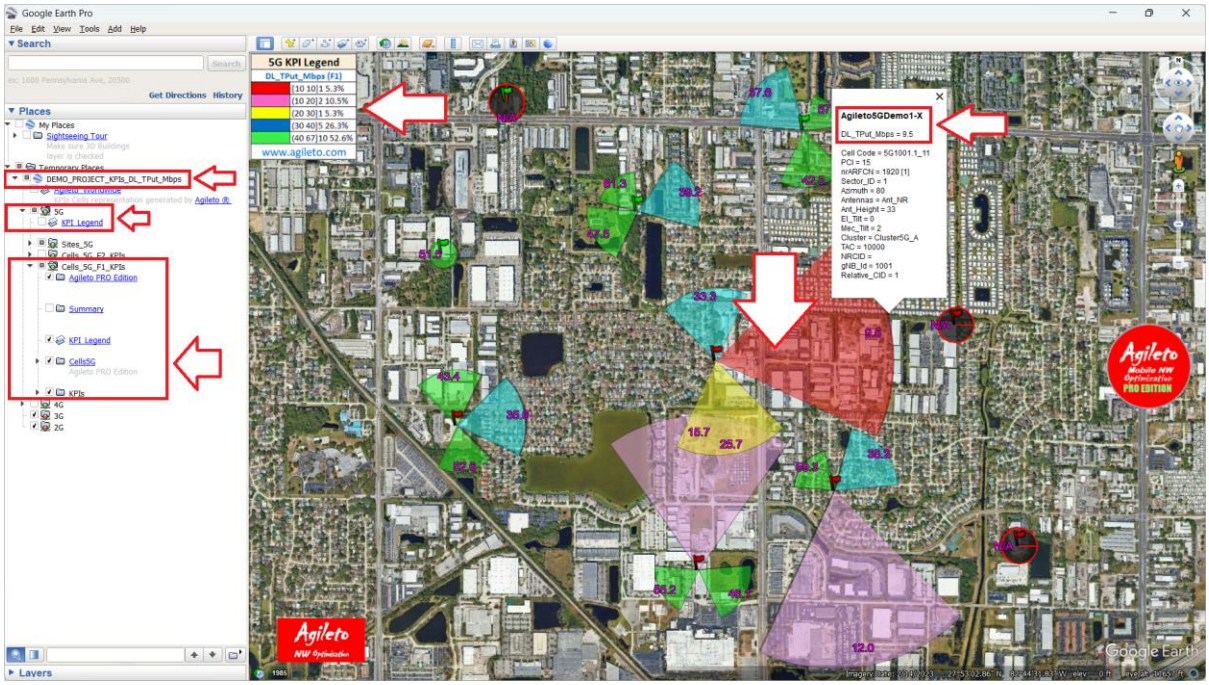


2) DL_TPut_Mbps:

5G Technology:

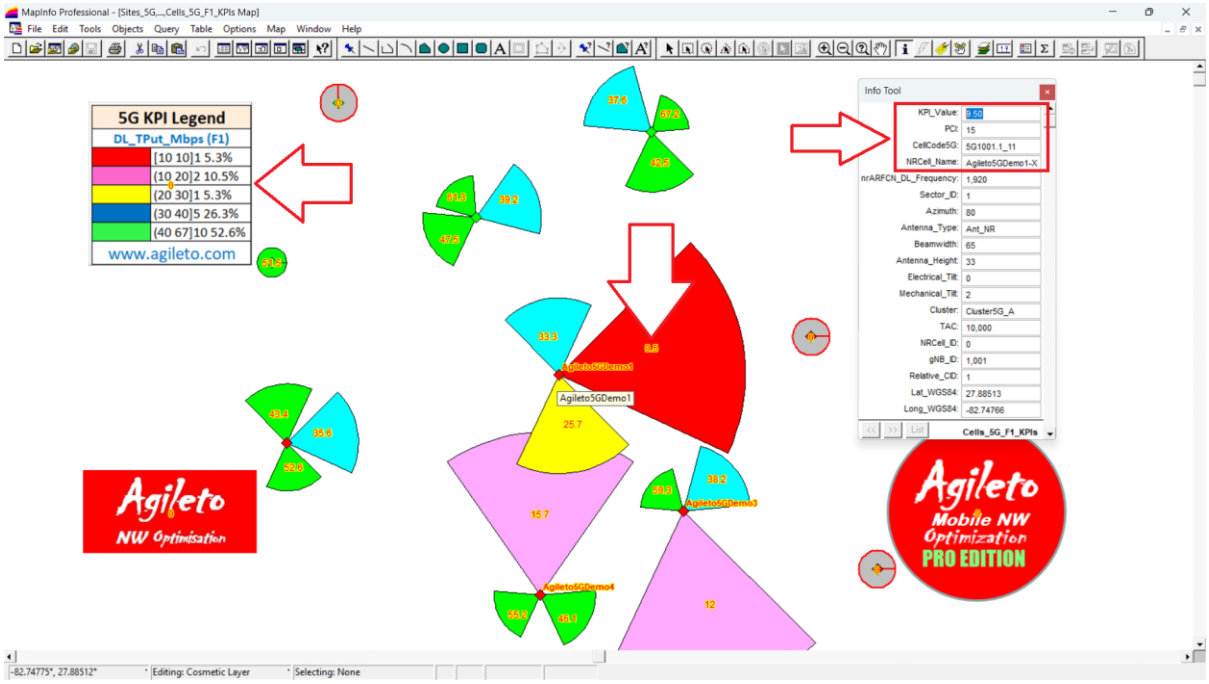
Google Earth:

C:\Agileto\DEMO_PROJECT\GoogleEarth\KPIs\DL_TPut_Mbps\MobileNW_KPIs.kmz



MapInfo:

C:\Agileto\DEMO_PROJECT\MapInfo\KPIs\DL_TPut_Mbps\5G\MobileNW_KPIs.kmz



In a similar way may be open the other available KPIs in MapInfo and Google Earth as per they have been presented to be detected in specific folders at the beginning of this chapter (here).

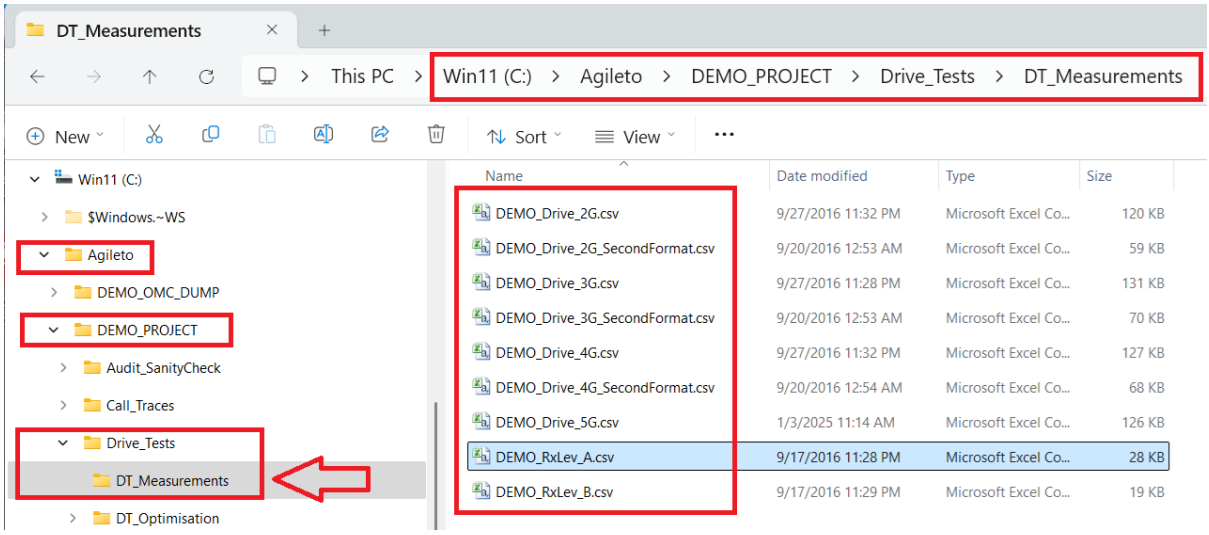
M4.1 Drive Test Analysis / Optimisation

This chapter contains two main sections, as following:

- **Drive Test Analysis**
- **Drive Test Optimisation**

The Drive Tests input files are located at the following location:

C:\Agileto\DEMO_PROJECT\Drive_Tests\DT_Measurements



Drive Test Analysis

This case is related to the analysis of one drive test metric or the difference (benchmark) between two drive test metrics performed on similar (but not necessary identical) routes.

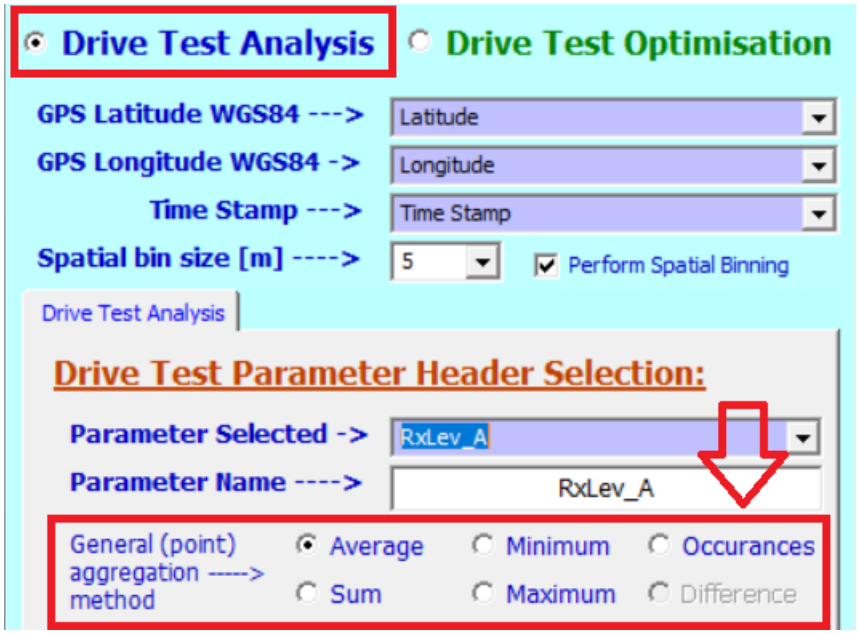
The drive test analysis may be performed and map on Google Earth and MapInfo by using the exact drive test inputs geographically data (latitude/longitude) or by using the method of the "**points aggregation**" with a "**Spatial bin size**" within selected square units [1m/5m/10m/100m etc].

If the "**Spatial bin size**" method is used then multiple aggregation methods for the drive test points which fall into the selected square bin size may be provided as outputs for the metric selected, as following:

- Average -> **Avg**
- Minimum -> **Min**
- Maximum -> **Max**
- Occurances -> **Occ**
- Sum -> **Sum**

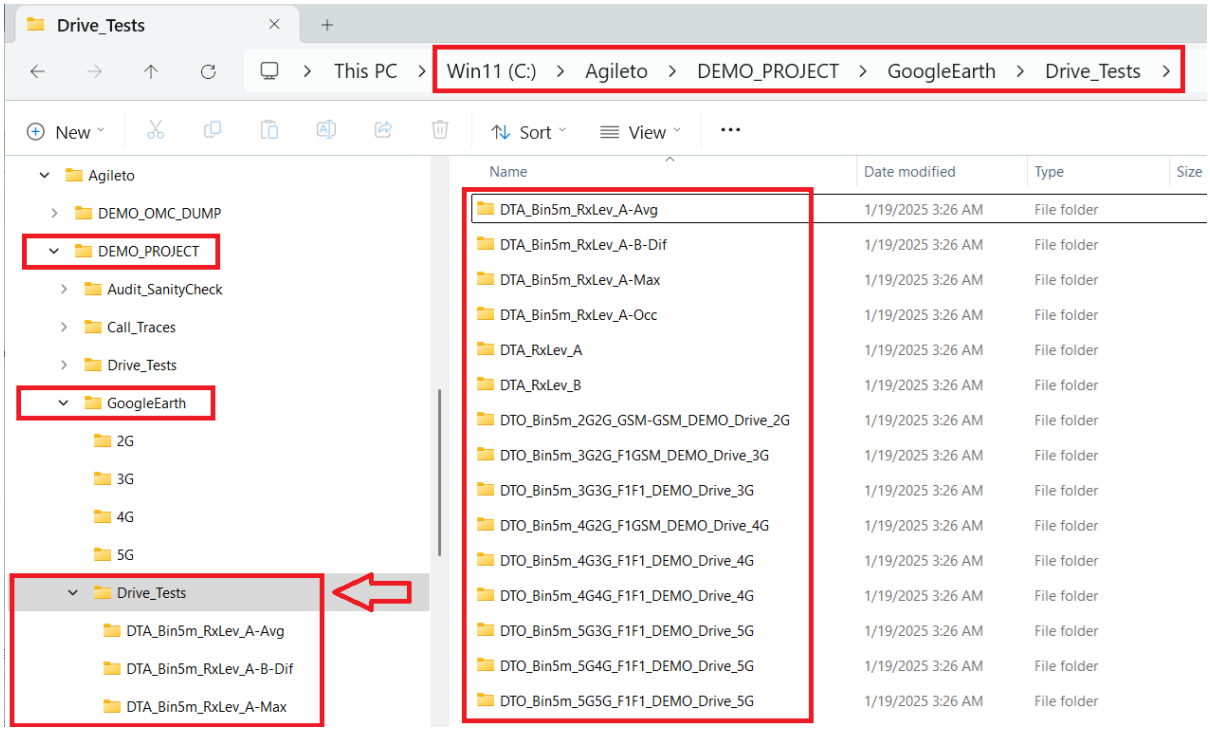
In case that two drive test metrics are provided as input, then the output evaluates automatically the drive test points which are detected in common routes performed for each metric and evaluate the benchmark (Difference -> **Dif**) between the two input metrics on each point of the drive test.

Example of Agileto software tool selection for the inputs:



The outputs related to this case will be stored in directories names which will start with the prefix **DTA** followed by the bin size unit selected as per may be seen below as examples under the Google Earth\Drive_Tests folder:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests



Similar type of the drive tests output folders are generated automatically by Agileto software tool under the MapInfo\Drive_Tests respectivelly Drive_Tests\DT_Optimisation folders:

MapInfo: C:\Agileto\DEMO_PROJECT\MapInfo\Drive_Tests

Drive_Tests: C:\Agileto\DEMO_PROJECT\Drive_Tests\DT_Optimisation

Examples of several Drive Test Analysis (**DTA**) outputs are provided below.

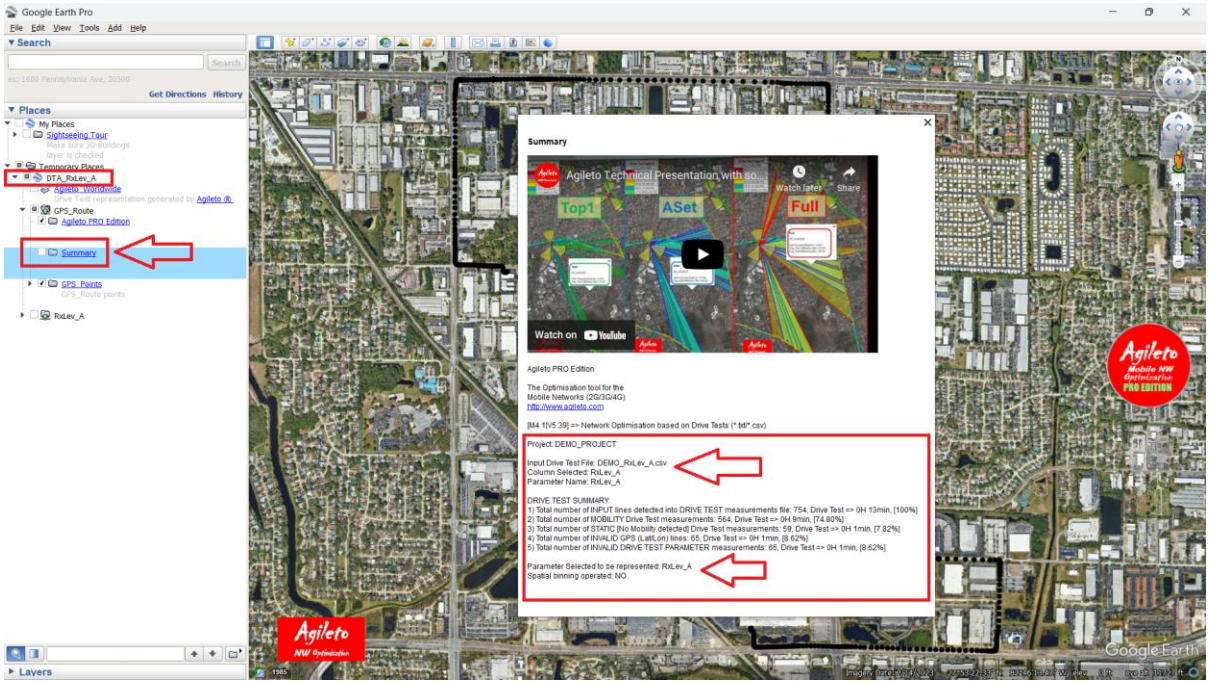
Metrics: **RxLev_A**, respectively **RxLevB**

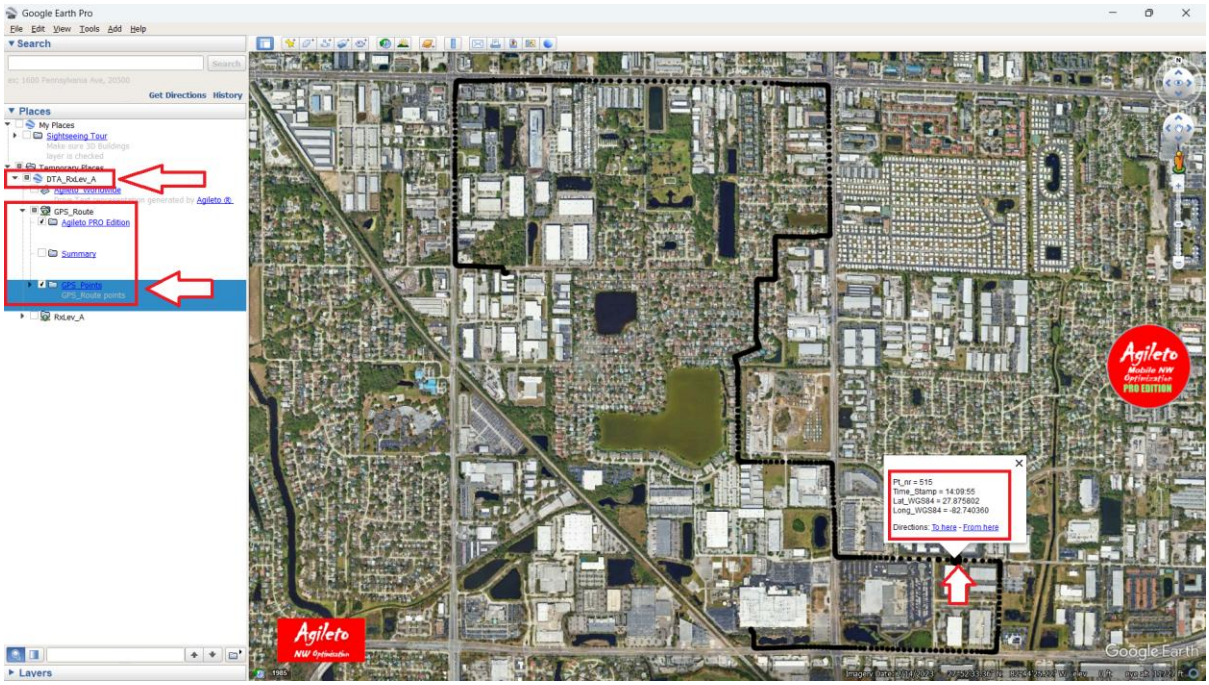
Google Earth:

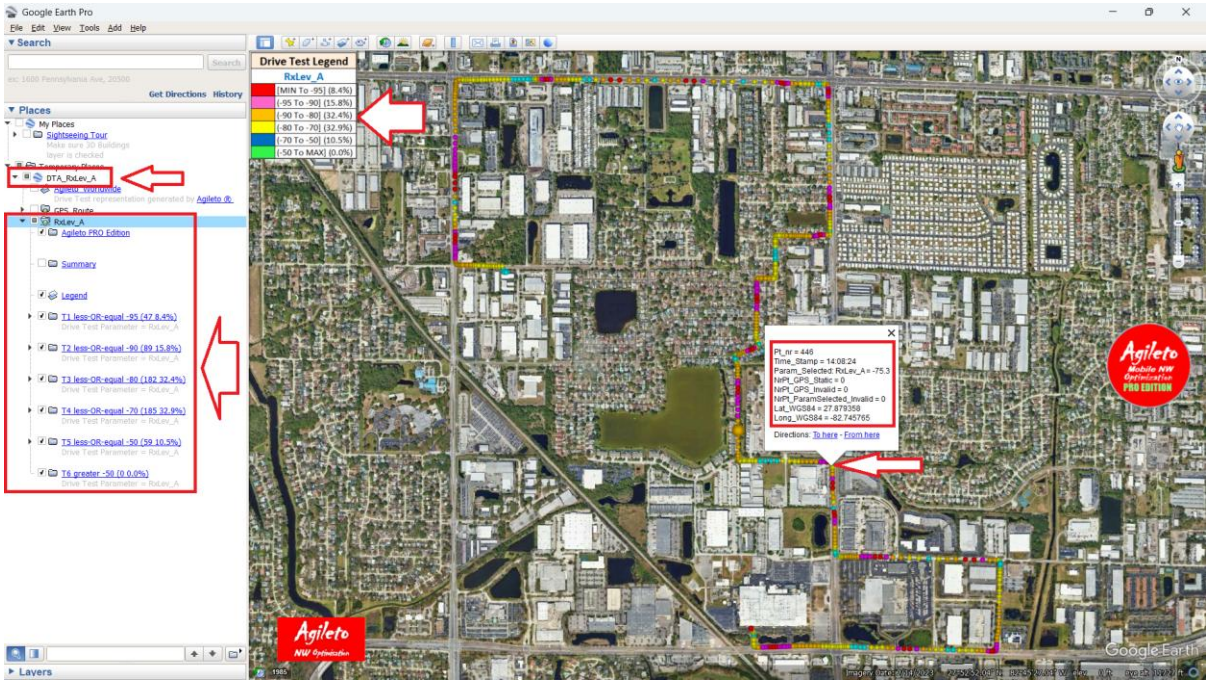
1) **RxLev_A without bin aggregation**:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTA_RxLev_A\Drive_Test.kmz

On the left panel from Google Earth is selected the desired info to be displayed:


Google Earth Pro
File Edit View Tools Add Help
Search
Places
My Places
Sightseeing Tour
Temporary Places
DTA_RxLev_A
GPS_Route
Agileto PRO Edition
Summary
GPS_Points
RxLev_A
Layers
Summary
Agileto Technical Presentation, with so...
Watch later
Share
Top1
ASet
Full
Watch on YouTube
Agileto PRO Edition
The Optimisation tool for the Mobile Networks (2G/3G/4G)
http://www.agileto.com
[M4.1](V5.39] => Network Optimisation based on Drive Tests (*.txt* csv)
Project: DEMO_PROJECT
Input Drive Test File: DEMO_RxLev_A.csv
Column Selected: RxLev_A
Parameter Name: RxLev_A
DRIVE TEST SUMMARY:
1) Total number of INPUT lines detected into DRIVE TEST measurements file: 754, Drive Test => 0H 13min, [100%]
2) Total number of MOBILITY Drive Test measurements: 564, Drive Test => 0H 9min, [74.80%]
3) Total number of STATIC [No Mobility detected] Drive Test measurements: 59, Drive Test => 0H 1min, [7.82%]
4) Total number of INVALID GPS (Lat/Lon) lines: 65, Drive Test => 0H 1min, [8.62%]
5) Total number of INVALID DRIVE TEST PARAMETER measurements: 65, Drive Test => 0H 1min, [8.62%]
Parameter Selected to be represented: RxLev_A
Spatial binning operated: NO
Agileto
NW Optimization
Agileto
Mobile NW Optimization
PRO EDITION
Google Earth

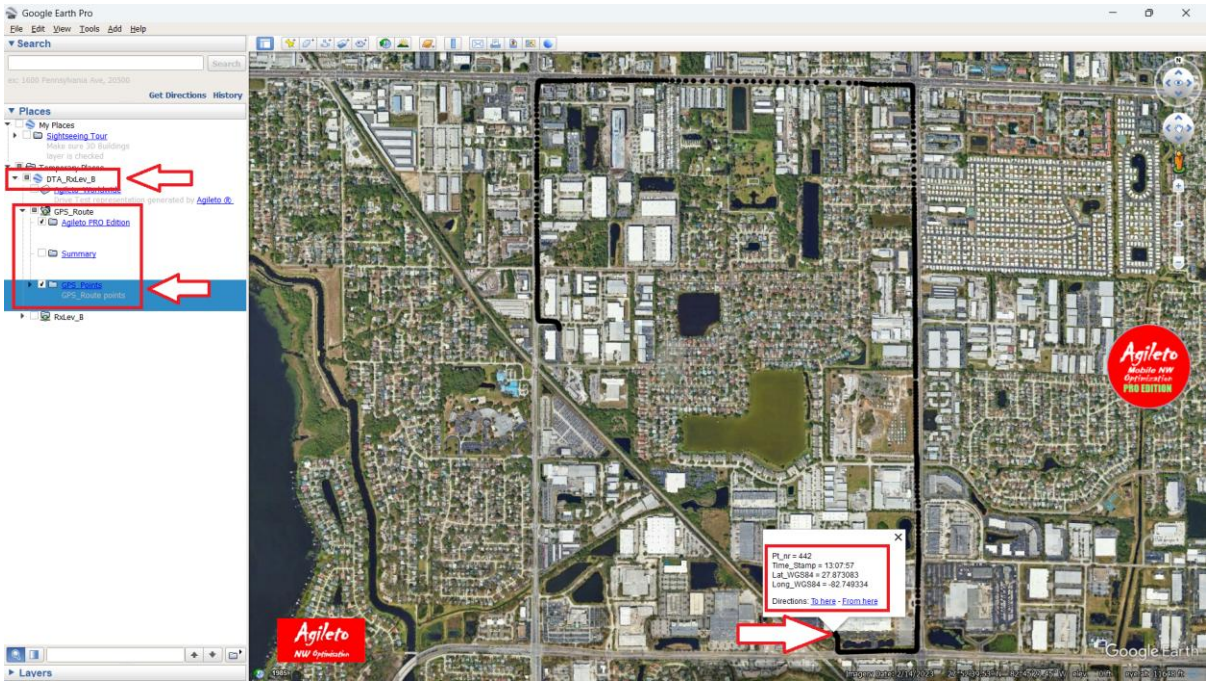

Google Earth Pro
File Edit View Tools Add Help
Search
Places
My Places
Sightseeing Tour
Temporary Places
DTA_RxLev_A
GPS_Route
Agileto PRO Edition
Summary
GPS_Points
GPS_Route points
RxLev_A
Layers
Pt_nr = 515
Time_Stamp = 14:09:55
Lat_WGS84 = 27.875802
Long_WGS84 = -82.740360
Directions: To here - From here
Agileto
NW Optimization
Agileto
Mobile NW Optimization
PRO EDITION
Google Earth

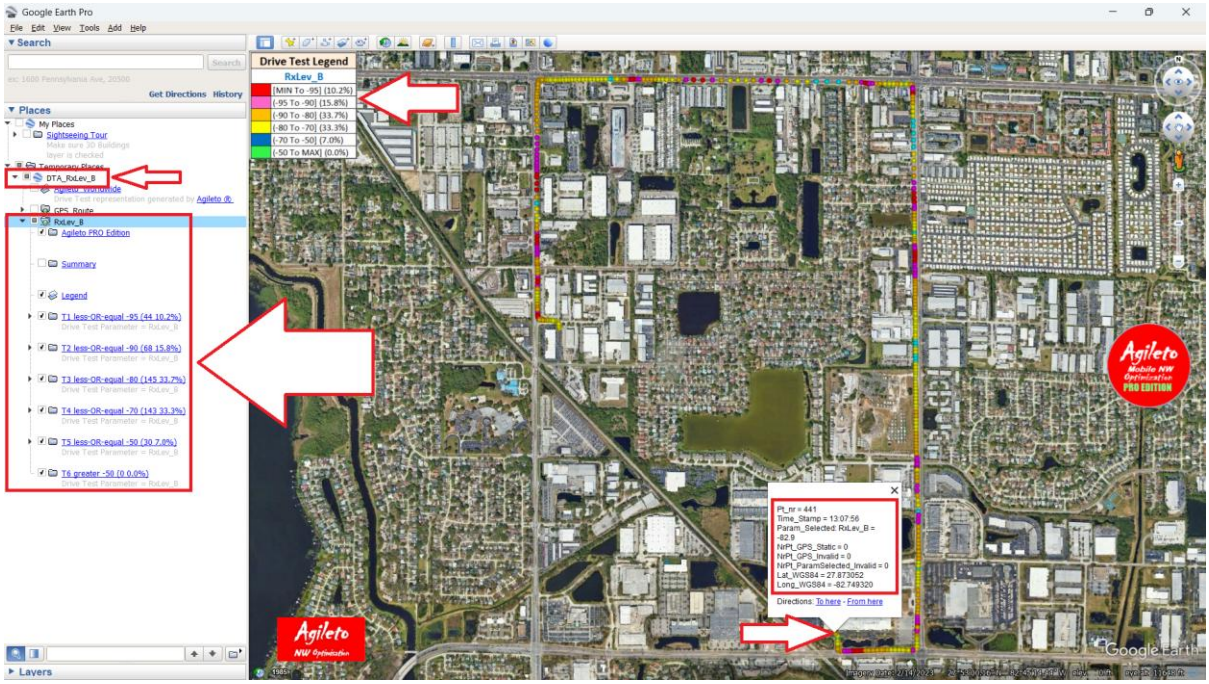


2) **RxLev_B without bin aggregation**:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTA_RxLev_B\Drive_Test.kmz

On the left panel from Google Earth is selected the desired info to be displayed:

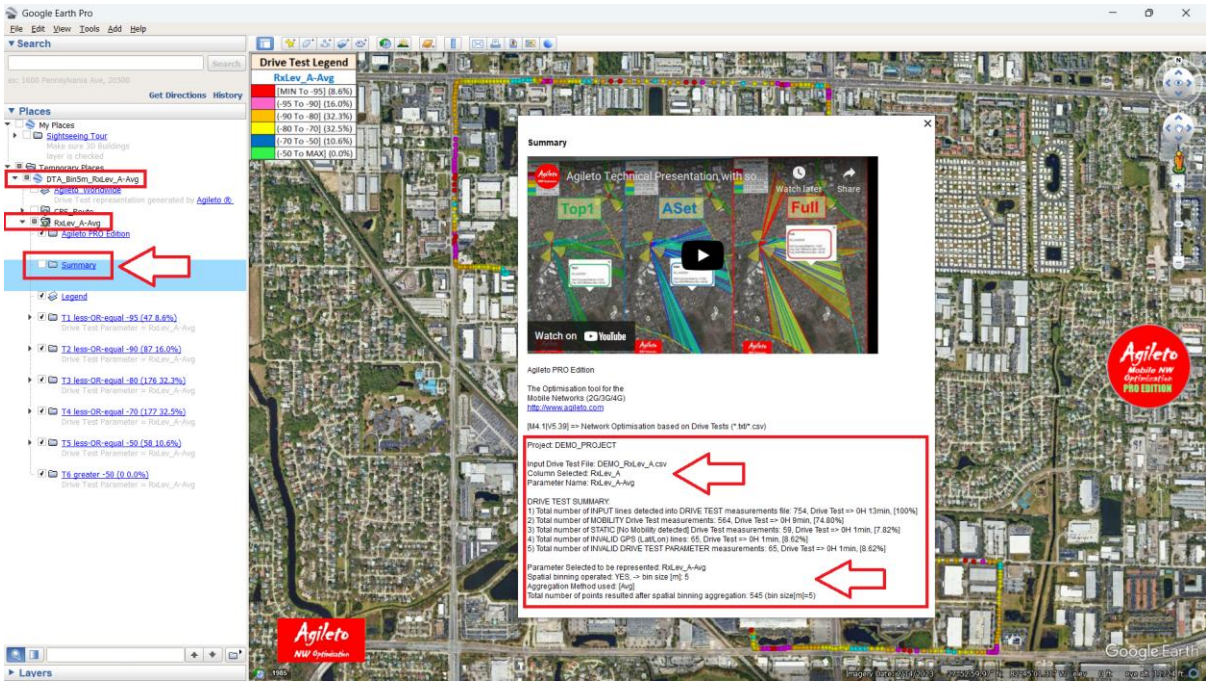


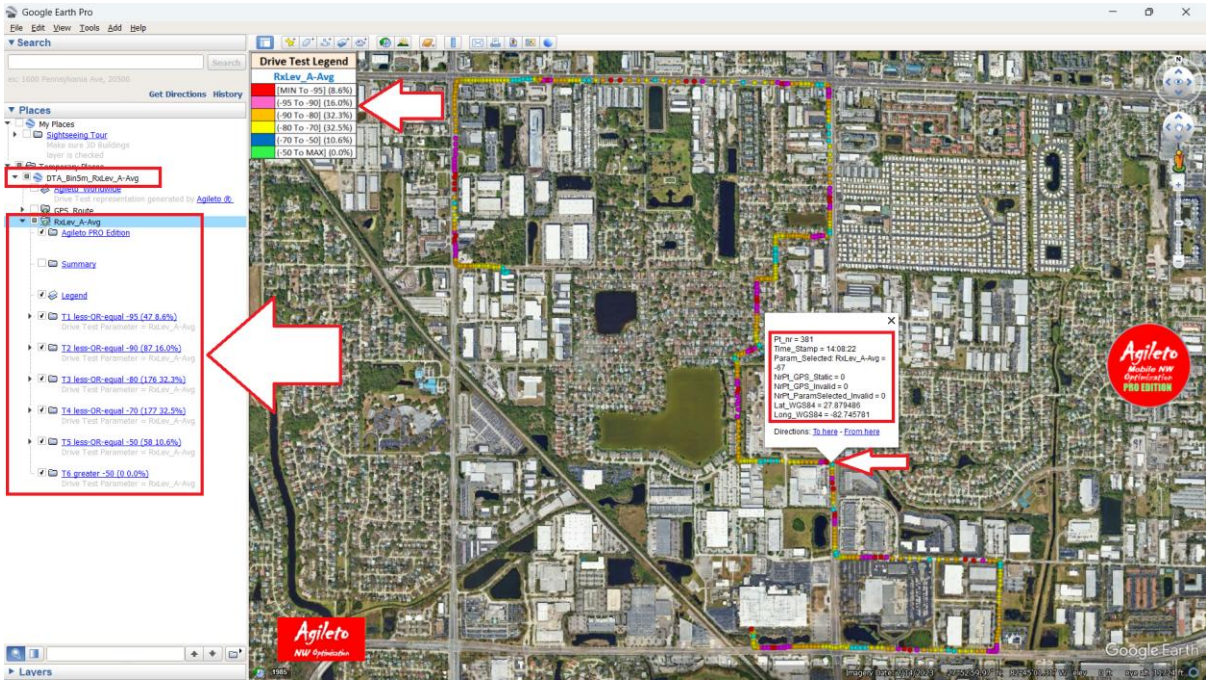


3) **RxLev_A with spatial bin aggregation [5m] => Average [Avg]**:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTA_Bin5m_RxLev_A-Avg\Drive_Test.kmz

On the left panel from Google Earth is selected the desired info to be displayed:



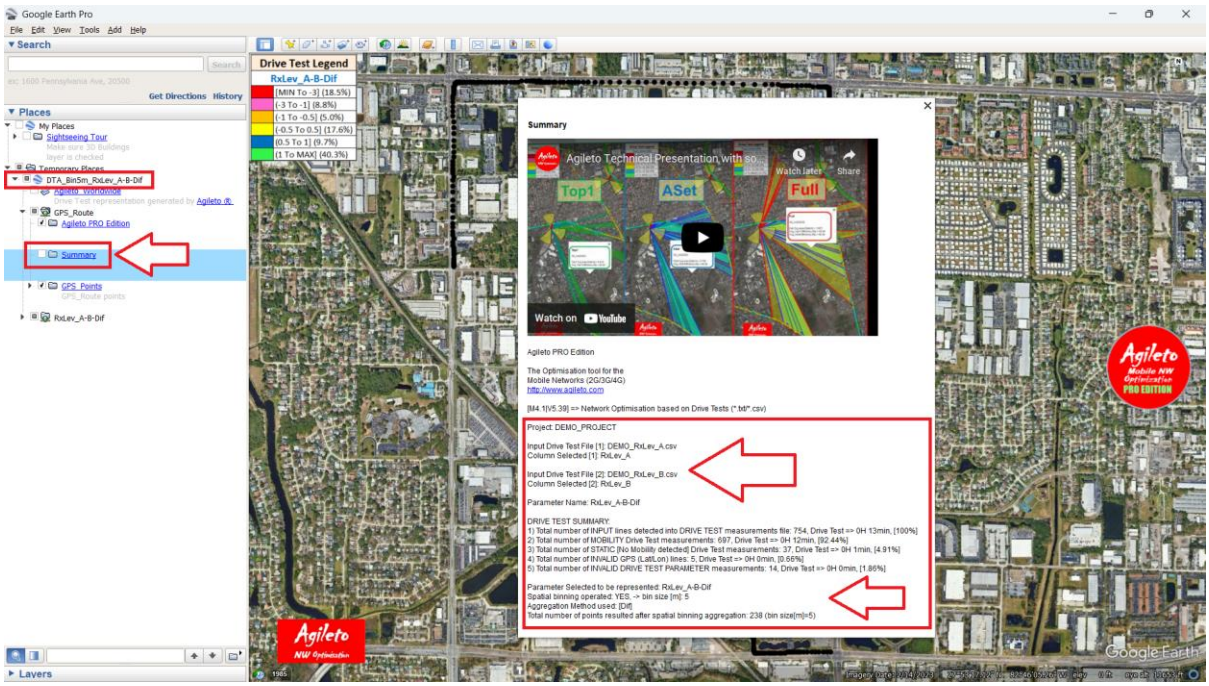


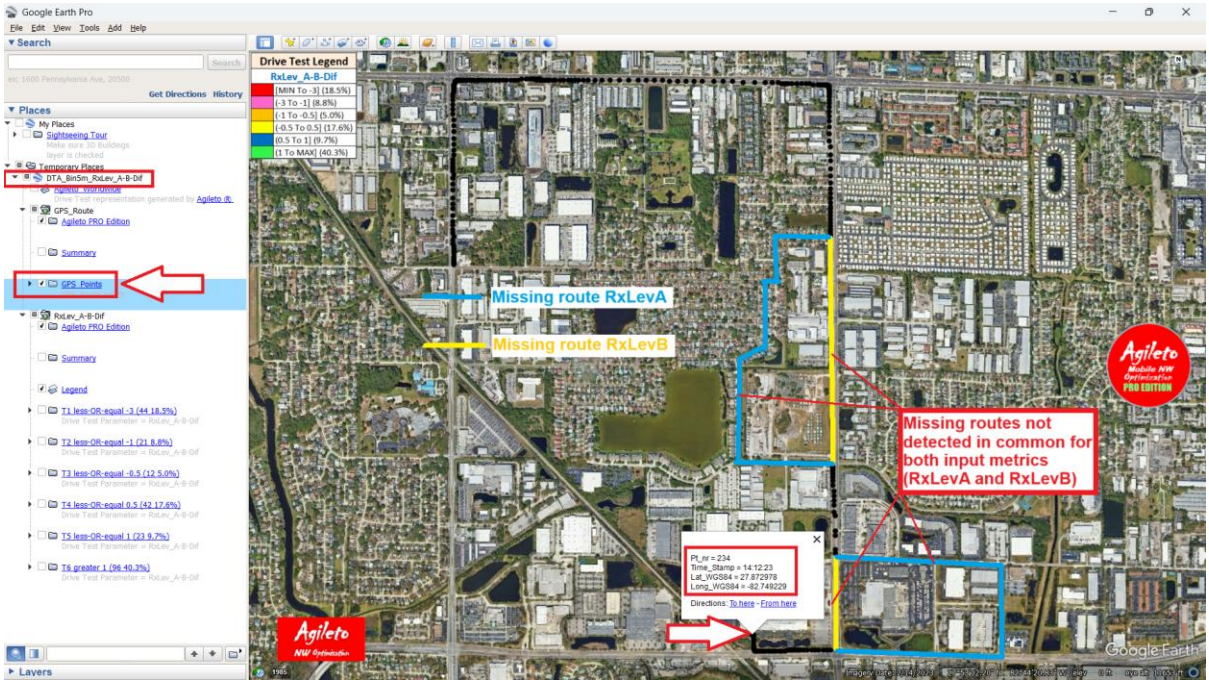
4) **Benchmark (Difference) between RxLev_A and RxLev_B**:

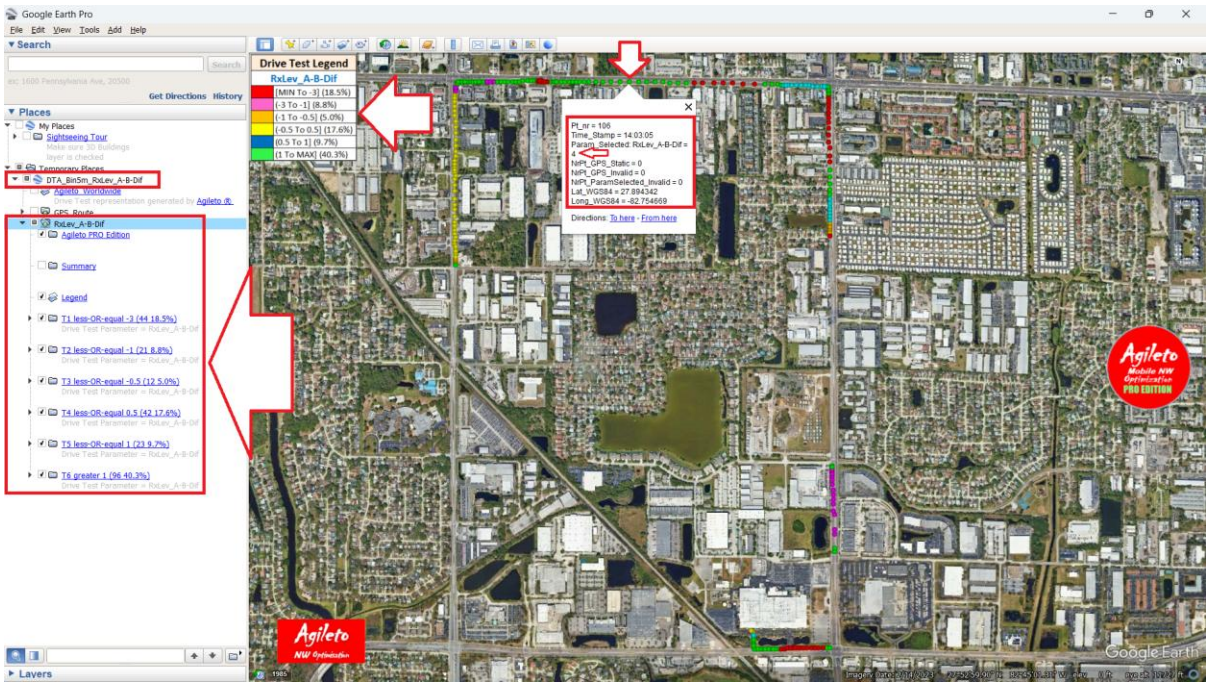
This case is automatically evaluated with the spatial bin aggregation method and evaluates at each bin level the difference between the metrics RxLev_A and RxLev_B for the common routes automatically detected and associated with these metrics:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTA_Bin5m_RxLev_A-B-Dif\Drive_Test.kmz

On the left panel from Google Earth is selected the desired info to be displayed:



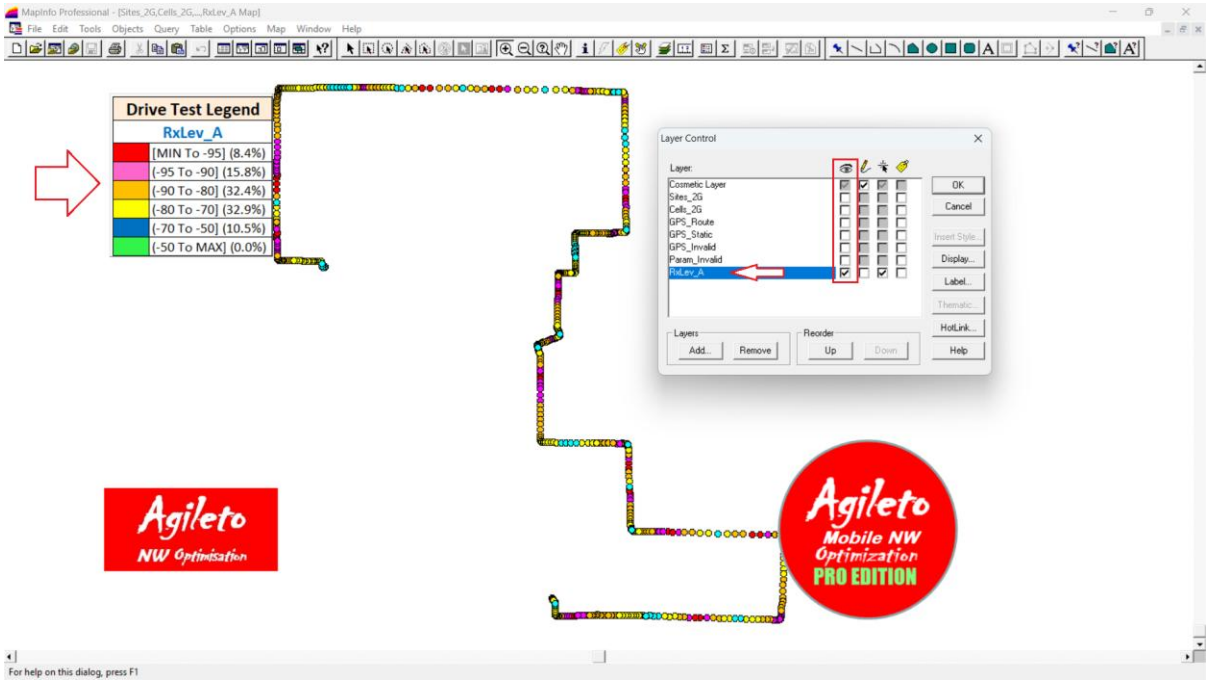




MapInfo:

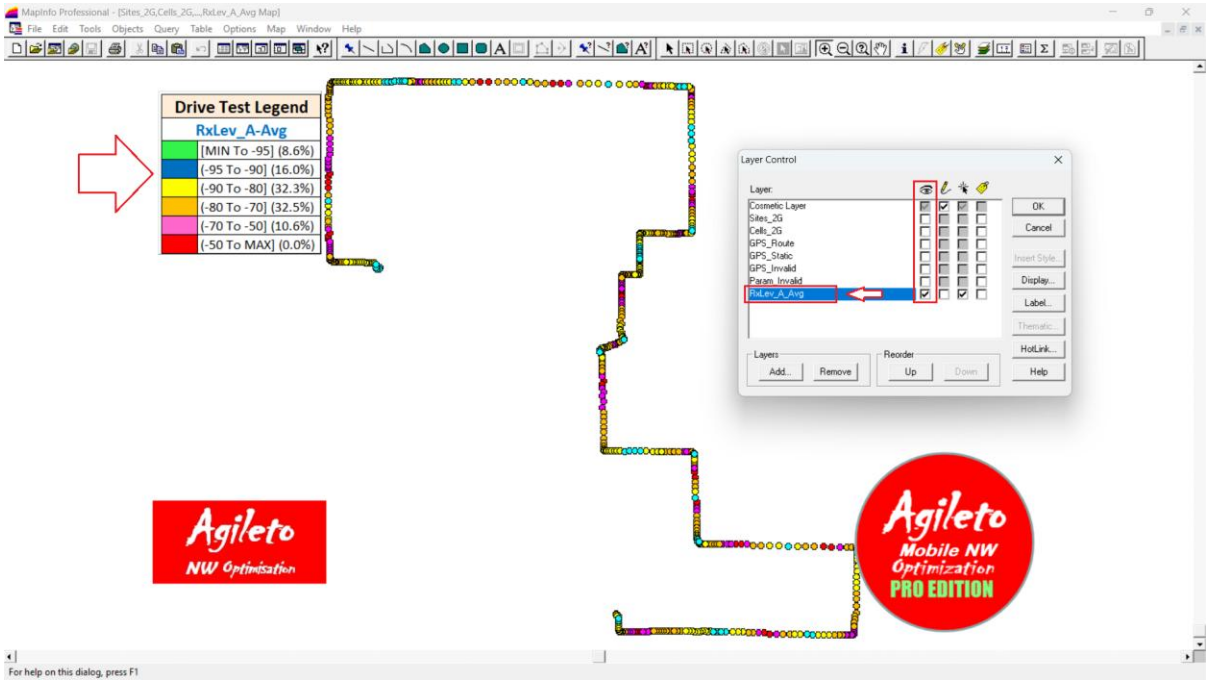
1) **RxLev_A without bin aggregation**:

C:\Agileto\DEMO_PROJECT\MapInfo\Drive_Tests\DTA_RxLev_A\Drive_Test.wor



2) **RxLev_A with spatial bin aggregation [5m] => Average [Avg]**:

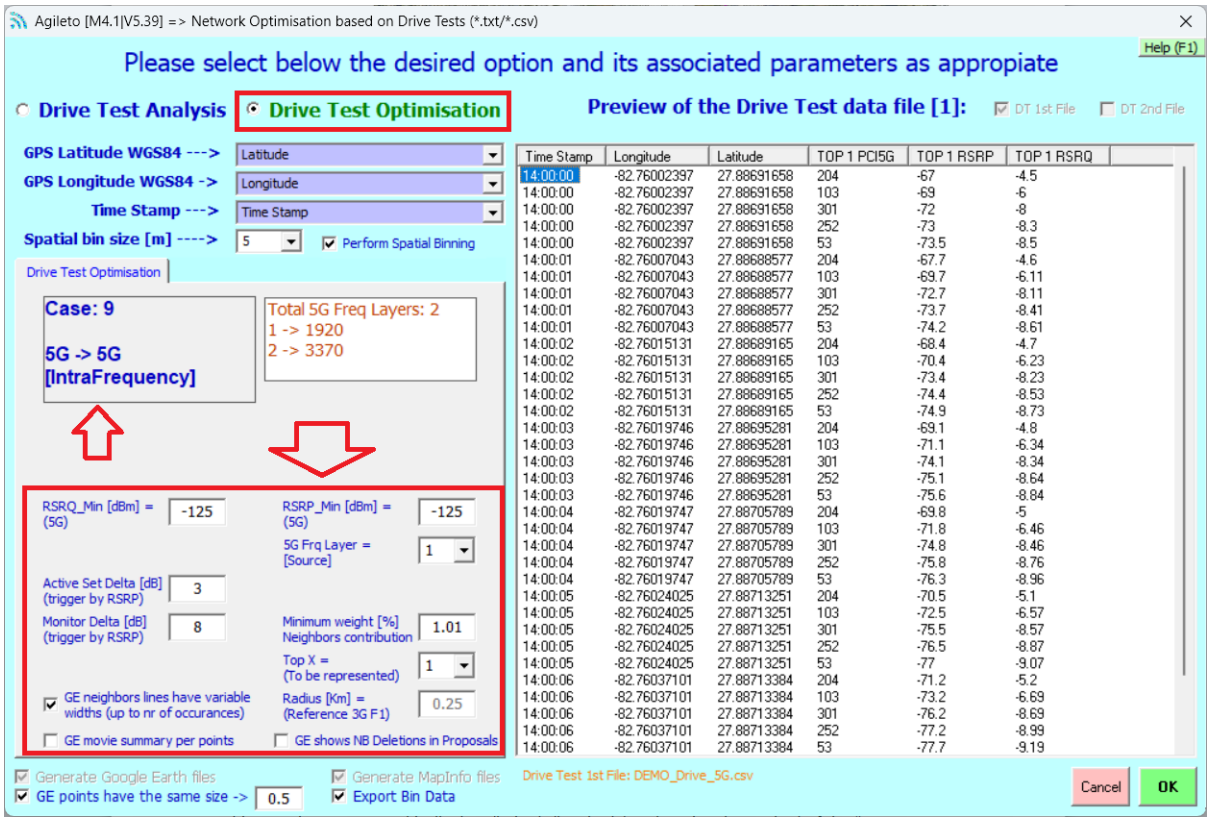
C:\Agileto\DEMO_PROJECT\MapInfo\Drive_Tests\DTA_Bin5m_RxLev_A-Avg\Drive_Test.wor



Drive Test Optimisation

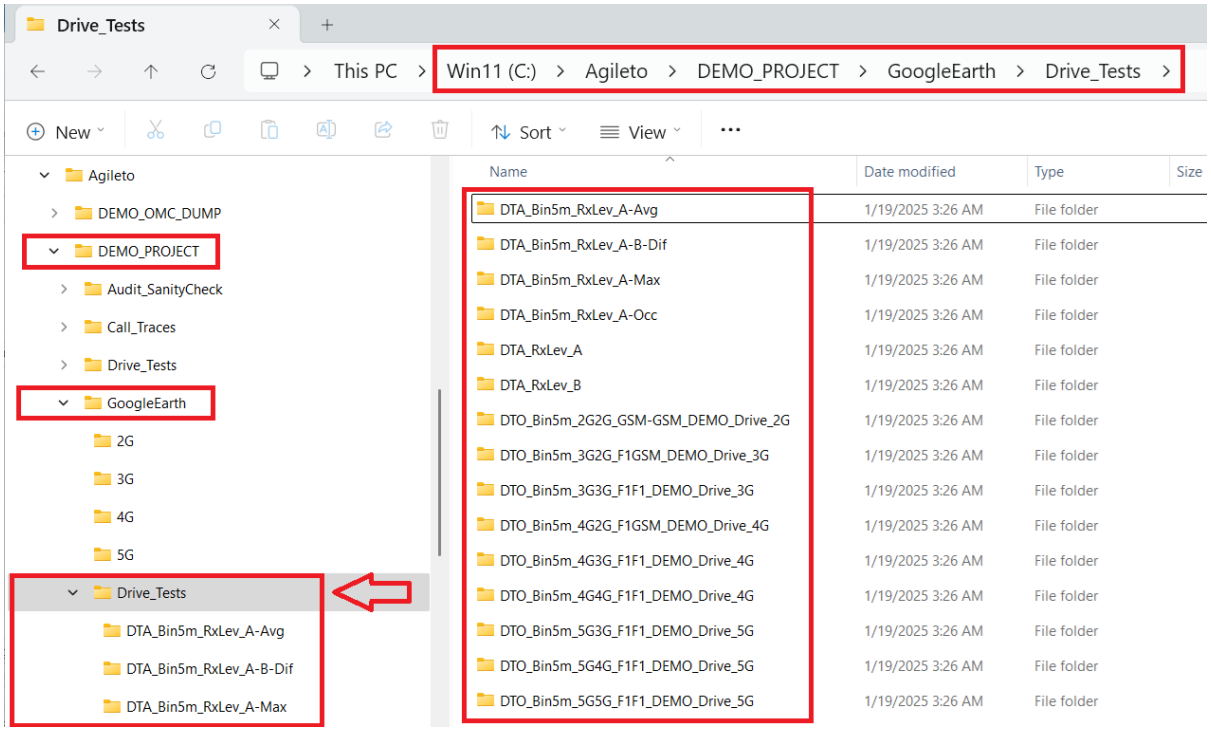
This case is related to the analysis and optimization provided automatically by Agileto software tool in case that the input drive test file is detected to have the standard Agileto format according with different technologies (2G/3G/4G/5G). For more details about these standard Agileto inputs drive test formats please check Agileto help file and/or view them as per they have been presented at the beginning of this 4.1 chapter (here).

Please see below (an example) for Agileto software tool interface in case of the 5G technology drive test input file:



The outputs related to this case will be stored in directories names which will start with the prefix **DTO** followed by the bin size unit selected as per may be seen below as examples under the Google Earth\Drive_Tests folder:

C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests



Similar type of the drive tests optimization output folders are generated automatically by Agileto software tool under the **MapInfo\Drive_Tests** respectivelly **Drive_Tests\DT_Optimisation** folders:

MapInfo: C:\Agileto\DEMO_PROJECT\MapInfo\Drive_Tests

Drive_Tests: C:\Agileto\DEMO_PROJECT\Drive_Tests\DT_Optimisation

Some examples of **Drive Test Optimisation** (**DTO**) outputs are provided below.

For each **DTO** case there are specific analysys & optimization results which are outputted in a folder with the same name for:

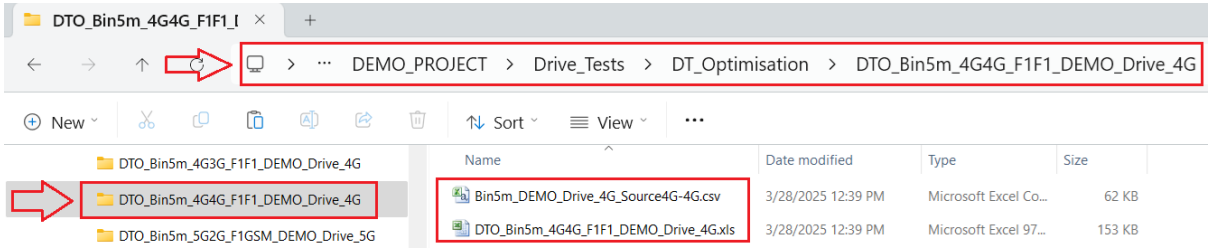
- **Excel** (tables *.xls + *.csv)
- **MapInfo** (*.wor + associated *.tab)
- **Google Earth** (*.kmz)

The structure of the generated files is the same for each of the above output types and although there are a lot of files which are generated by Agileto tool, they are linked one with each other, so only few may need to be open and all the others are open automatically, as per how they are going to be provided below, in few examples (offering the links to be able to open them manually too).

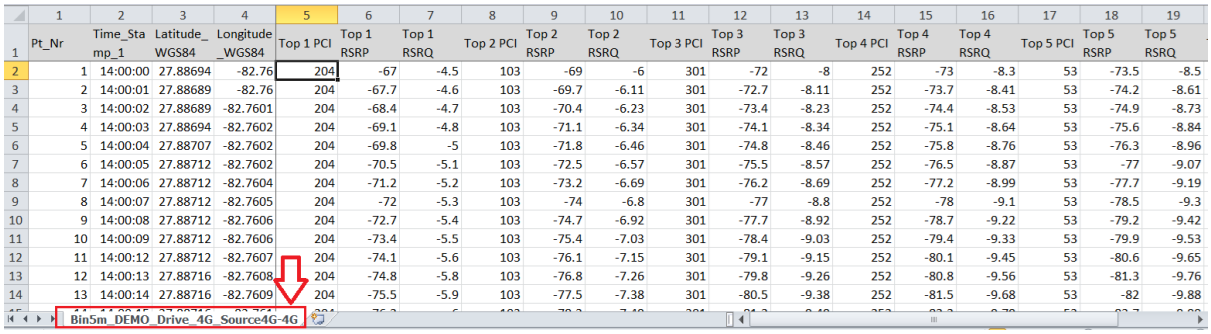
Technology 4G:

1) Excel

C:\Agileto\DEMO_PROJECT\Drive_Tests\DT_Optimisation\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G



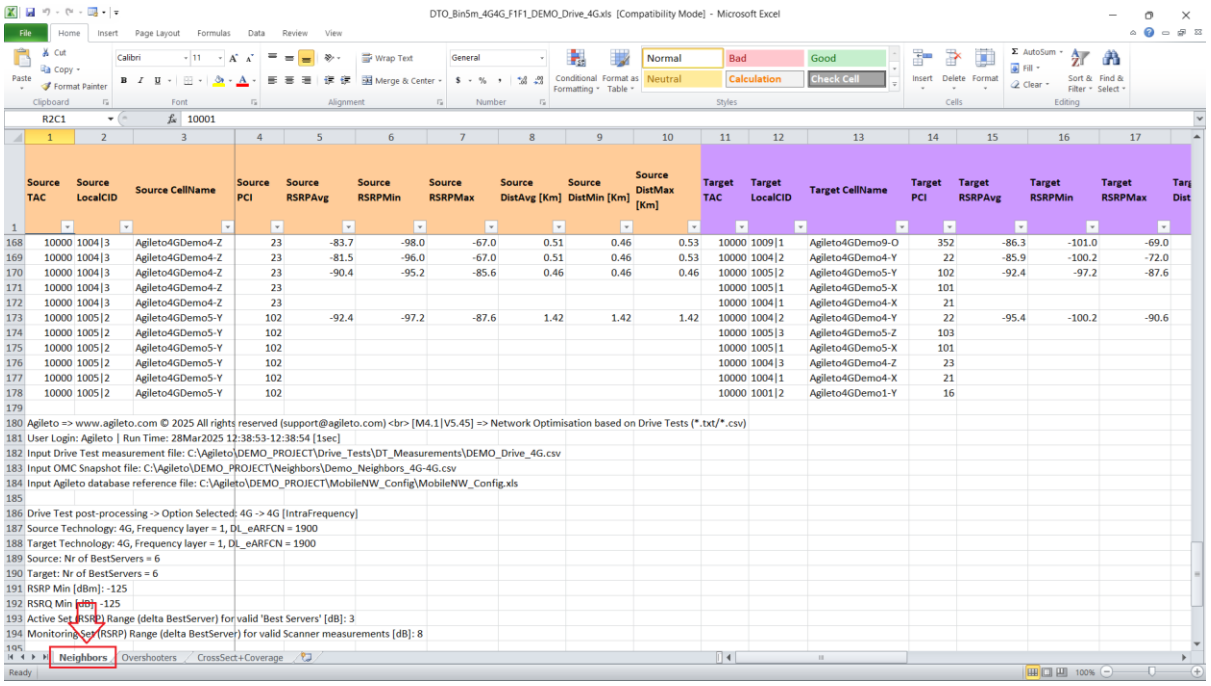
C:\Agileto\DEMO_PROJECT\Drive_Tests\DT_Optimisation\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G\Bin5m_DEMO_Drive_4G_Source4G-4G.csv



	Pt_Nr	Time_Stamp_1	Latitude_WGS84	Longitude_WGS84	Top 1 PCI	Top 1 RSRP	Top 1 RSRQ	Top 2 PCI	Top 2 RSRP	Top 2 RSRQ	Top 3 PCI	Top 3 RSRP	Top 3 RSRQ	Top 4 PCI	Top 4 RSRP	Top 4 RSRQ	Top 5 PCI	Top 5 RSRP	Top 5 RSRQ
2	1	14:00:00	27.88694	-82.76	204	-67	-4.5	103	-69	-6	301	-72	-8	252	-73	-8.3	53	-73.5	-8.5
3	2	14:00:01	27.88689	-82.76	204	-67.7	-4.6	103	-69.7	-6.11	301	-72.7	-8.11	252	-73.7	-8.41	53	-74.2	-8.61
4	3	14:00:02	27.88689	-82.7601	204	-68.4	-4.7	103	-70.4	-6.23	301	-73.4	-8.23	252	-74.4	-8.53	53	-74.9	-8.73
5	4	14:00:03	27.88694	-82.7602	204	-69.1	-4.8	103	-71.1	-6.34	301	-74.1	-8.34	252	-75.1	-8.64	53	-75.6	-8.84
6	5	14:00:04	27.88707	-82.7602	204	-69.8	-5	103	-71.8	-6.46	301	-74.8	-8.46	252	-75.8	-8.76	53	-76.3	-8.96
7	6	14:00:05	27.88712	-82.7602	204	-70.5	-5.1	103	-72.5	-6.57	301	-75.5	-8.57	252	-76.5	-8.87	53	-77	-9.07
8	7	14:00:06	27.88712	-82.7604	204	-71.2	-5.2	103	-73.2	-6.69	301	-76.2	-8.69	252	-77.2	-8.99	53	-77.7	-9.19
9	8	14:00:07	27.88712	-82.7605	204	-72	-5.3	103	-74	-6.8	301	-77	-8.8	252	-78	-9.1	53	-78.5	-9.3
10	9	14:00:08	27.88712	-82.7606	204	-72.7	-5.4	103	-74.7	-6.92	301	-77.7	-8.92	252	-78.7	-9.22	53	-79.2	-9.42
11	10	14:00:09	27.88712	-82.7606	204	-73.4	-5.5	103	-75.4	-7.03	301	-78.4	-9.03	252	-79.4	-9.33	53	-79.9	-9.53
12	11	14:00:12	27.88712	-82.7607	204	-74.1	-5.6	103	-76.1	-7.15	301	-79.1	-9.15	252	-80.1	-9.45	53	-80.6	-9.65
13	12	14:00:13	27.88716	-82.7608	204	-74.8	-5.8	103	-76.8	-7.26	301	-79.8	-9.26	252	-80.8	-9.56	53	-81.3	-9.76
14	13	14:00:14	27.88716	-82.7609	204	-75.5	-5.9	103	-77.5	-7.38	301	-80.5	-9.38	252	-81.5	-9.68	53	-82	-9.88

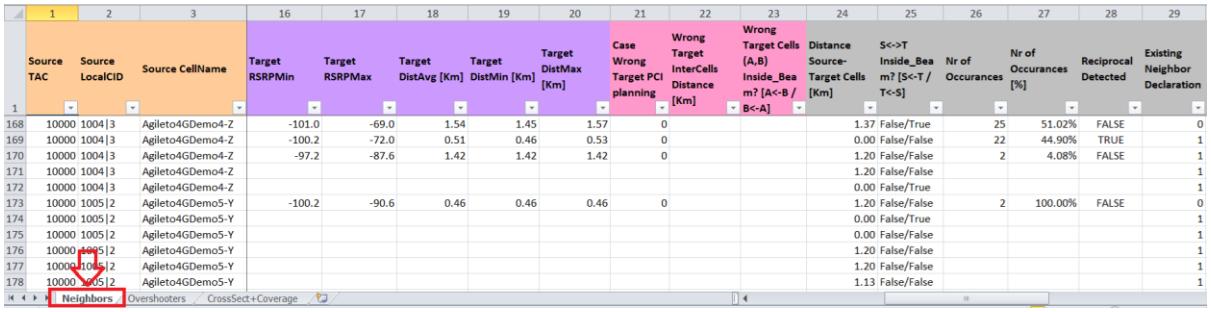
Bin5m_DEMO_Drive_4G_Source4G-4G

C:\Agileto\DEMO_PROJECT\Drive_Tests\DT_Optimisation\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G.xls



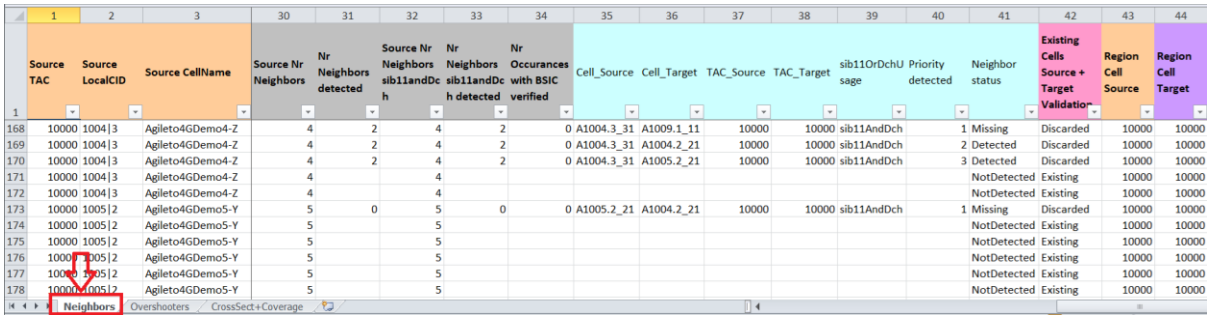
	Source TAC	Source LocalCID	Source CellName	Source PCI	Source RSRPAvg	Source RSRPMin	Source RSRPMax	Source DistAvg [Km]	Source DistMin [Km]	Source DistMax [Km]	Target TAC	Target LocalCID	Target CellName	Target PCI	Target RSRPAvg	Target RSRPMin	Target RSRPMax
168	10000	1004|3	Agileto4GDemo4-Z	23	-83.7	-98.0	-67.0	0.51	0.46	0.53	10000	1009|1	Agileto4GDemo9-O	352	-86.3	-101.0	-69.0
169	10000	1004|3	Agileto4GDemo4-Z	23	-81.5	-96.0	-67.0	0.51	0.46	0.53	10000	1004|2	Agileto4GDemo4-Y	22	-85.9	-100.2	-72.0
170	10000	1004|3	Agileto4GDemo4-Z	23	-90.4	-95.2	-85.6	0.46	0.46	0.46	10000	1005|2	Agileto4GDemo5-Y	102	-92.4	-97.2	-87.6
171	10000	1004|3	Agileto4GDemo4-Z	23							10000	1005|1	Agileto4GDemo5-X	101			
172	10000	1004|3	Agileto4GDemo4-Z	23							10000	1004|1	Agileto4GDemo4-X	21			
173	10000	1005|2	Agileto4GDemo5-Y	102	-92.4	-97.2	-87.6	1.42	1.42	1.42	10000	1004|2	Agileto4GDemo4-Y	22	-95.4	-100.2	-90.6
174	10000	1005|2	Agileto4GDemo5-Y	102							10000	1005|3	Agileto4GDemo5-Z	103			
175	10000	1005|2	Agileto4GDemo5-Y	102							10000	1005|1	Agileto4GDemo5-X	101			
176	10000	1005|2	Agileto4GDemo5-Y	102							10000	1004|3	Agileto4GDemo4-Z	23			
177	10000	1005|2	Agileto4GDemo5-Y	102							10000	1004|1	Agileto4GDemo4-X	21			
178	10000	1005|2	Agileto4GDemo5-Y	102							10000	1001|2	Agileto4GDemo1-Y	16			
179																	
180	Agileto => www.agileto.com © 2025 All rights reserved (support@agileto.com) [M4.1|V5.45] => Network Optimisation based on Drive Tests (*.txt/*.csv)																
181	User Login: Agileto | Run Time: 28Mar2025 12:38:53-12:38:54 [1sec]																
182	Input Drive Test measurement file: C:\Agileto\DEMO_PROJECT\Drive_Tests\DT_Measurements\DEMO_Drive_4G.csv																
183	Input OMC Snapshot file: C:\Agileto\DEMO_PROJECT\Neighbors\Demo_Neighbors_4G-4G.csv																
184	Input Agileto database reference file: C:\Agileto\DEMO_PROJECT\MobileNW_Config\MobileNW_Config.xls																
185																	
186	Drive Test post-processing -> Option Selected: 4G -> 4G [IntraFrequency]																
187	Source Technology: 4G, Frequency layer = 1, DL_eARFCN = 1900																
188	Target Technology: 4G, Frequency layer = 1, DL_eARFCN = 1900																
189	Source: Nr of BestServers = 6																
190	Target: Nr of BestServers = 6																
191	RSRP Min [dBm]: -125																
192	RSRQ Min [dB]: -125																
193	Active Set (RSRP) Range (delta BestServer) for valid 'Best Servers' [dB]: 3																
194	Monitoring Set (RSRP) Range (delta BestServer) for valid Scanner measurements [dB]: 8																

Neighbors Overshooters CrossSect+Coverage



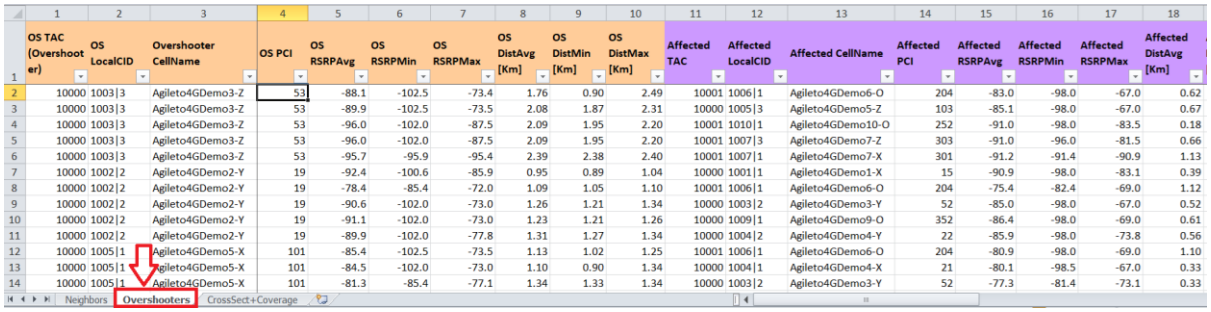
	Source TAC	Source LocalCID	Source CellName	Target RSRPMin	Target RSRPMax	Target DistAvg [Km]	Target DistMin [Km]	Target DistMax [Km]	Case Wrong Target PCI planning	Wrong Target InterCells Distance [Km]	Wrong Target Cells (A,B) Inside_Beam? [A<-B / B<-A]	Distance Source-Target Cells [Km]	S<->T Inside_Beam? [S<-T / T<-S]	Nr of Occurances	Nr of Occurances [%]	Reciprocal Detected	Existing Neighbor Declaration
168	10000	1004|3	Agileto4GDemo4-Z	-101.0	-69.0	1.54	1.45	1.57	0			1.37	False/True	25	51.02%	FALSE	0
169	10000	1004|3	Agileto4GDemo4-Z	-100.2	-72.0	0.51	0.46	0.53	0			0.00	False/False	22	44.90%	TRUE	1
170	10000	1004|3	Agileto4GDemo4-Z	-97.2	-87.6	1.42	1.42	1.42	0			1.20	False/False	2	4.08%	FALSE	1
171	10000	1004|3	Agileto4GDemo4-Z									1.20	False/False				1
172	10000	1004|3	Agileto4GDemo4-Z									0.00	False/True				1
173	10000	1005|2	Agileto4GDemo5-Y	-100.2	-90.6	0.46	0.46	0.46	0			1.20	False/False	2	100.00%	FALSE	0
174	10000	1005|2	Agileto4GDemo5-Y									0.00	False/True				1
175	10000	1005|2	Agileto4GDemo5-Y									0.00	False/False				1
176	10000	1005|2	Agileto4GDemo5-Y									1.20	False/False				1
177	10000	1005|2	Agileto4GDemo5-Y									1.20	False/False				1
178	10000	1005|2	Agileto4GDemo5-Y									1.13	False/False				1

Neighbors | Overshooters | CrossSect+Coverage



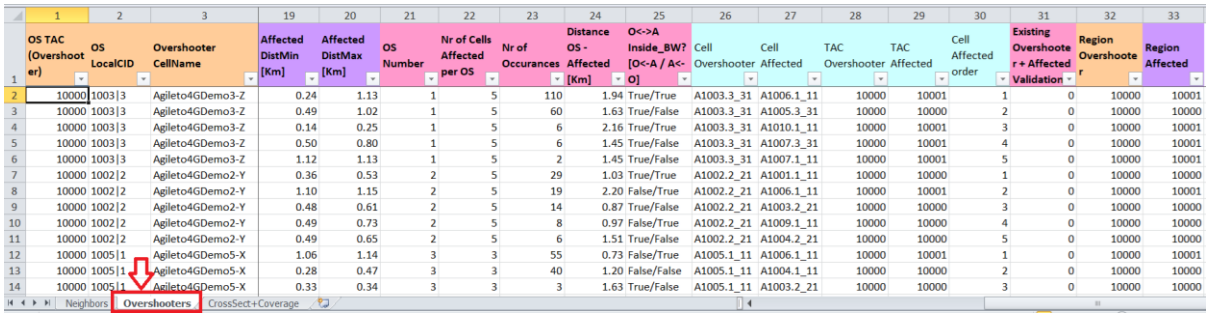
	Source TAC	Source LocalCID	Source CellName	Source Nr Neighbors	Nr Neighbors detected	Source Nr Neighbors sib11andDch	Nr Neighbors sib11andDch detected	Nr Occurances with BSIC verified	Cell_Source	Cell_Target	TAC_Source	TAC_Target	sib11OrDchUsage	Priority detected	Neighbor status	Existing Cells Source + Target Validation	Region Cell Source	Region Cell Target
168	10000	1004|3	Agileto4GDemo4-Z	4	2	4	2	0	A1004.3_31	A1009.1_11	10000	10000	sib11AndDch	1	Missing	Discarded	10000	10000
169	10000	1004|3	Agileto4GDemo4-Z	4	2	4	2	0	A1004.3_31	A1004.2_21	10000	10000	sib11AndDch	2	Detected	Discarded	10000	10000
170	10000	1004|3	Agileto4GDemo4-Z	4	2	4	2	0	A1004.3_31	A1005.2_21	10000	10000	sib11AndDch	3	Detected	Discarded	10000	10000
171	10000	1004|3	Agileto4GDemo4-Z	4		4									NotDetected	Existing	10000	10000
172	10000	1004|3	Agileto4GDemo4-Z	4		4									NotDetected	Existing	10000	10000
173	10000	1005|2	Agileto4GDemo5-Y	5	0	5	0	0	A1005.2_21	A1004.2_21	10000	10000	sib11AndDch	1	Missing	Discarded	10000	10000
174	10000	1005|2	Agileto4GDemo5-Y	5		5									NotDetected	Existing	10000	10000
175	10000	1005|2	Agileto4GDemo5-Y	5		5									NotDetected	Existing	10000	10000
176	10000	1005|2	Agileto4GDemo5-Y	5		5									NotDetected	Existing	10000	10000
177	10000	1005|2	Agileto4GDemo5-Y	5		5									NotDetected	Existing	10000	10000
178	10000	1005|2	Agileto4GDemo5-Y	5		5									NotDetected	Existing	10000	10000

Neighbors | Overshooters | CrossSect+Coverage



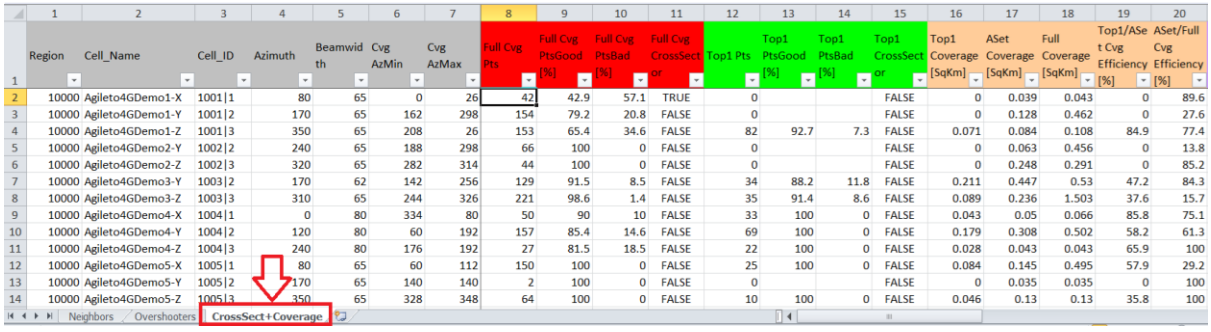
	OS TAC (Overshooter)	OS LocalCID	Overshooter CellName	OS PCI	OS RSRPAvg	OS RSRPMin	OS RSRPMax	OS DistAvg [Km]	OS DistMin [Km]	OS DistMax [Km]	Affected TAC	Affected LocalCID	Affected CellName	Affected PCI	Affected RSRPAvg	Affected RSRPMin	Affected RSRPMax	Affected DistAvg [Km]
2	10000	1003|3	Agileto4GDemo3-Z	53	-88.1	-102.5	-73.4	1.76	0.90	2.49	10001	1006|1	Agileto4GDemo6-O	204	-83.0	-98.0	-67.0	0.62
3	10000	1003|3	Agileto4GDemo3-Z	53	-89.9	-102.5	-73.5	2.08	1.87	2.31	10000	1005|3	Agileto4GDemo5-Z	103	-85.1	-98.0	-67.0	0.67
4	10000	1003|3	Agileto4GDemo3-Z	53	-96.0	-102.0	-87.5	2.09	1.95	2.20	10001	1010|1	Agileto4GDemo10-O	252	-91.0	-98.0	-83.5	0.18
5	10000	1003|3	Agileto4GDemo3-Z	53	-96.0	-102.0	-87.5	2.09	1.95	2.20	10001	1007|3	Agileto4GDemo7-Z	303	-91.0	-96.0	-81.5	0.66
6	10000	1003|3	Agileto4GDemo3-Z	53	-95.7	-95.9	-95.4	2.39	2.38	2.40	10001	1007|1	Agileto4GDemo7-X	301	-91.2	-91.4	-90.9	1.13
7	10000	1002|2	Agileto4GDemo2-Y	19	-92.4	-100.6	-85.9	0.95	0.89	1.04	10000	1001|1	Agileto4GDemo1-X	15	-90.9	-98.0	-83.1	0.39
8	10000	1002|2	Agileto4GDemo2-Y	19	-78.4	-85.4	-72.0	1.09	1.05	1.10	10001	1006|1	Agileto4GDemo6-O	204	-75.4	-82.4	-69.0	1.12
9	10000	1002|2	Agileto4GDemo2-Y	19	-90.6	-102.0	-73.0	1.26	1.21	1.34	10000	1003|2	Agileto4GDemo3-Y	52	-85.0	-98.0	-67.0	0.52
10	10000	1002|2	Agileto4GDemo2-Y	19	-91.1	-102.0	-73.0	1.23	1.21	1.26	10000	1009|1	Agileto4GDemo9-O	352	-86.4	-98.0	-69.0	0.61
11	10000	1002|2	Agileto4GDemo2-Y	19	-89.9	-102.0	-77.8	1.31	1.27	1.34	10000	1004|2	Agileto4GDemo4-Y	22	-85.9	-98.0	-73.8	0.56
12	10000	1005|1	Agileto4GDemo5-X	101	-85.4	-102.5	-73.5	1.13	1.02	1.25	10001	1006|1	Agileto4GDemo6-O	204	-80.9	-98.0	-69.0	1.10
13	10000	1005|1	Agileto4GDemo5-X	101	-84.5	-102.0	-73.0	1.10	0.90	1.34	10000	1004|1	Agileto4GDemo4-X	21	-80.1	-98.5	-67.0	0.33
14	10000	1005|1	Agileto4GDemo5-X	101	-81.3	-85.4	-77.1	1.34	1.33	1.34	10000	1003|2	Agileto4GDemo3-Y	52	-77.3	-81.4	-73.1	0.33

Neighbors | Overshooters | CrossSect+Coverage



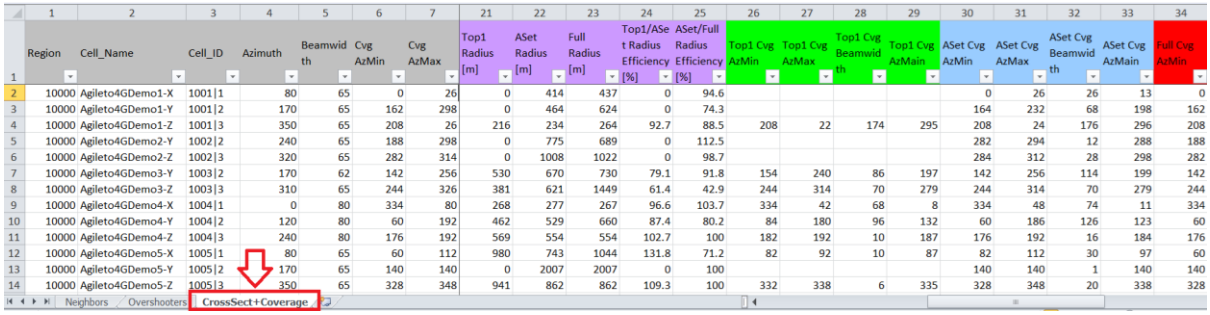
	OS TAC (Overshooter)	OS LocalCID	Overshooter CellName	Affected DistMin [Km]	Affected DistMax [Km]	OS Number	Nr of Cells Affected per OS	Nr of Occurances	Distance OS - Affected [Km]	O<->A Inside_BW? [O<-A / A<-O]	Cell Overshooter	Cell Affected	TAC Overshooter	TAC Affected	Cell Affected order	Existing Overshooter + Affected Validation	Region Overshooter	Region Affected
2	10000	1003|3	Agileto4GDemo3-Z	0.24	1.13	1	5	110	1.94	True/True	A1003.3_31	A1006.1_11	10000	10001	1	0	10000	10001
3	10000	1003|3	Agileto4GDemo3-Z	0.49	1.02	1	5	60	1.63	True/False	A1003.3_31	A1005.3_31	10000	10000	2	0	10000	10000
4	10000	1003|3	Agileto4GDemo3-Z	0.14	0.25	1	5	6	2.16	True/True	A1003.3_31	A1010.1_11	10000	10001	3	0	10000	10001
5	10000	1003|3	Agileto4GDemo3-Z	0.50	0.80	1	5	6	1.45	True/False	A1003.3_31	A1007.3_31	10000	10001	4	0	10000	10001
6	10000	1003|3	Agileto4GDemo3-Z	1.12	1.13	1	5	2	1.45	True/False	A1003.3_31	A1007.1_11	10000	10001	5	0	10000	10001
7	10000	1002|2	Agileto4GDemo2-Y	0.36	0.53	2	5	29	1.03	True/True	A1002.2_21	A1001.1_11	10000	10000	1	0	10000	10000
8	10000	1002|2	Agileto4GDemo2-Y	1.10	1.15	2	5	19	2.20	False/True	A1002.2_21	A1006.1_11	10000	10001	2	0	10000	10001
9	10000	1002|2	Agileto4GDemo2-Y	0.48	0.61	2	5	14	0.87	True/False	A1002.2_21	A1003.2_21	10000	10000	3	0	10000	10000
10	10000	1002|2	Agileto4GDemo2-Y	0.49	0.73	2	5	8	0.97	False/True	A1002.2_21	A1009.1_11	10000	10000	4	0	10000	10000
11	10000	1002|2	Agileto4GDemo2-Y	0.49	0.65	2	5	6	1.51	True/False	A1002.2_21	A1004.2_21	10000	10000	5	0	10000	10000
12	10000	1005|1	Agileto4GDemo5-X	1.06	1.14	3	3	55	0.73	False/True	A1005.1_11	A1006.1_11	10000	10001	1	0	10000	10001
13	10000	1005|1	Agileto4GDemo5-X	0.28	0.47	3	3	40	1.20	False/False	A1005.1_11	A1004.1_11	10000	10000	2	0	10000	10000
14	10000	1005|1	Agileto4GDemo5-X	0.33	0.34	3	3	3	1.63	True/False	A1005.1_11	A1003.2_21	10000	10000	3	0	10000	10000

Neighbors | Overshooters | CrossSect+Coverage



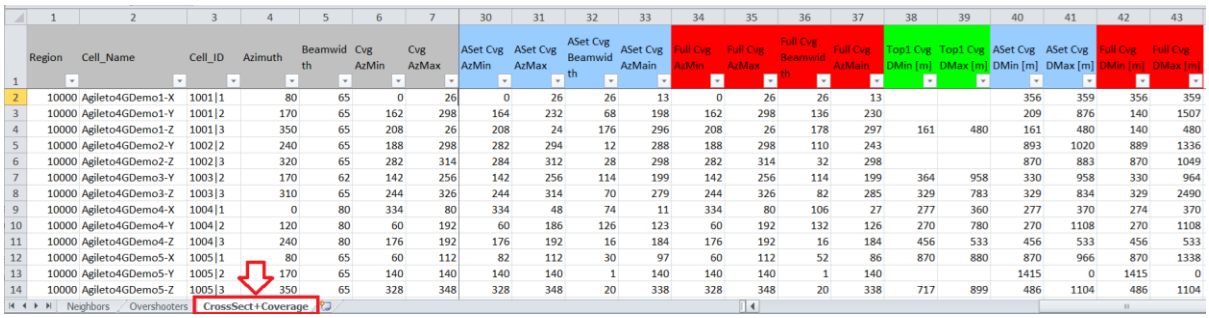
	Region	Cell_Name	Cell_ID	Azimuth	Beamwidth	Cvg AzMin	Cvg AzMax	Full Cvg Pts	Full Cvg PtsGood [%]	Full Cvg PtsBad [%]	Full Cvg CrossSector	Top1 Pts	Top1 PtsGood [%]	Top1 PtsBad [%]	Top1 CrossSector	Top1 Coverage [SqKm]	ASet Coverage [SqKm]	Full Coverage [SqKm]	Top1/ASet Cvg Efficiency [%]	ASet/Full Cvg Efficiency [%]
2	10000	Agileto4GDemo1-X	1001|1	80	65	0	26	42	42.9	57.1	TRUE	0			FALSE	0	0.039	0.043	0	89.6
3	10000	Agileto4GDemo1-Y	1001|2	170	65	162	298	154	79.2	20.8	FALSE	0			FALSE	0	0.128	0.462	0	27.6
4	10000	Agileto4GDemo1-Z	1001|3	350	65	208	26	153	65.4	34.6	FALSE	82	92.7	7.3	FALSE	0.071	0.084	0.108	84.9	77.4
5	10000	Agileto4GDemo2-Y	1002|2	240	65	188	298	66	100	0	FALSE	0			FALSE	0	0.063	0.456	0	13.8
6	10000	Agileto4GDemo2-Z	1002|3	320	65	282	314	44	100	0	FALSE	0			FALSE	0	0.248	0.291	0	85.2
7	10000	Agileto4GDemo3-Y	1003|2	170	62	142	256	129	91.5	8.5	FALSE	34	88.2	11.8	FALSE	0.211	0.447	0.53	47.2	84.3
8	10000	Agileto4GDemo3-Z	1003|3	310	65	244	326	221	98.6	1.4	FALSE	35	91.4	8.6	FALSE	0.089	0.236	1.503	37.6	15.7
9	10000	Agileto4GDemo4-X	1004|1	0	80	334	80	50	90	10	FALSE	33	100	0	FALSE	0.043	0.05	0.066	85.8	75.1
10	10000	Agileto4GDemo4-Y	1004|2	120	80	60	192	157	85.4	14.6	FALSE	69	100	0	FALSE	0.179	0.308	0.502	58.2	61.3
11	10000	Agileto4GDemo4-Z	1004|3	240	80	176	192	27	81.5	18.5	FALSE	22	100	0	FALSE	0.028	0.043	0.043	65.9	100
12	10000	Agileto4GDemo5-X	1005|1	80	65	60	112	150	100	0	FALSE	25	100	0	FALSE	0.084	0.145	0.495	57.9	29.2
13	10000	Agileto4GDemo5-Y	1005|2	170	65	140	140	2	100	0	FALSE	0			FALSE	0	0.035	0.035	0	100
14	10000	Agileto4GDemo5-Z	1005|3	350	65	328	348	64	100	0	FALSE	10	100	0	FALSE	0.046	0.13	0.13	35.8	100

Neighbors | Overshooters | CrossSect+Coverage



	Region	Cell_Name	Cell_ID	Azimuth	Beamwidth	Cvg AzMin	Cvg AzMax	Top1 Radius [m]	ASet Radius [m]	Full Radius [m]	Top1/ASet Radius Efficiency [%]	ASet/Full Radius Efficiency [%]	Top1 Cvg AzMin	Top1 Cvg AzMax	Top1 Cvg Beamwidth	Top1 Cvg AzMain	ASet Cvg AzMin	ASet Cvg AzMax	ASet Cvg Beamwidth	ASet Cvg AzMain	Full Cvg AzMin
2	10000	Agileto4GDemo1-X	1001|1	80	65	0	26	0	414	437	0	94.6					0	26	26	13	0
3	10000	Agileto4GDemo1-Y	1001|2	170	65	162	298	0	464	624	0	74.3					164	232	68	198	162
4	10000	Agileto4GDemo1-Z	1001|3	350	65	208	26	216	234	264	92.7	88.5	208	22	174	295	208	24	176	296	208
5	10000	Agileto4GDemo2-Y	1002|2	240	65	188	298	0	775	689	0	112.5					282	294	12	288	188
6	10000	Agileto4GDemo2-Z	1002|3	320	65	282	314	0	1008	1022	0	98.7					284	312	28	298	282
7	10000	Agileto4GDemo3-Y	1003|2	170	62	142	256	530	670	730	79.1	91.8	154	240	86	197	142	256	114	199	142
8	10000	Agileto4GDemo3-Z	1003|3	310	65	244	326	381	621	1449	61.4	42.9	244	314	70	279	244	314	70	279	244
9	10000	Agileto4GDemo4-X	1004|1	0	80	334	80	268	277	267	96.6	103.7	334	42	68	8	334	48	74	11	334
10	10000	Agileto4GDemo4-Y	1004|2	120	80	60	192	462	529	660	87.4	80.2	84	180	96	132	60	186	126	123	60
11	10000	Agileto4GDemo4-Z	1004|3	240	80	176	192	569	554	554	102.7	100	182	192	10	187	176	192	16	184	176
12	10000	Agileto4GDemo5-X	1005|1	80	65	60	112	980	743	1044	131.8	71.2	82	92	10	87	82	112	30	97	60
13	10000	Agileto4GDemo5-Y	1005|2	170	65	140	140	0	2007	2007	0	100					140	140	1	140	140
14	10000	Agileto4GDemo5-Z	1005|3	350	65	328	348	941	862	862	109.3	100	332	338	6	335	328	348	20	338	328

Neighbors | Overshooters | CrossSect+Coverage

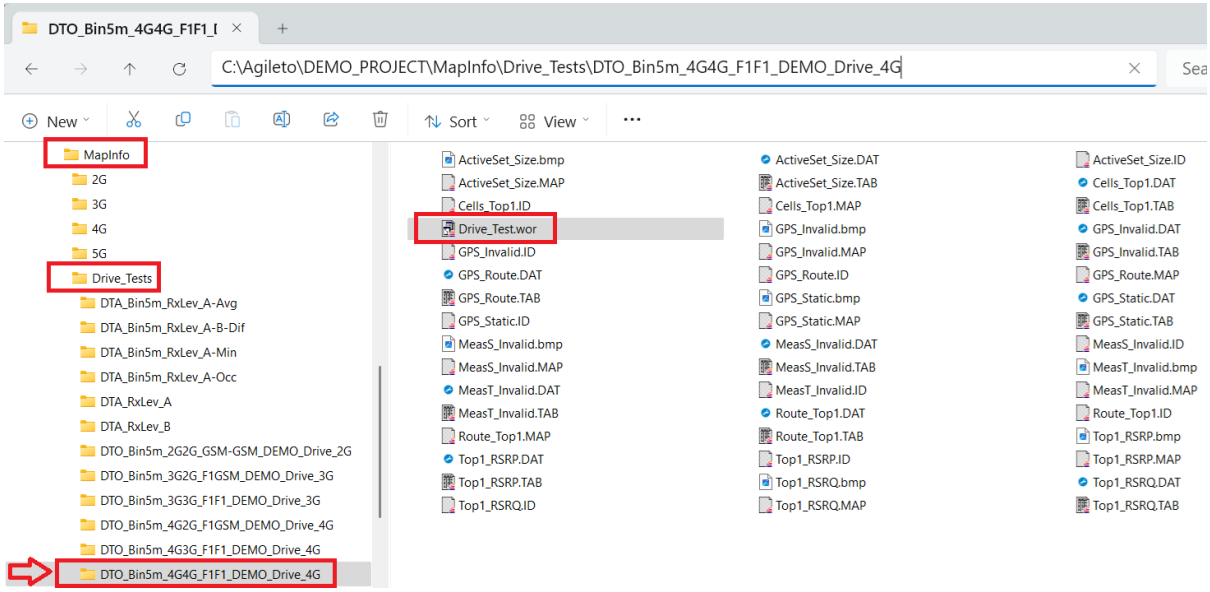


	Region	Cell_Name	Cell_ID	Azimuth	Beamwidth	Cvg AzMin	Cvg AzMax	ASet Cvg AzMin	ASet Cvg AzMax	ASet Cvg Beamwidth	ASet Cvg AzMain	Full Cvg AzMin	Full Cvg AzMax	Full Cvg Beamwidth	Full Cvg AzMain	Top1 Cvg DMin [m]	Top1 Cvg DMax [m]	ASet Cvg DMin [m]	ASet Cvg DMax [m]	Full Cvg DMin [m]	Full Cvg DMax [m]
2	10000	Agileto4GDemo1-X	1001|1	80	65	0	26	0	26	26	13	0	26	26	13			356	359	356	359
3	10000	Agileto4GDemo1-Y	1001|2	170	65	162	298	164	232	68	198	162	298	136	230			209	876	140	1507
4	10000	Agileto4GDemo1-Z	1001|3	350	65	208	26	208	24	176	296	208	26	178	297	161	480	161	480	140	480
5	10000	Agileto4GDemo2-Y	1002|2	240	65	188	298	282	294	12	288	188	298	110	243			893	1020	889	1336
6	10000	Agileto4GDemo2-Z	1002|3	320	65	282	314	284	312	28	298	282	314	32	298			870	883	870	1049
7	10000	Agileto4GDemo3-Y	1003|2	170	62	142	256	142	256	114	199	142	256	114	199	364	958	330	958	330	964
8	10000	Agileto4GDemo3-Z	1003|3	310	65	244	326	244	314	70	279	244	326	82	285	329	783	329	834	329	2490
9	10000	Agileto4GDemo4-X	1004|1	0	80	334	80	334	48	74	11	334	80	106	27	277	360	277	370	274	370
10	10000	Agileto4GDemo4-Y	1004|2	120	80	60	192	60	186	126	123	60	192	132	126	270	780	270	1108	270	1108
11	10000	Agileto4GDemo4-Z	1004|3	240	80	176	192	176	192	16	184	176	192	16	184	456	533	456	533	456	533
12	10000	Agileto4GDemo5-X	1005|1	80	65	60	112	82	112	30	97	60	112	52	86	870	880	870	966	870	1338
13	10000	Agileto4GDemo5-Y	1005|2	170	65	140	140	140	140	1	140	140	140	1	140			1415	0	1415	0
14	10000	Agileto4GDemo5-Z	1005|3	350	65	328	348	328	348	20	338	328	348	20	338	717	899	486	1104	486	1104

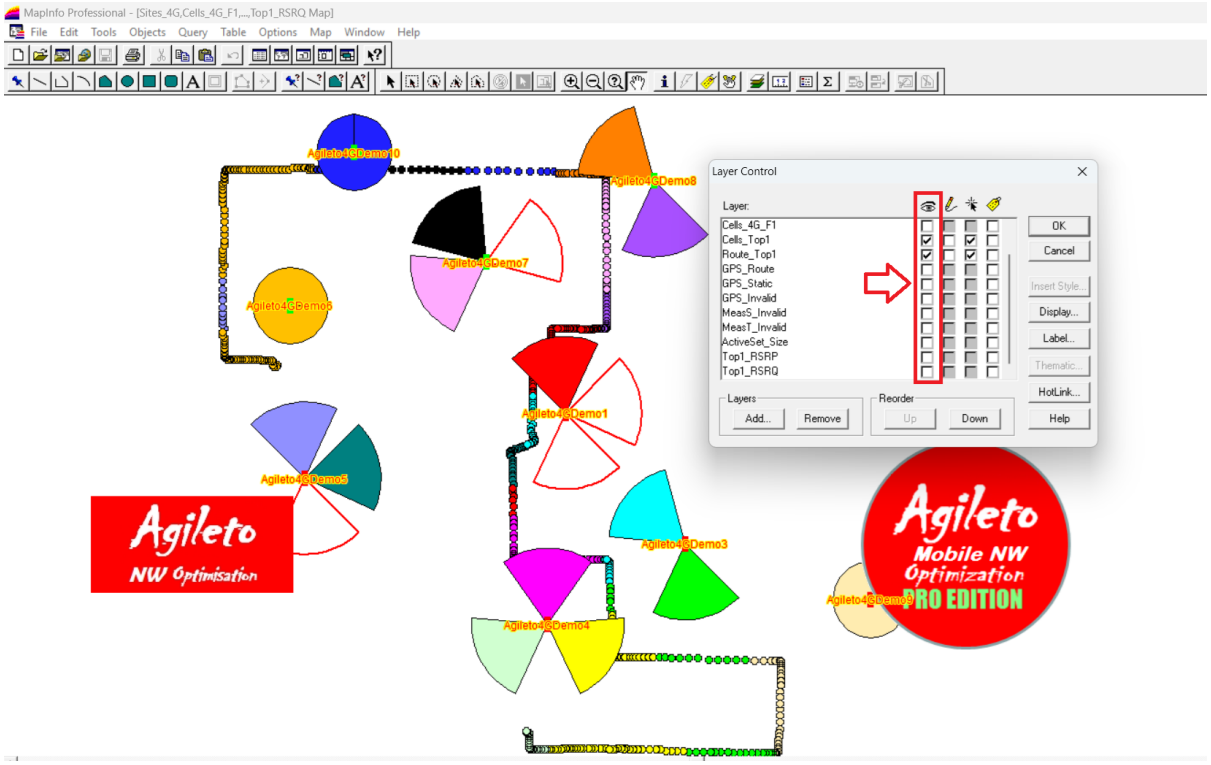
Neighbors | Overshooters | CrossSect+Coverage

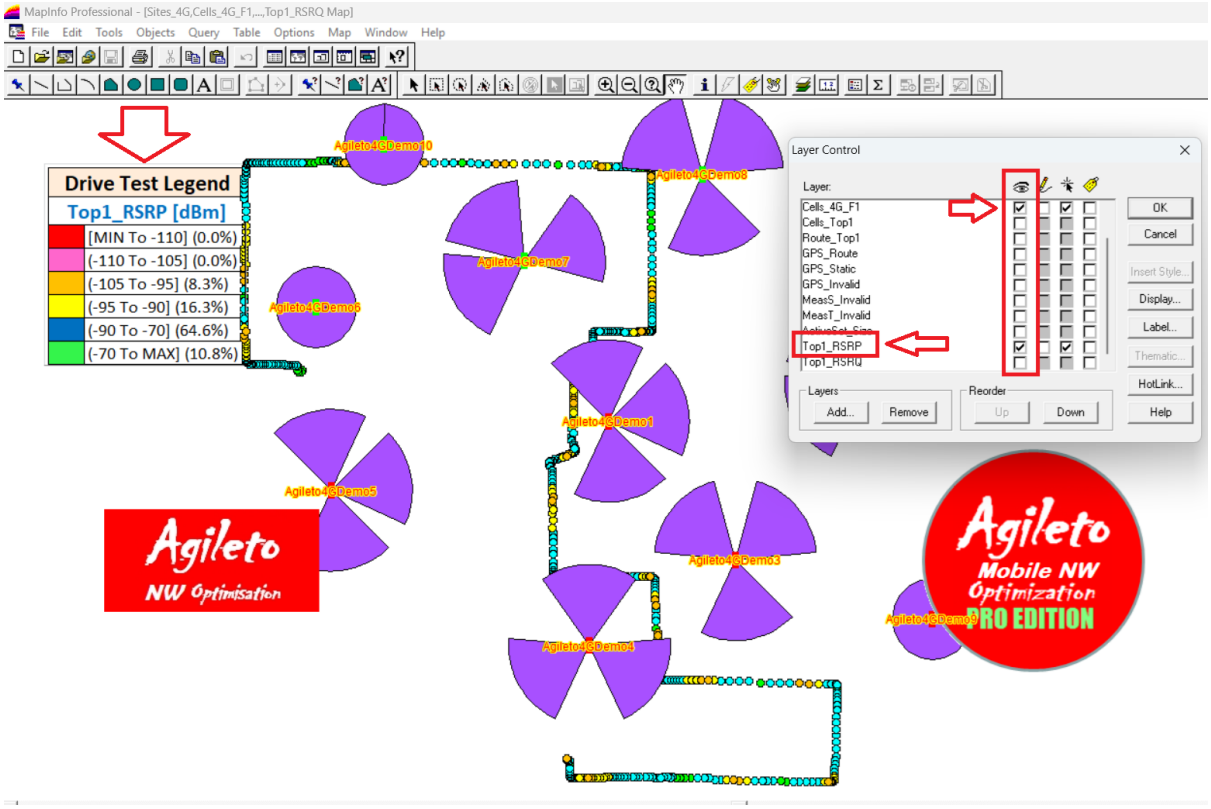
2) MapInfo

C:\Agileto\DEMO_PROJECT\MapInfo\Drive_Tests\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G



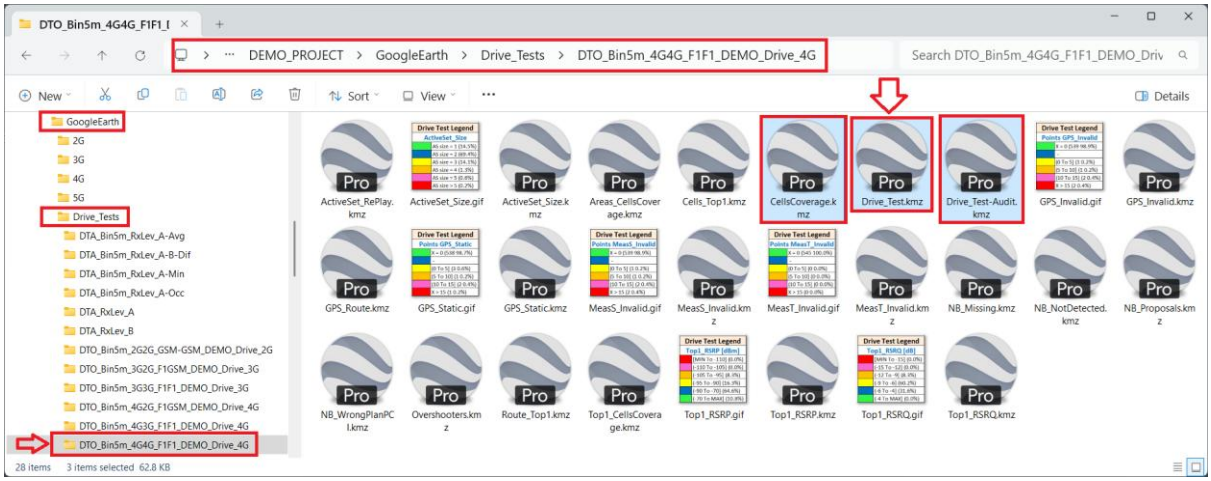
C:\Agileto\DEMO_PROJECT\MapInfo\Drive_Tests\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G\Drive_Test.wor


MapInfo Professional - [Sites_4G,Cells_4G_F1,...,Top1_RSRQ Map]
File Edit Tools Objects Query Table Options Map Window Help
Layer Control
Layer:
Cells_4G_F1
Cells_Top1
Route_Top1
GPS_Route
GPS_Static
GPS_Invalid
MeasS_Invalid
MeasT_Invalid
ActiveSet_Size
Top1_RSRP
Top1_RSRQ
OK
Cancel
Insert Style...
Display...
Label...
Thematic...
HotLink...
Help
Layers
Add...
Remove
Reorder
Up
Down
Agileto4GDemo10
Agileto4GDemo8
Agileto4GDemo7
Agileto4GDemo6
Agileto4GDemo1
Agileto4GDemo5
Agileto4GDemo3
Agileto4GDemo4
Agileto
NW Optimisation
Agileto
Mobile NW
Optimization
PRO EDITION

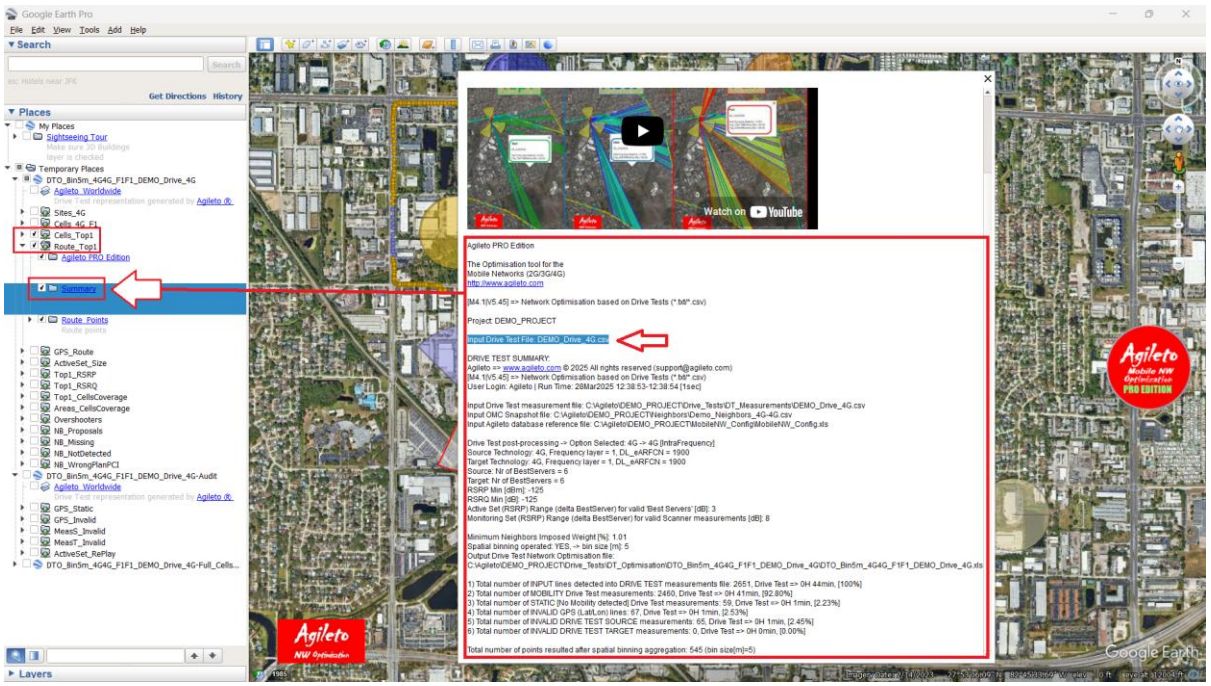

MapInfo Professional - [Sites_4G,Cells_4G_F1,...,Top1_RSRQ Map]
File Edit Tools Objects Query Table Options Map Window Help
Drive Test Legend
Top1_RSRP [dBm]
[MIN To -110] (0.0%)
(-110 To -105] (0.0%)
(-105 To -95] (8.3%)
(-95 To -90] (16.3%)
(-90 To -70] (64.6%)
(-70 To MAX] (10.8%)
Layer Control
Layer:
Cells_4G_F1
Cells_Top1
Route_Top1
GPS_Route
GPS_Static
GPS_Invalid
MeasS_Invalid
MeasT_Invalid
Top1_RSRP
Top1_RSRQ
OK
Cancel
Insert Style...
Display...
Label...
Thematic...
HotLink...
Help
Layers
Add...
Remove
Reorder
Up
Down
Agileto4GDemo10
Agileto4GDemo8
Agileto4GDemo7
Agileto4GDemo6
Agileto4GDemo1
Agileto4GDemo5
Agileto4GDemo3
Agileto4GDemo4
Agileto
NW Optimisation
Agileto
Mobile NW
Optimization
PRO EDITION

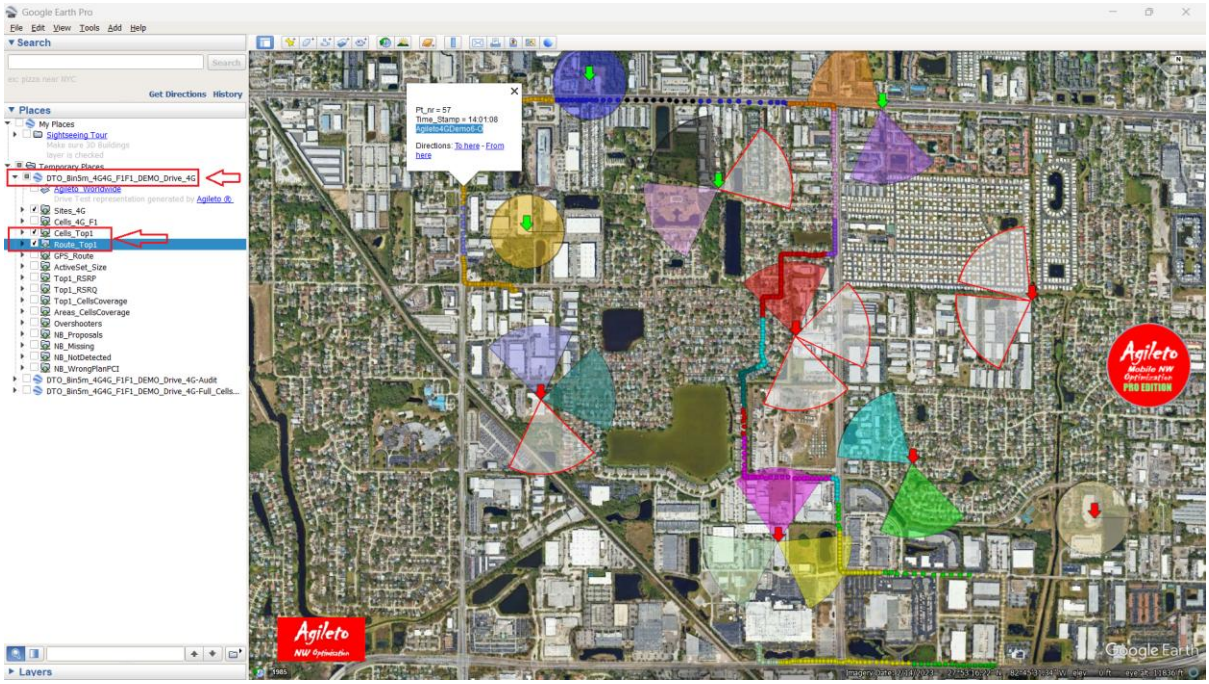
3) Google Earth:

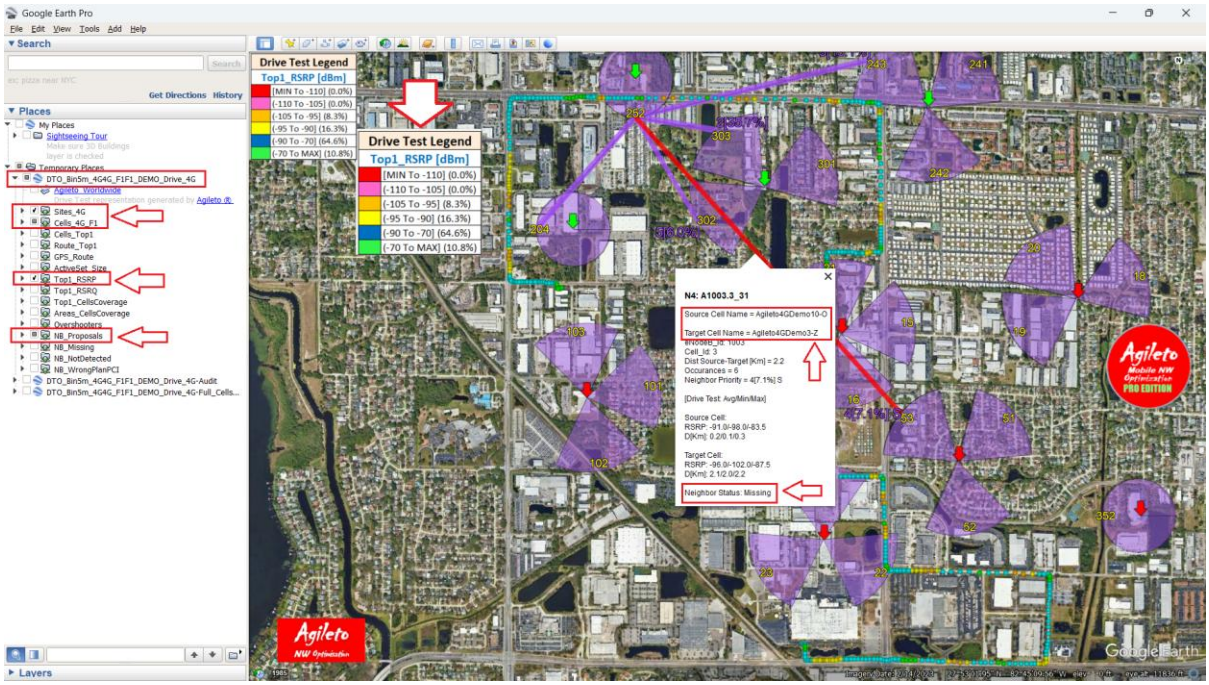
C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G

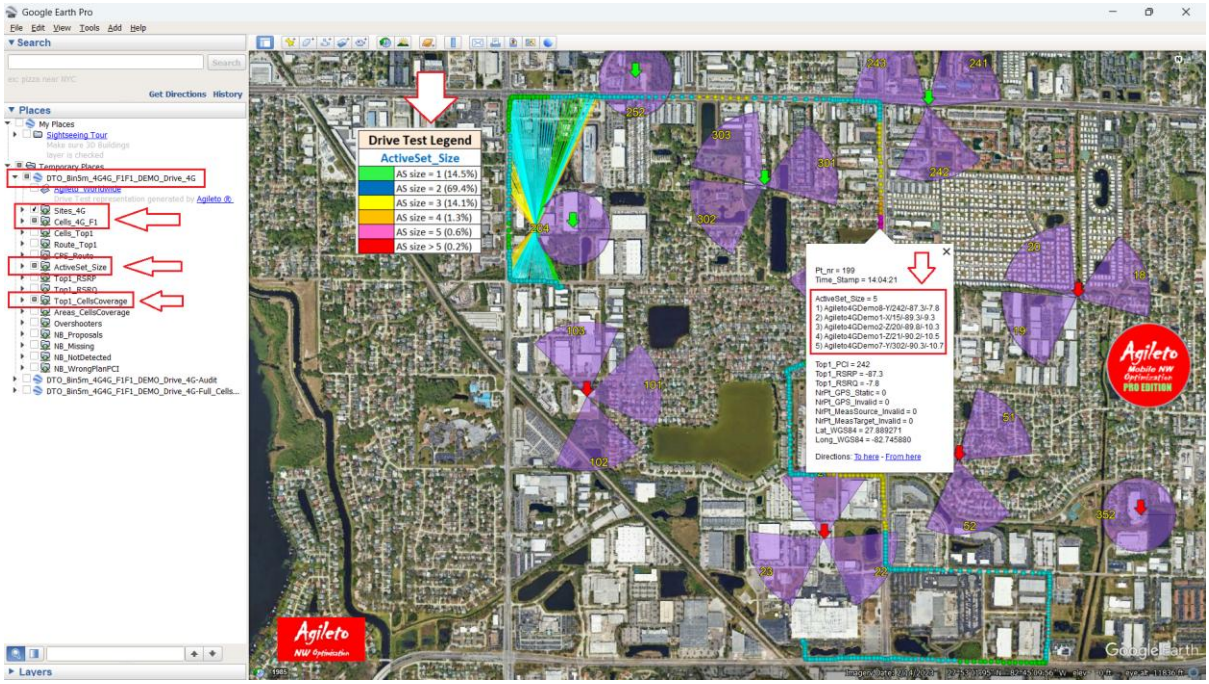


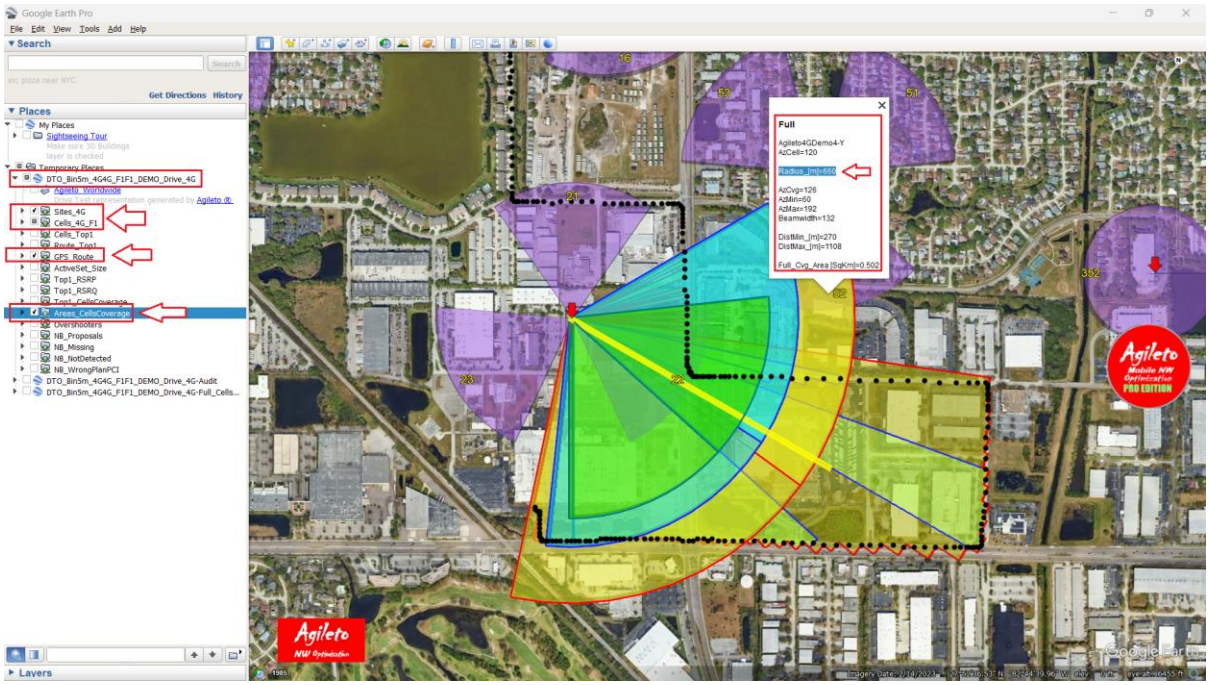
C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G\Drive_Test.kmz

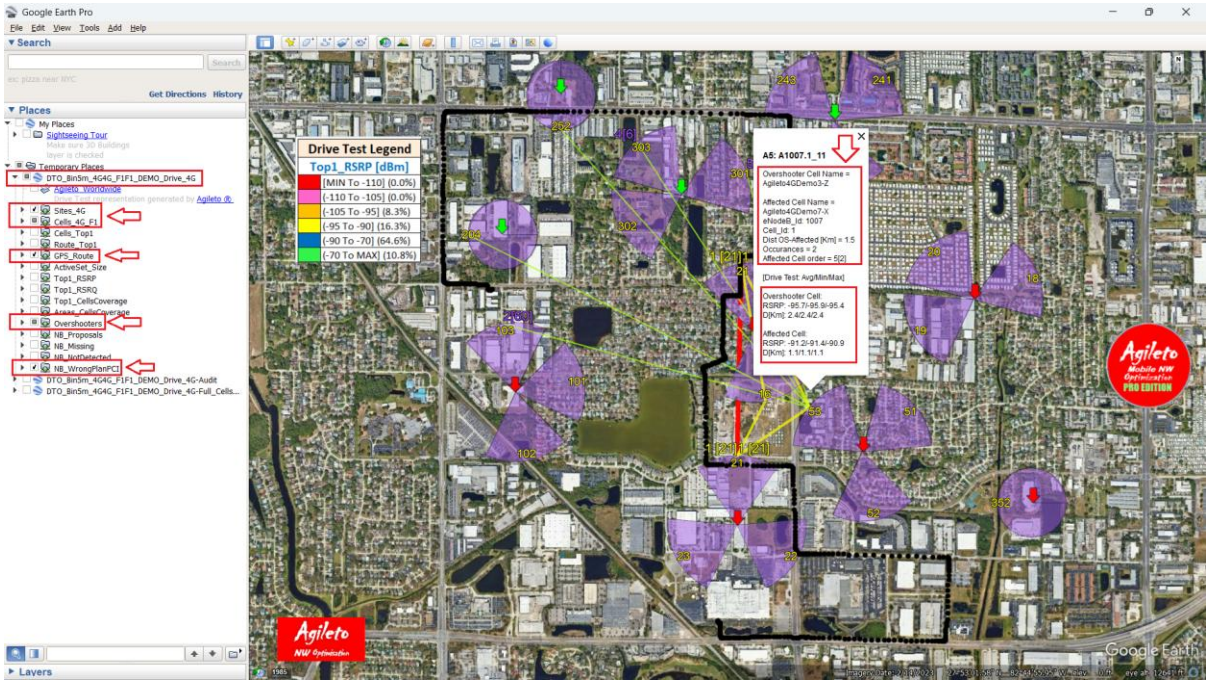



Google Earth Pro
File Edit View Tools Add Help
Search
Places
Layers
DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G
Sites_4G
Cells_4G_F1
Cells_Top1
Route_Top1
GPS_Route
ActiveSet_Size
Top1_RSRP
Top1_RSRQ
Top1_CellsCoverage
Areas_CellsCoverage
Overshooters
NB_Proposals
NB_Missing
NB_NotDetected
NB_WrongPlanPCI
DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G-Audit
DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G-Full_Cells...
Agileto
Google Earth

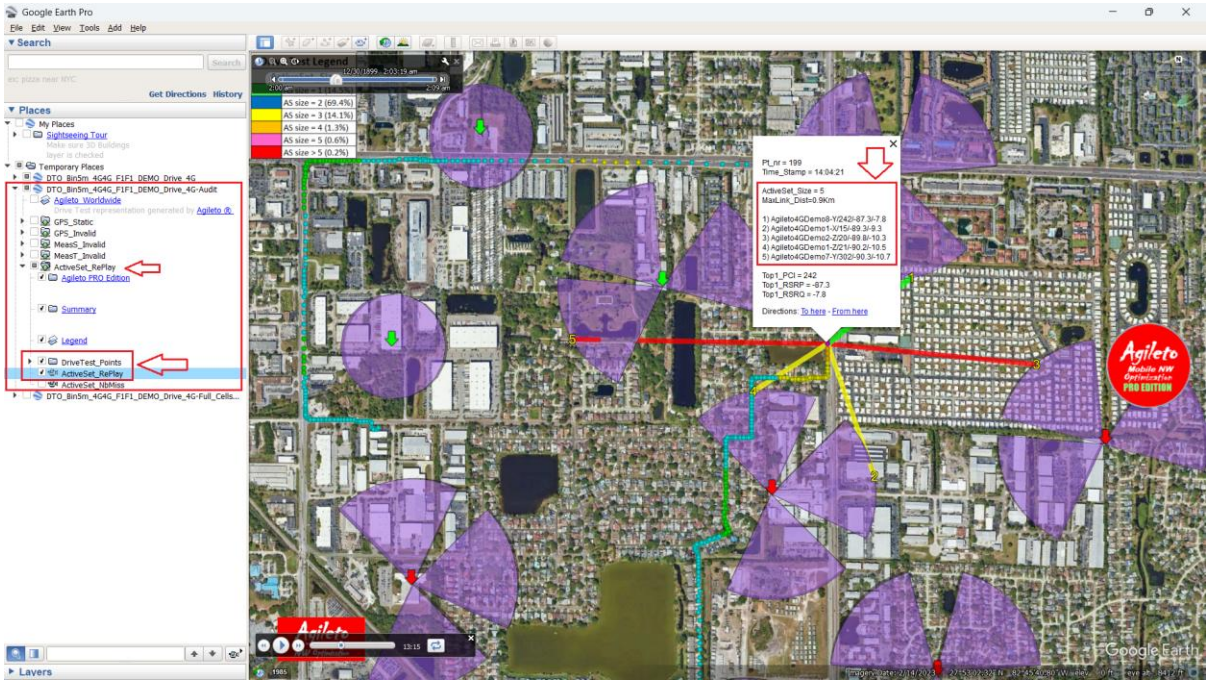

Google Earth Pro
File Edit View Tools Add Help
Search
Places
Layers
Drive Test Legend
Top1_RSRP [dBm]
[MIN To -110] (0.0%)
(-110 To -105] (0.0%)
(-105 To -95] (8.3%)
(-95 To -90] (16.3%)
(-90 To -70] (64.6%)
(-70 To MAX] (10.8%)
N4: A1003.3_31
Source Cell Name = Agileto4GDemo10-O
Target Cell Name = Agileto4GDemo3-Z
Neighbor Status: Missing
Agileto
Google Earth


Google Earth Pro
Drive Test Legend
ActiveSet_Size
AS size = 1 (14.5%)
AS size = 2 (69.4%)
AS size = 3 (14.1%)
AS size = 4 (1.3%)
AS size = 5 (0.6%)
AS size > 5 (0.2%)
Agileto
Mobile NW Optimization
PRO EDITION

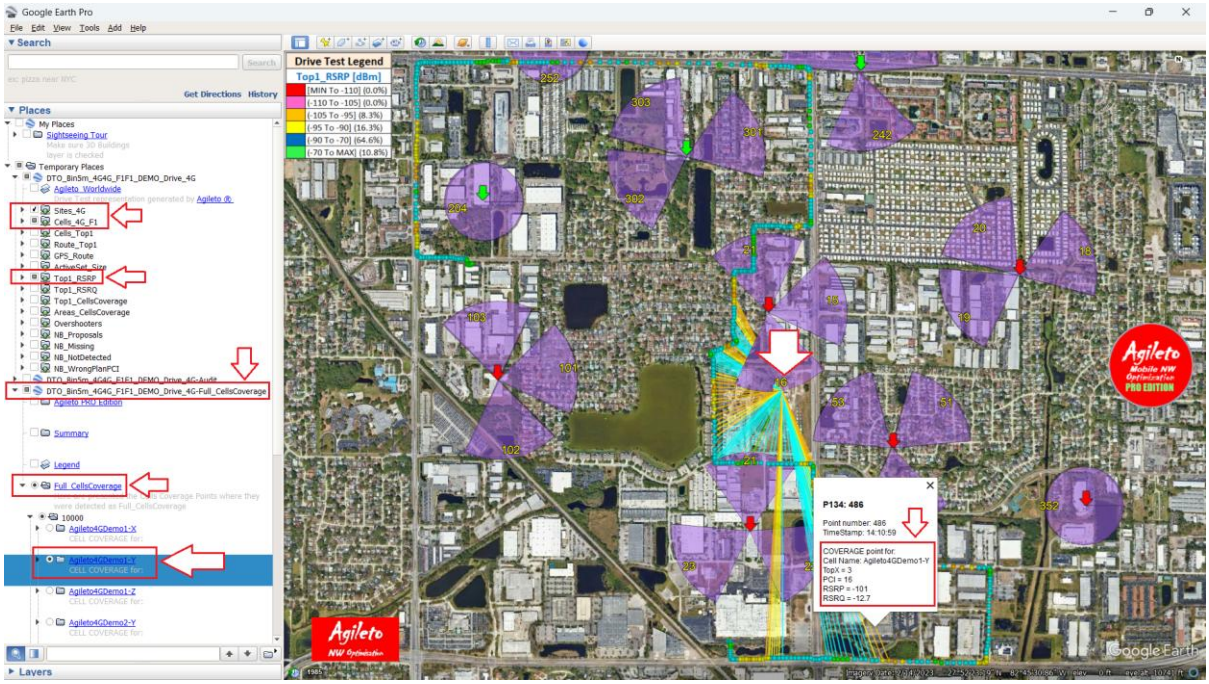

Google Earth Pro
Full
Agileto
Mobile NW Optimization
PRO EDITION



C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G\Drive_Test-Audit.kmz



C:\Agileto\DEMO_PROJECT\GoogleEarth\Drive_Tests\DTO_Bin5m_4G4G_F1F1_DEMO_Drive_4G\CellsCoverage.kmz



Similar **DTO** outputs are available for all technologies (2G to 5G) concerning Agileto DEMO_PROJECT (including **inter-technology** analysis [Ex: **4G-3G** or **4G-2G**]) and they may be accessed in a similar way like the links that have been presented above for the 4G technology.

Agileto DEMO Projects to be open from within Agileto tool

This **Agileto DEMO PROJECT** help file may be open anytime, as following:

1) **Download** from internet the very last version from our server, then execute the file:

http://www.agileto.com/pro/Agileto_DEMO_PROJECT.exe

Notice: This method will (re)install **Agileto DEMO_PROJECT** on your PC and reset all the **DEMO Projects** data to the initially values in case that you have played with the Demo data and you want to return to the initially Demo values & outputs.

2) By Agileto software tool by pressing the dedicated button when any of the following projects, DEMO_PROJECT or DEMO_OMC_DUMP, is selected.

3) Manually, it may be launched from the following path:

C:\Agileto\DEMO_PROJECT**Agileto_DEMO_PROJECT.pdf**

Agileto **DEMO projects** are projects already included into **PRO_Setup.exe** (Agileto installation setup kit) containing some samples databases which allow the user to accommodate and quickly browse between some of the main Agileto modules, as they are presented below.

This version of Agileto **DEMO projects** has been generated by **Agileto PRO Edition** version.

Notice: The remaining users of **Agileto GOLD Edition** (which is obsolete / deprecated, with no more support and development) are advised to switch to **Agileto PRO Edition** witch has enhanced features. Always it is provided online automatically a BASIC (free of charge) or ENHANCED license.

Remarks:

1) The purpose of Agileto **DEMO projects** and this presentation is not exhaustive to Agileto's features and capabilities. For more details please check Agileto Help file:

http://www.agileto.com/docs/Agileto_Help.pdf

2) Agileto **DEMO projects** have the meaning of making very quickly a new Agileto user familiar with some of the main Agileto's features and functionalities.

3) You may download anytime **Agileto PRO Edition** setup installation kit (**PRO_Setup.exe**) from here:

http://www.agileto.com/pro/PRO_Setup.exe

The next part of this document will present two major cases (A + B) covering the situations where an Agileto user may try to view (A) different Agileto outputs already generated in advance, or it may try to generate (B) some other new Agileto outputs.

A) View Agileto Demo databases in Excel / MapInfo / Google Earth

A) -> This first part (A) is focused to view the Demo databases & outputs (MapInfo & Google Earth) already generated and included into **DEMO projects**, as following:

A.1) View the Demo Mobile Networks database (2G/3G/4G/5G);

A.2) View the Demo Mobile Networks (2G/3G/4G/5G) in MapInfo & Google Earth;

A.3) Visualize/Change the Demo Neighbors in MapInfo or Google Earth;

A.4) View the Demo Mobile Networks KPIs representation in MapInfo & Google Earth;

A.5) View/Detect the Demo Network boundary (Border Cells);

A.6) View OMC Demo dump file Audit and Sanity Check;

A.7) View Demo 3G/4G/5G PSC/PCI Audit and Optimization;

A.8) View Demo 2G BCCH Audit and Optimization;

A.9) View the Demo Drive Test Analysis and Optimization (2G/3G/4G/5G).

B) Generate NEW Agileto DEMO outputs in Excel / MapInfo / Google Earth

B) -> This second part (B) is focused on how to generate (and then view) NEW Agileto Demo databases and outputs in MapInfo & Google Earth; below it is presented the process and the necessary steps to follow in order to achieve the this part B).

The following tasks will be presented & detailed below (sometimes including slide variations):

B.1) Generate the Demo Mobile Networks database (2G/3G/4G/5G);

B.2) View the Demo Mobile Networks database (2G/3G/4G/5G) (-> idem with A.1 above);

B.3) Generate the Demo Mobile Networks (2G/3G/4G/5G) in MapInfo & Google Earth;

B.4) View the Demo Mobile Networks (2G/3G/4G/5G) in MapInfo & Google Earth (-> idem with A.2 above);

B.5) Generate the Demo Neighbors (5G-5G, 5G-4G, 4G->4G, 4G->3G, 4G->2G, 3G->3G, 3G->2G, 2G->2G) to be changed/visualized in MapInfo and Google Earth;

B.6) Visualize/Change the Demo Neighbors in MapInfo or Google Earth (-> idem with A.3 above);;

B.7) Generate the Demo Mobile Networks KPIs (2G/3G/4G/5G) representation in MapInfo & Google Earth;

B.8) View the Demo Mobile Networks KPIs representation in MapInfo & Google Earth (-> idem with A.4 above);

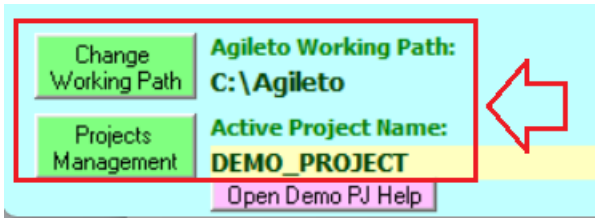
Other tasks may include some additionally specific 2G/3G/4G/5G vendor data like OMC mobile network snapshot files. For these cases please read Agileto User Guide manual (open Agileto help file anytime just by pressing the key **F1**) where detailed explanations are provided for each Agileto's module.

Detail presentations of the cases A) + B) presented above:

First of all you need to be sure that you have the following two settings in Agileto:

-> Agileto Working Path: **C:\Agileto**

-> Active Project Name: **DEMO_PROJECT**

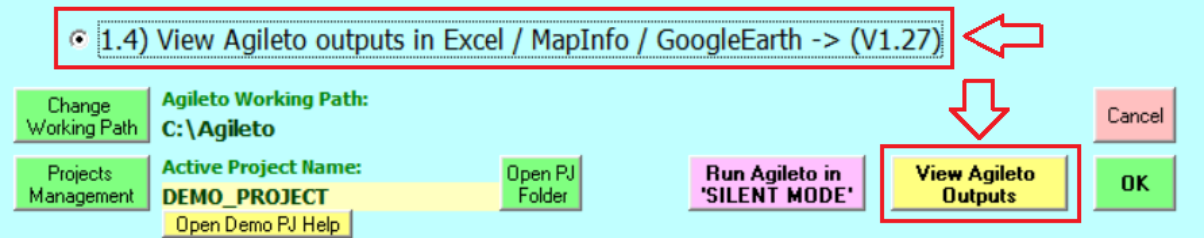


If necessary modify these settings accordingly (press the **Start** button from the main interface and then check & adjust these settings by using the corresponding buttons [**Change Working Path** & **Projects Management**]).

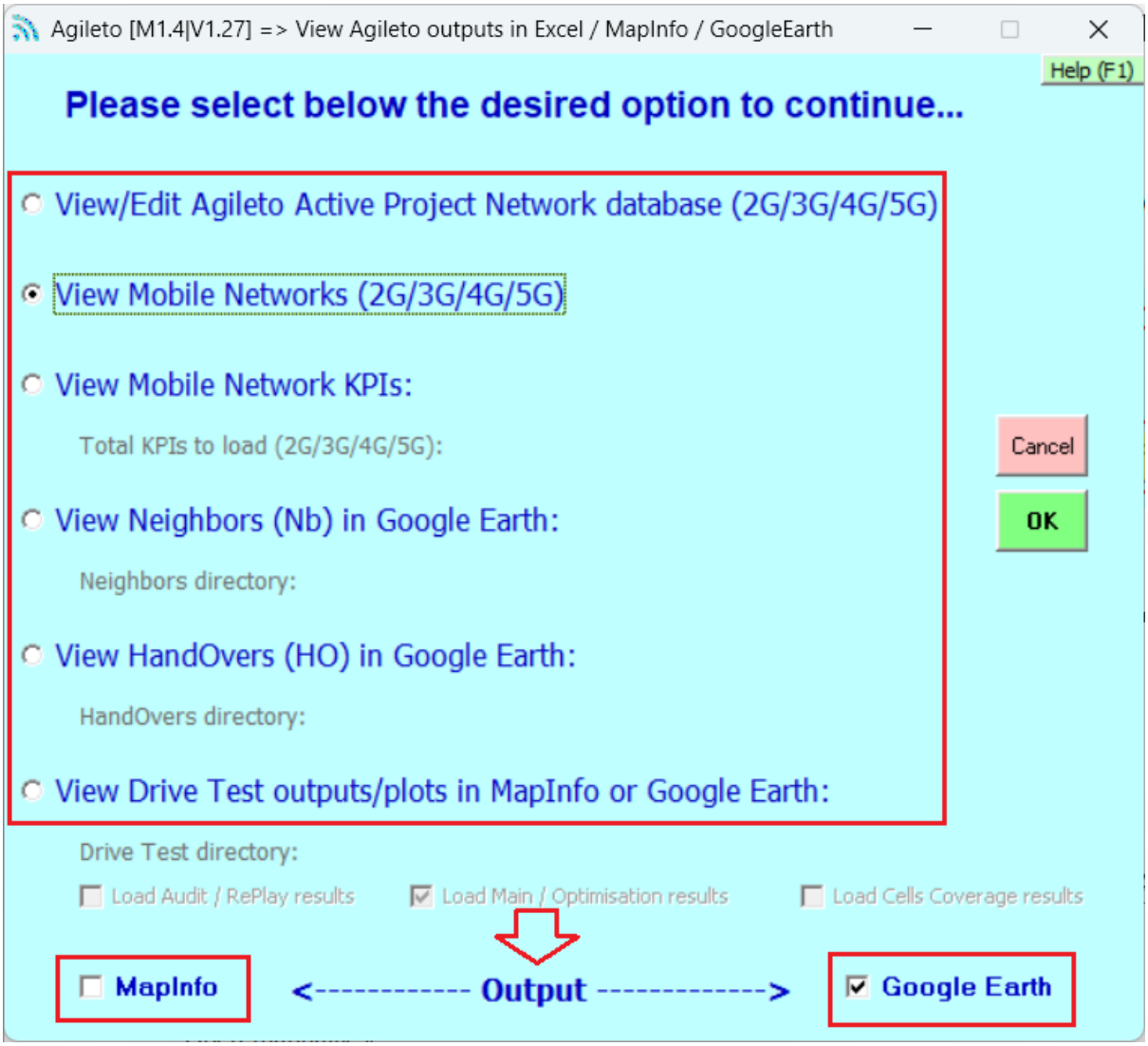
(By default these are the settings after the installation is completed)

A) -> View Agileto Demo outputs in Excel / MapInfo / Google Earth

To access Agileto's View options you need to run the module M1.4 or to press the View Agileto Outputs like it is presented below:



This will provide you multiple options like they are presented into the window below:



A.1) View the Demo Mobile Networks database (2G/3G/4G/5G):

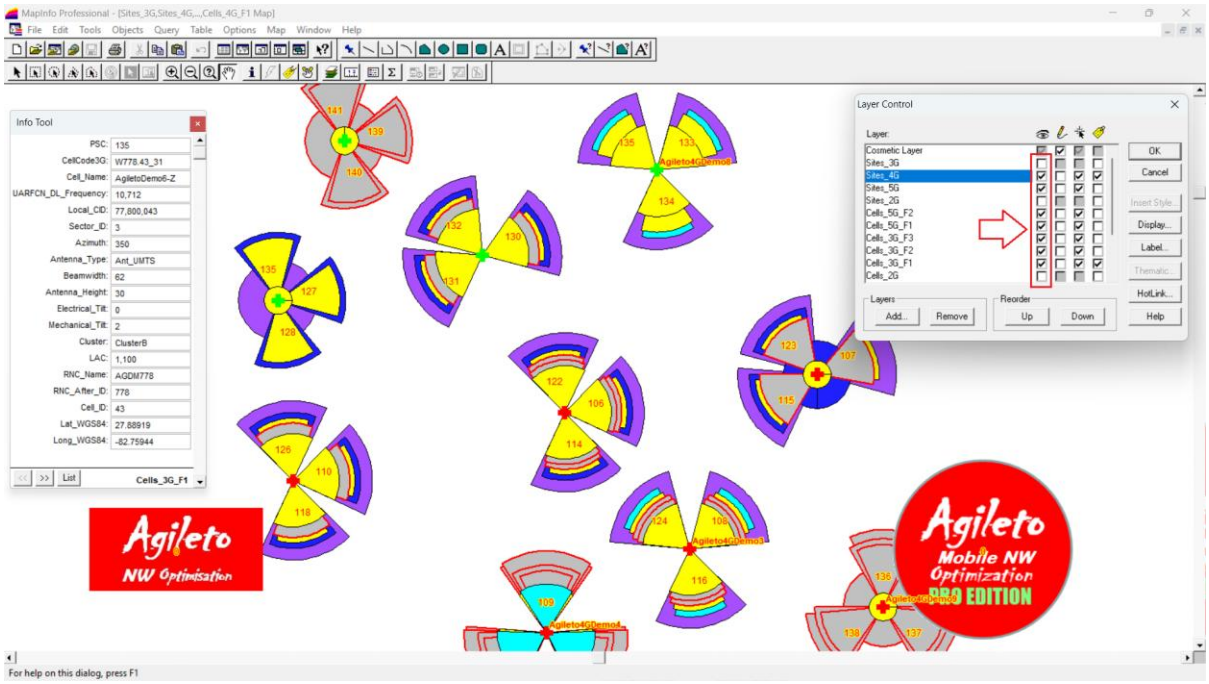
Select the option "**View/Edit Agileto Project Network database (2G/3G/4G/5G)**" then press OK button. This will open Agileto database related to the Active Project (Excel file) that you may browse

and modify manually if desired. If changes are performed on the database please do not forget to save the file at the end. The structure of Agileto database has been already presented in advance (here).

A.2) View the Demo Mobile Networks (2G/3G/4G/5G) in MapInfo & Google Earth:

Select the option "**View Mobile Networks (2G/3G/4G/5G)**" then select the desired output as MapInfo or Google Earth and then press OK button. This will open the Mobile Network related to the Active Project in MapInfo or Google Earth as per the selection done.

The presentation of the Mobile Network in MapInfo & Google Earth has been done in advance here.



A.3) Visualize/Change the Demo Neighbors in MapInfo or Google Earth:

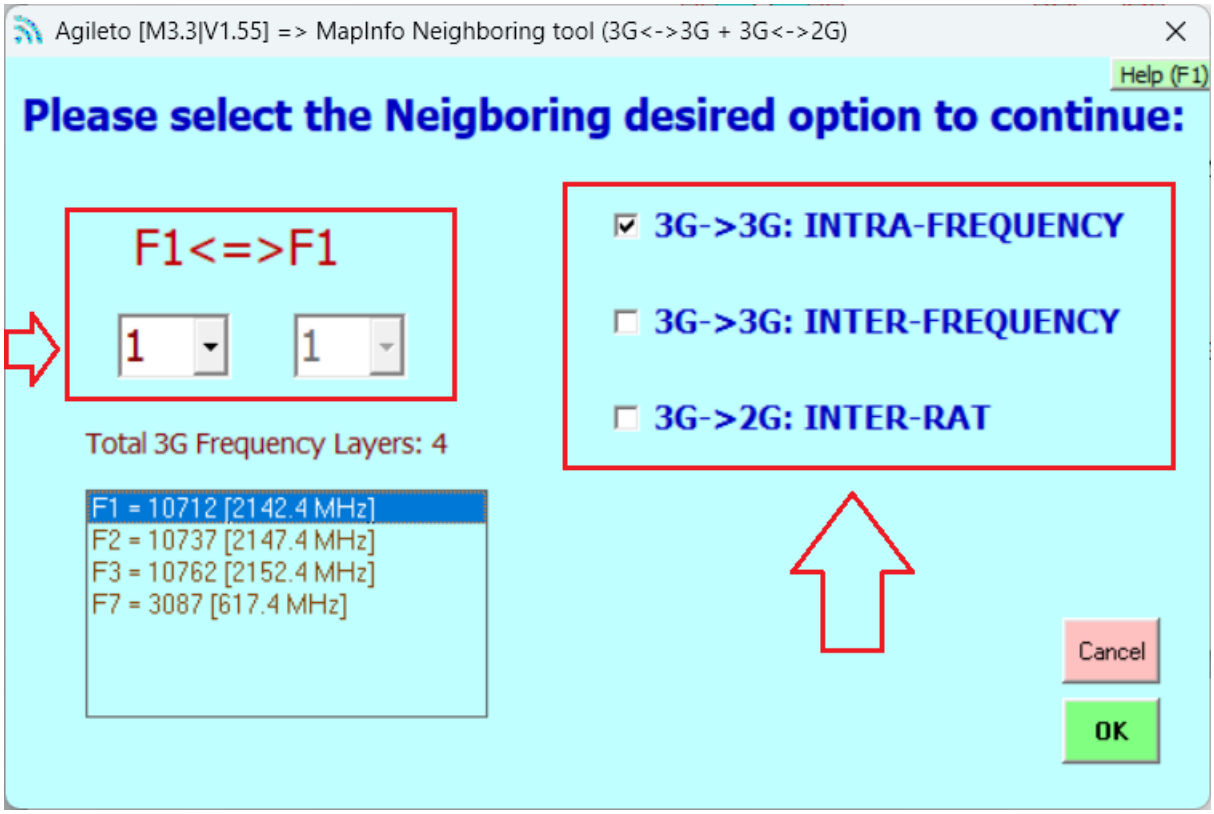
There are two options to see the neighbors and they will be presented further, as following:

A) In MapInfo

B) In Google Earth

A.3.1) MapInfo output:

Run the module M3.3 and select the neighbors input file according with your needs



Example: for the case of **3G->3G INTRA-FREQUENCY** select the following file:

C:\Agileto\DEMO_PROJECT\MapInfo\Neigh_DB-MI\Nb3G3G_Demo_Neighbors_3G-3G**N3G3G_IntraFr.csv**

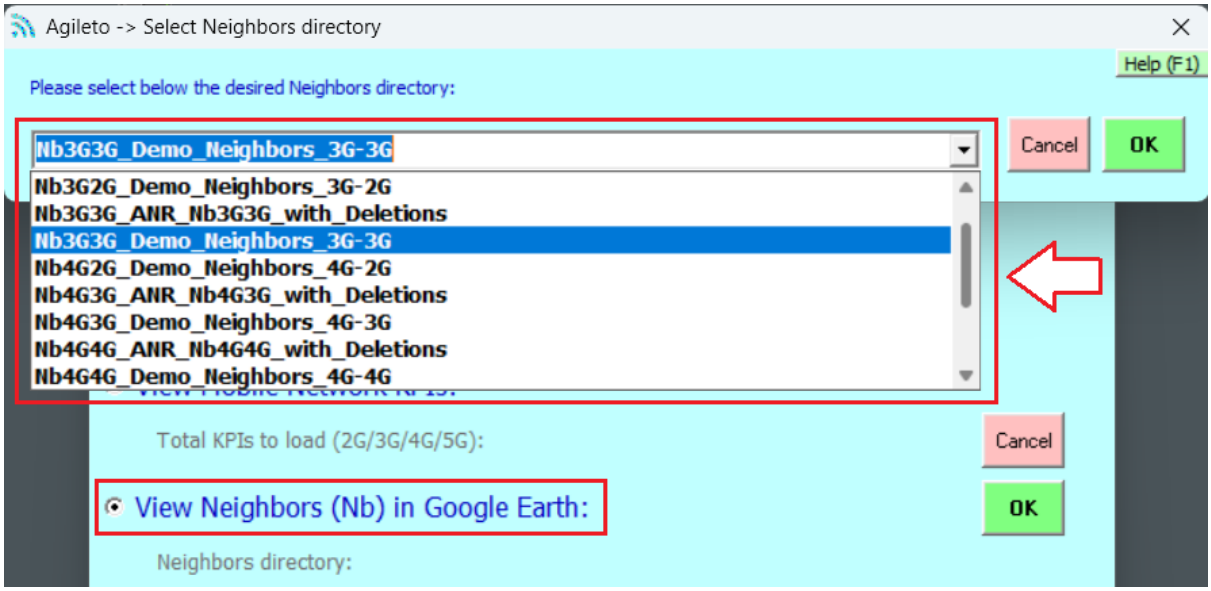
Then play in MapInfo directly with MapInfo neighbors tool icons as per it is described into Agileto User Guide.

The presentation of the neighbors in MapInfo has been performed in advance here.

A.3.2) Google Earth output:

Before proceeding with this topic please make sure that your Mobile Network (2G/3G/4G) is already open in Google Earth (for this purpose use the module M1.4 -> that is the case A.2 above).

From the general window of the case A above select the option "**View Neighbors (Nb) in Google Earth**" then press OK button. This will open a secondary window (like below) from where the user may select one of the available neighbors database created in advance.



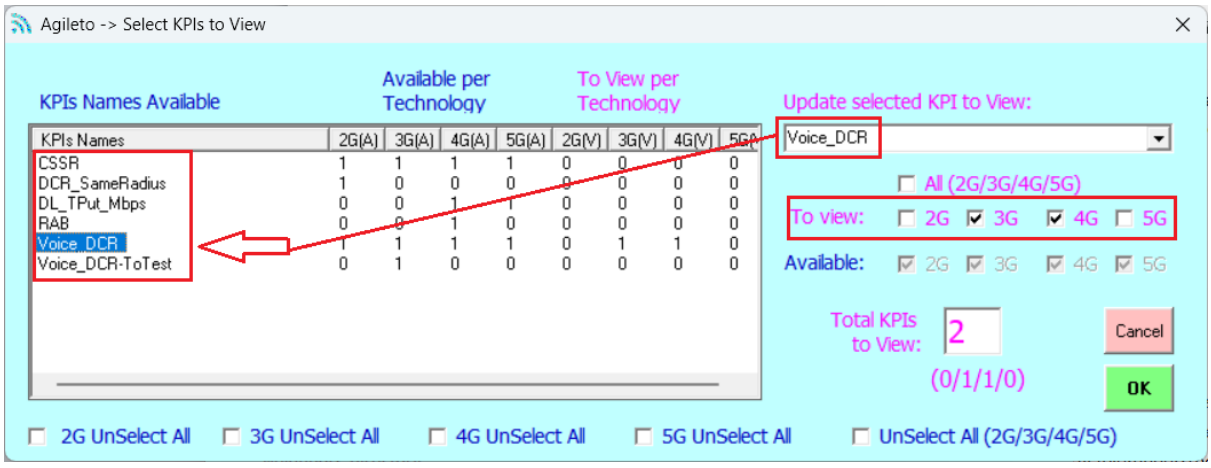
Then play directly in Google Earth by selecting the source **Cell_Name** (left panel) which you want to see the neighbors.

Google Earth Tip: To search for a specific 2G/3G/4G/5G cell in Google Earth press "Ctrl + F" and then type the Cell Name; if the cell exists then it will be highlighted into the left panel (use the mouse wheel up/down if it is not visible); to select that cell just double click on it on the left panel and it will zoom to it on the main Google Earth window.

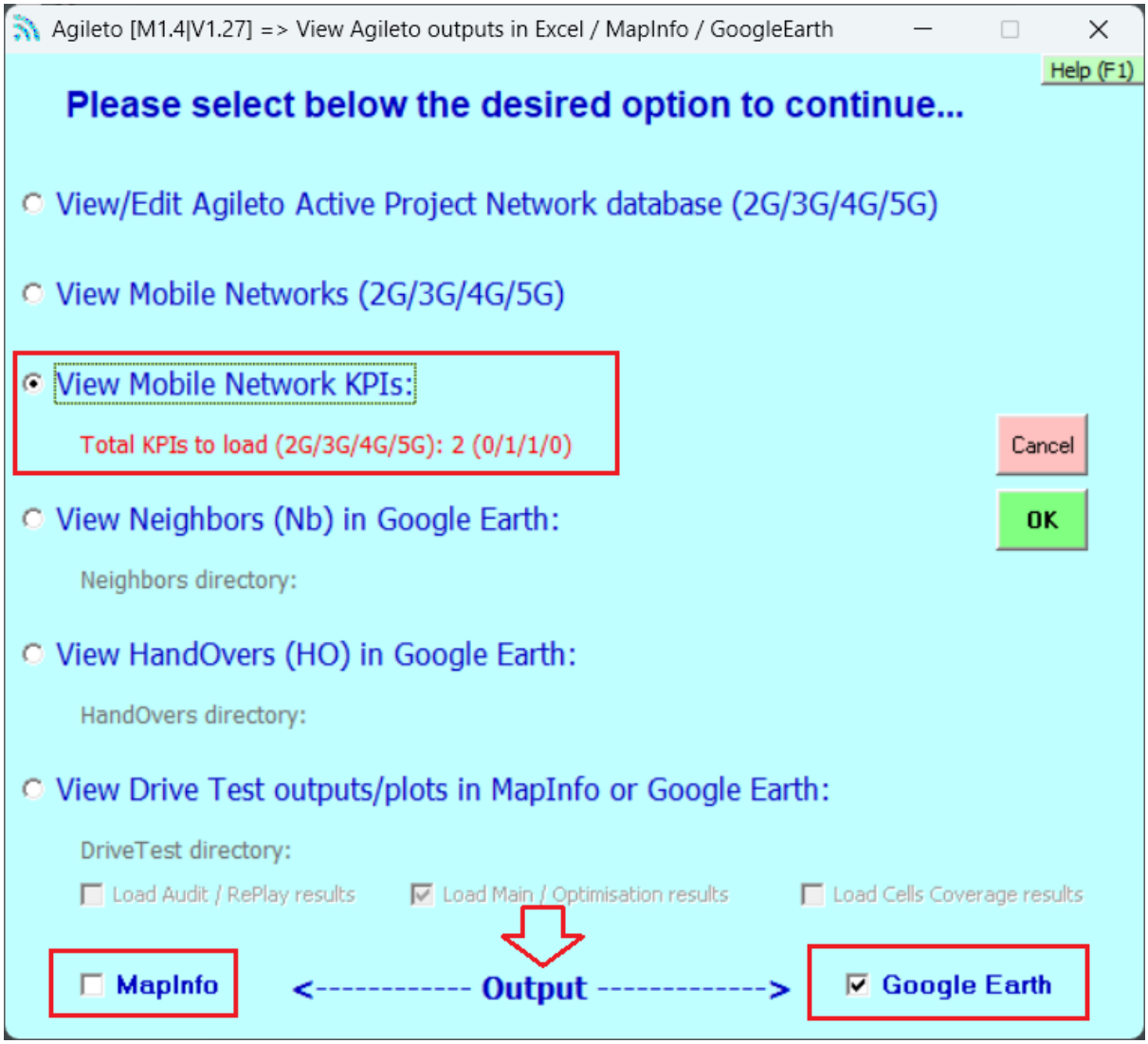
The presentation of the Neighbors in google Earth has been already performed in advance, here.

A.4) View the Demo Mobile Networks KPIs representation in MapInfo & Google Earth:

From the general window of the case A above select the option "**View Mobile Network KPIs**" then press OK button. This will open a secondary window (like below) from where the user may select one of the available KPIs created in advance.



Finally select the desired output (MapInfo or Google Earth) then press the OK button.



Notice: Google Earth will load by default all the technologies available under the same KPI name selected and the display KPIs technology may be set directly in GE on the left panel.

The KPIs representation in Google Earth and MapInfo has been already presented in advance, here.

Please notice that the KPIs legend is displayed always into the top left corner in Google Earth / MapInfo and is available for each technology (2G/3G/4G/5G) and frequency layer (F1/F2/F3…).

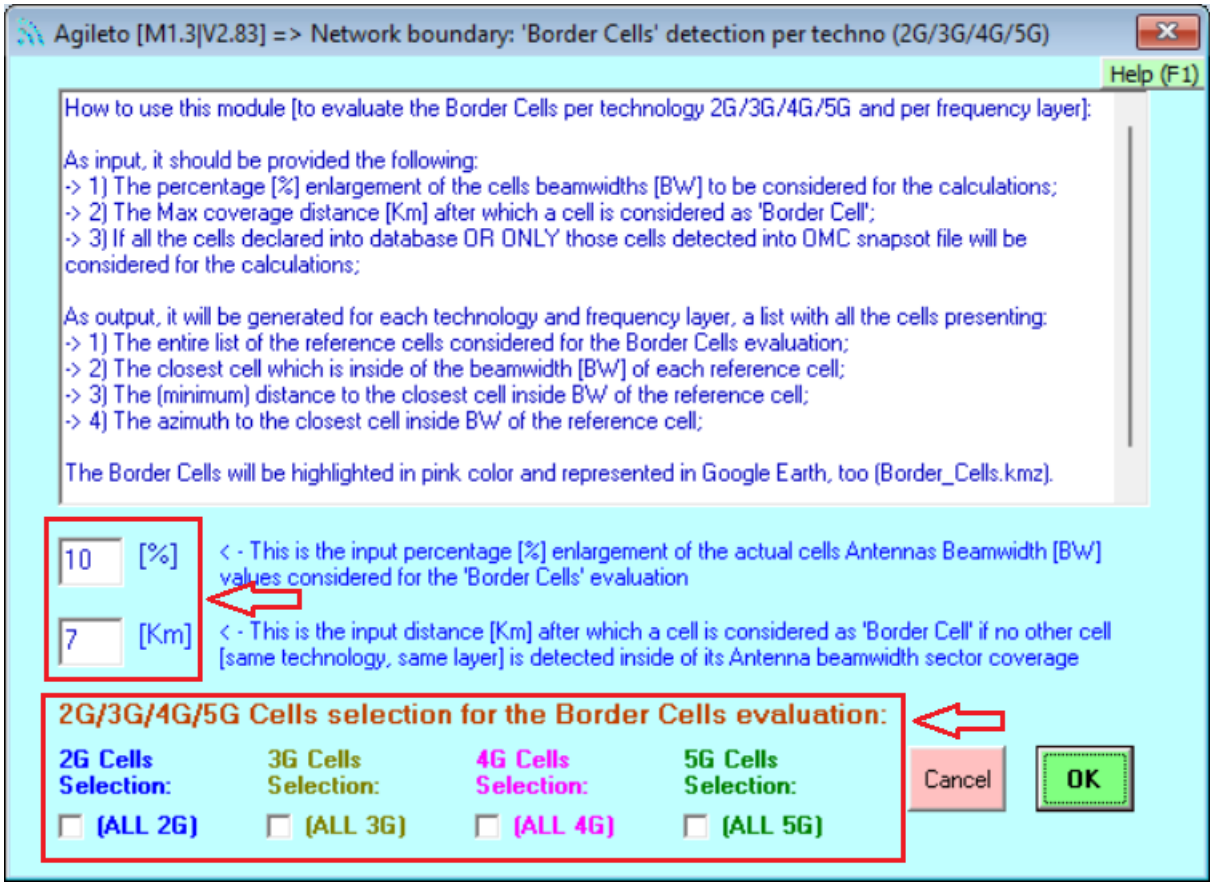
For more details about how to view / generate KPIs in MapInfo & Google Earth you may view the following video training:

https://youtu.be/3B65edyGBBg

A.5) View/Detect the Demo Network boundary (Border Cells):

The Border Cells for all Technologies are now usually evaluated and generated with the module M1.2 too (which map the Mobile Network in Google Earth and MapInfo).

However, there is available Agileto M1.3 module which may generate/update the Border Cells.



The Border Cells are displayed only in Google Earth with wider lines and specific colors for each technology, being directed on the azimuth of the Cell detected as Border Cell (Border Cell = Cell which has no other Cell in front working on the same technology and the same frequency layer for a certain minimum distance).

They have been already presented in advance here.

For more details about the Border Cells you may view the following related video training:

https://youtu.be/Ah5rT0knr1k

A.6) View OMC Demo dump file Audit and Sanity Check

The presentation of an Audit & Sanity Check performed by Agileto tool has been already done in advance here.

Audit and Sanity Check file is a file with a specific format for each technology and It consists in a summary Audit (Excel) file related to a number of main RF parameter from the RAN + a number of other associated *.xls + *.csv files in regard with the results of the audit and eventually inconsistency Cells parameters detected during the audit that need to be corrected.

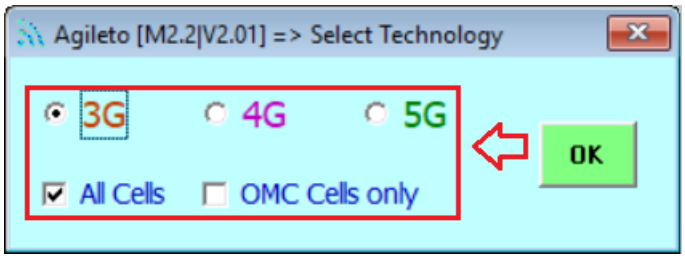
For more details related to this topic please watch the following related video training:

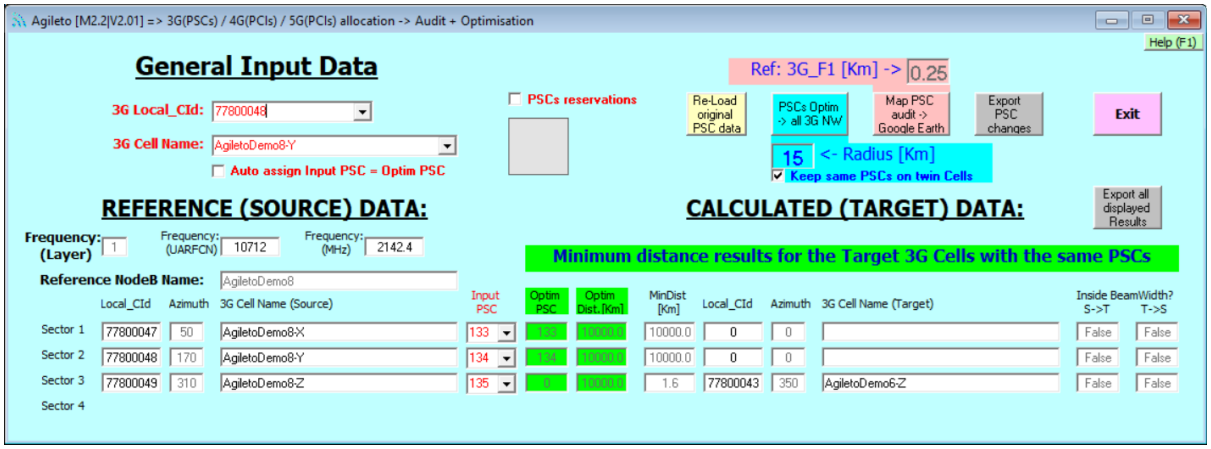
https://youtu.be/Gsp-jwjSdvI

A.7) View Demo 3G PSC Audit and Optimization:

The presentation of the 3G PSC Audit & Optimization performed by Agileto tool has been already done in advance here.

Agileto M2.2 module is used to perform this evaluation:





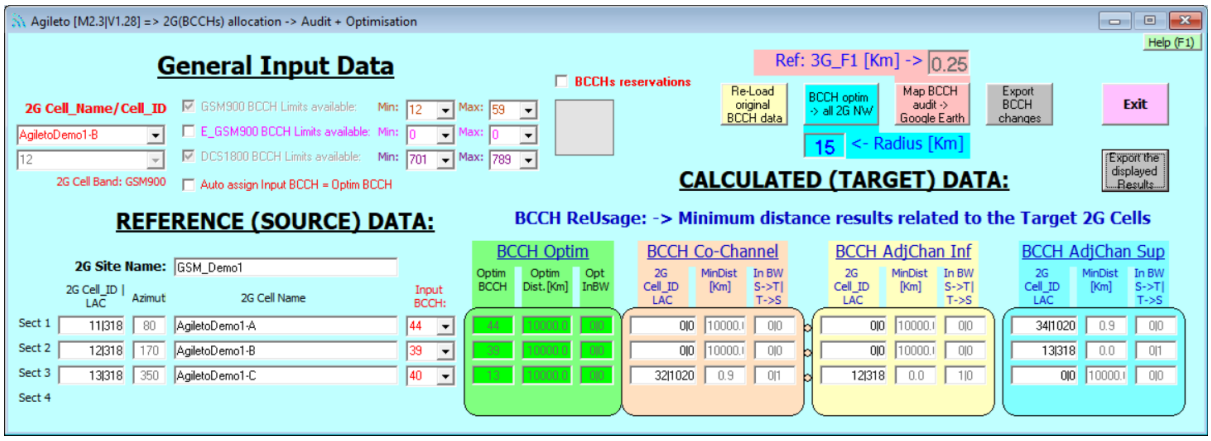
For more details related to this topic please watch the following related video training:

https://youtu.be/I6PR3ytiQmU

A.8) View Demo 2G BCCH Audit and Optimization:

The presentation of the 2G BCCH Audit & Optimization performed by Agileto tool has been already done in advance here.

Agileto M2.3 module is used to perform this evaluation:



For more details related to this topic please watch the following related video training:

https://youtu.be/RdTrT5m4EwY

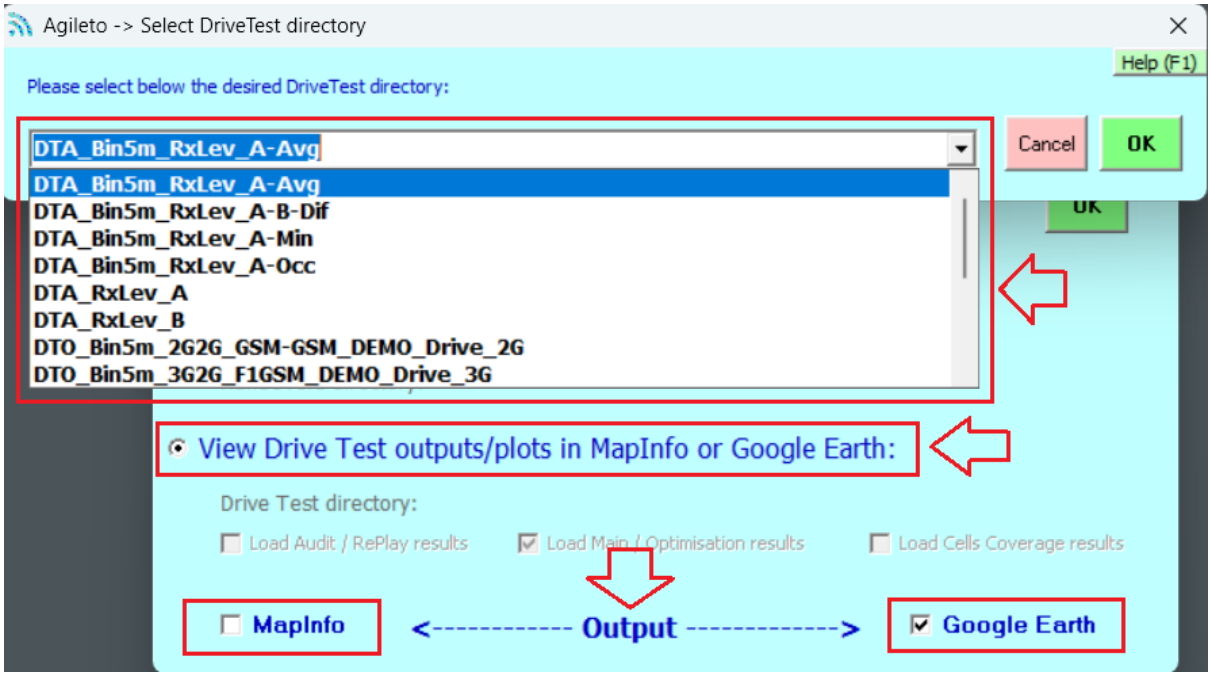
A.9) View the Demo Drive Test Analysis and Optimization (2G/3G/4G/5G):

There are two main cases, as following:

1) **Drive Test Analysis** (DTA) – when specific metrics are mapped into MI and GE;

2) **Drive Test Optimization** (DTO) – when automatic optimization outputs are provided for each technology (2G/3G/4G/5G).

To view the output associated results in Google Earth or MapInfo select from the main window presented at the case A) above the option "**View Drive Test outputs/plots in MapInfo or Google Earth**".



A.9.1) DTA case

The presentation of the DTA case performed by Agileto tool has been already done in advance here.

For more details related to this topic please watch the following related video training:

https://youtu.be/5wXpXNObrk4

A.9.2) DTO case (2G/3G/4G/5G)

The presentation of the DTO case performed by Agileto tool has been already done in advance here.

For more details related to this topic please watch the following related video trainings:

2G: https://youtu.be/f3uoeIENcUc

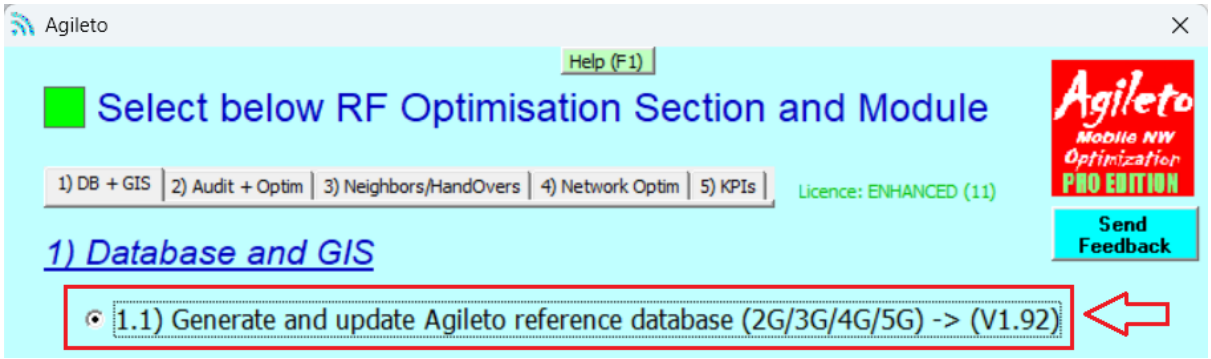
3G: https://youtu.be/-N_GuLsRPU8

4G: https://youtu.be/_oafTkMk99Q

B) -> Generate NEW Agileto Demo outputs in Excel / MapInfo / Google Earth

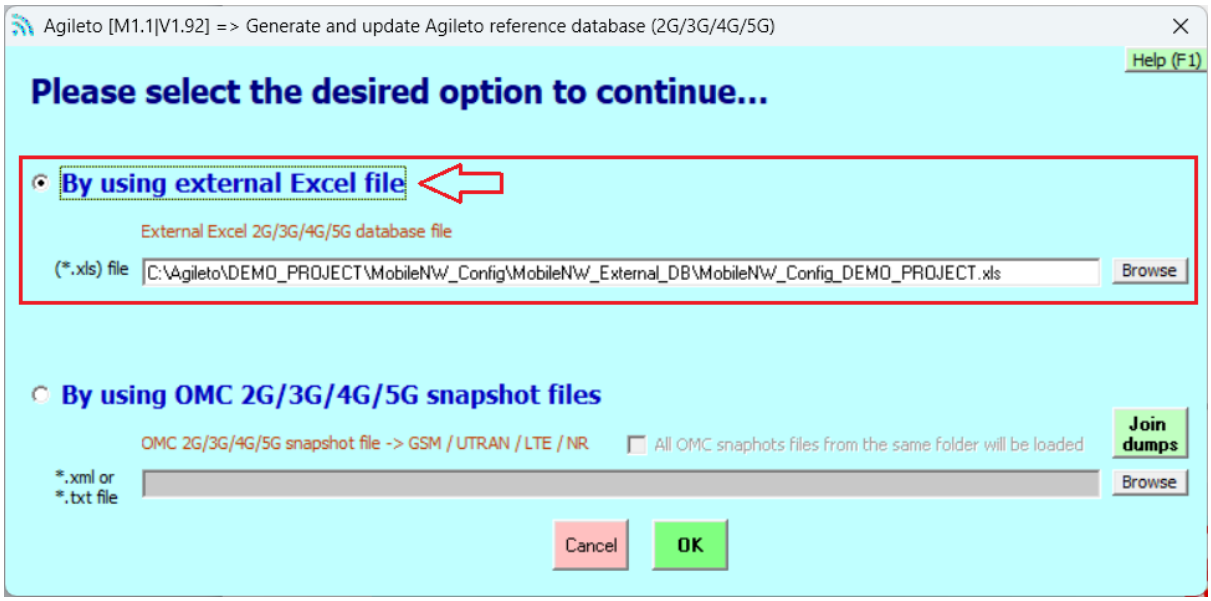
B.1) Generate the Demo Mobile Networks database (2G/3G/4G/5G)

Run the module M1.1 (select the top option "**By using external Excel file**")



Provide the following file as input for the External Excel file:

C:\Agileto\DEMO_PROJECT\MobileNW_Config\MobileNW_External_DB**MobileNW_Config_DEMO_PROJECT.xls**



As far as the headers of the columns into the External Excel file (MobileNW_Config_DEMO_PROJECT.xls) have already standard names used by Agileto database, the columns correspondence between Agileto database and the columns from the external Excel file for each technology (2G/3G/4G/5G) is performed automatically by the tool. In the real case you will need to adjust the column correspondence accordingly.

Notice:

In the real case when working on a real mobile network and have access to the OMC export snapshot files for different technologies (2G/3G/4G/5G), it is recommended to generate Agileto database based on the real mobile network elements, so you need to select the bottom option "**By using OMC snapshot file**". Each vendor equipment (Huawei/Alcatel-Lucent/Ericsson/Nokia/etc) has its own OMC snapshot file format available for each technology (2G/3G/4G/5G) as *.xml or *.txt files. Agileto will recognize automatically all these OMC snapshot files formats and process them accordingly.

Conclusion: You may choose initially to generate and then update Agileto database based on the OMC snapshot files (by using the option "**By using OMC snapshot file**") for each technology (2G/3G/4G/5G) then you may continue to update subsequently Agileto database for each technology with geographical info (Ex: Latitude/Longitude/Azimuth/etc) which are not usually included into the snapshot files by using the top option "**By using external Excel file**" with the help of one or multiple external Excel database files where the desired info data are recorded per each 2G/3G/4G/5G cell.

For more details related to this topic please watch the following related video trainings:

A) Excel input data file: https://youtu.be/xCrvsqBfV_0

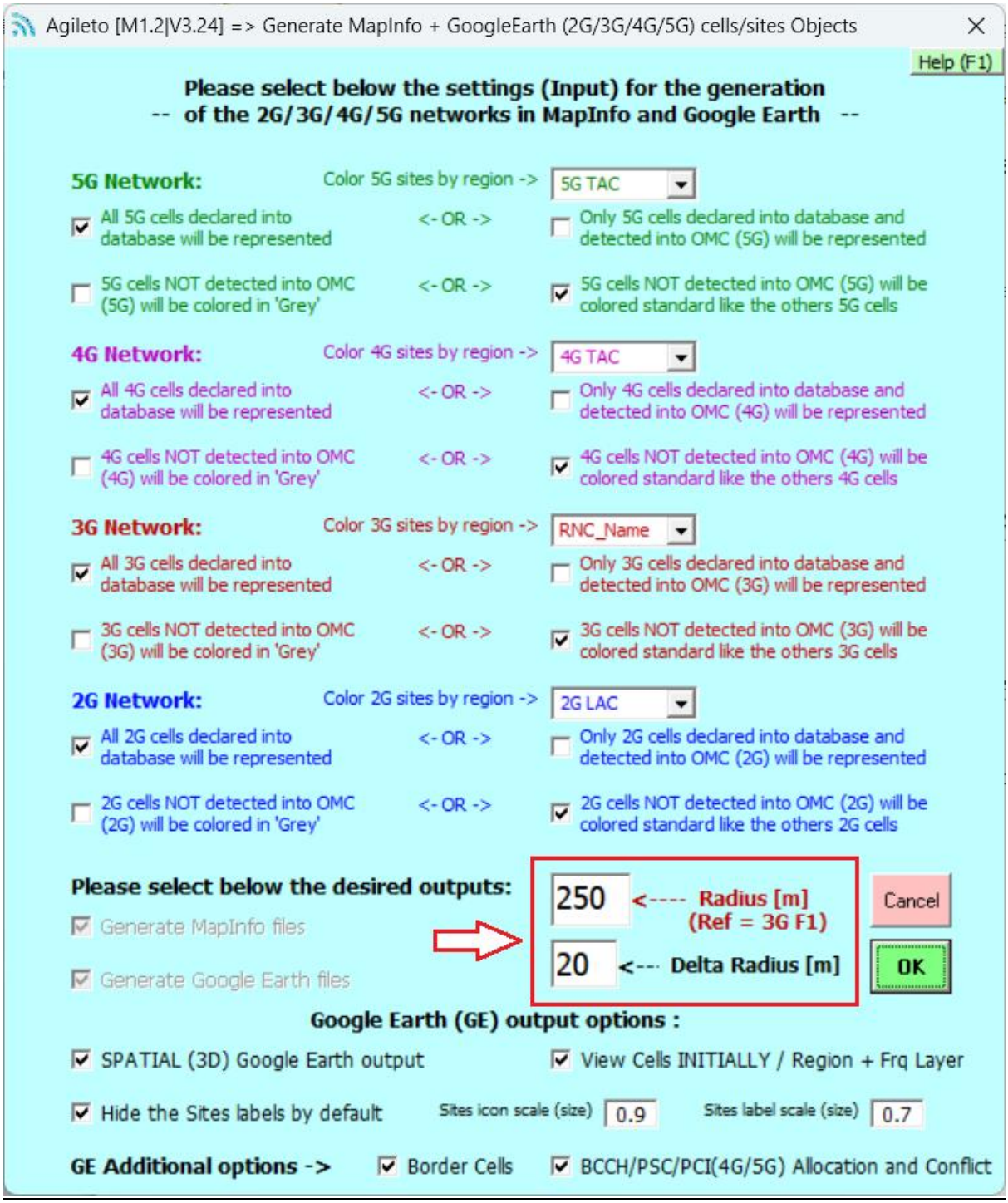
B) OMC dump input data file: https://youtu.be/QnptqYVeEPk

B.2) View the Demo Mobile Networks database (2G/3G/4G/5G):

Idem with A.1 above;

B.3) Generate the Demo Mobile Networks (2G/3G/4G/5G) in MapInfo & Google Earth:

Run the module M1.2 and provide the desired inputs. For the best visualization set the **Reference 3G F1 Radius = 250m** and **Delta Radius = 20 m**



Notice that you may choose to generate the 2G/3G/4G networks in Google Earth as 3D (spatial) or 2D (plain) according with your needs.

For more details related to this topic please watch the following related video training:

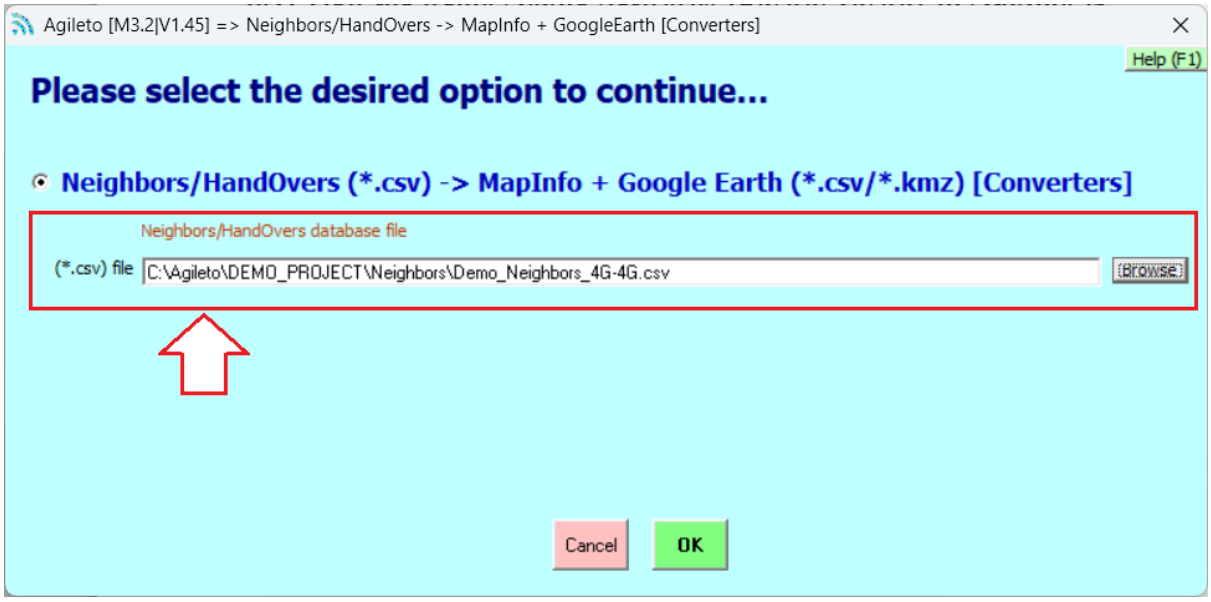
https://youtu.be/D_Mf-kZPoek

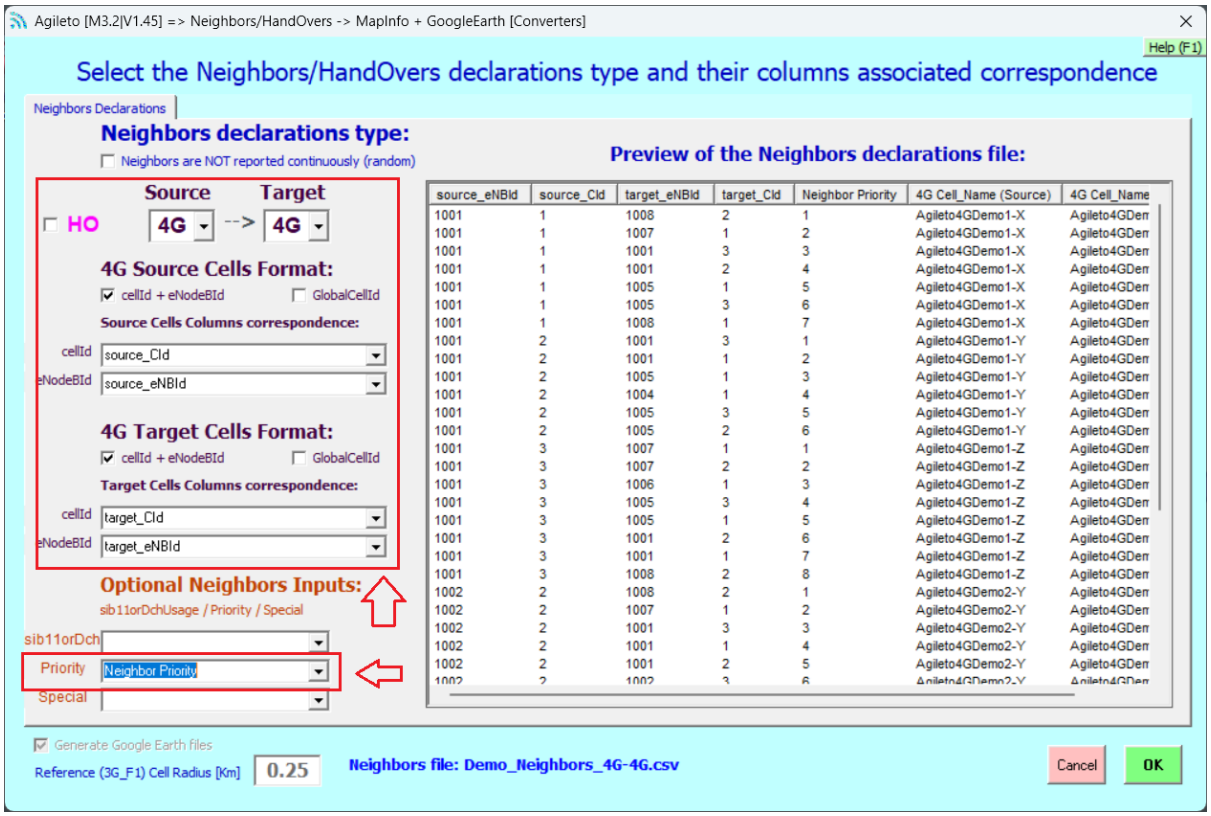
B.4) View the Demo Mobile Networks (2G/3G/4G/5G) in MapInfo & Google Earth:

Idem with A.2 above;

B.5) Generate the Demo Neighbors XG->YG (Ex. 4G->3G) to be changed/visualized in MapInfo and Google Earth:

Run the module M3.2 and select the input files accordingly.





In a similar way like presented above for the 4G technology are processed all the neighbors declarations for all the technologies, including the neighbors related to inter-technologies [Ex. 4G-3G].

The presentation for the potential input neighbors files including the neighbors representation have been already presented in advance here.

Notice:

In the real case when you have access to an export OMC snapshot file, you may run the module M3.1 which is generating automatically all type of the neighbors declarations (5G-5G, 4G->4G, 4G->3G, 4G->2G, 3G->3G, 3G->2G, 2G->2G) based on the real network data neighbors declarations recorded into OMC snapshot file (Agileto tool will parse the input OMC snapshot file and extract this info accordingly).

For more details related to this topic please watch the following related video trainings:

A) M3.1 -> OMC Neighbors: https://youtu.be/TTvFI8YqdOs

B) M3.2 -> Database Neighbors: https://youtu.be/1TgOntWXt9U

B.6) Visualize the Demo Neighbors in MapInfo or Google Earth:

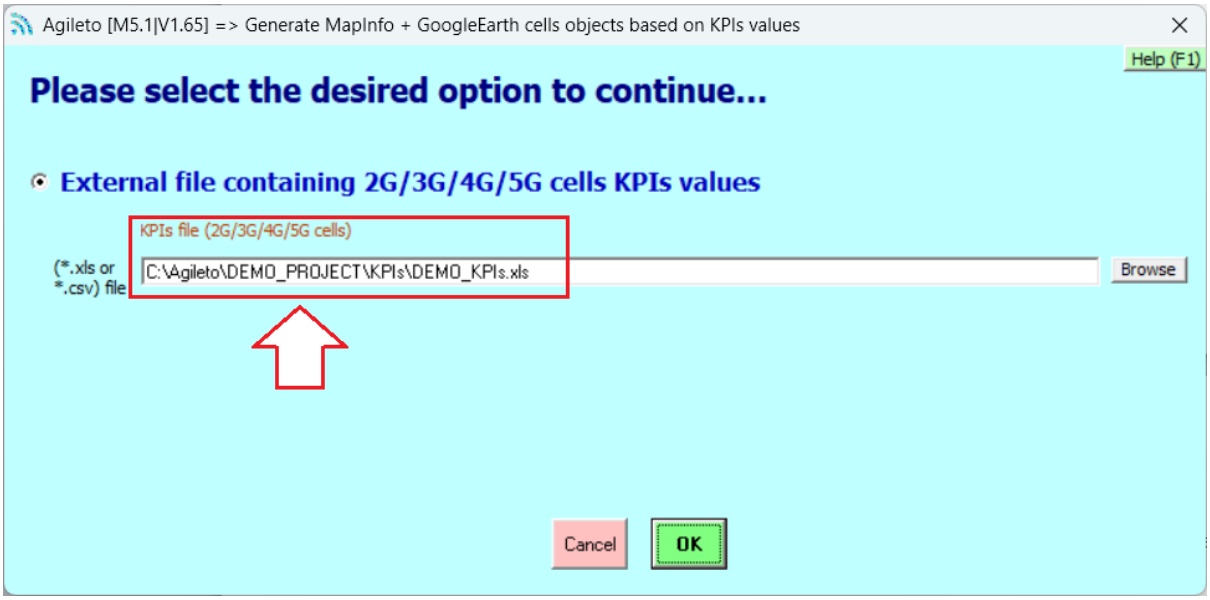
Idem with A.3 above;

B.7) Generate the Demo Mobile Networks KPIs (2G/3G/4G/5G) representation in MapInfo & Google Earth:

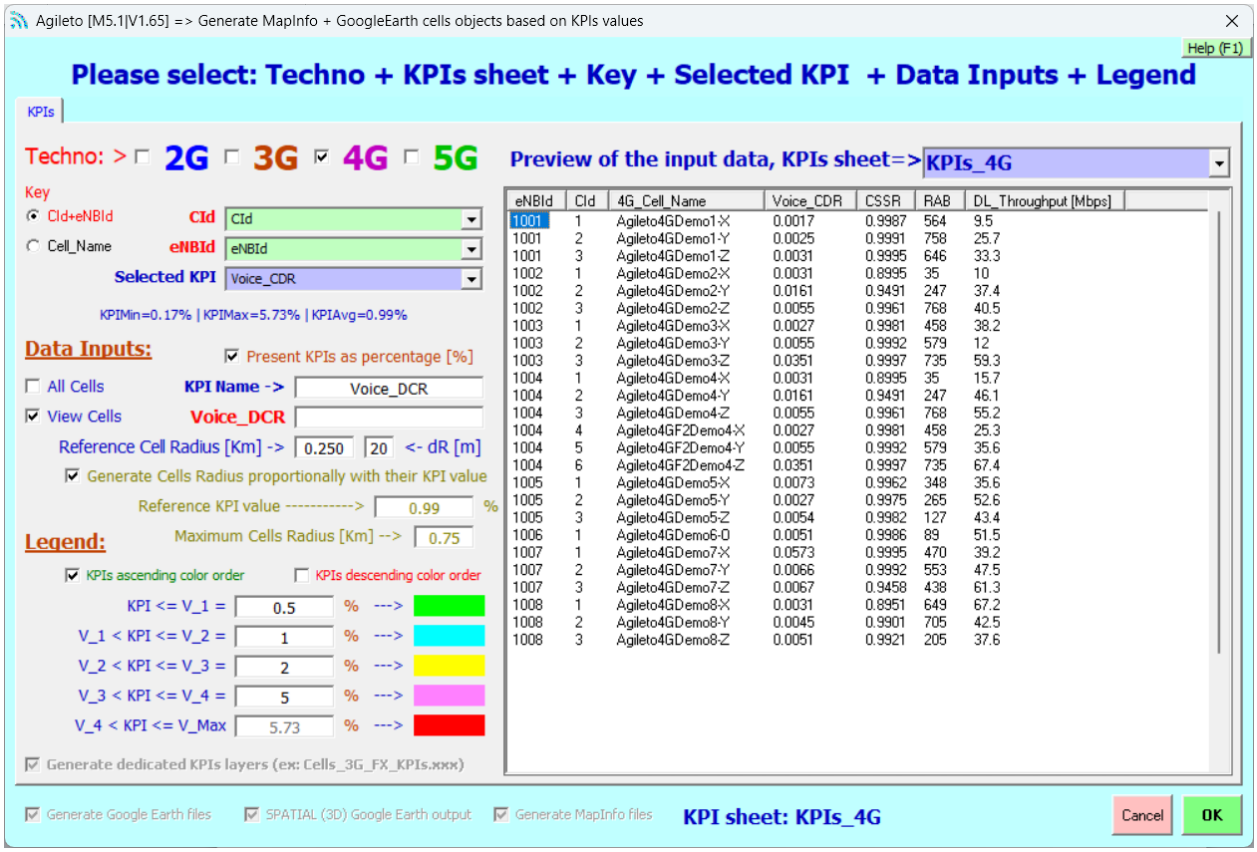
Run the module M5.1 and select as input file accordingly.

Select the following input file:

C:\Agileto\DEMO_PROJECT\KPIs**DEMO_KPIs.xls**



Perform the following following settings for the 4G technology:



eNBId	CId	4G_Cell_Name	Voice_CDR	CSSR	RAB	DL_Throughput [Mbps]
1001	1	Agileto4GDemo1-X	0.0017	0.9987	564	9.5
1001	2	Agileto4GDemo1-Y	0.0025	0.9991	758	25.7
1001	3	Agileto4GDemo1-Z	0.0031	0.9995	646	33.3
1002	1	Agileto4GDemo2-X	0.0031	0.8995	35	10
1002	2	Agileto4GDemo2-Y	0.0161	0.9491	247	37.4
1002	3	Agileto4GDemo2-Z	0.0055	0.9961	768	40.5
1003	1	Agileto4GDemo3-X	0.0027	0.9981	458	38.2
1003	2	Agileto4GDemo3-Y	0.0055	0.9992	579	12
1003	3	Agileto4GDemo3-Z	0.0351	0.9997	735	59.3
1004	1	Agileto4GDemo4-X	0.0031	0.8995	35	15.7
1004	2	Agileto4GDemo4-Y	0.0161	0.9491	247	46.1
1004	3	Agileto4GDemo4-Z	0.0055	0.9961	768	55.2
1004	4	Agileto4GF2Demo4-X	0.0027	0.9981	458	25.3
1004	5	Agileto4GF2Demo4-Y	0.0055	0.9992	579	35.6
1004	6	Agileto4GF2Demo4-Z	0.0351	0.9997	735	67.4
1005	1	Agileto4GDemo5-X	0.0073	0.9962	348	35.6
1005	2	Agileto4GDemo5-Y	0.0027	0.9975	265	52.6
1005	3	Agileto4GDemo5-Z	0.0054	0.9982	127	43.4
1006	1	Agileto4GDemo6-0	0.0051	0.9986	89	51.5
1007	1	Agileto4GDemo7-X	0.0573	0.9995	470	39.2
1007	2	Agileto4GDemo7-Y	0.0066	0.9992	553	47.5
1007	3	Agileto4GDemo7-Z	0.0067	0.9458	438	61.3
1008	1	Agileto4GDemo8-X	0.0031	0.8951	649	67.2
1008	2	Agileto4GDemo8-Y	0.0045	0.9901	705	42.5
1008	3	Agileto4GDemo8-Z	0.0051	0.9921	205	37.6

Similar way there are completed the same KPI (Voice_DCR) for the other technologies and for some others KPIs, too.

Up to the specific KPIs input data rows you need to choose initially which technology is analyzed (**2G**/**3G**/**4G**/**5G**) then proceed with the other settings/selections accordingly.

For more details related to this topic please watch the following related video trainings:

https://youtu.be/3B65edyGBBg

Notice: There is available a special option "**Generate Cell Radius proportionally with its KPI value**". When this option is selected then in addition to the cells color legend, the radius of the cells will be proportionally with their KPI values. This option is useful when we want to visually highlight the cells with KPIs above/below a specific threshold.

On this DEMO_PROJECT help file we will present for each technology (2G/3G/4G/5G) how to generate different KPIs, as following:

B.7-2G) Technology **2G**: KPIs -> **CDR/CSSR/RAB** (3 KPIs)

B.7-3G) Technology **3G**: KPIs -> **CDR/CSSR/RAB** (3 KPIs)

B.7-4G) Technology **4G**: KPIs -> **CDR/CSSR/RAB/DL_Throughput** (4 KPIs)

B.7-5G) Technology **5G**: KPIs -> **CDR/CSSR/RAB/DL_Throughput** (4 KPIs)

B.7-2G) Technology 2G, general settings:

sheet => **KPIs_2G**

Technology selected => **2G**

The Key is => **Cid + LAC**
(these is the common keys between Agileto 2G database and KPIs database Excel file).

B.7-2G Case 1: 2G CDR settings (Call Drop Rate):

Set the above mentioned general settings regarding the KPIs for the technology 2G.

1) Selected_KPI -> **Voice_CDR**

2) DATA Inputs: "**Present KPIs as percentage**" should be **checked** (see then how the values are presented as percentage)

3) KPI Name -> type: "**Voice_DCR**" (this is the user desired name for the KPI selected).

Legend:

4) "**KPIs ascending color order**" should be **checked**.

5) Threshold_1 -> **0.5** (0% < CDR =< 0.5% will be colored in green)

6) Threshold_2 -> **1** (0.5% < CDR =< 1% will be colored in blue)

7) Threshold_3 -> **2** (1% < CDR =< 2% will be colored in yellow)

8) Threshold_4 -> **5** (2% < CDR =< 5% will be colored in pink)

Threshold_5 is auto detected -> (5% < Voice_DCR ------> will be colored in red)

Press **OK** button and the MapInfo & Google Earth output files will be generated.

B.7-2G Case 2: 2G CSSR settings (Call Setup Success Rate):

Set the above mentioned general settings regarding the KPIs for the technology 2G.

1) Selected_KPI -> **CS_CSSR**

2) DATA Inputs: "**Present KPIs as percentage**" should be **checked** (see then how the values are presented as percentage)

3) KPI Name -> type: "**CSSR**" (this is the user desired name for the KPI selected).

Legend:

4) "**KPIs descending color order**" should be **checked** (please notice the difference from the first example).

5) Threshold_1 -> **90** (0% < CSSR =< 90% will be colored in red)

6) Threshold_2 -> **99** (90% < CSSR =< 99% will be colored in pink)

7) Threshold_3 -> **99.5** (99% < CSSR =< 99.5% will be colored in yellow)

8) Threshold_4 -> **99.8** (99.5% < CSSR =< 99.8% will be colored in blue)

Threshold_5 is auto detected-> (99.8% < CSSR -------> will be colored in green)

Press OK button and the MapInfo & Google Earth output files will be generated.

B.7-2G Case 3: 2G RAB settings (Nr of Radio Access Bearers):

Set the above mentioned general settings regarding the KPIs for the technology 2G.

1) Selected_KPI -> **CS_RAB**

2) DATA Inputs: "**Present KPIs as percentage**" should be **unchecked** (to see KPIs values like into the preview table form)

3) KPI Name -> type: "**RAB**" (this is the user desired name/label for the KPI selected).

Legend:

4) "**KPIs descending color order**" should be **checked** (please notice the difference from the first example).

5) Threshold_1 -> **100** (0 < RAB =< 100 will be colored in red)

6) Threshold_2 -> **200** (100 < RAB =< 200 will be colored in pink)

7) Threshold_3 -> **300** (200 < RAB =< 300 will be colored in yellow)

8) Threshold_4 -> **500** (300 < RAB =< 500 will be colored in blue)

Threshold_5 is auto detected -> (500 < RAB ----> will be colored in green)

Press OK button and the MapInfo & Google Earth output files will be generated.

B.7-3G) Technology 3G, general settings:

sheet => **KPIs_3G**

Technology selected => **3G**

The Key is => **Cid + RncId**

(this is the common key between Agileto 3G database and KPIs database Excel file).

B.7-3G Case 1: 3G CDR settings (Call Drop Rate):

Set the above mentioned general settings regarding the KPIs for the technology 3G.

The other settings (points 1 to 8) are the same with those presented at B.7-2G Case 1 above.

B.7-3G Case 2: 3G CSSR settings (Call Setup Success Rate):

Set the above mentioned general settings regarding the KPIs for the technology 3G.

The other settings (points 1 to 8) are the same with those presented at B.7-2G Case 2 above.

B.7-3G Case 3: 3G RAB settings (Nr of Radio Access Bearers):

Set the above mentioned general settings regarding the KPIs for the technology 3G.

The other settings (points 1 to 8) are the same with those presented at B.7-2G Case 3 above.

B.7-4G) Technology 4G, general settings:

sheet => **KPIs_4G**

Technology selected => **4G**

The Key is => **Cid + eNBId**

(this is the common key between Agileto database and KPIs database Excel file).

B.7-4G Case 1: 4G CDR settings (Call Drop Rate):

Set the above mentioned general settings regarding the KPIs for the technology 4G.

1) Selected_KPI -> **Voice_CDR**

The rest of the settings (points 2 to 8) are idem with those presented at B.7-2G Case 1 above.

B.7-4G Case 2: 4G CSSR settings (Call Setup Success Rate):

Set the above mentioned general settings regarding the KPIs for the technology 4G.

1) Selected_KPI -> **CSSR**

The rest of the settings (points 2 to 8) are idem with those presented at B.7-2G Case 2 above.

B.7-4G Case 3: 4G RAB settings (Nr of Radio Access Bearers):

Set the above mentioned general settings regarding the KPIs for the technology 4G.

1) Selected_KPI -> **RAB**

The rest of the settings (points 2 to 8) are idem with those presented at B.7-2G Case 3 above.

B.7-4G Case 4: 4G DL_Throughput settings (Downlink Throughput):

Set the above mentioned general settings regarding the KPIs for the technology 4G.

1) Selected_KPI -> **DL_Throughput [Mbps]**

2) DATA Inputs: "**Present KPIs as percentage**" should be **unchecked** (to see KPIs values like into the preview table form)

3) KPI Name -> type: "**DL_TPut_Mbps**" (this is the user desired name/label for the KPI selected).

Legend:

4) "**KPIs descending color order**" should be **checked**.

5) Threshold_1 -> **10** (0 < DL_Throughput =< 10 will be colored in red)

6) Threshold_2 -> **30** (10 < DL_Throughput =< 30 will be colored in pink)

7) Threshold_3 -> **40** (30 < DL_Throughput =< 40 will be colored in yellow)

8) Threshold_4 -> **50** (40 < DL_Throughput =< 50 will be colored in blue)

Threshold_5 is auto detected -> (50 < DL_Throughput --> will be colored in green)

Press OK button and the MapInfo & Google Earth output files will be generated.

B.7-5G) Technology 5G, general settings:

sheet => **KPIs_5G**

Technology selected => **5G**

The Key is => **Cid + gNBId**

(this is the common key between Agileto database and KPIs database Excel file).

Notice: 5G KPIs cases are very similar like they were presented here for the 4G Technology

B.8) View the Demo Mobile Networks KPIs representation in MapInfo & Google Earth:

Idem with A.4 above;

Feedback

For any feedback, comments and/or suggestions please do not hesitate to contact us by one of the details presented below.

Agileto® contact details:

web site: http://www.agileto.com

sales: sales@agileto.com

support: support@agileto.com

Facebook: https://www.facebook.com/agileto

Telegram: https://t.me/agileto and https://t.me/agileto_news

Tel: +40 773 991 443 WhatsApp (Mon-Fri, 8:00-15:00 GMT)