

REPUBLIC INDONESIA
KEMENTERIAN HUKUM DAN HAK ASASI MANUSIA

SURAT PENCATATAN CIPTAAN

Dalam rangka perlindungan ciptaan di bidang ilmu pengetahuan, seni dan sastra berdasarkan Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta, dengan ini menerangkan:

Nomor dan tanggal permohonan : EC002022101704, 8 Desember 2022

Pencipta

Nama : **Ir. Sirmayanti, S.T., M.Eng., Ph.D, IPM, Sahbuddin Abdul Kadir, A.Md, S.T, M.T dkk**

Alamat : **Jl. Dg Ramang, Komp Griya Mulia Asri Blok F No.1 , Makassar, SULAWESI SELATAN, 90242**

Kewarganegaraan : **Indonesia**

Pemegang Hak Cipta

Nama : **P3M Politeknik Negeri Ujung Pandang**

Alamat : **Jl. Perintis Kemerdekaan KM 10, Makassar, SULAWESI SELATAN, 90245**

Kewarganegaraan : **Indonesia**

Jenis Ciptaan : **Kompilasi Ciptaan / Data**

Judul Ciptaan : **RF Data Anylisis Of LTE Network**

Tanggal dan tempat diumumkan untuk pertama kali di wilayah Indonesia atau di luar wilayah Indonesia : **18 Agustus 2021, di Makassar**

Jangka waktu perlindungan : **Berlaku selama 50 (lima puluh) tahun sejak Ciptaan tersebut pertama kali dilakukan Pengumuman.**

Nomor pencatatan : **000417448**

adalah benar berdasarkan keterangan yang diberikan oleh Pemohon.

Surat Pencatatan Hak Cipta atau produk Hak terkait ini sesuai dengan Pasal 72 Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta.



a.n Menteri Hukum dan Hak Asasi Manusia
Direktur Jenderal Kekayaan Intelektual
u.b.
Direktur Hak Cipta dan Desain Industri

Anggoro Dasananto
NIP.196412081991031002

Disclaimer:

Dalam hal pemohon memberikan keterangan tidak sesuai dengan surat pernyataan, Menteri berwenang untuk mencabut surat pencatatan permohonan.

LAMPIRAN PENCIPTA

No	Nama	Alamat
1	Ir. Sirmayanti, S.T., M.Eng., Ph.D, IPM	Jl. Dg Ramang, Komp Griya Mulia Asri Blok F No.1
2	Sahbuddin Abdul Kadir, A.Md, S.T, M.T	BTN PEPABRI Blok C7 No 20
3	Lidemar Halide, S.T., M.T	Jl. Kandeia Kompleks Unhas No. 26
4	Adnan Novikar	Jl.Anggur No.12, Desa Baruga, Kec.Malili
5	Nurul Mujahidah	Dusun Tobunne, RT/RW 001, Desa Gona, Kecamatan Kajuara
6	Farhan Rahman	BTN Taroda Permai A5/12, Maccopa, Kec. Turikale



DOKUMEN CIPTAAN

JENIS: KOMPILASI DATA

JUDUL:

RF Data Analysis of LTE Network

PENCIPTA/INVENTOR:

Sirmayanti
Sahbuddin Abdul Kadir
Lidemar Halide
Adnan Novikar
Nurul Mujahidah
Farhan Rahman



RF Data Analysis of LTE Network

Tim Work:

- *Sirmayanti*
- *Sahbuddin Abdul Kadir*
- *Lidemar Halide*
- *Adnan Novikar*
- *Nurul Mujahidah*
- *Farhan Rahman*

Subjek: Data *Radio Frequency* (RF) dari aktivitas site audit dan pengukuran kualitas radio menggunakan tool Drive Test Nemo Handy. Data ini bertujuan untuk pengukuran *Key Performance Indicator* (KPI) LTE jaringan Seluler 4G pada operator eksis.

Deskripsi: Data yang diperoleh menghasilkan referensi KPI, jenis parameter radio yang tepat, jumlah antenna MIMO yang digunakan, jarak jangkauan repeater yang dipasang, serta perhitungan budget link dan cost instalasi pada penerapan BTS-mini (Mi-Fi) jaringan seluler 4G pada wilayah-wilayah rural full-fading seperti pegunungan, lembah, dsb. Metode perancangan BTS Mi-Fi 4G berdasarkan arsitektur skema RF-upconverter yang telah terbukti memiliki kestabilan dalam BTS cell coverage. Mi-Fi 4G dirancang dengan konsep inovasi digitalisasi BTS bersifat mWatt transmitter untuk menunjang terwujudnya green-BTS yang ramah lingkungan dan Tx-low power. Objek Pengukuran dilakukan di wilayah Rammang-rammang Kabupaten Maros dengan operator eksis TELKOMSEL.

Prosedur: Gambar 1

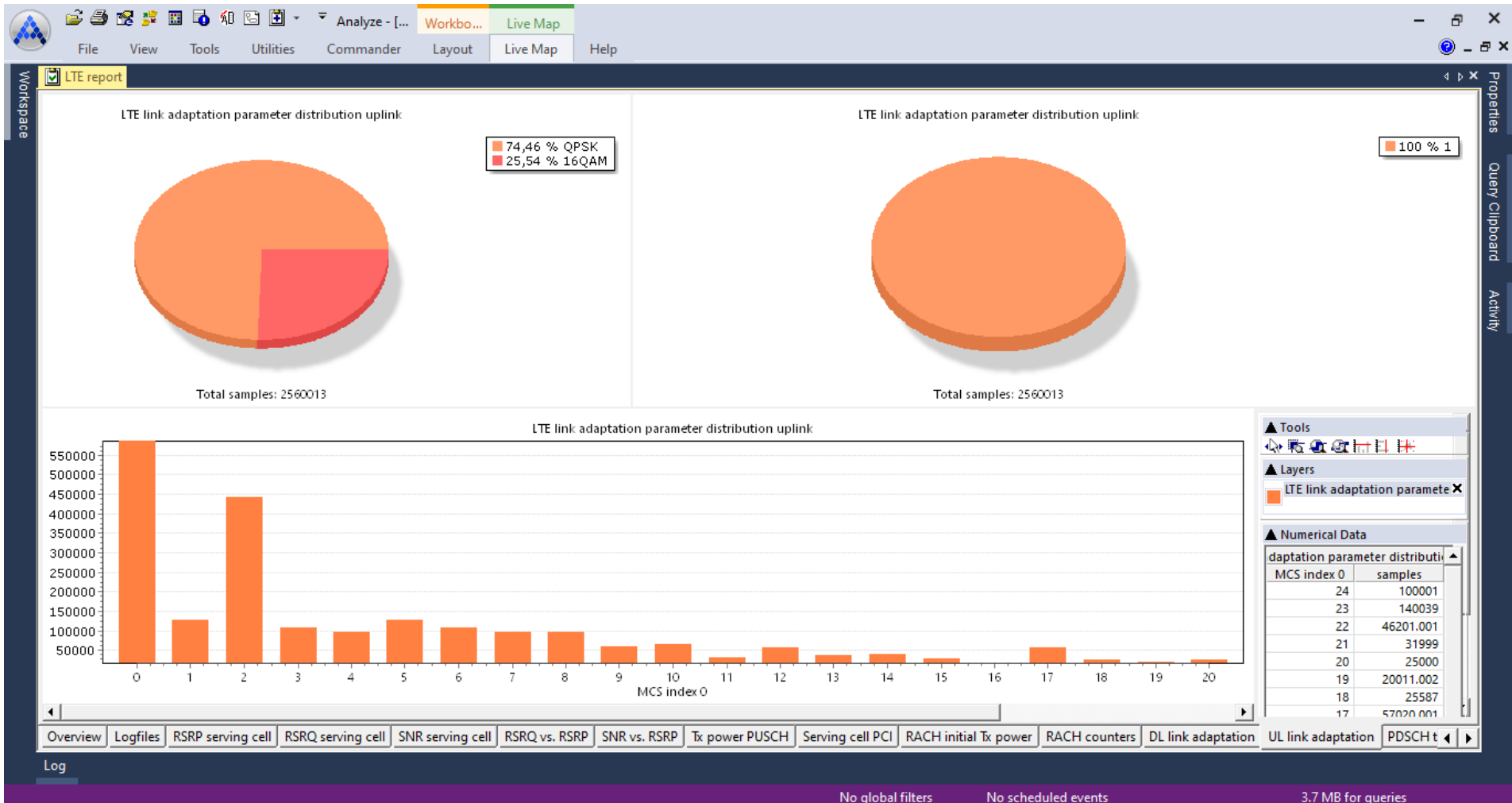
Langkah optimasi RF seperti pada Gambar 1.

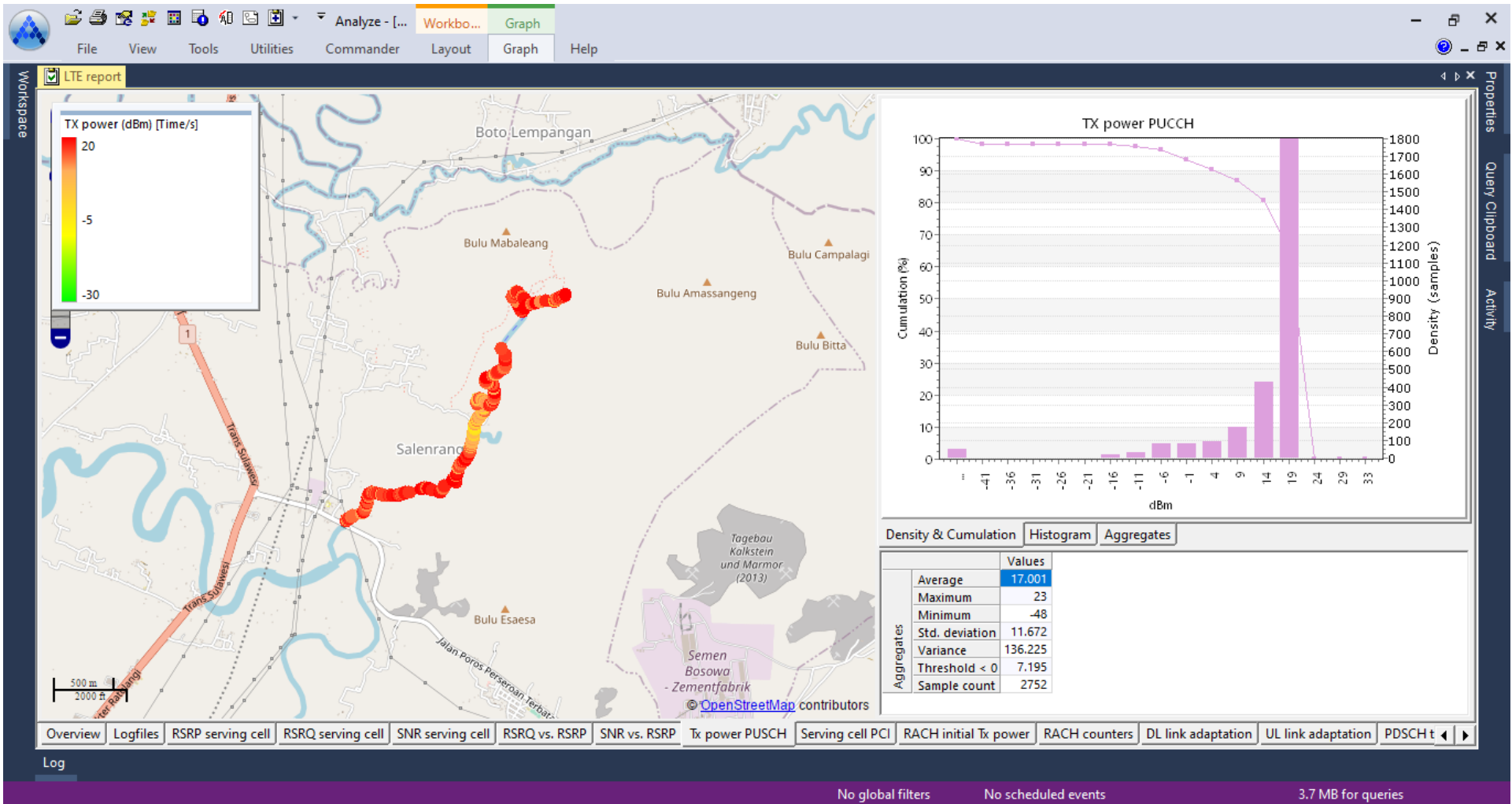


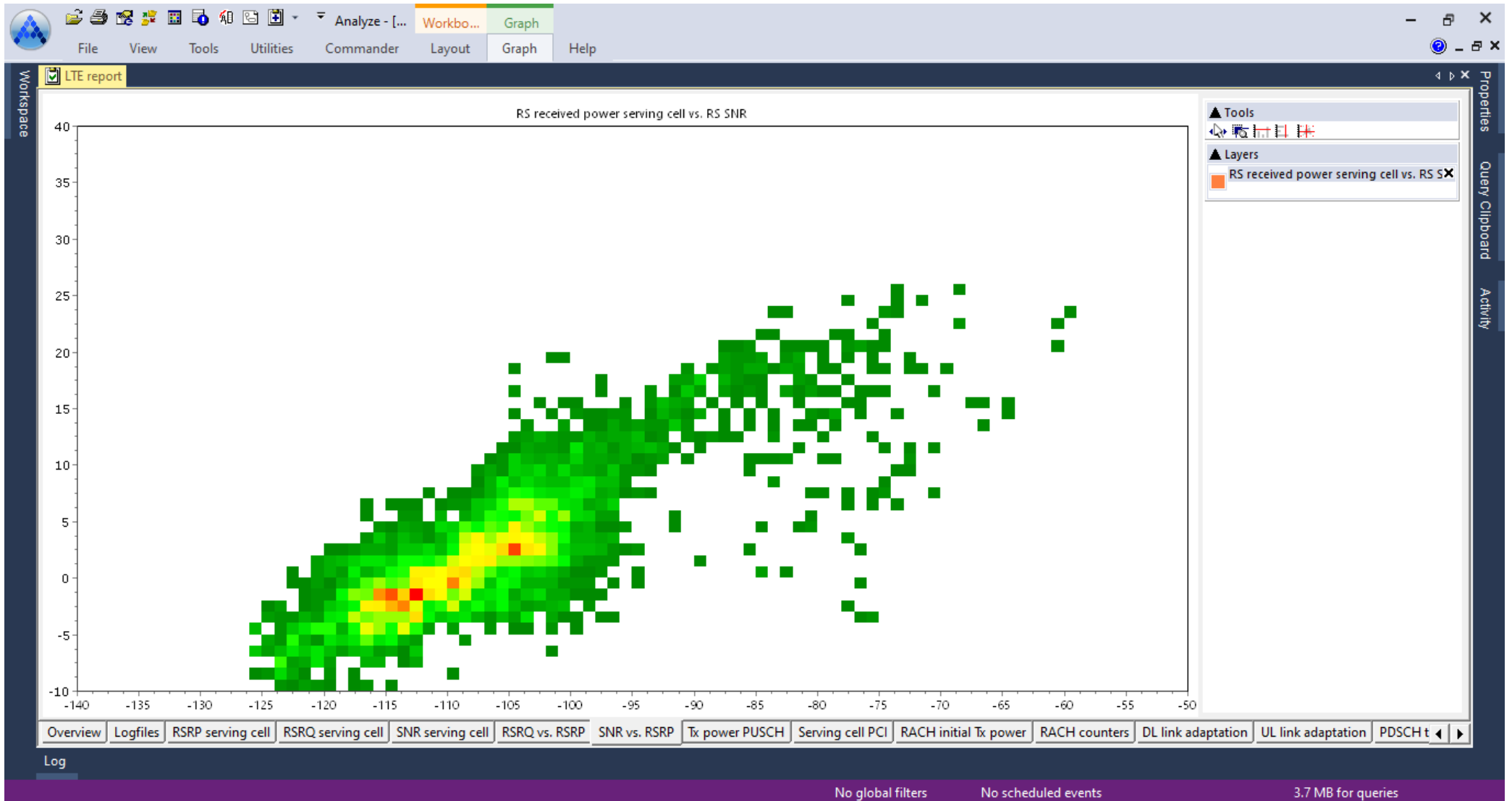
Gambar 1. Target wilayah BTS cell untuk pengukuran Drive/Walking Test (DT/WT). Warna merah adalah wilayah BTS eksis dan Warna Kuning/Hijau adalah wilayah target Wi-Fi 4G

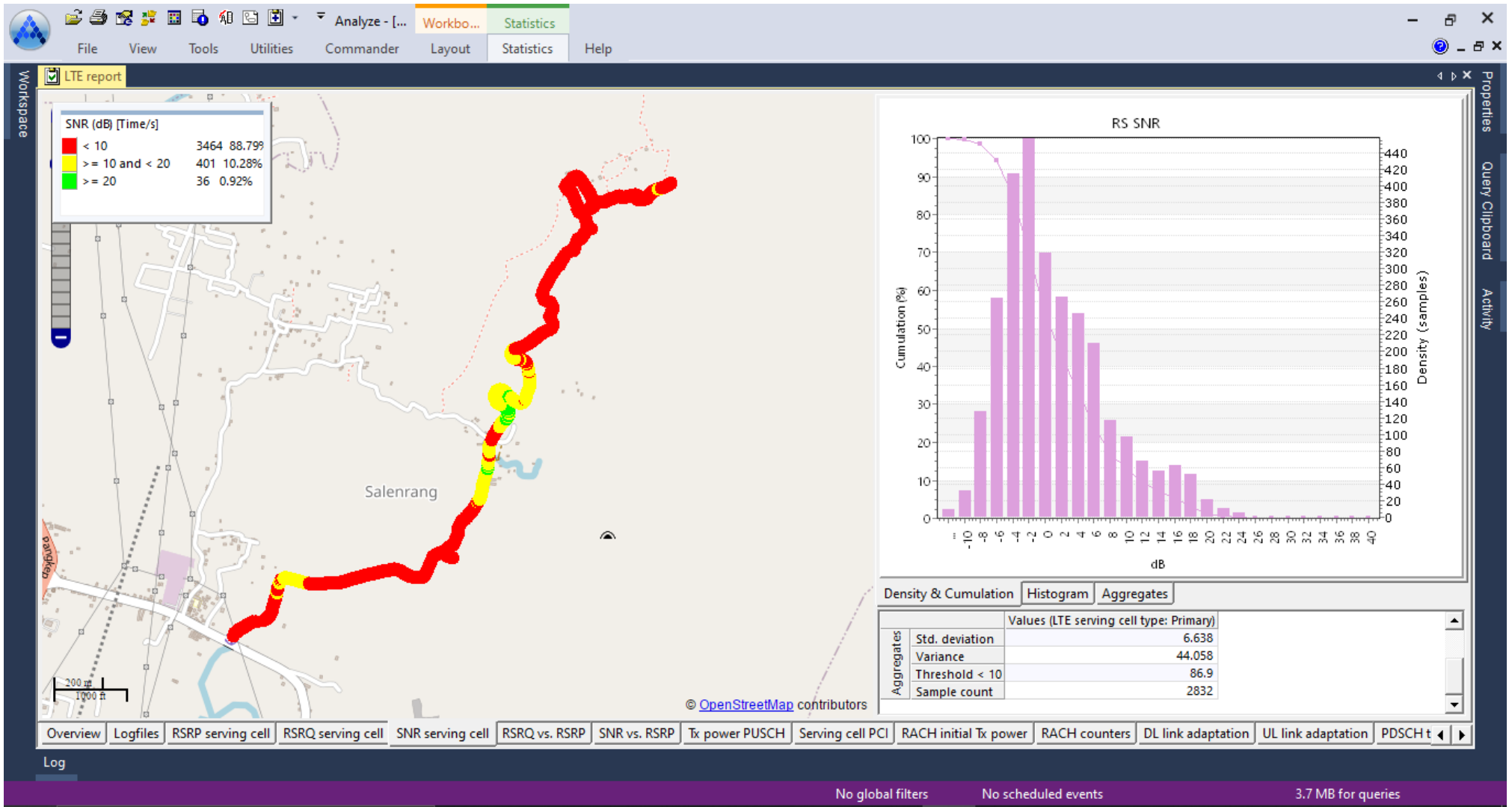
Hasil: Data menunjukkan KPI Optimasi jaringan BTS eksis melalui pengukuran Drive/Walk Testing. Metode ini juga diperkuat dengan penerapan co-operative wireless radio dimana Mi-Fi 4G bukan hanya berperan sebagai transmitter (Tx) namun terintegrasi sebagai akses relay yang dapat memaksimalkan jangkauan hopping signal kepada area tertentu. Kelebihan Mi-Fi 4G adalah karena dilengkapi dengan teknologi antenna Tx/Rx multiple input multiple output (MIMO) sehingga menguatkan interference reduction dan distortion cancellation disetiap proses transmisi signal pada BTS.

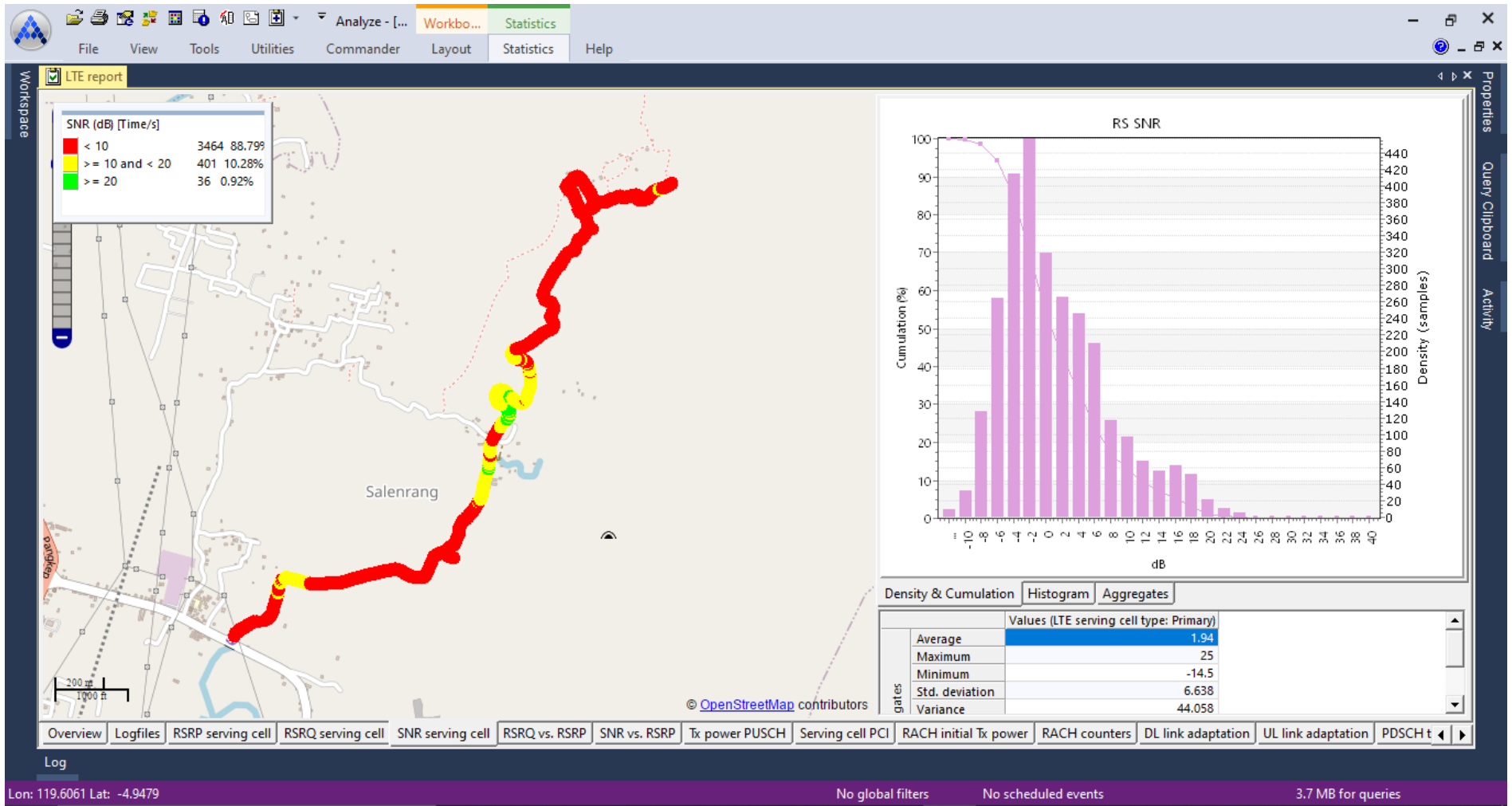
Lampiran: Capture original LTR-Report (30 gambar)

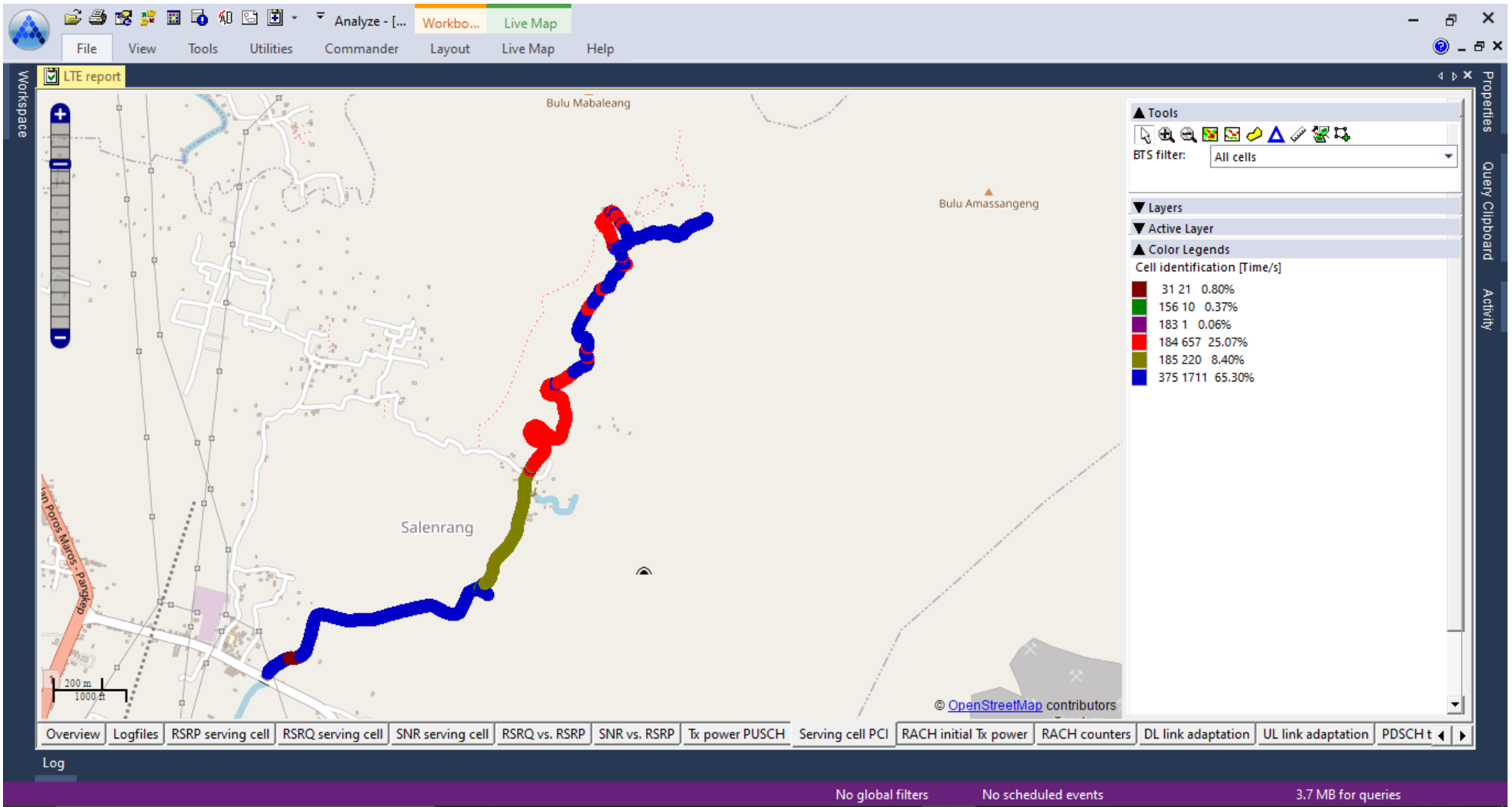


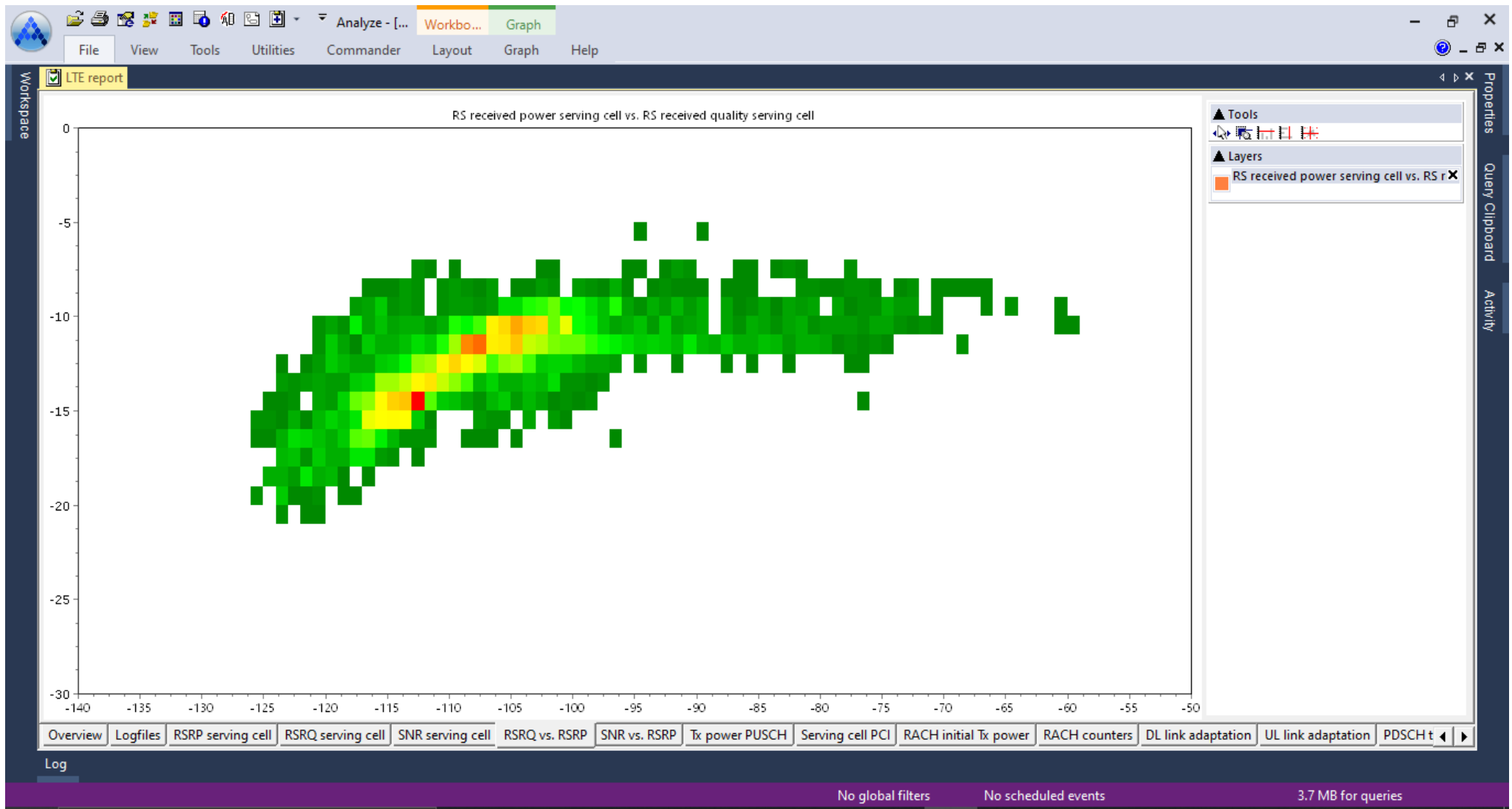


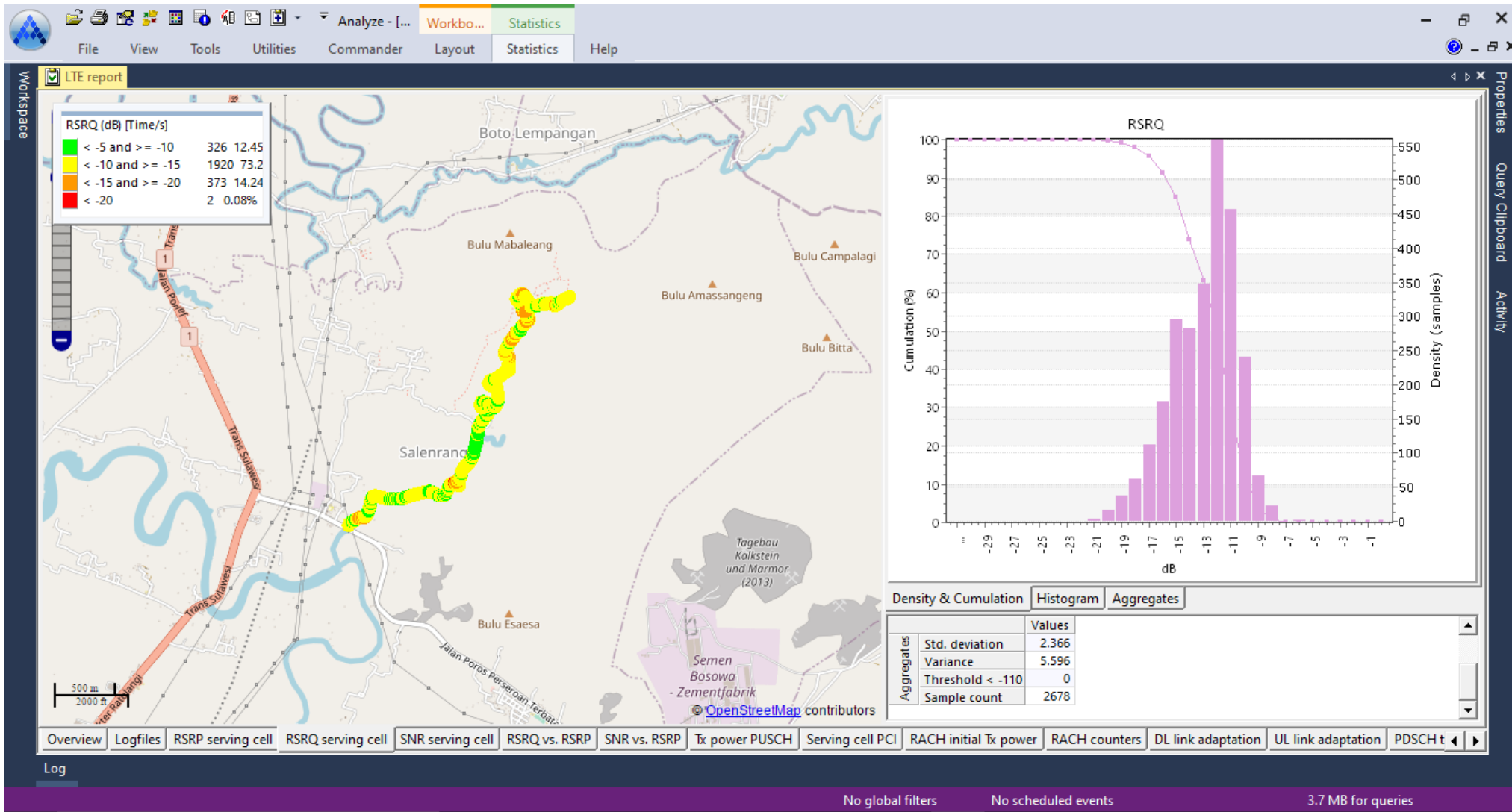


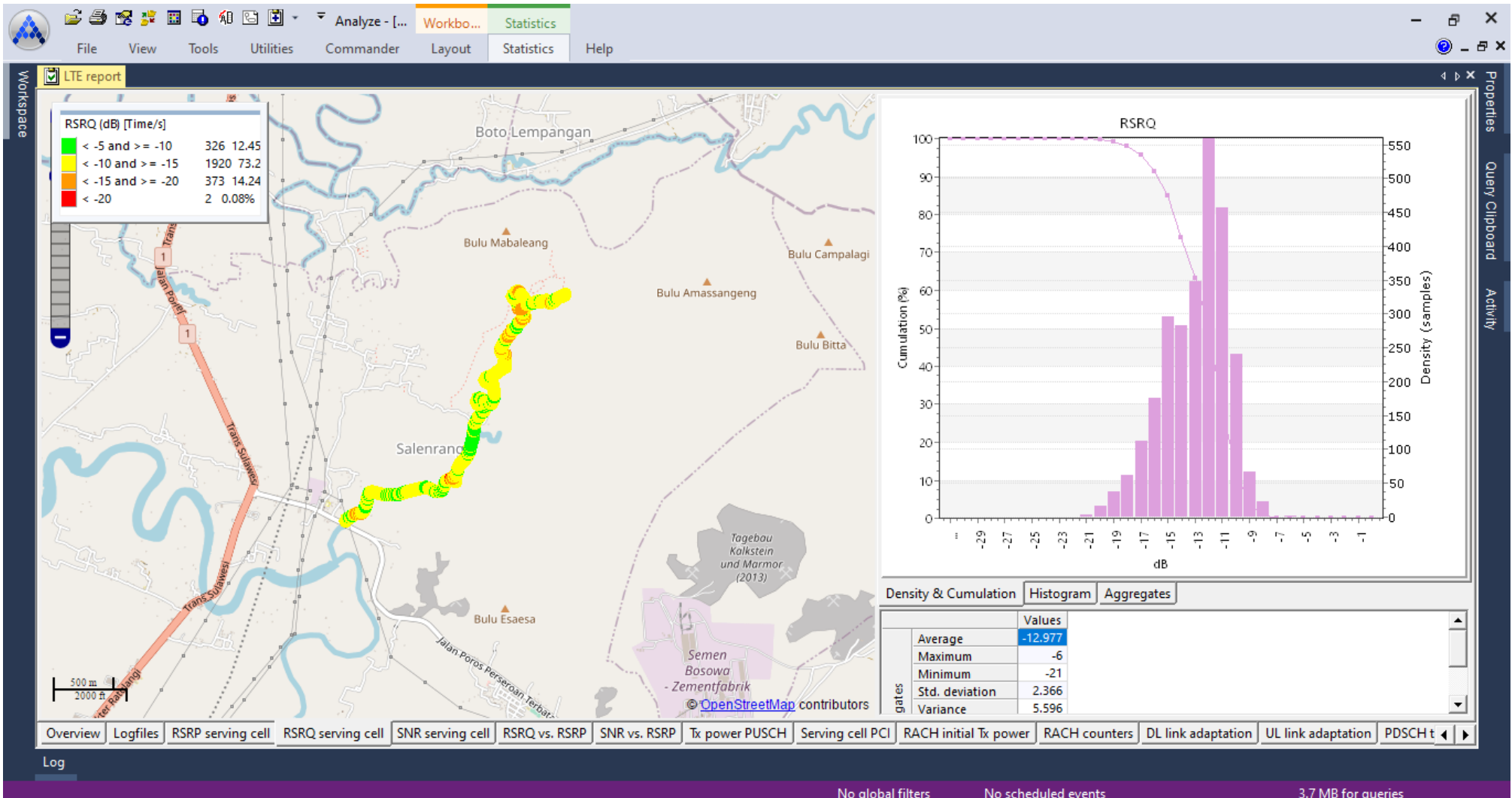


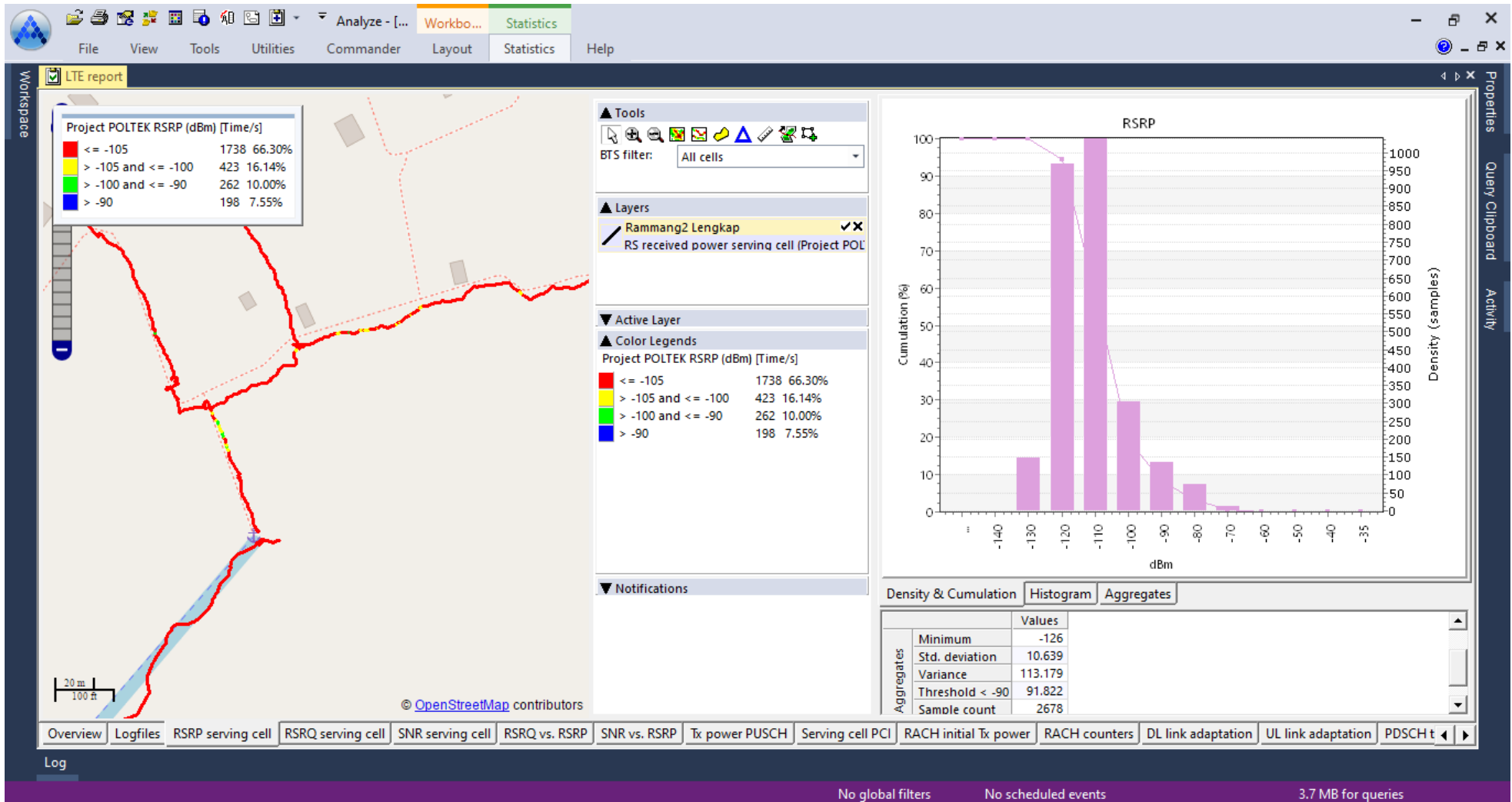


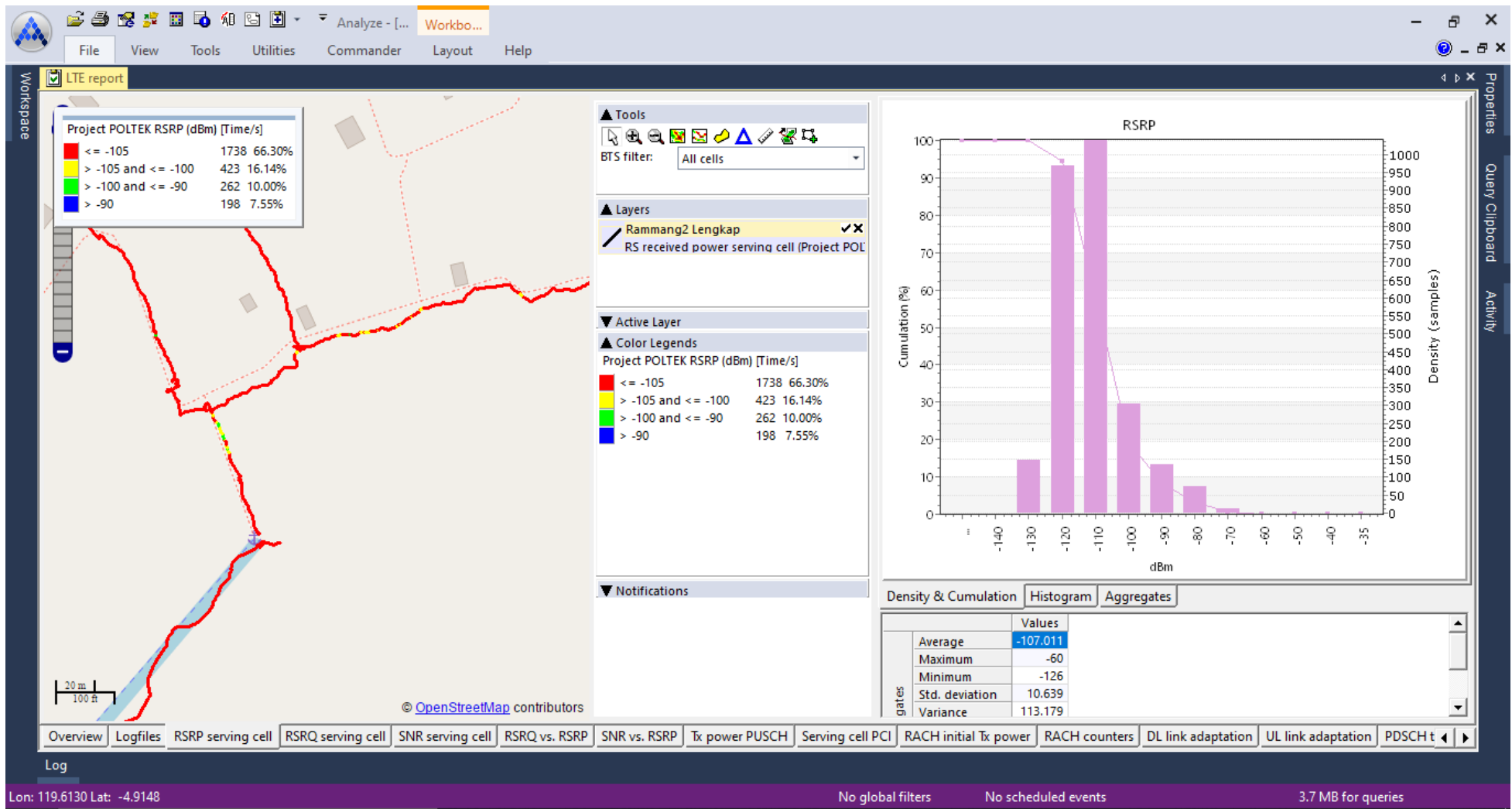


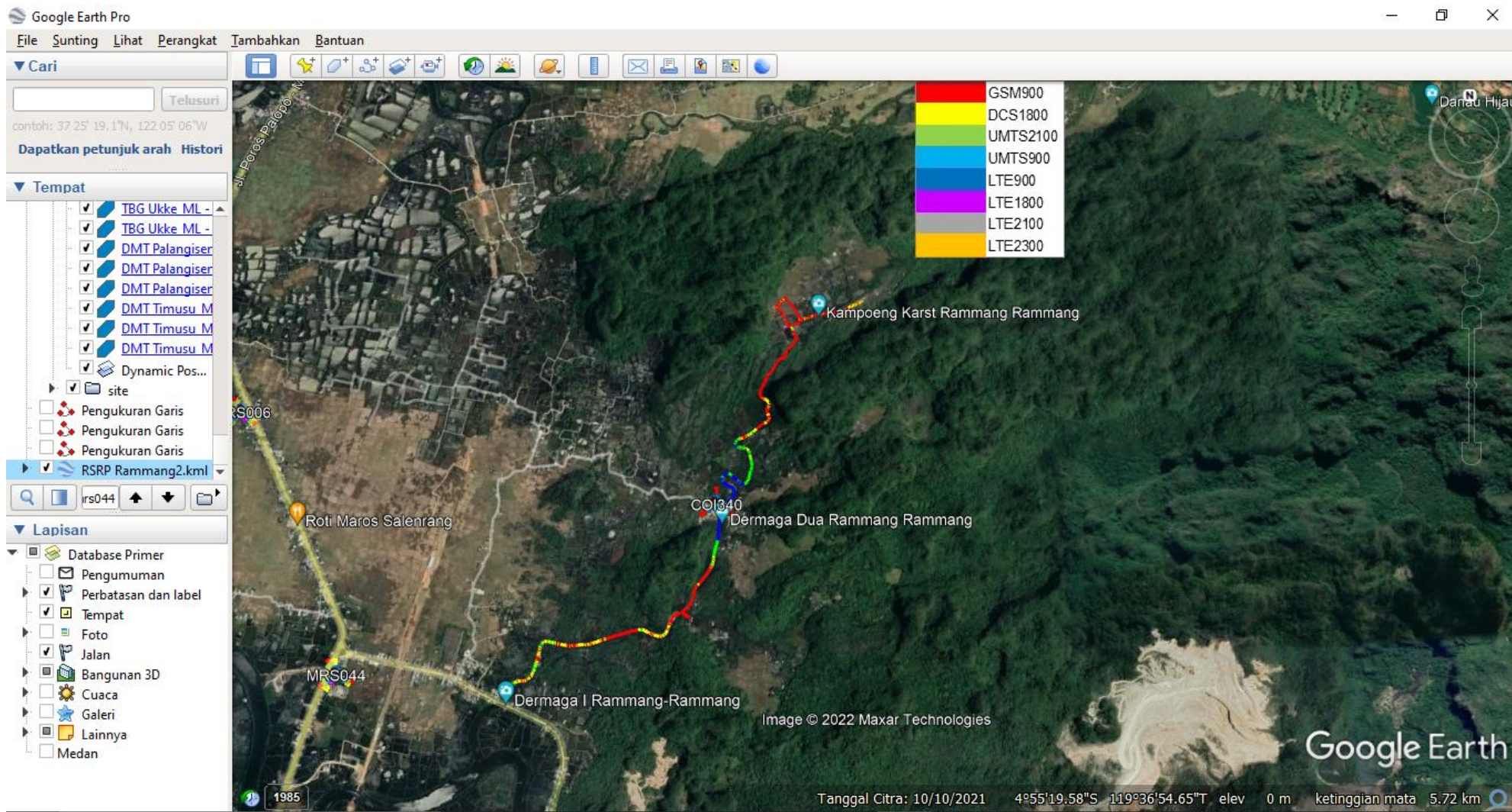


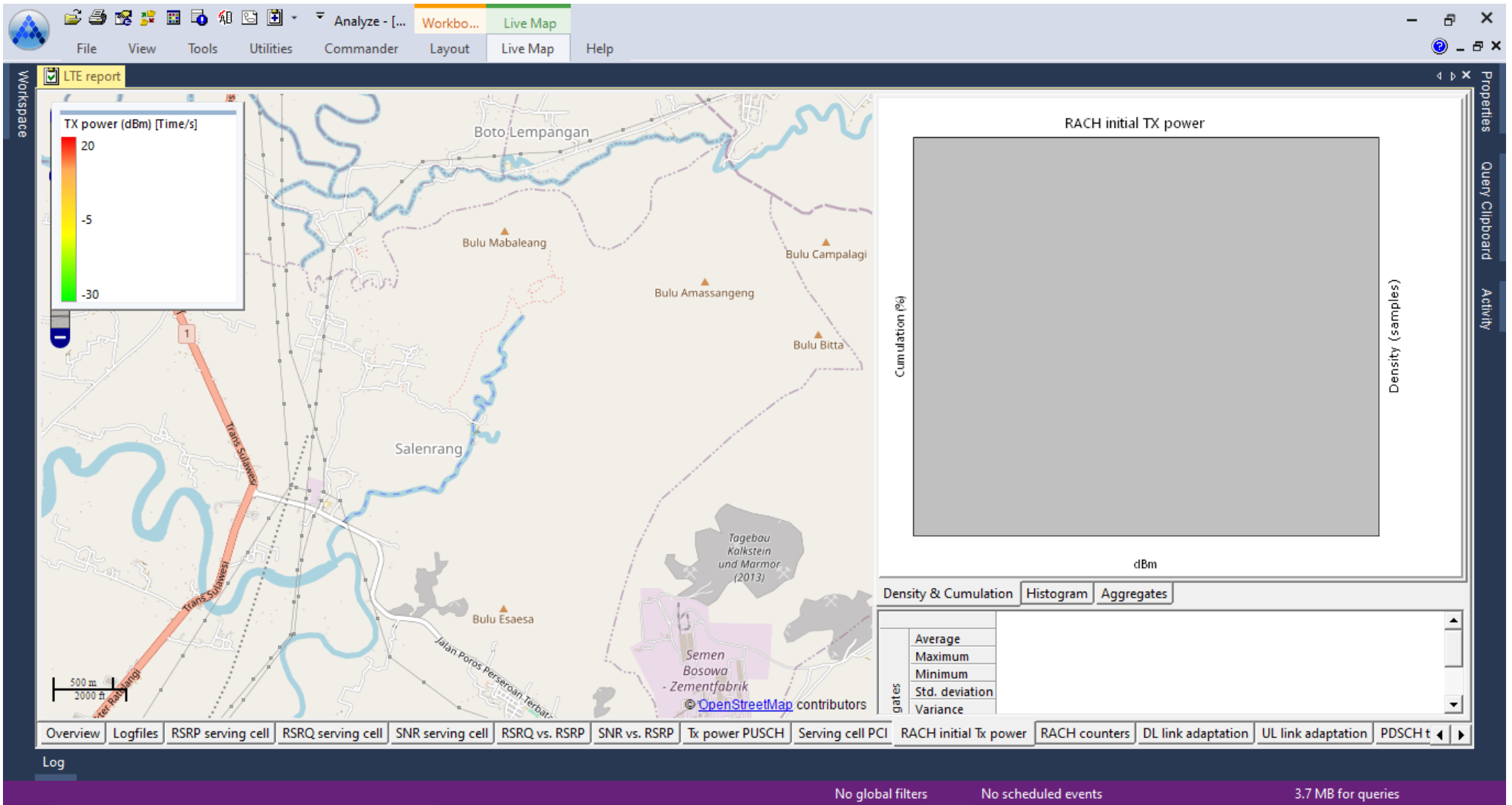


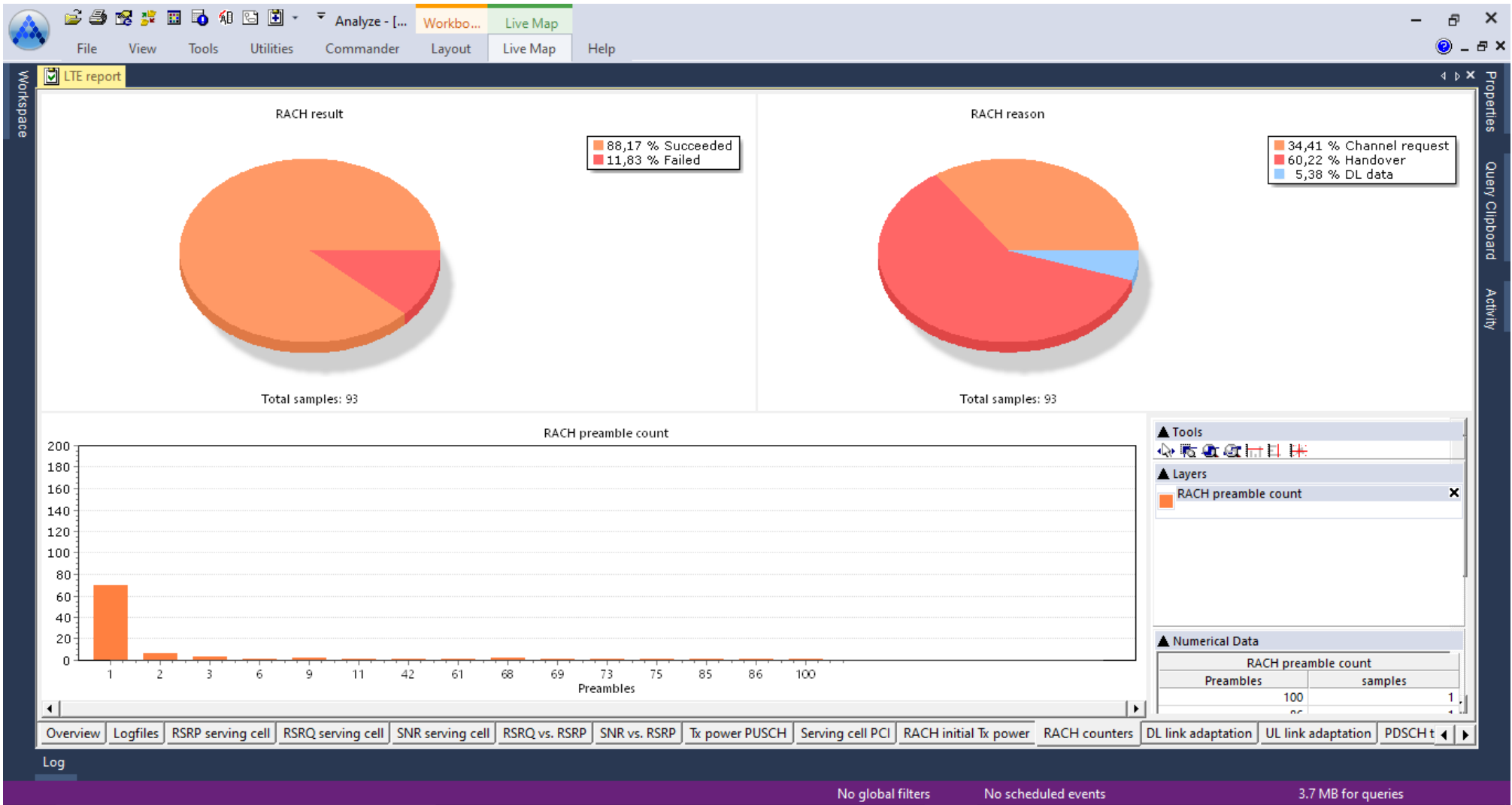


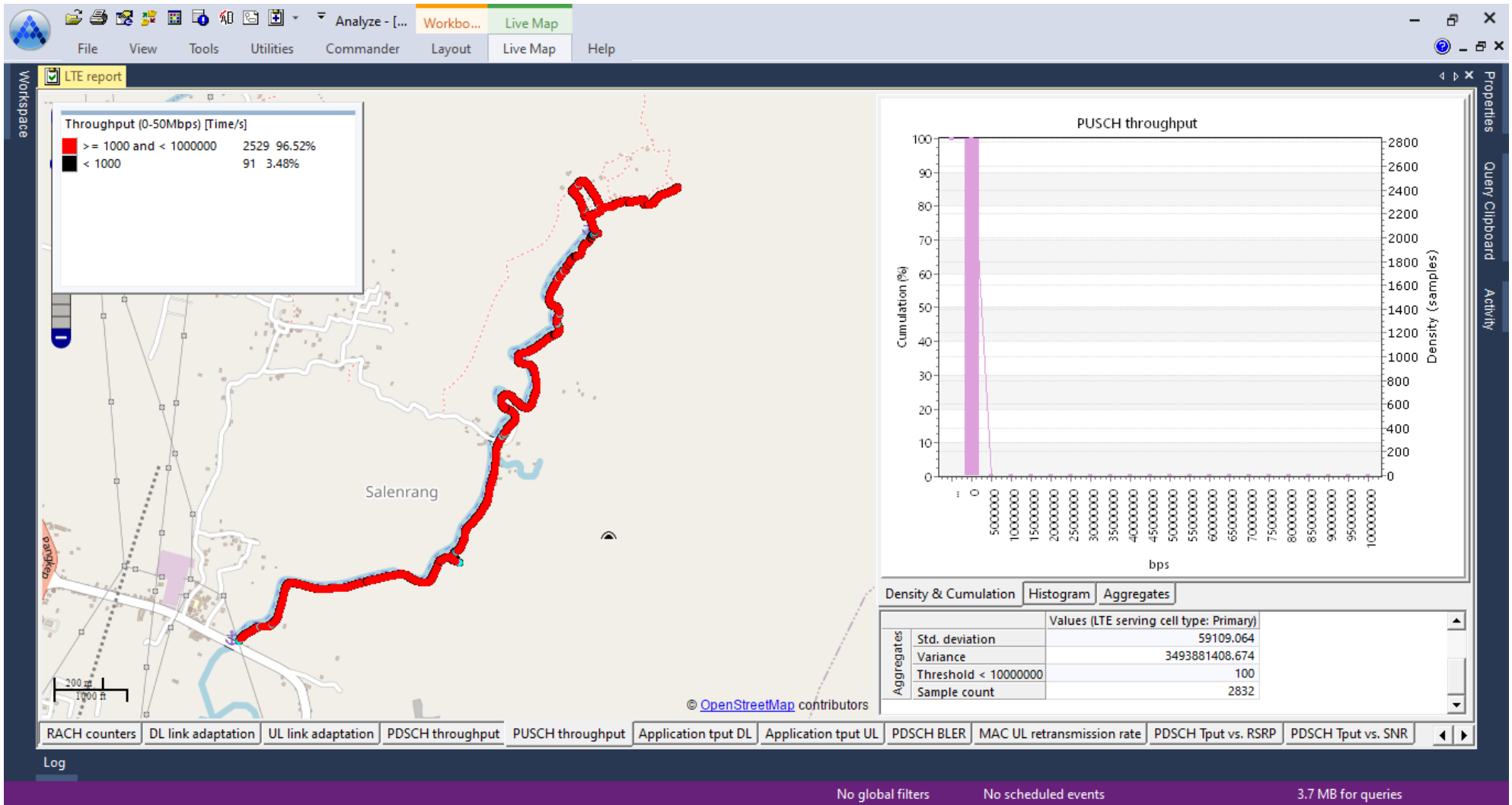


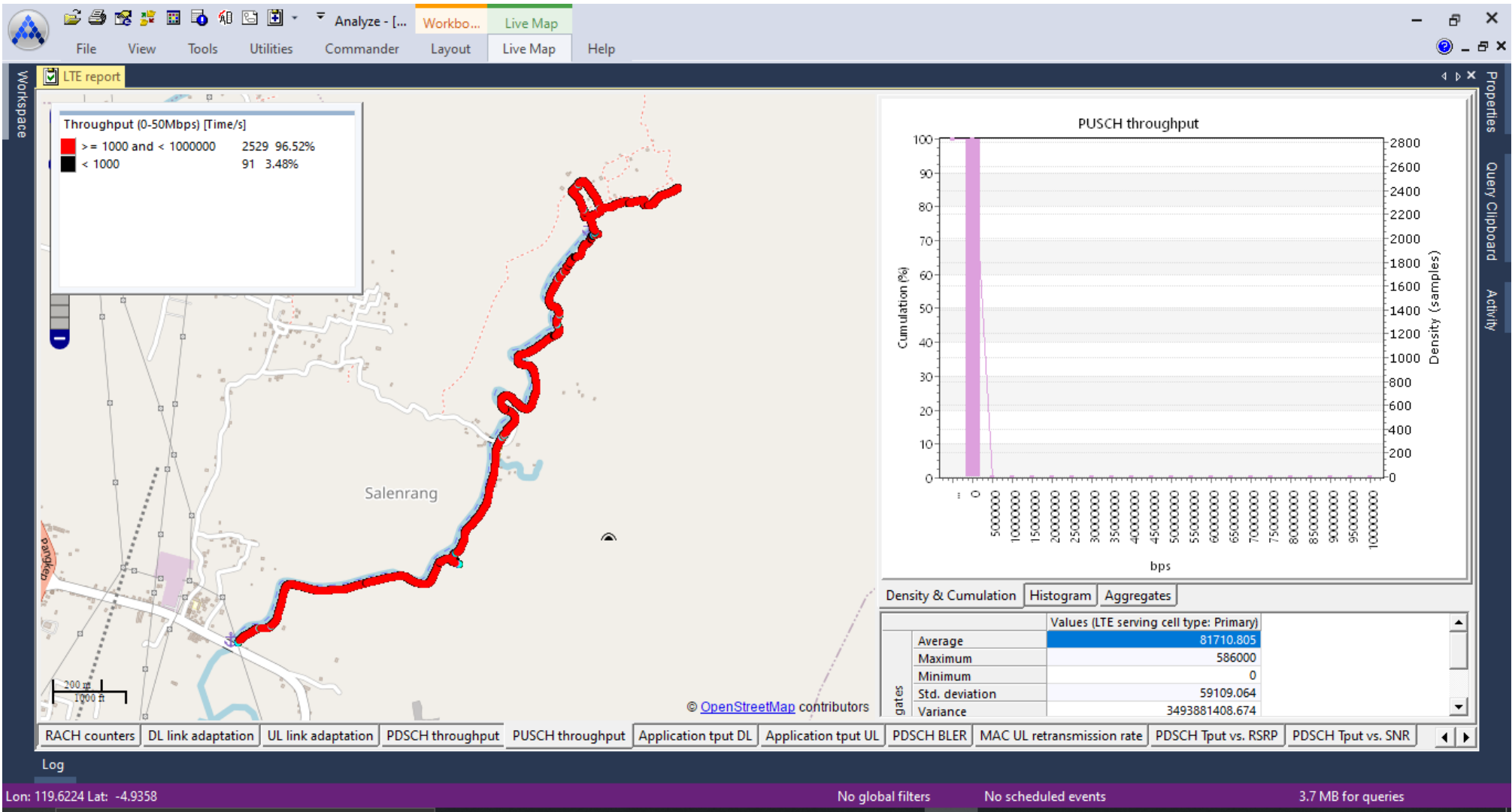


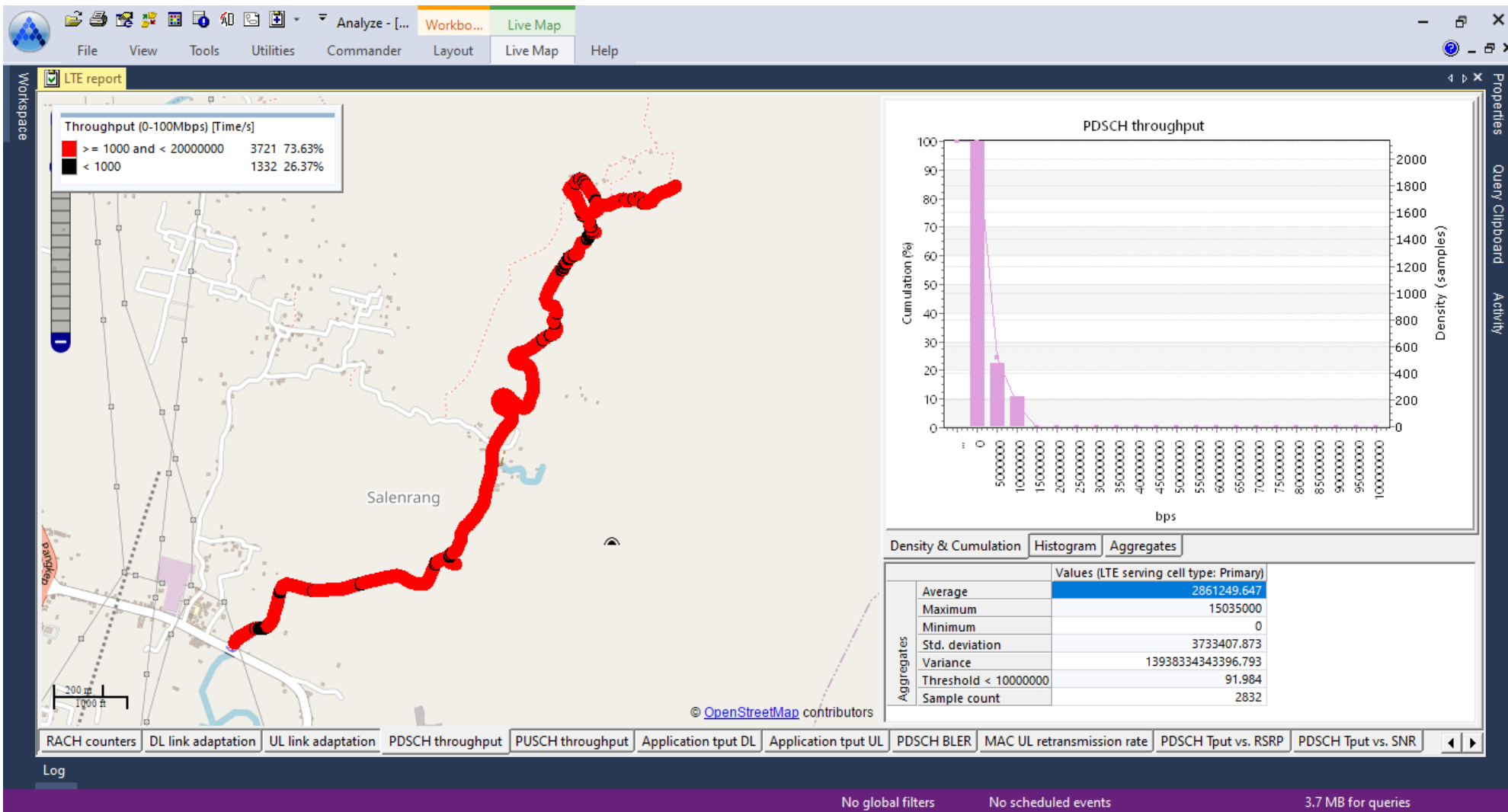


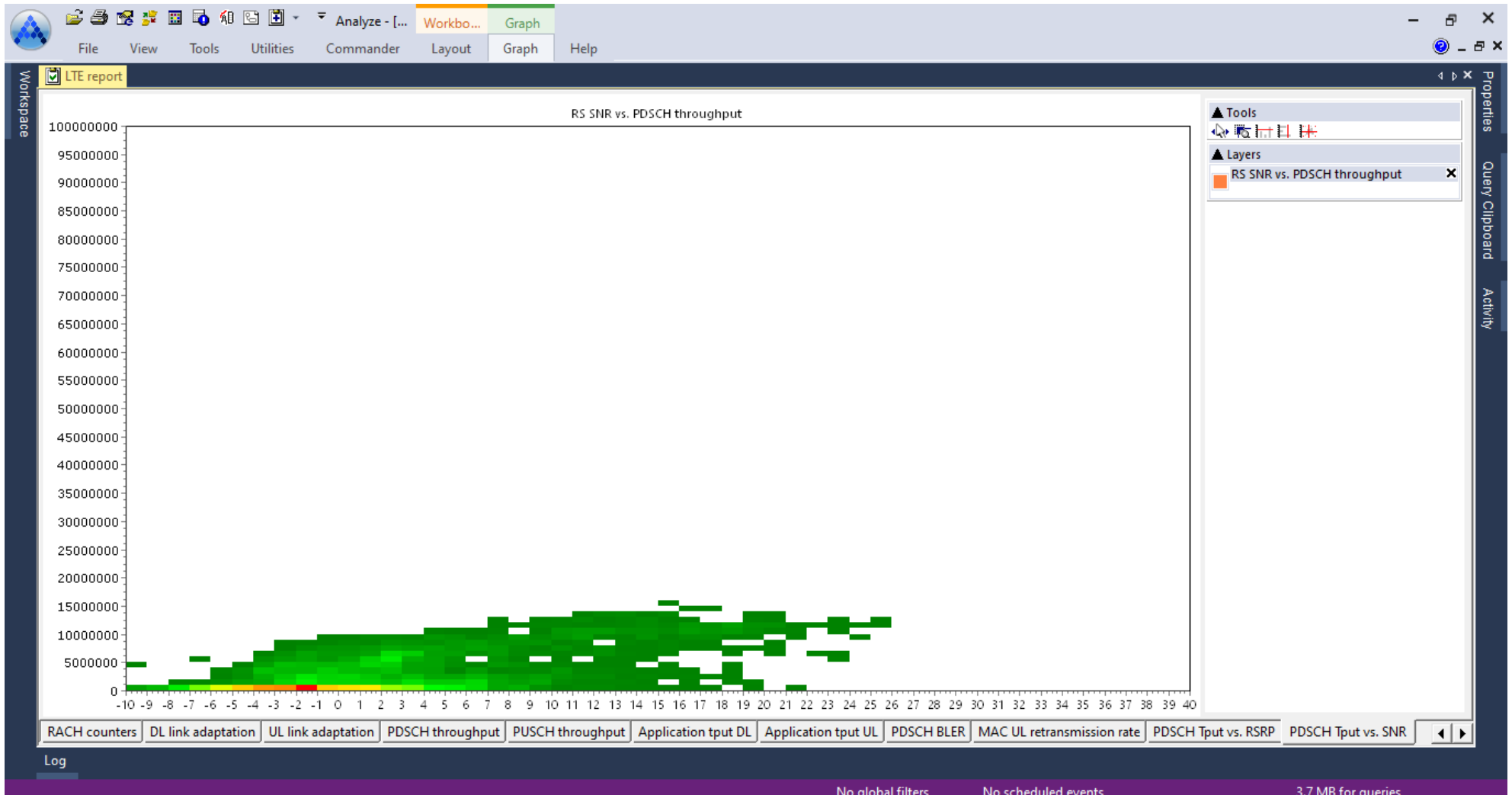


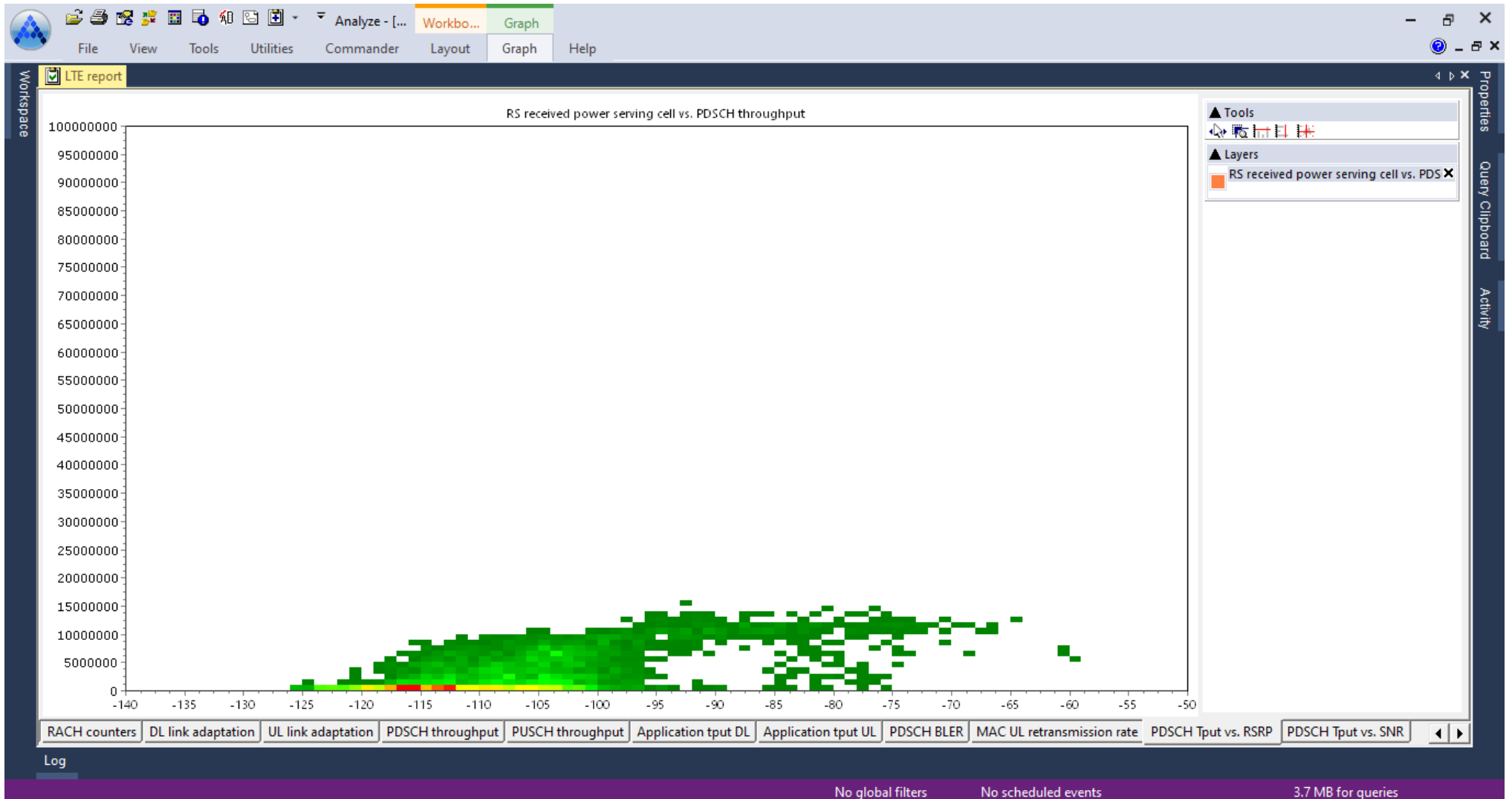


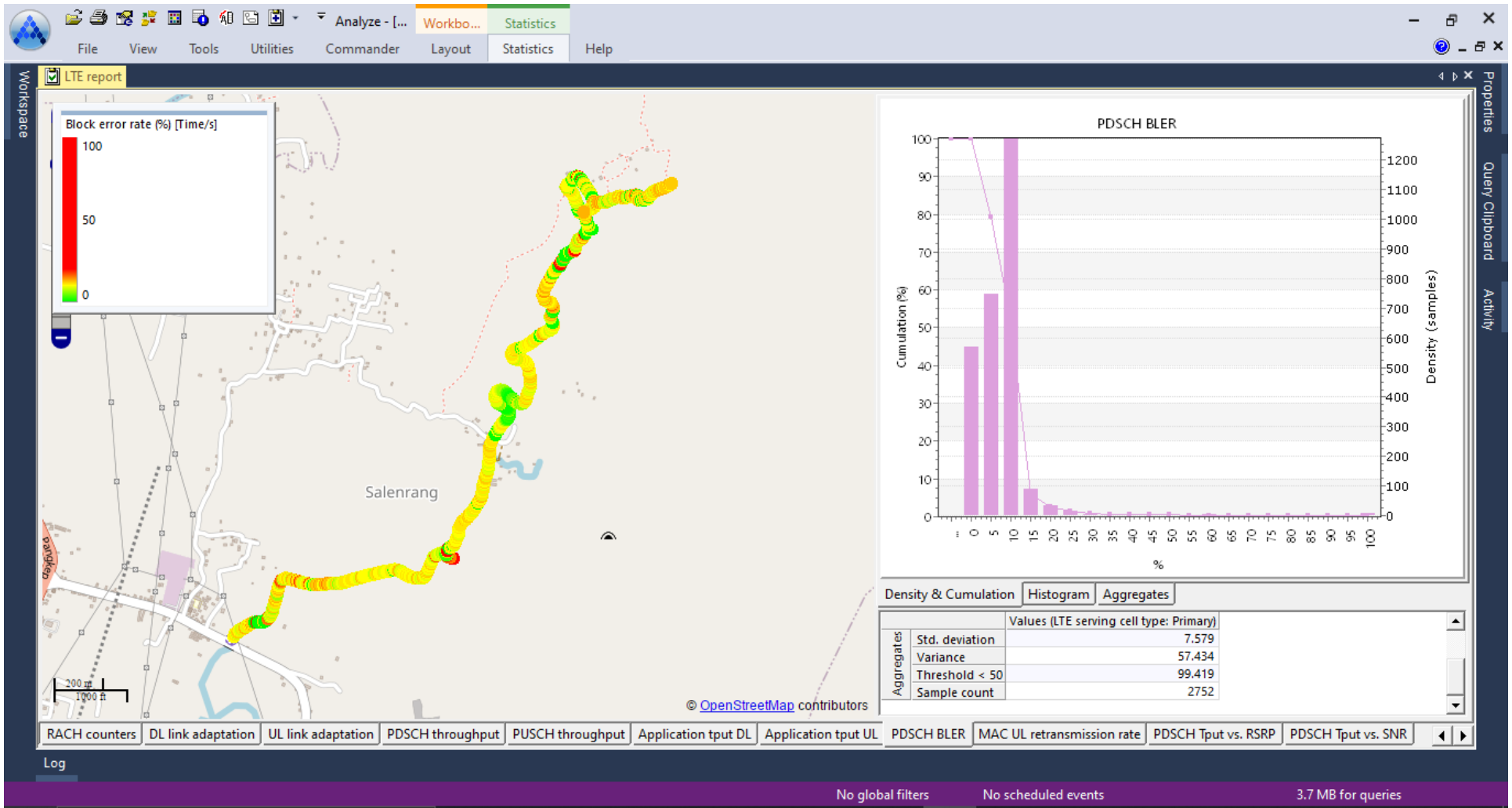


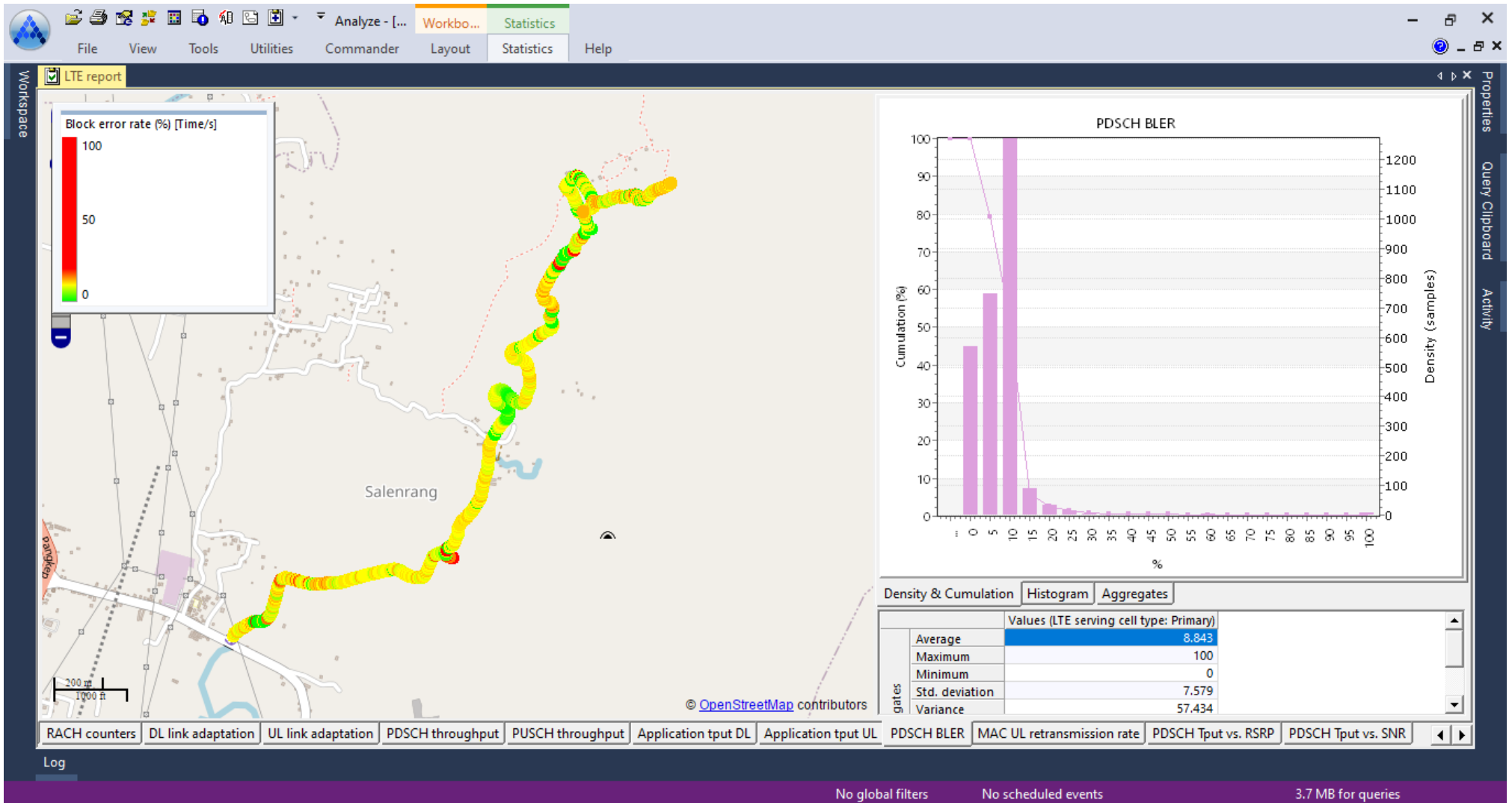












File View Tools Utilities Commander Layout Statistics Help

1 LTE Report

Cluster details:
Date:
Engineer name:

B29	=IF((B26=0);0;(B27/B26))	
A	B	C
Data transfer statistics		
Data server connection attempt	21	
Data server connection attempt failure	4	
Data server connect	17	
Data server disconnect	10	
Data server connection dropped	7	
Data server connection success rate	80.95 %	
Data server connection cut-off rate	41.18 %	
File transfer statistics		
File transfer request	18	
File transfer complete	10	
File transfer dropped	8	
File transfer success rate	55.56 %	

Aggregates		Rammang2 Lengkap
Average		5151521.601
Maximum		14547520
Minimum		0
Std. deviation		3662093.943
Variance		13410932049873.961
Threshold < 100000		10.009
Time (ms)		1929356

Overview Logfiles RSRP serving cell RSRQ serving cell SNR serving cell RSRQ vs. RSRP SNR vs. RSRP Tx power PUSCH Serving cell PCI RACH initial Tx power RACH counters DL link adaptation UL link adaptation PDSCH t

Log

No global filters No scheduled events 3.7 MB for queries

File View Tools Utilities Commander Layout Statistics Help

Workbo... Statistics

LTE report

1 LTE Report

Cluster details:
Date:
Engineer name:

B29 =IF((B26=0);0;(B27/B26))

	A	B	C
1	Attach statistics		
2	Attach attempt	6	
3	Attach failure	0	
4	Attach success	6	
5	Attach success rate	100.00 %	
6			
7	EPS Bearer context statistics		
8	EPS bearer activation attempt	4	
9	EPS bearer activation failure	0	
10	EPS bearer activation success	4	
11	EPS bearer deactivation	4	
12	EPS bearer dropped	0	
13	EPS bearer activation success rate	100.00 %	
14	EPS bearer cut-off rate	0.00 %	
15			
16	Data transfer statistics		
17	Data server connection attempt	21	
18	Data server connection attempt failure	4	
19	Data server connect	17	
20	Data server disconnect	10	
21	Data server connection dropped	7	
22	Data server connection success rate	80.95 %	
23	Data server connection cut-off rate	41.18 %	
24			

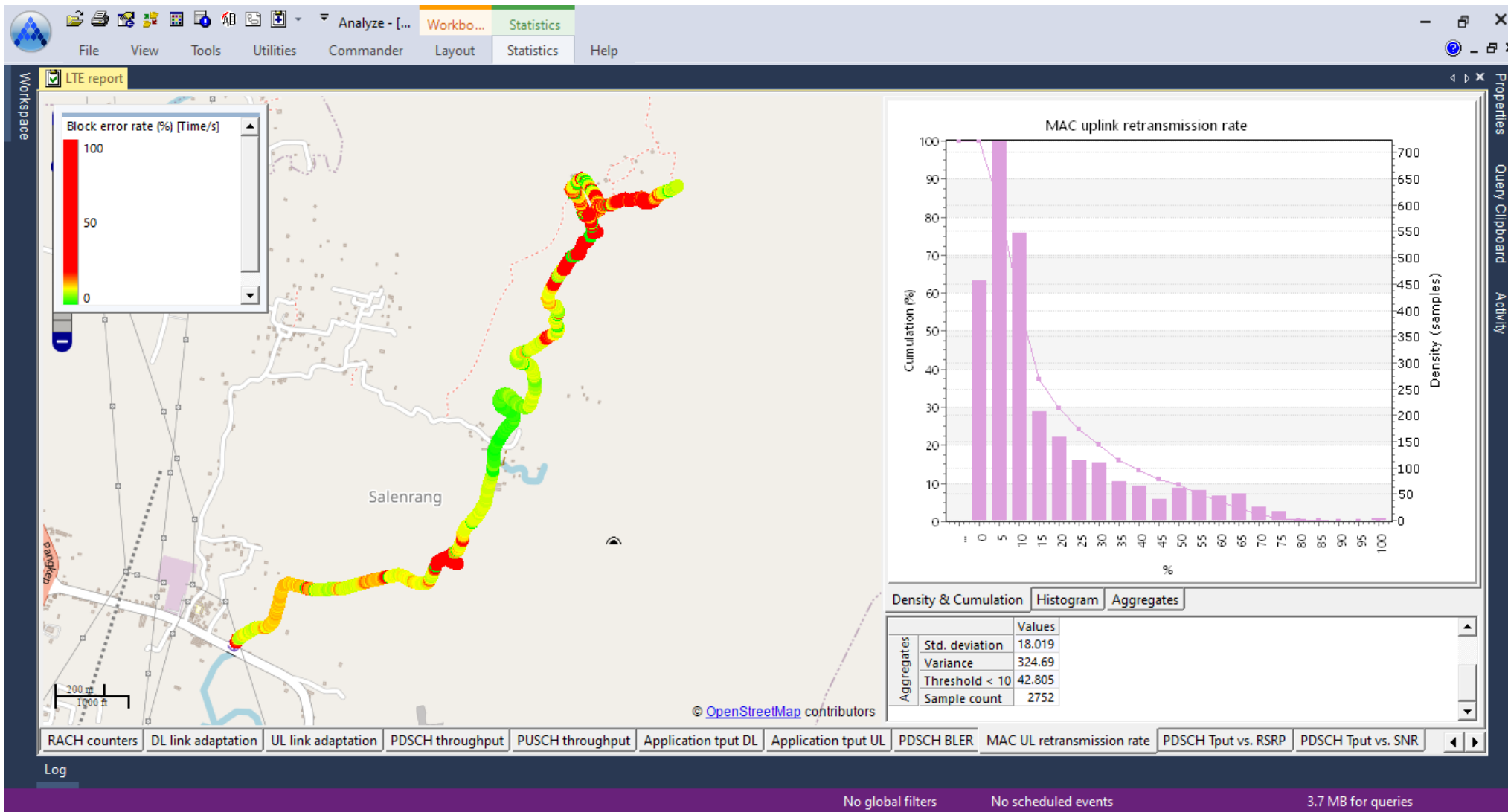
Density & Cumulation Histogram Aggregates

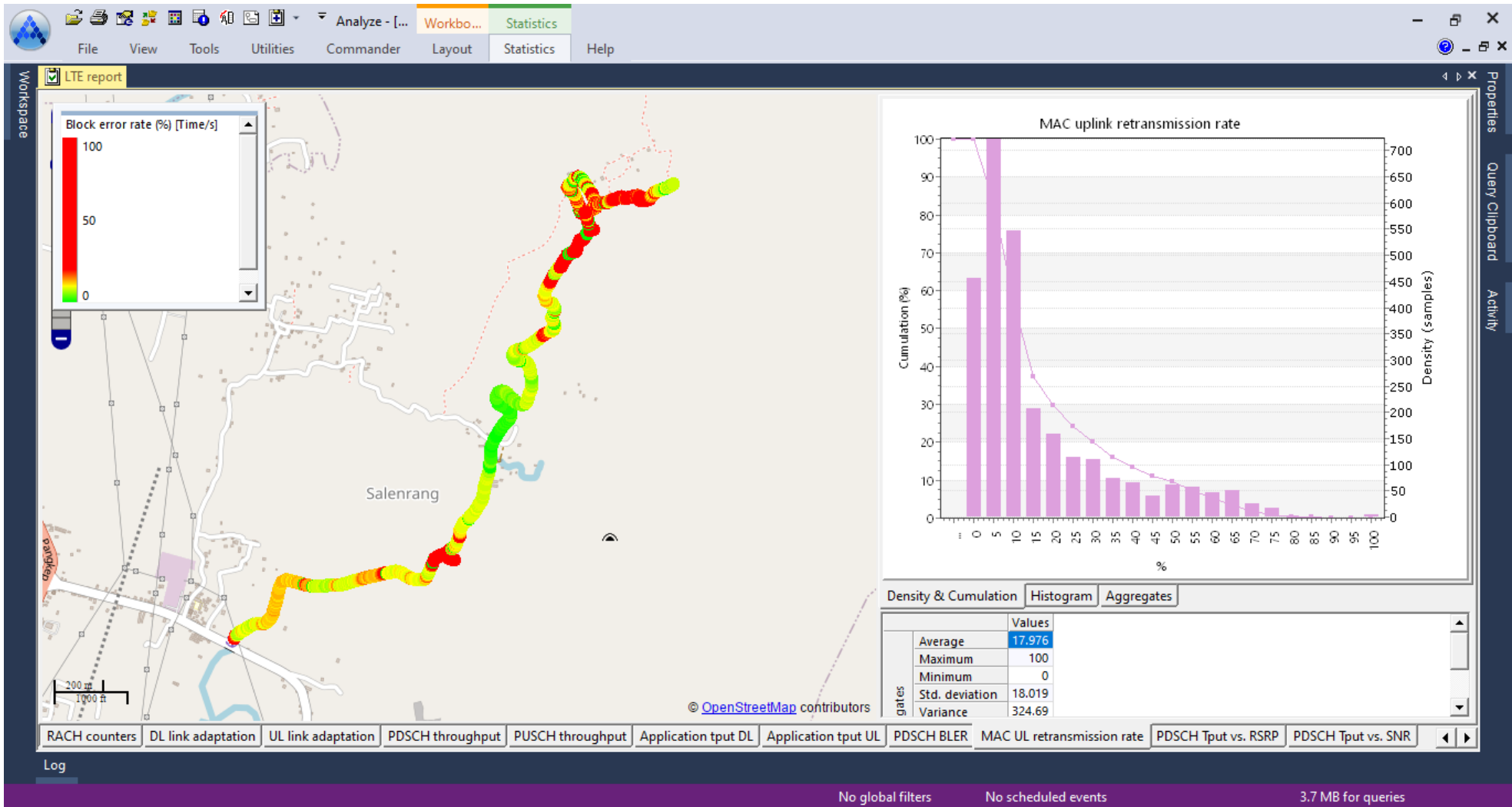
Aggregates		Ramrang2 Lengkap
Average		5151521.601
Maximum		14547520
Minimum		0
Std. deviation		3662093.943
Variance		13410932049873.961
Threshold < 100000		10.009
Time (ms)		1929356

Overview Logfiles RSRP serving cell RSRQ serving cell SNR serving cell RSRQ vs. RSRP SNR vs. RSRP Tx power PUSCH Serving cell PCI RACH initial Tx power RACH counters DL link adaptation UL link adaptation PDSCH t

Log

No global filters No scheduled events 3.7 MB for queries





Analyze - [...] Workbo... Grid

File View Tools Utilities Commander Layout Grid Help

Workspace LTE report

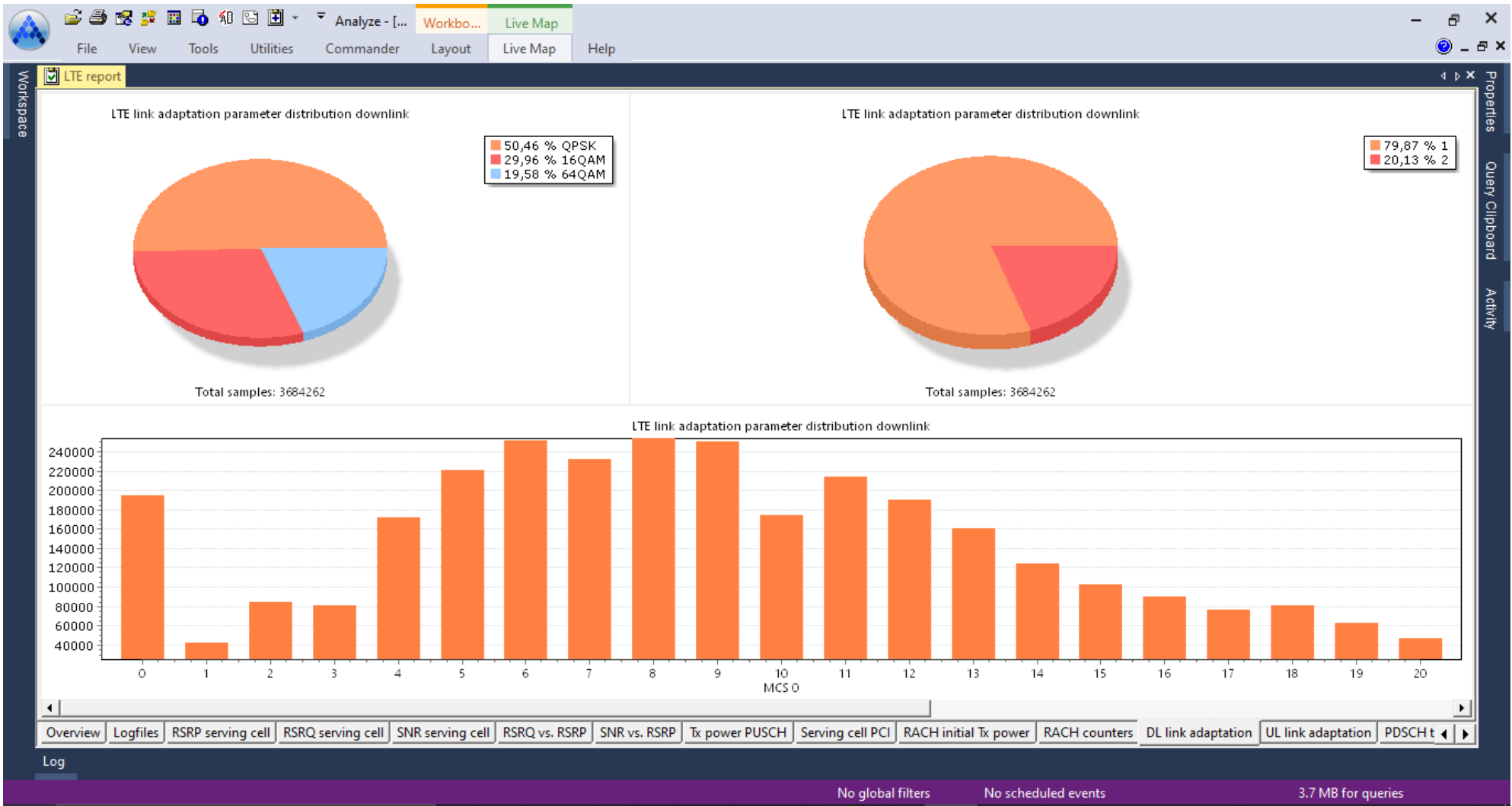
	Measurement	Time	Measurement length (min)	Description	Parse time	Equipment ID	Subscriber ID	Hash
1.	Pe1 Rammang TSEL2_22Jul03_115737.1	11:57:37.620	7.827		17:12:37.000	352204080538228	510109972174361	Invalid
2.	Pe2 Rammang TSEL2_22Jul03_145415.1	14:54:15.699	17.471		17:12:42.000	352204080538228	510109972174361	Invalid
3.	Pe3 Rammang TSEL2_22Jul03_151935.1	15:19:35.894	10.585		17:12:26.000	352204080538228	510109972174361	Invalid
4.	Pe3 Rammang TSEL2_22Jul03_153551.1	15:35:51.049	7.822		17:12:32.000	352204080538228	510109972174361	Invalid

Properties Query Clipboard Activity

Overview Logfiles RSRP serving cell RSRQ serving cell SNR serving cell RSRQ vs. RSRP SNR vs. RSRP Tx power PUSCH Serving cell PCI RACH initial Tx power RACH counters DL link adaptation UL link adaptation PDSCH t

Log

No global filters No scheduled events 3.7 MB for queries



Analyze - [...] Workbo... Statistics

File View Tools Utilities Commander Layout Statistics Help

Workspace

LTE report

Throughput (0-50Mbps) [Time/s]

Salenrang

© OpenStreetMap contributors

Application throughput uplink

Cumulation (%)

Density (samples)

bps

Density & Cumulation Histogram Aggregates

Aggregates	
Std. deviation	
Variance	
Threshold	
Sample count	

RACH counters DL link adaptation UL link adaptation PDSCH throughput PUSCH throughput Application tput DL Application tput UL PDSCH BLER MAC UL retransmission rate PDSCH Tput vs. RSRP PDSCH Tput vs. SNR

Log

No global filters No scheduled events 3.7 MB for queries

