

Global View

version 4.8.4
site Laboratory satellite systems
abbreviation NAU
country Ukraine
city Kiev
comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
P.50 - 54
program Pegasus
date 23/02/2016

Range Domain

start: 06:09:09 20.02.2016 (week: 1884 sec: 540549)
end: 11:55:58 20.02.2016 (week: 1884 sec: 561358)
duration: 05:46:50 ..

quality

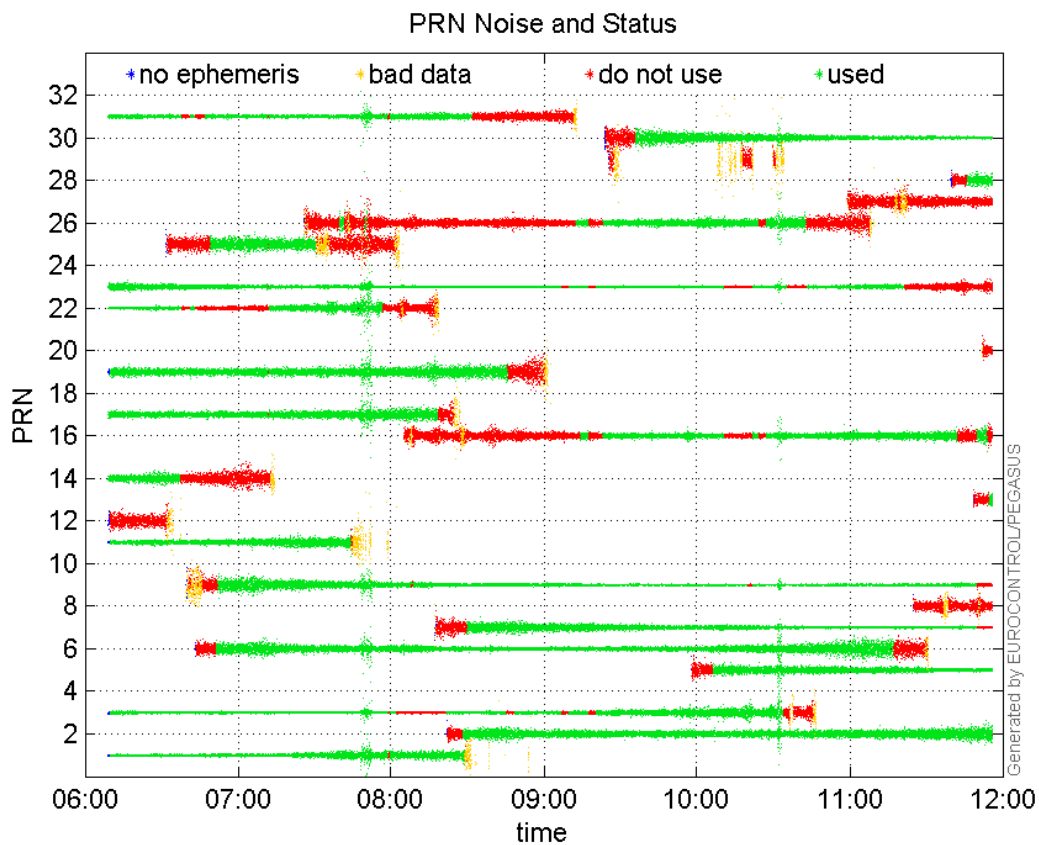
valid samples 20810
total samples 20810

PRN overview

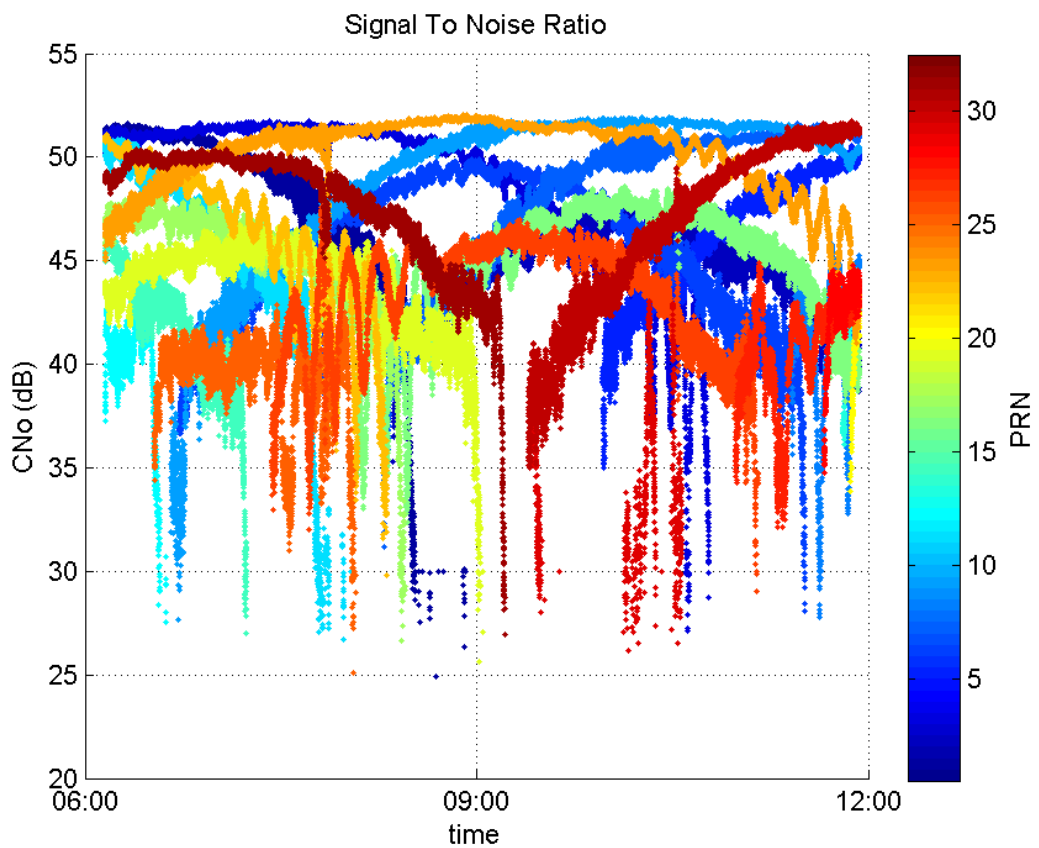
Number of Visible GPS Satellites 25
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



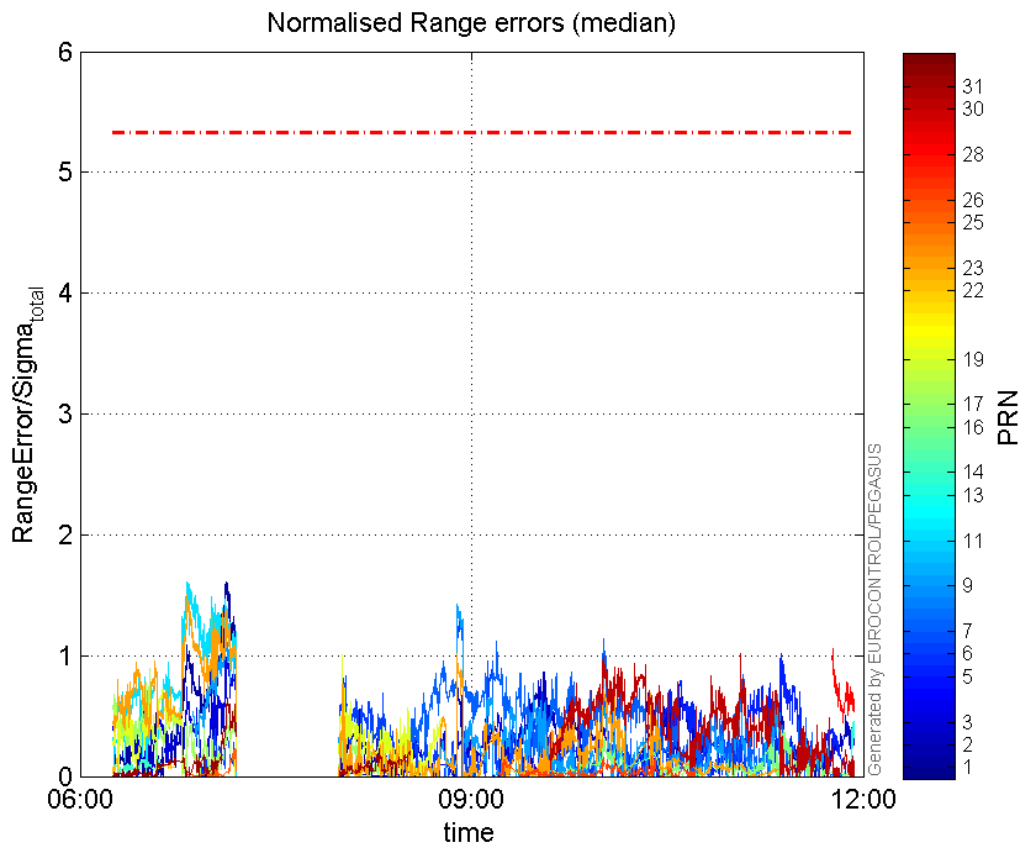
range errors

Number of Overbounding Norm Errors 0

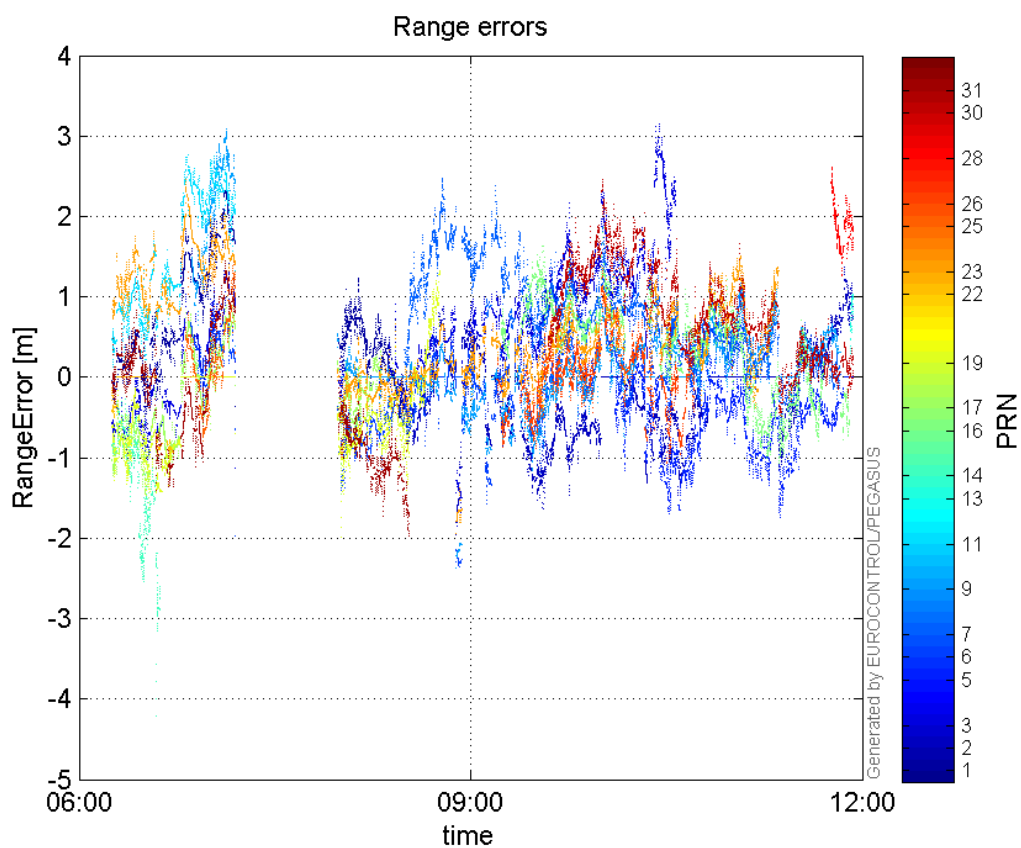
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1884	544039	1	1.61336	2.31722	1.43627
1884	552797	2	0.868136	-1.62961	1.87713
1884	544135	3	1.02901	1.32276	1.28547
1884	559353	5	1.01259	-1.7377	1.7161
1884	550490	6	1.30517	-2.3599	1.80812
1884	554436	7	1.14193	1.86221	1.63076
1884	550405	9	1.43096	-2.37498	1.65972
1884	542939	11	1.60823	2.66882	1.65948
1884	561348	13	0.452943	1.02003	2.25201
1884	542142	14	0.178003	-4.21379	23.6726
1884	559309	16	0.429075	-1.07248	2.49953
1884	541921	17	0.894177	-1.61537	1.80655
1884	547233	19	1.00407	-1.98374	1.9757
1884	541014	22	0.146994	-0.366081	2.49044
1884	542939	23	1.50953	2.3966	1.58765
1884	544261	25	0.232692	1.42904	6.14132
1884	555781	26	0.163794	-0.674198	4.11614
1884	560757	28	1.06226	2.59599	2.44384
1884	558206	30	1.01524	1.6572	1.63233
1884	544048	31	0.650238	1.32806	2.04241

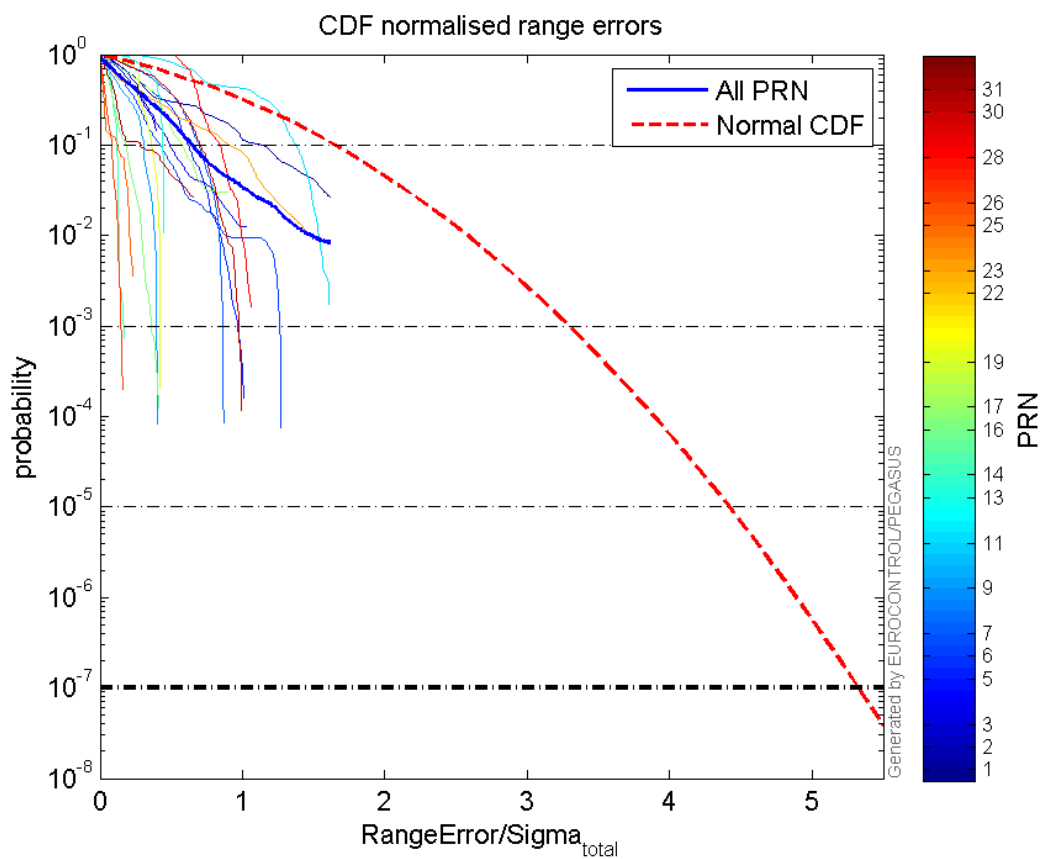
Normalised Range errors (median):



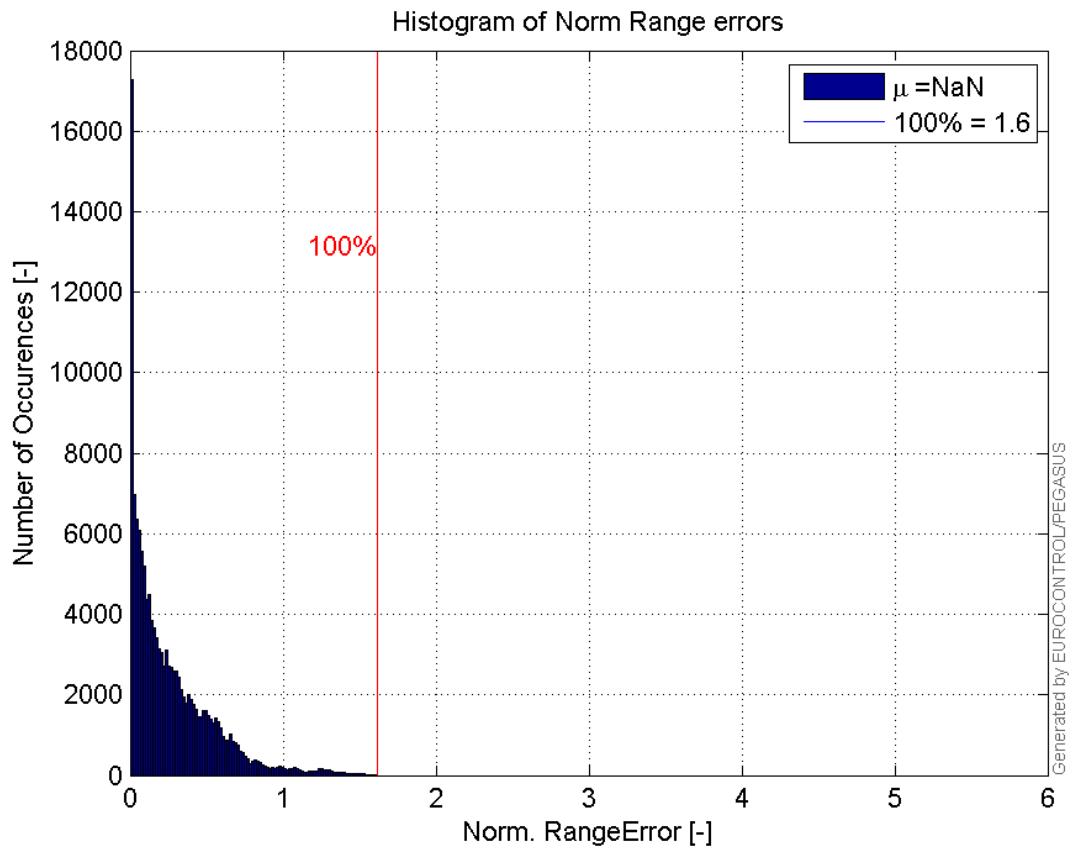
Range errors:



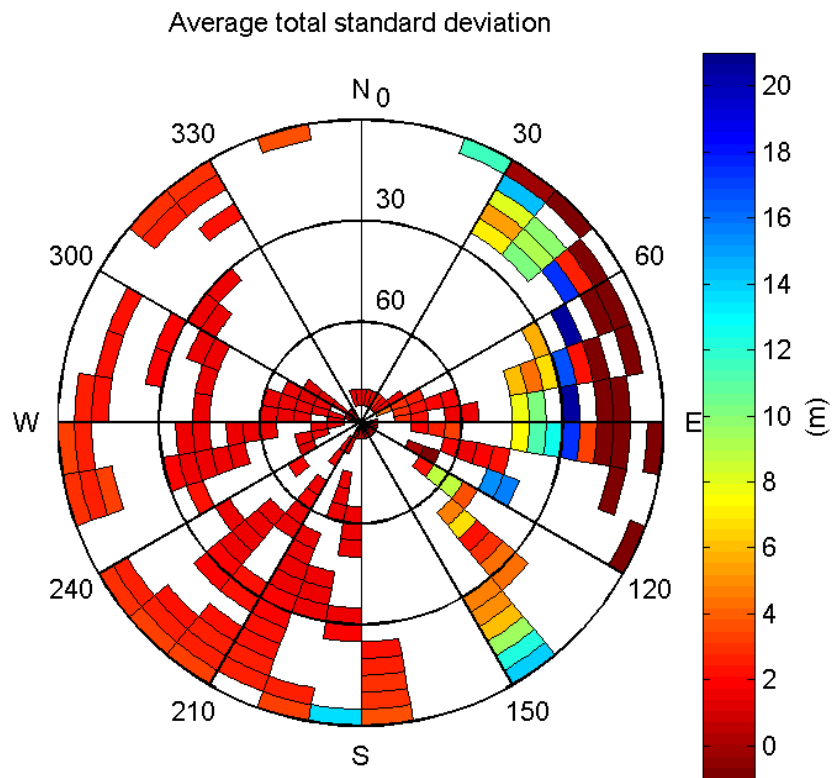
CDF normalised range errors:



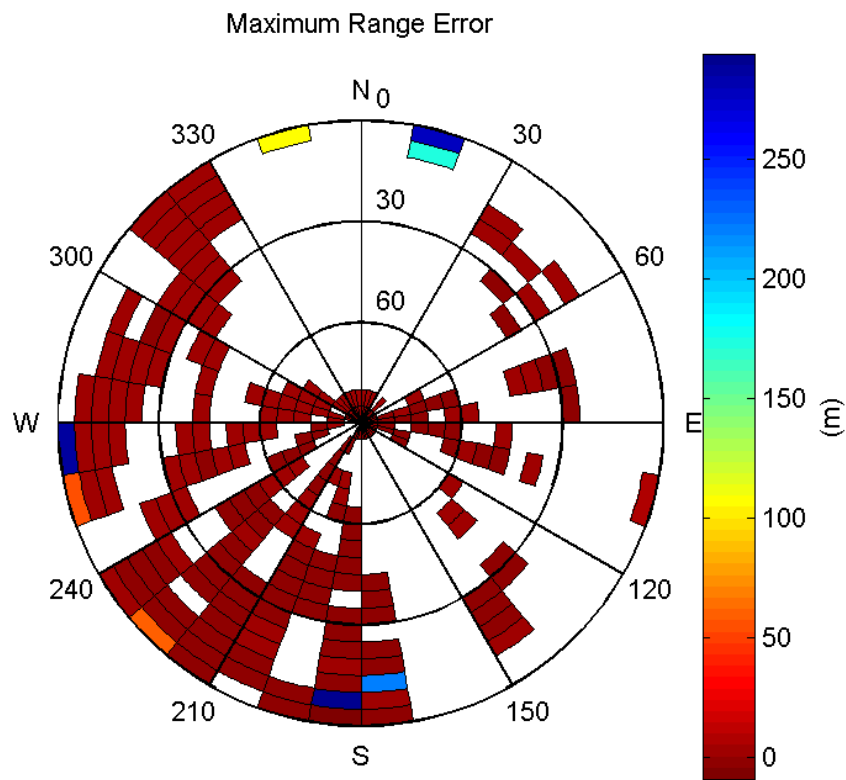
Histogram of Norm Range errors:



Sigma Sky Plot:

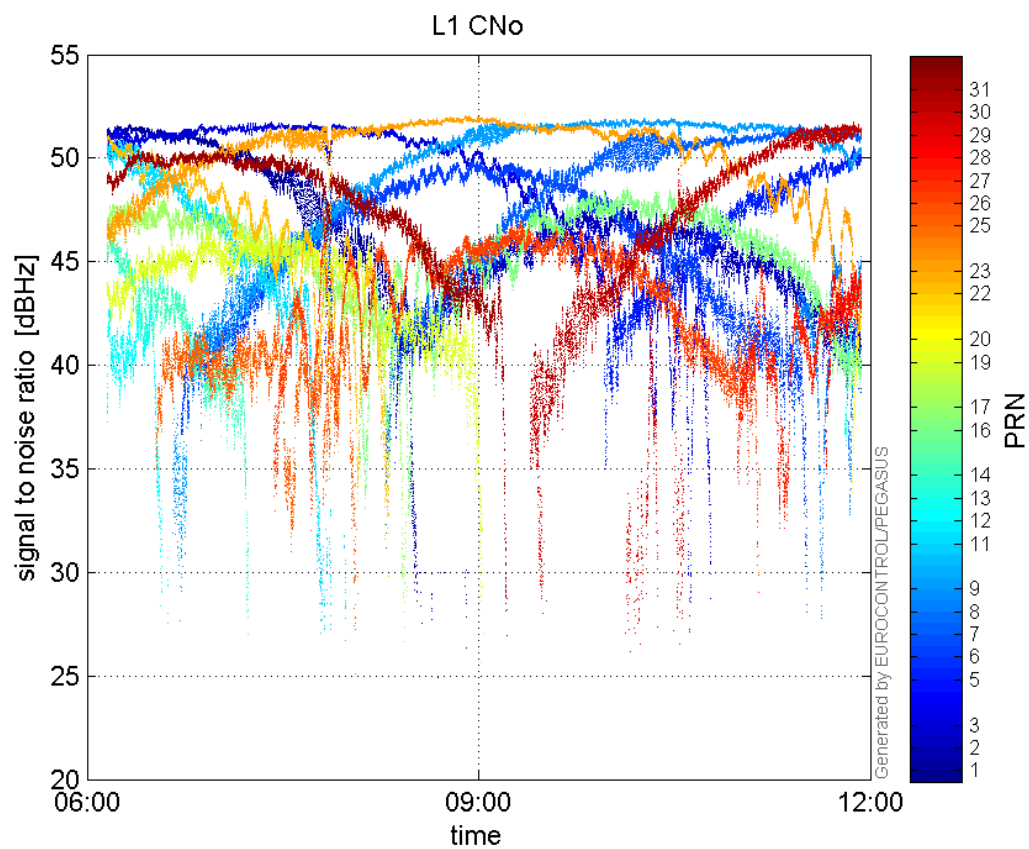


Norm Error Sky Plot:

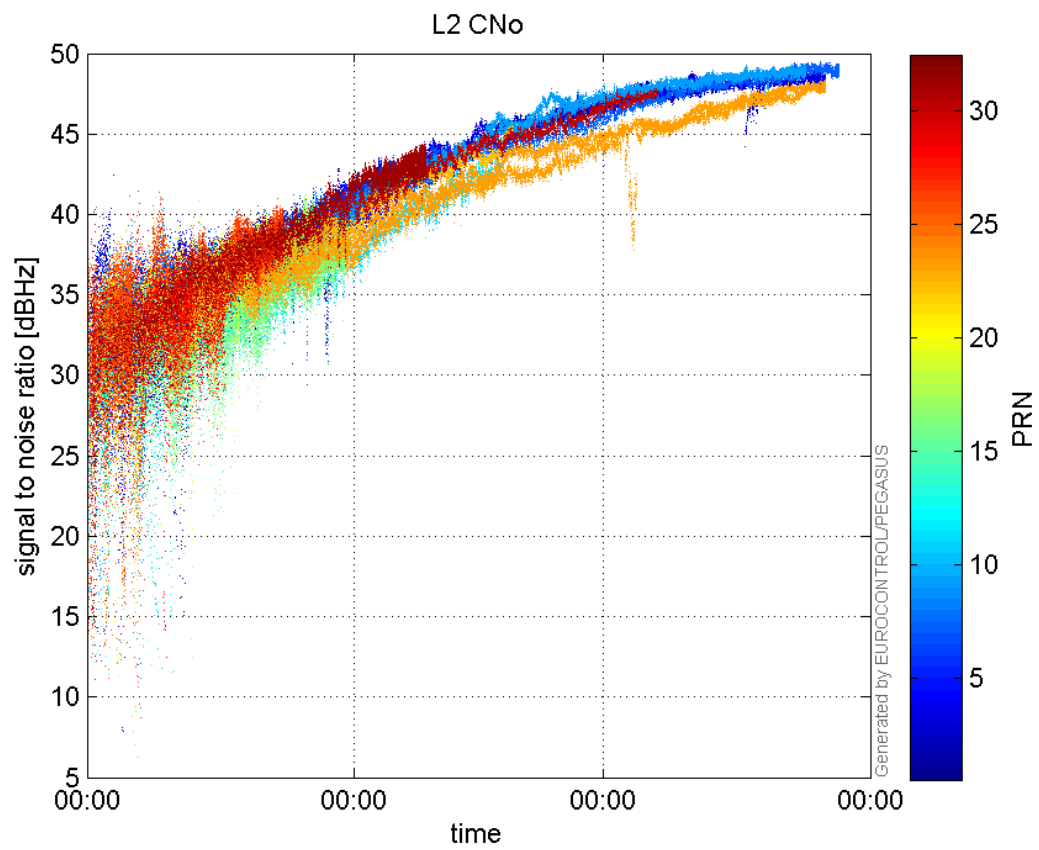


signal quality

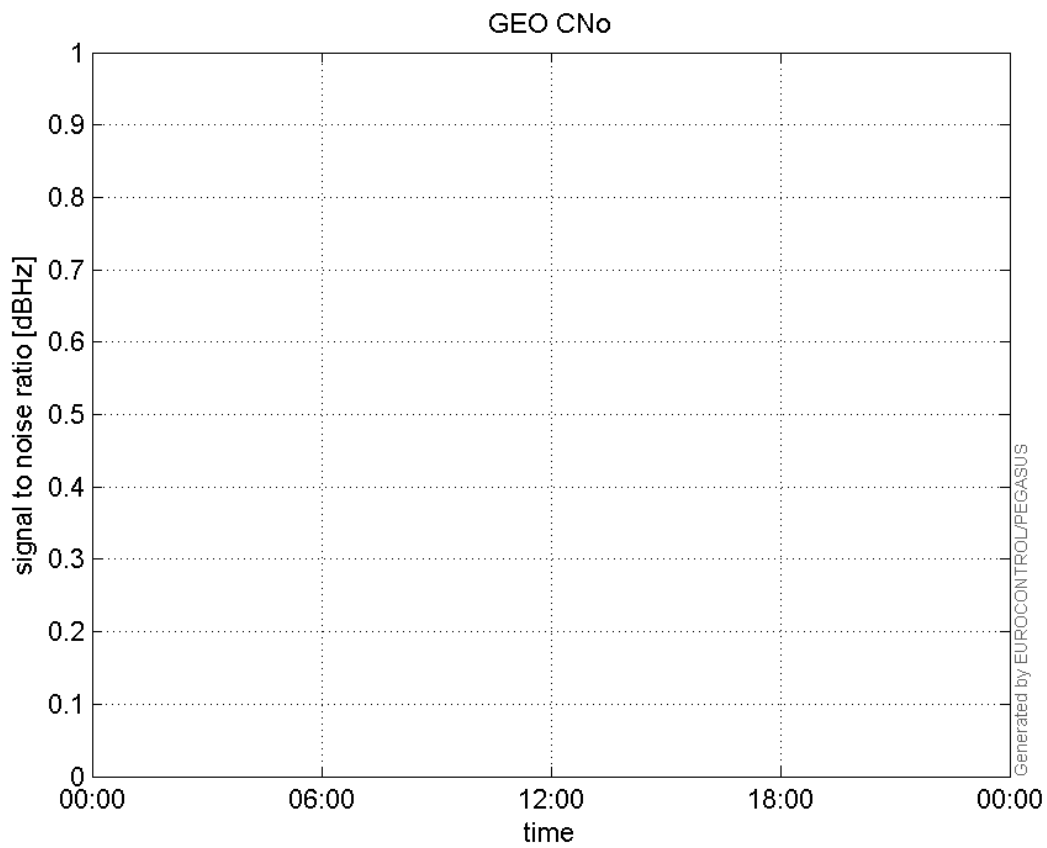
L1 CNo:



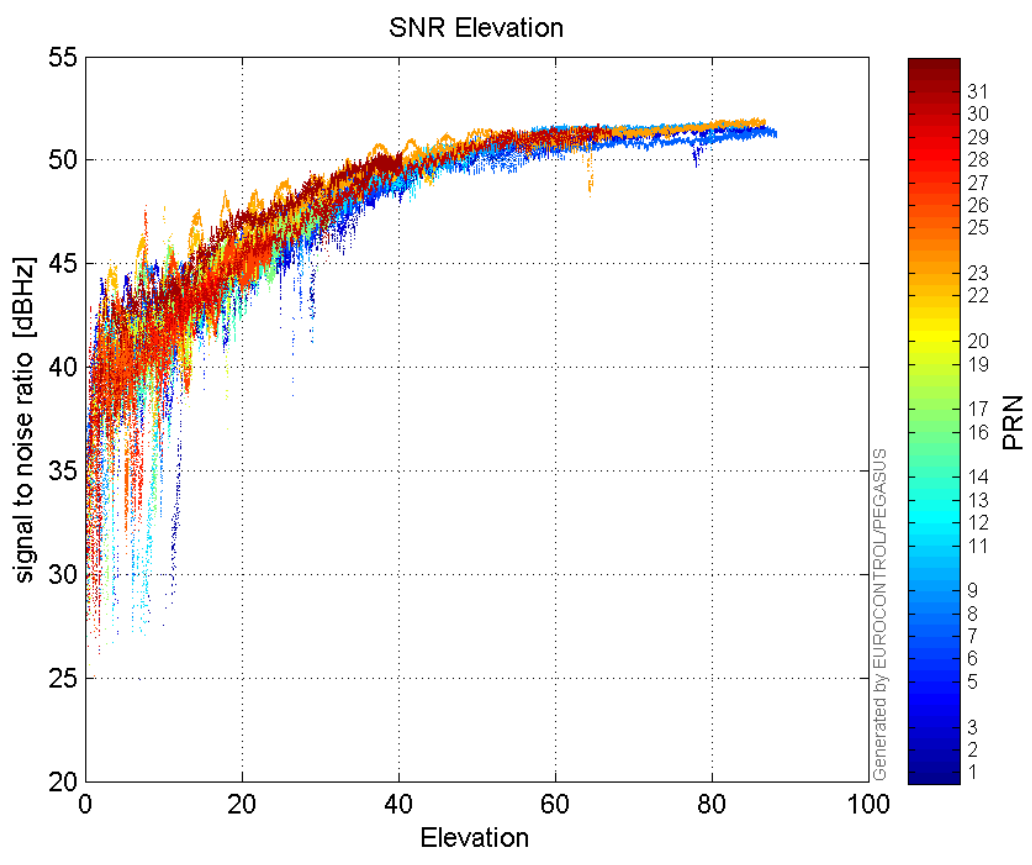
L2 CNo:



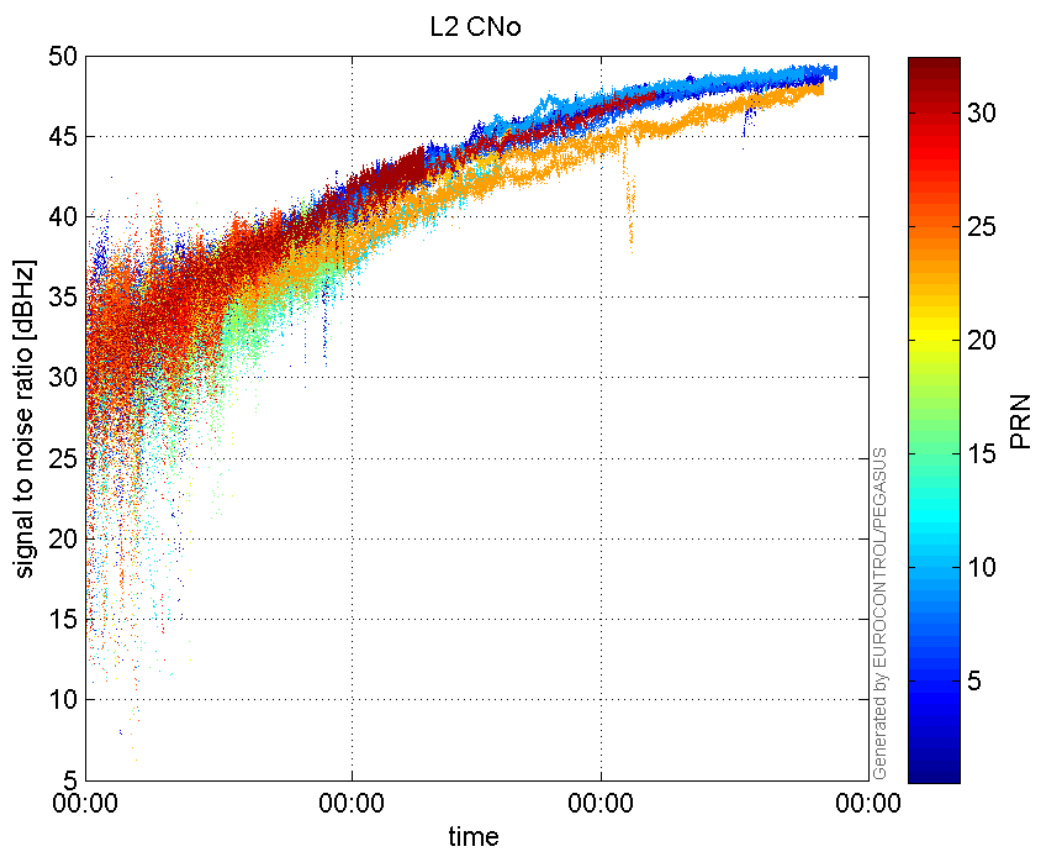
GEO CNo:



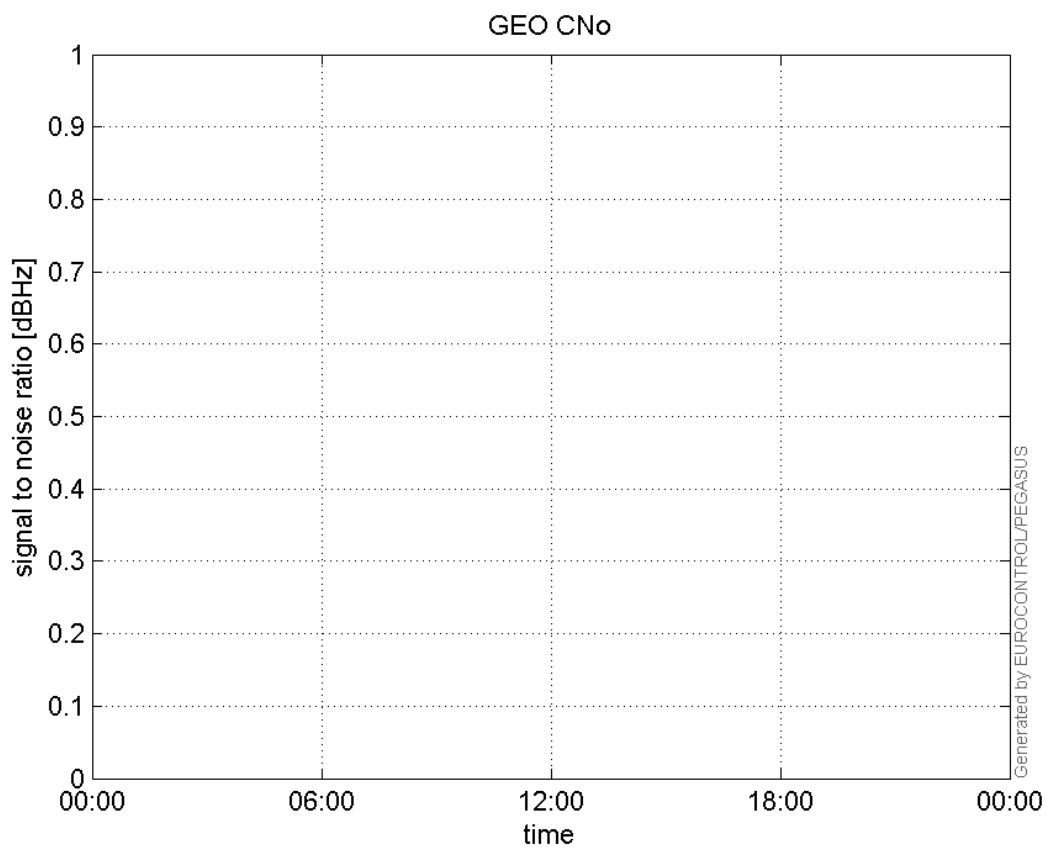
SNR Elevation:



L2 CNo:

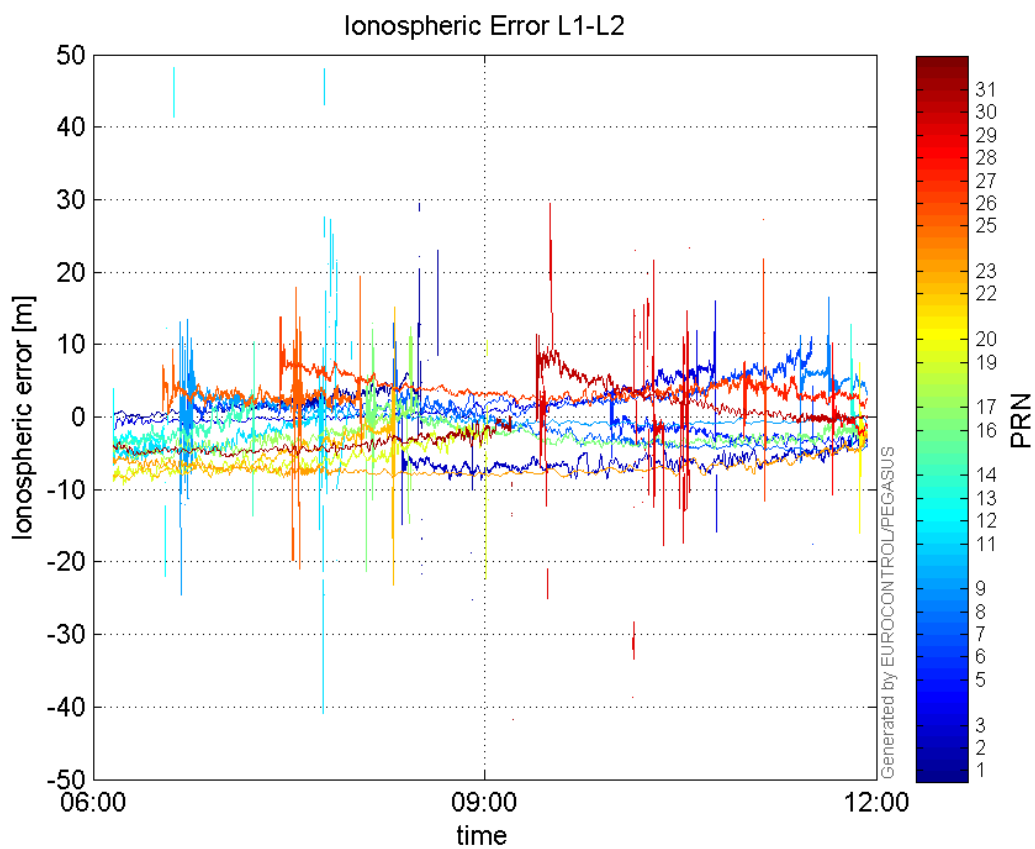


GEO CNo:



dual frequency

Ionospheric Error L1-L2:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateGob/job/2016_02_20EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_20EGNOS/03_GNSS_Solution/03_GNSS_Solution_sol

settings

Name	Section	Value
ref_lat	settings	50.439
ref_lon	settings	30.4297
ref_alt	settings	215.271
smoothing	settings	yes
smoothing_constant	settings	100
smoothing_max_gap	settings	10
smoothing_max_divergence	settings	3
min_elevation	settings	5
aad_model	settings	a
output_range_file	settings	yes
sbas_prn	settings	120
gnss_mode	settings	sbas

results

Name	Section	Value
init_lat	results	50.439
init_lon	results	30.4297
init_alt	results	218.6855
mi_numbers	results	0

SBAS Messages

start: 06:09:8.129 20.02.2016 (week: 1884 sec: 540548.129)
end: 11:55:58.129 20.02.2016 (week: 1884 sec: 561358.129)
duration: 05:46:50 ..

quality

valid samples 39408
total samples 39408
number of SBAS PRNs 2

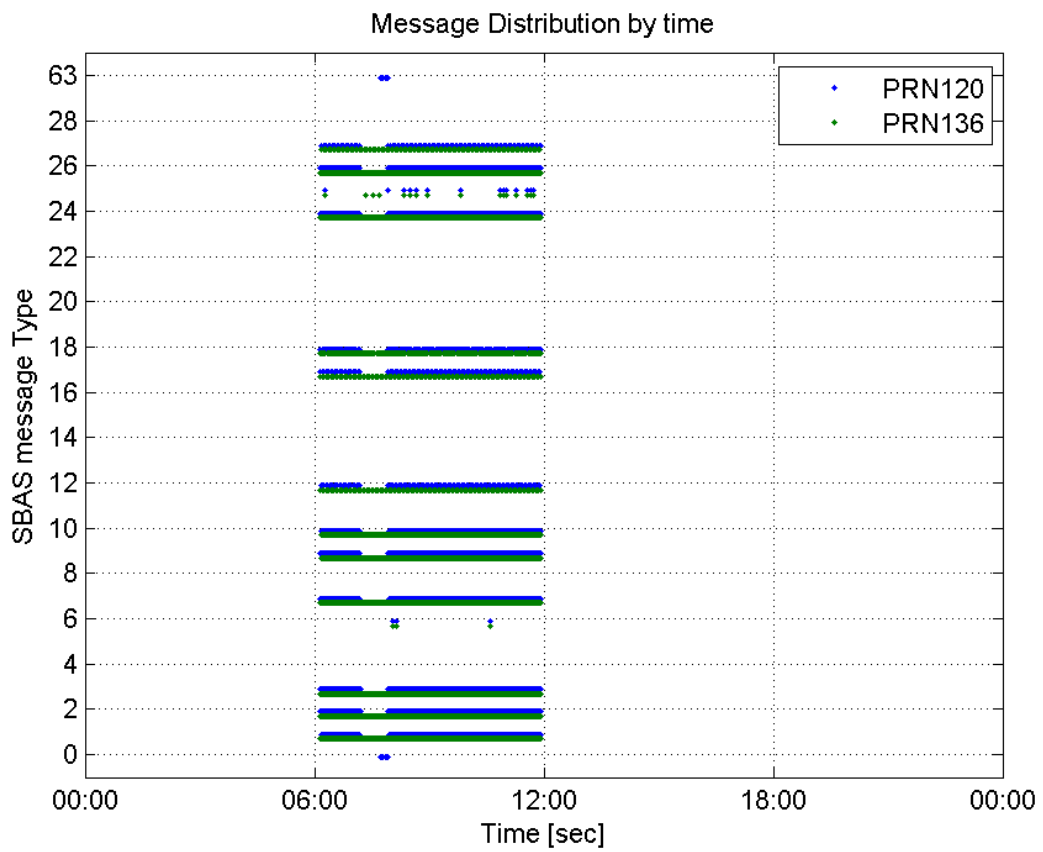
SBAS SIS Overview

Message Type 6 repetitions :

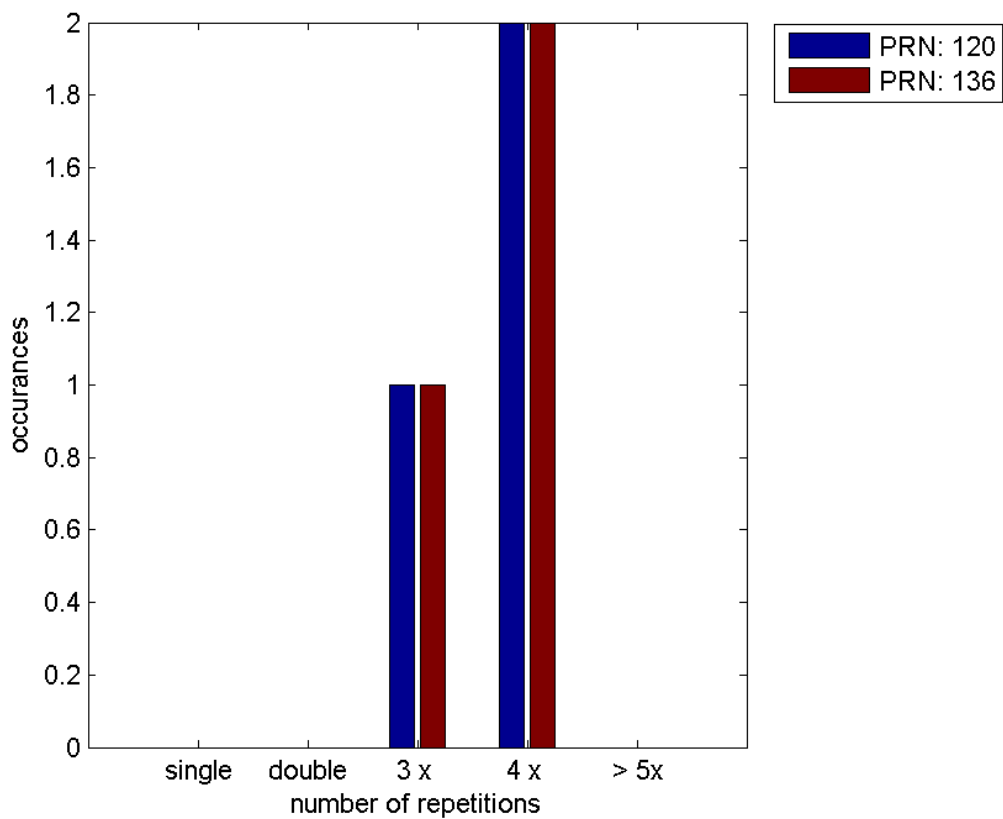
	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	2	0

PRN 136 | 0 | 0 | 1 | 2 | 0

Message Distribution by time:



Message Type 6 repetitions:



SBAS SIS Analysis

PRN 120

Broadcast SBAS Messages :

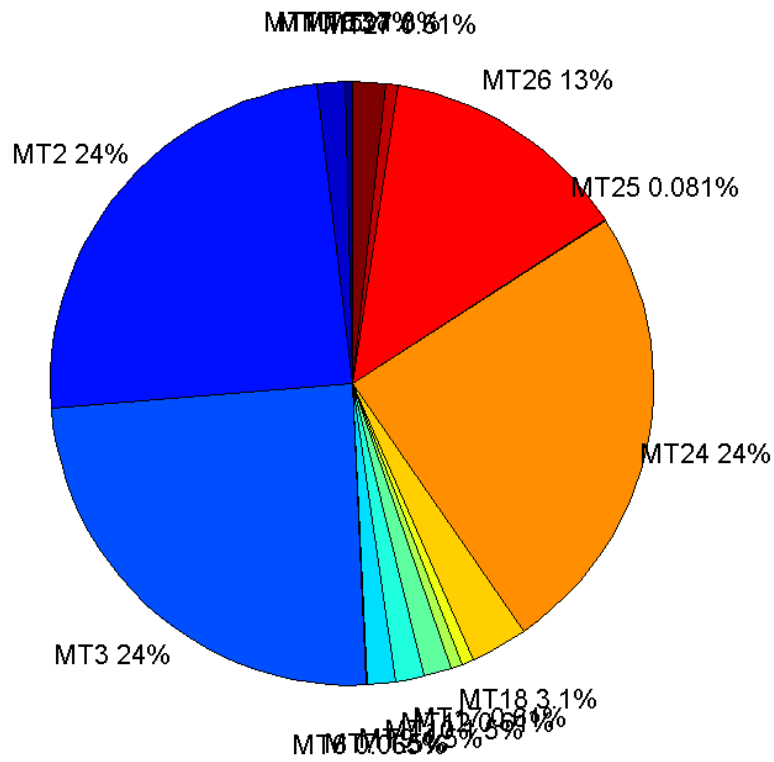
	number of messages	%
MT 0	68	0.36565
MT 1	282	1.51637
MT 2	4543	24.4287
MT 3	4543	24.4287
MT 4	0	0
MT 5	0	0
MT 6	12	0.0645265
MT 7	283	1.52175
MT 9	283	1.52175
MT 10	282	1.51637
MT 12	114	0.613002
MT 17	114	0.613002
MT 18	570	3.06501
MT 24	4542	24.4233
MT 25	15	0.0806582
MT 26	2495	13.4161
MT 27	113	0.607625
MT 28	0	0
MT 62	0	0
MT 63	338	1.8175
Total	18597	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	6	210	10.4776	7	0	0
MT 1	61	2726	73.8292	1	1	1
MT 2	3	2633	4.58058	5	2	2
MT 3	3	2636	4.58124	5	2	2
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	8842	836.273	2	2	2
MT 7	61	2686	73.5674	1	1	1
MT 9	61	2647	73.5532	0	0	0
MT 10	61	2738	73.8149	1	1	1
MT 12	156	2651	182.531	113	1	1
MT 17	151	2661	182.566	0	0	0
MT 18	1	2663	36.5729	1	0	0

MT 24	3	2637	4.58159	0	0	0
MT 25	31	5972	1402.43	0	0	0
MT 26	1	2625	8.33761	0	0	0
MT 27	152	2746	184.196	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	1	208	2.09496	0	0	0

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

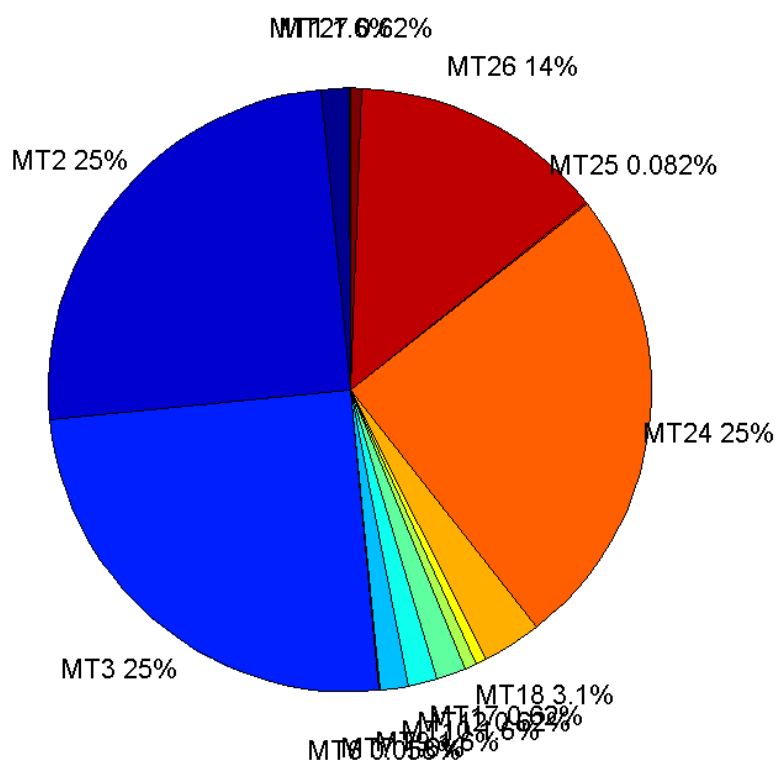
	number of messages	%
MT 0	0	0
MT 1	324	1.55687
MT 2	5198	24.9772
MT 3	5199	24.982
MT 4	0	0
MT 5	0	0

MT 6	12	0.0576618
MT 7	324	1.55687
MT 9	324	1.55687
MT 10	324	1.55687
MT 12	130	0.62467
MT 17	130	0.62467
MT 18	647	3.10893
MT 24	5198	24.9772
MT 25	17	0.0816876
MT 26	2855	13.7187
MT 27	129	0.619864
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	20811	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	69	64.2415	0	0	0
MT 2	4	7	4.00327	3	0	0
MT 3	4	8	4.00308	3	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	8842	836.273	2	2	2
MT 7	64	69	64.2415	0	0	0
MT 9	64	71	64.2415	0	0	0
MT 10	64	69	64.2415	0	0	0
MT 12	156	167	160.481	129	0	0
MT 17	160	167	160.481	0	0	0
MT 18	4	131	32.065	0	0	0
MT 24	4	8	4.00327	0	0	0
MT 25	31	3858	1227.13	0	0	0
MT 26	4	28	7.29012	0	0	0
MT 27	156	167	160.484	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 136:



Parameters

System

Name	Section	Value
Name	System	Convertor
Version	System	4.3
Inputfile	System	D:/PegasusDateGob/job/2016_02_20EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2016_02_20EGNOS/02_Convertor/02_Convertor

Configuration

Name	Section	Value
Receiver	Configuration	Novatel OEM4
Leap_Seconds	Configuration	17
Correction_mode	Configuration	SBAS MODE 0/2
Dual_Frequency	Configuration	no

Position Domain

start: 06:09:09 20.02.2016 (week: 1884 sec: 540549)

end: 11:55:58 20.02.2016 (week: 1884 sec: 561358)

duration: 05:46:50 ..

quality

valid samples 20449

total samples 20810

Event tables

Position discontinuity events type all
 APV-I discontinuity events type long
 APV-35m discontinuity events type long
 LPV-200 discontinuity events type long
 CAT-I discontinuity events type nothing

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	554351	1.93099	11.1579	0.17306	-0.0614596	19.6849	0.00312217
max normVer	550627	1.4467	35.6135	0.0406223	3.24504	21.4859	0.151031
max HPE	561358	5.23651	376.962	0.0138913	0.358827	98.2988	0.00365037
max VPE	547162	4.85346	137.746	0.0352349	-4.86006	112.665	0.0431373
min HPL	544280	1.23055	8.58665	0.14331	0.253176	13.2896	0.0190507
min VPL	544279	1.23348	8.71583	0.141522	0.260112	13.1567	0.0197703

Position discontinuity events :

#	Epoch	duration	stable period
1	544309	2827	3399

APV-I discontinuity events :

#	Epoch	duration	stable period
1	544308	2855	3398
2	551210	160	4047
3	560670	72	8663

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	544308	2855	3398
2	551210	160	4047
3	556815	67	4808
4	560670	72	3695

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	544308	2855	3398
2	551210	160	4047
3	556815	67	4808

4	560670	72	3695
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First Glance analysis

Duration	20810
Number of Samples	20810
Number of invalid sample	361
Number of no position solution samples	2827
Number of missing sample	0
Logging Loss	0
Processing Loss	1.7347
Number of Misleading Information	0
Data gaps	0
Discontinuities	1

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
17622	16710	16629	0	16629

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.80282	1.78494	1.78513	NaN	1.78513
HPEScale 95%	NaN	5.09787	5.1007	NaN	5.1007
VPE 95%	1.73219	1.57804	1.58079	NaN	1.58079
VPEscale 95%	NaN	4.42606	3.10294	NaN	3.10294

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.861754	0.817155	0.813194	0	0.813194
measurements	0.846804	0.802979	0.799087	0	0.799087
Operational	0.846804	0.802979	0.799087	0	0.799087

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	1	38	45	--	45
Long	1	3	4	--	4
Independent	1	3	4	--	4
P(disc.)	0.000851209	0.002693	0.00360815	NaN	0.00360815
P(slide)	0.000851209	0.00939557	0.0117866	NaN	0.0117866

Integrity events :

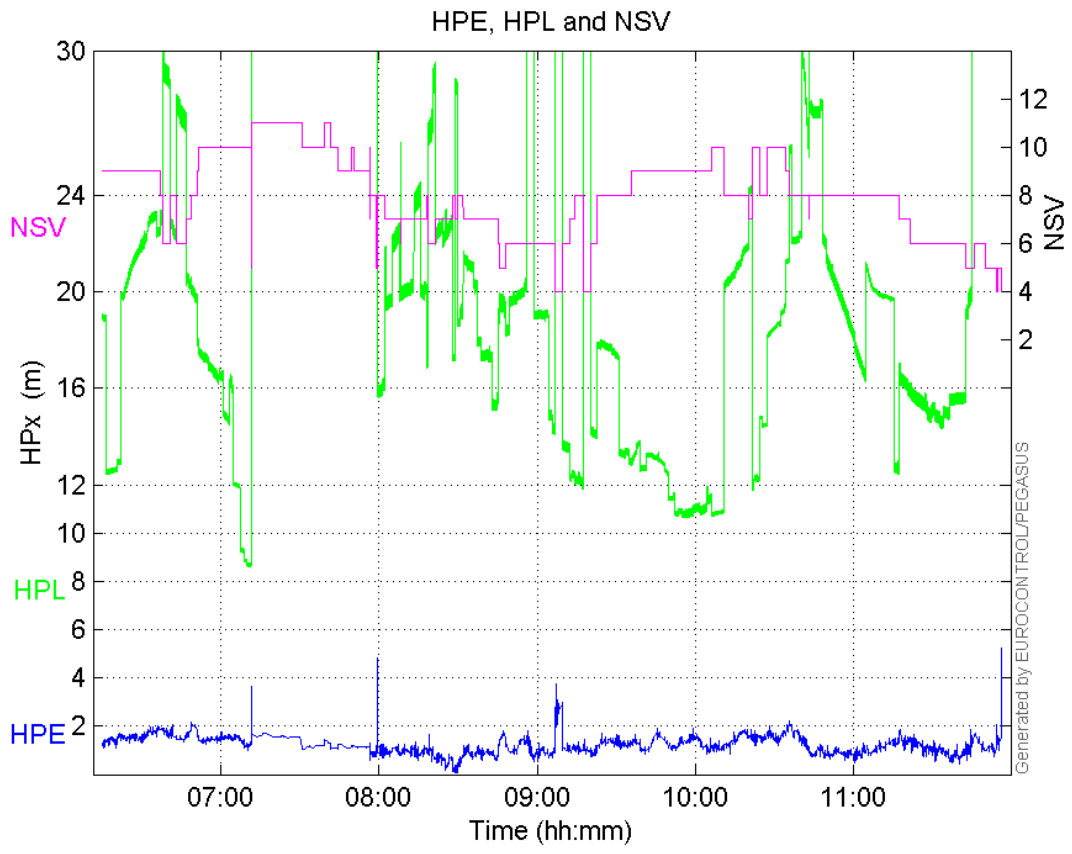
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

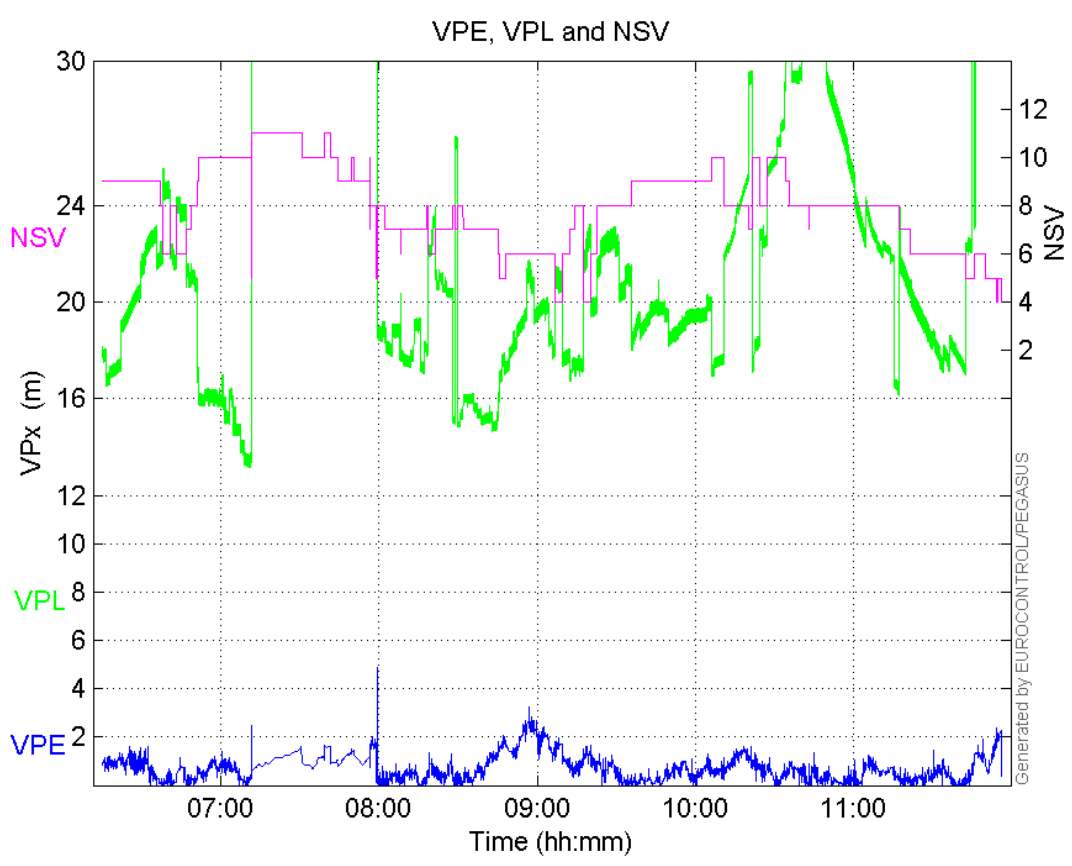
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	17622	16710	16629	0	16629
SIS Availability	0.861754	0.817155	0.813194	0	0.813194
Local Availability	0.846804	0.802979	0.799087	0	0.799087
Operational Availability	0.846804	0.802979	0.799087	0	0.799087
HPE 95%	1.80282	1.78494	1.78513	NaN	1.78513
HPEscale 95%	NaN	5.09787	5.1007	NaN	5.1007
VPE 95%	1.73219	1.57804	1.58079	NaN	1.58079
VPEscale 95%	NaN	4.42606	3.10294	NaN	3.10294
All Discontinuity Events	1	38	45	--	45
Long Discontinuity Events	1	3	4	--	4
Independent Discontinuity Events	1	3	4	--	4
P(discontinuity)	0.000851209	0.002693	0.00360815	NaN	0.00360815
P(sliding window)	0.000851209	0.00939557	0.0117866	NaN	0.0117866
All Integrity Events	0	0	0	0	0
Horizontal Integrity Events	0	0	0	0	0
Vertical Integrity Events	0	0	0	0	0

Time Series

HPE, HPL and NSV:

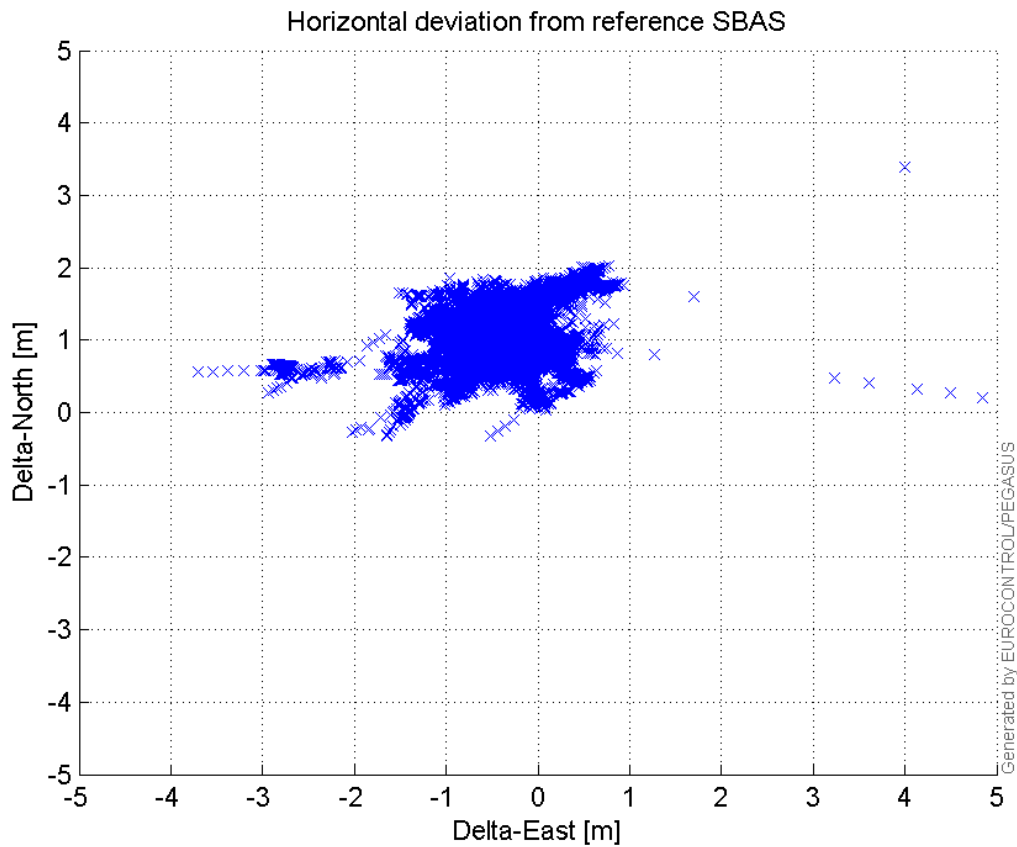


VPE, VPL and NSV:



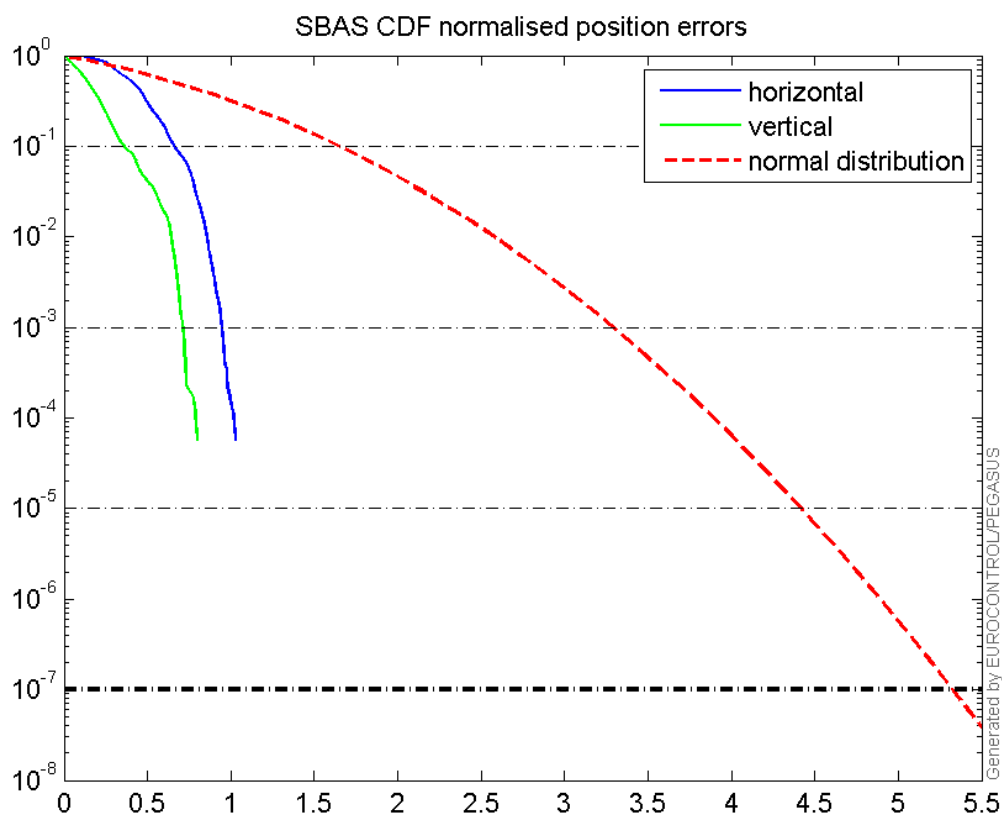
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

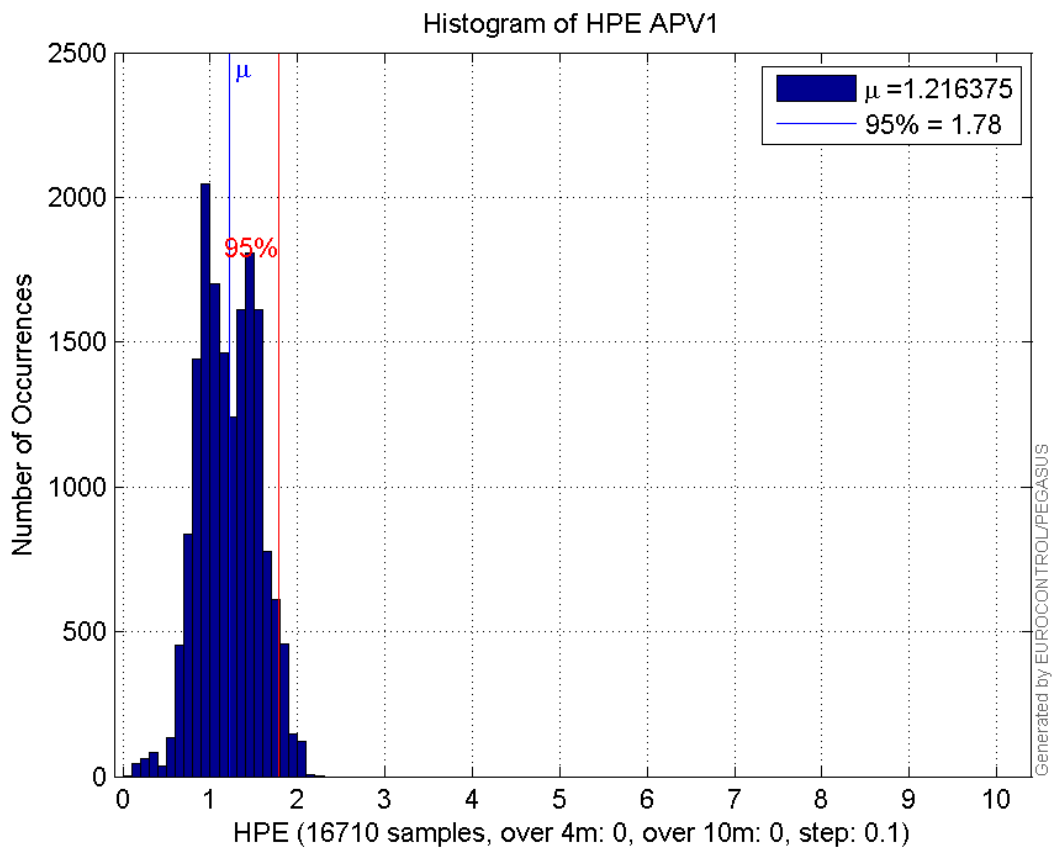
number	16710
sum	20325.628
sum2	26669.635
prctile95	1.7849447
prctile99	1.958159
number	16710
sum	10533.57
sum2	10863.161
prctile95	1.5780391
prctile99	2.4536714
number	16710
sum	304007.33
sum2	5974507.7
prctile95	27.595
prctile99	35.40002
number	16710
sum	344058.02
sum2	7391993.1
prctile95	29.3785
prctile99	34.44022
number	16710
sum	1211.0374
sum2	101.42318
prctile95	0.12744665
prctile99	0.14290103
number	16710
sum	537.69619
sum2	29.089695
prctile95	0.088521118
prctile99	0.12072098
number	16629
sum	20213.176
sum2	26511.565
prctile95	1.7851294
prctile99	1.9591765
number	16629
sum	10488.715
sum2	10834.226
prctile95	1.5807924
prctile99	2.4547601
number	16629
sum	301614.09
sum2	5903727.1
prctile95	27.499
prctile99	35.40632
number	16629
sum	341144.73
sum2	7287152
prctile95	29.25527

prctile99 34.015667
number 16629
sum 1207.2218
sum2 101.24075
prctile95 0.12751739
prctile99 0.1429257
number 16629
sum 536.45099
sum2 29.067455
prctile95 0.088655454
prctile99 0.12079571

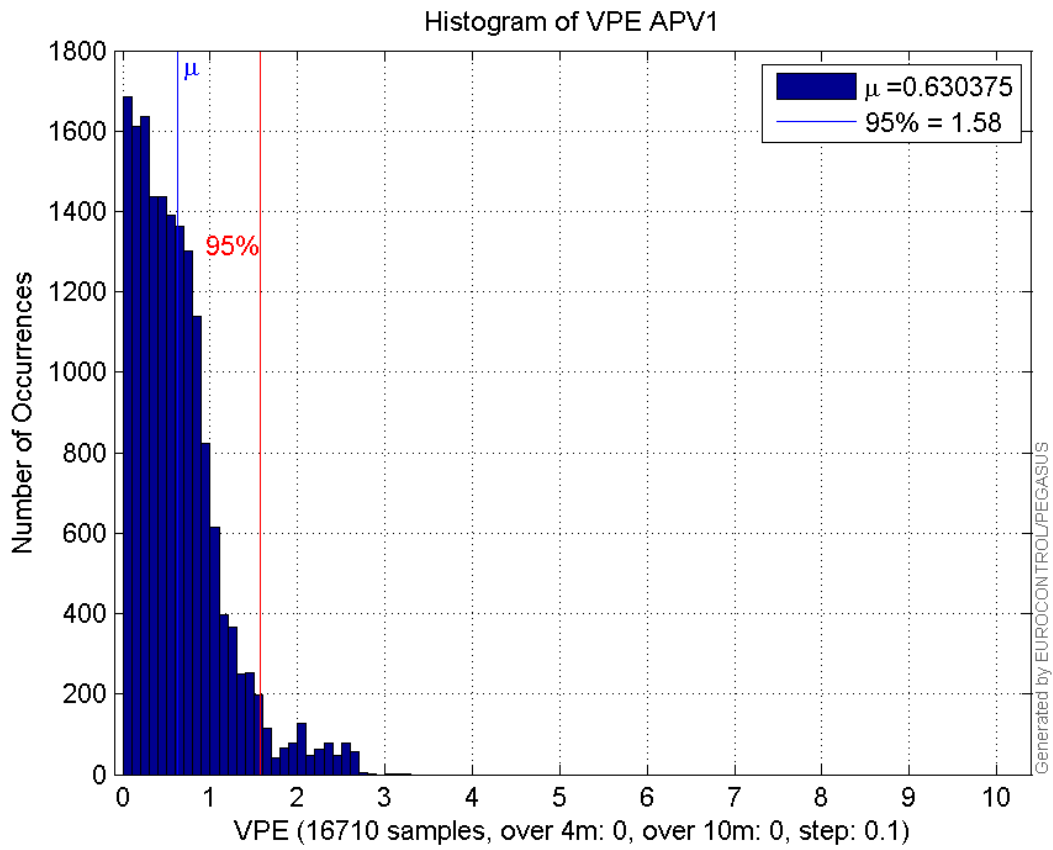
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.21638	0.341273	1.20454	1.78494	1.95816	1.26334
HPL	18.1931	5.15288	18.3532	27.595	35.4	18.9088
VPE	0.630375	0.502734	0.537919	1.57804	2.45367	0.806287
VPL	20.5899	4.29239	19.5619	29.3785	34.4402	21.0326

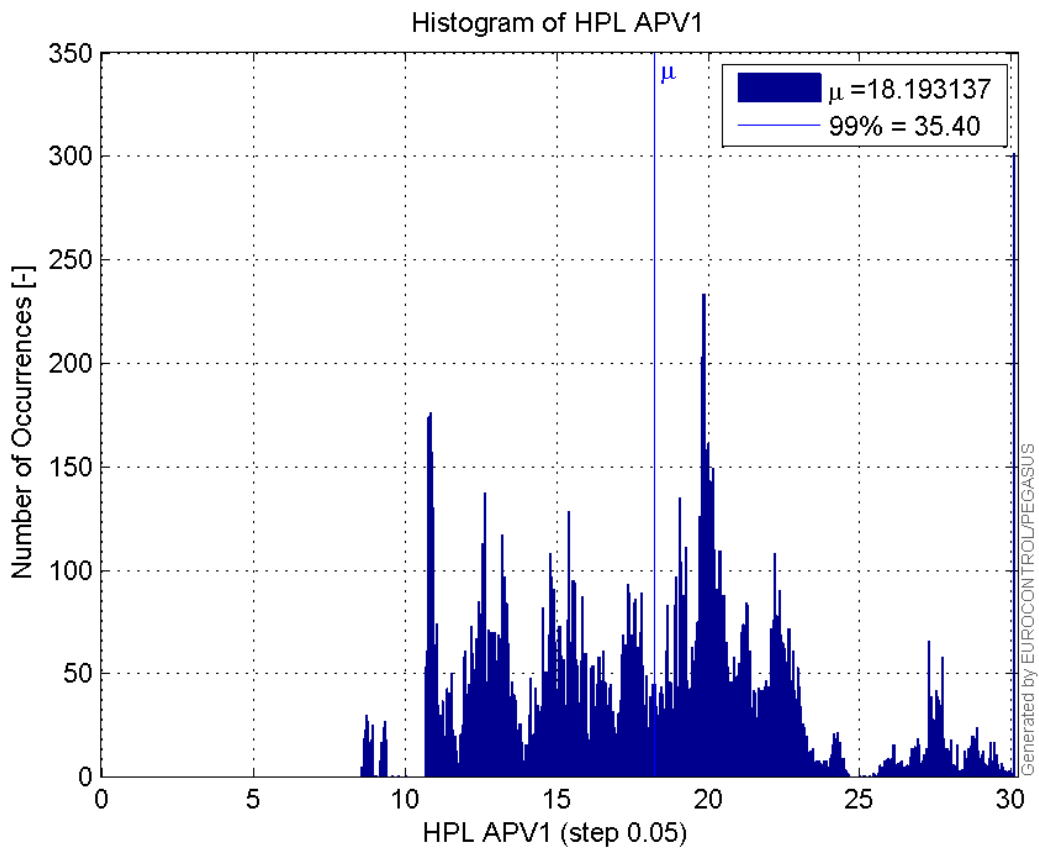
Histogram of HPE APV1:



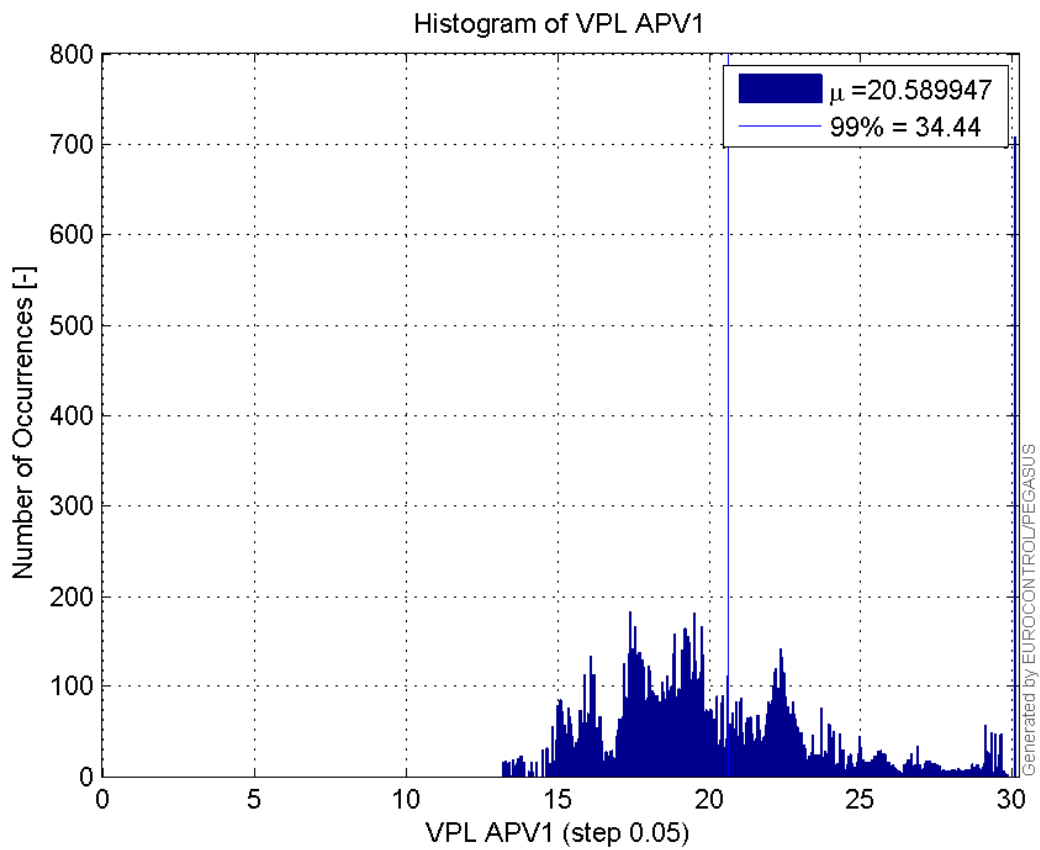
Histogram of VPE APV1:



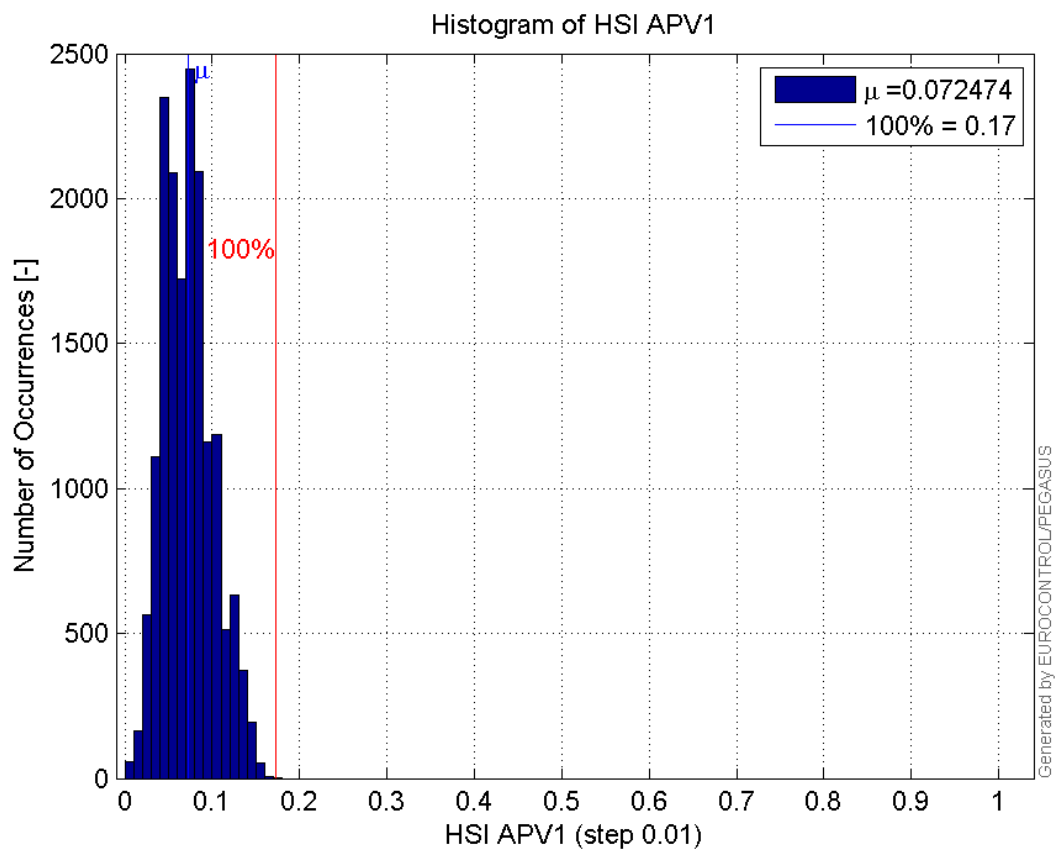
Histogram of HPL APV1:



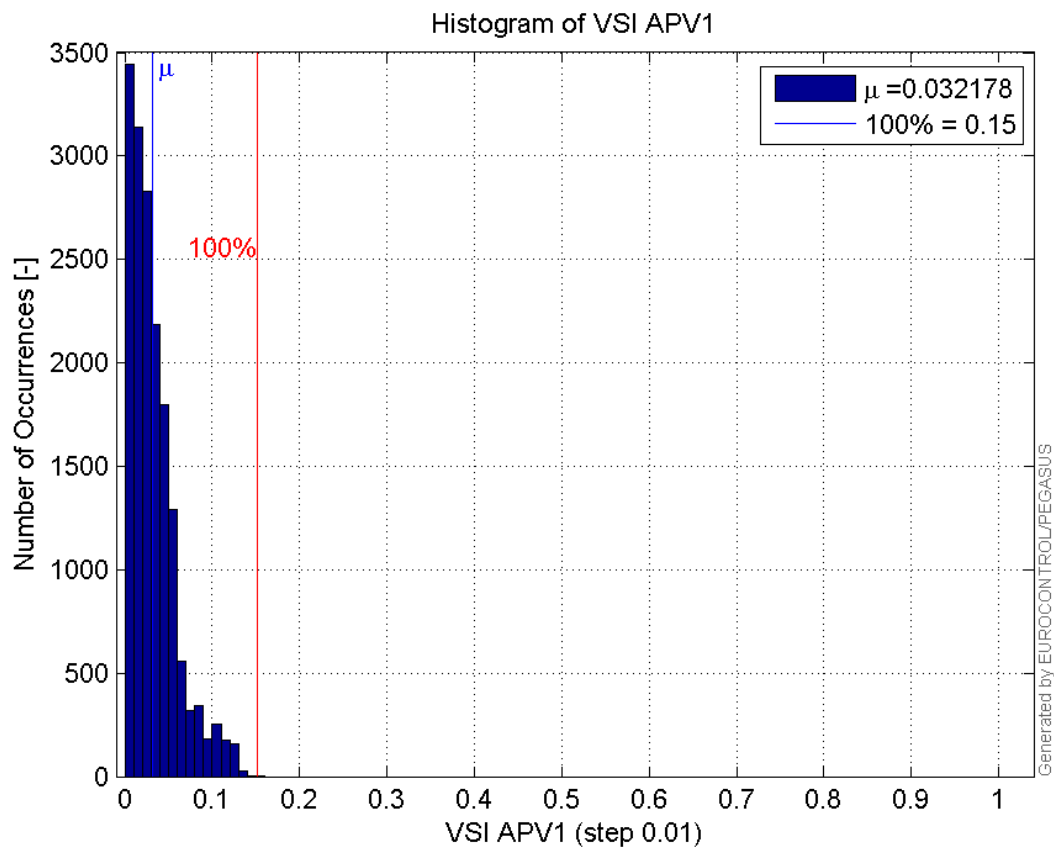
Histogram of VPL APV1:



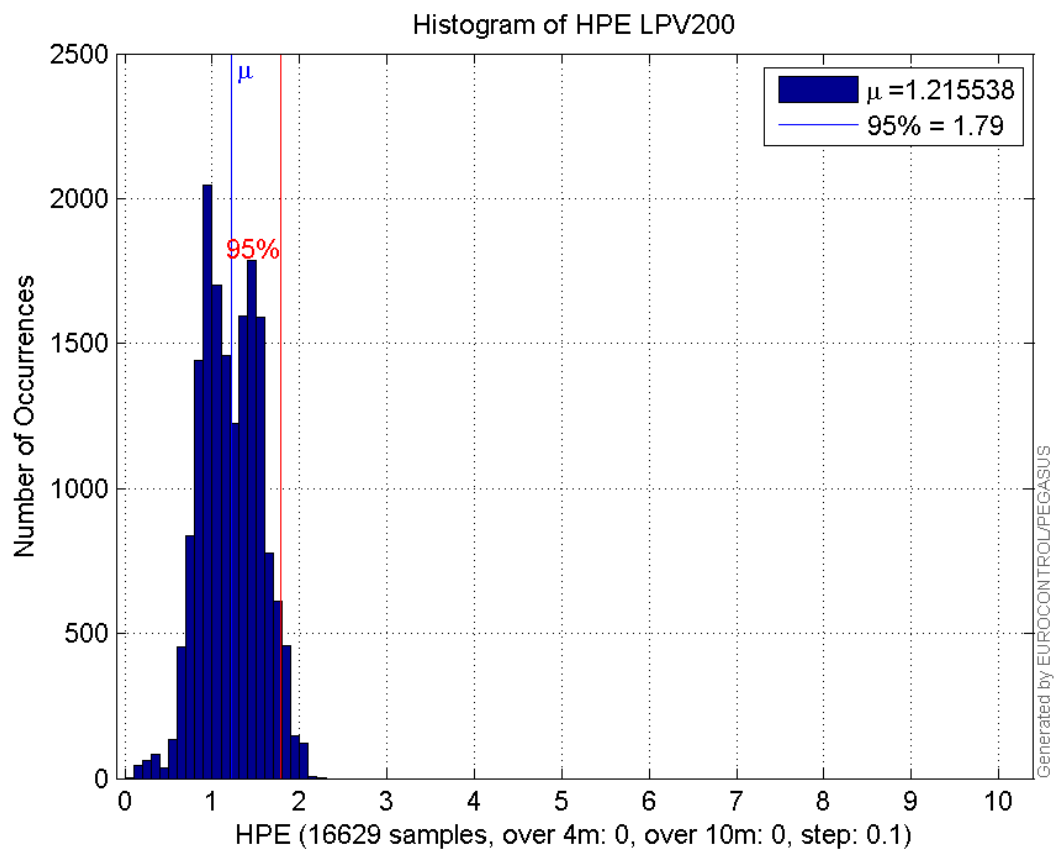
Histogram of HSI APV1:



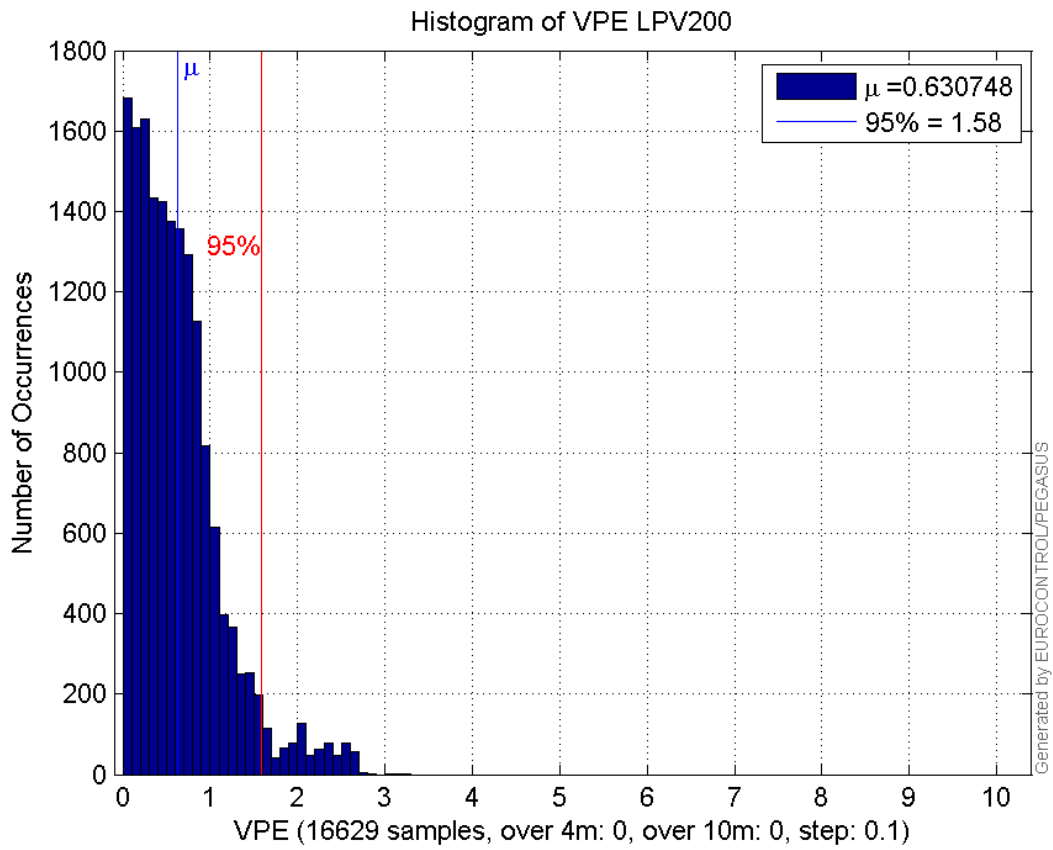
Histogram of VSI APV1:



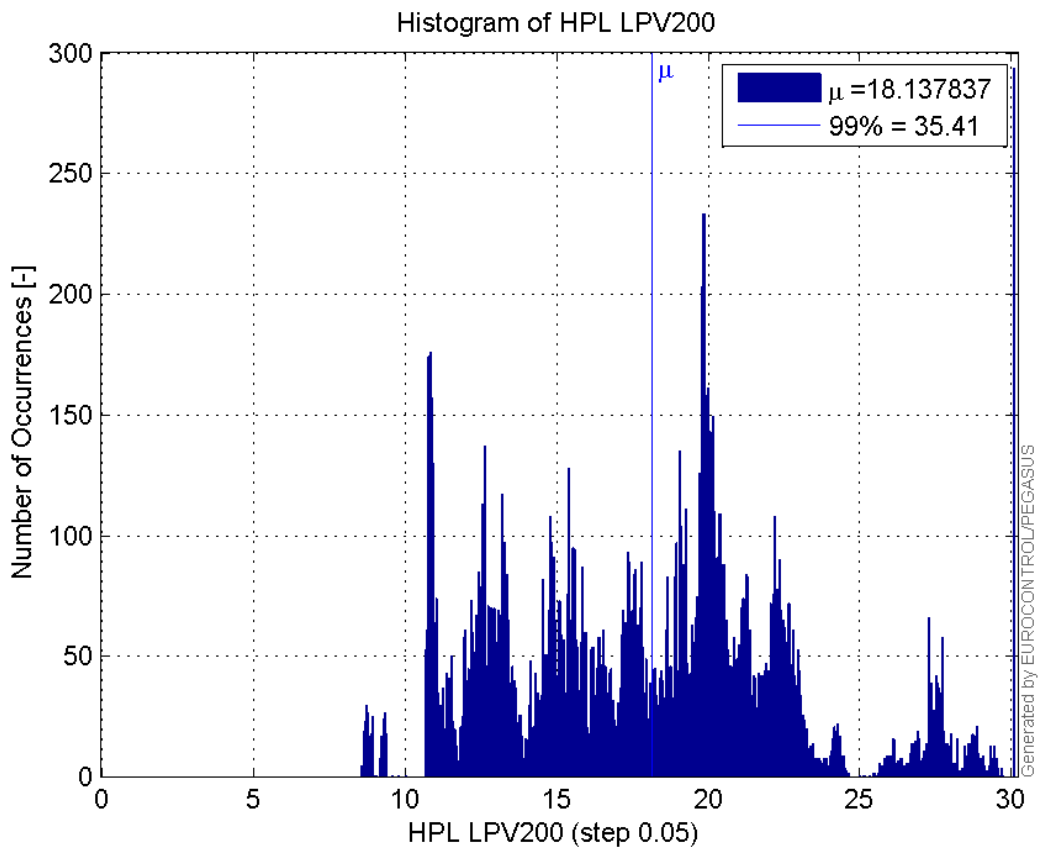
Histogram of HPE LPV200:



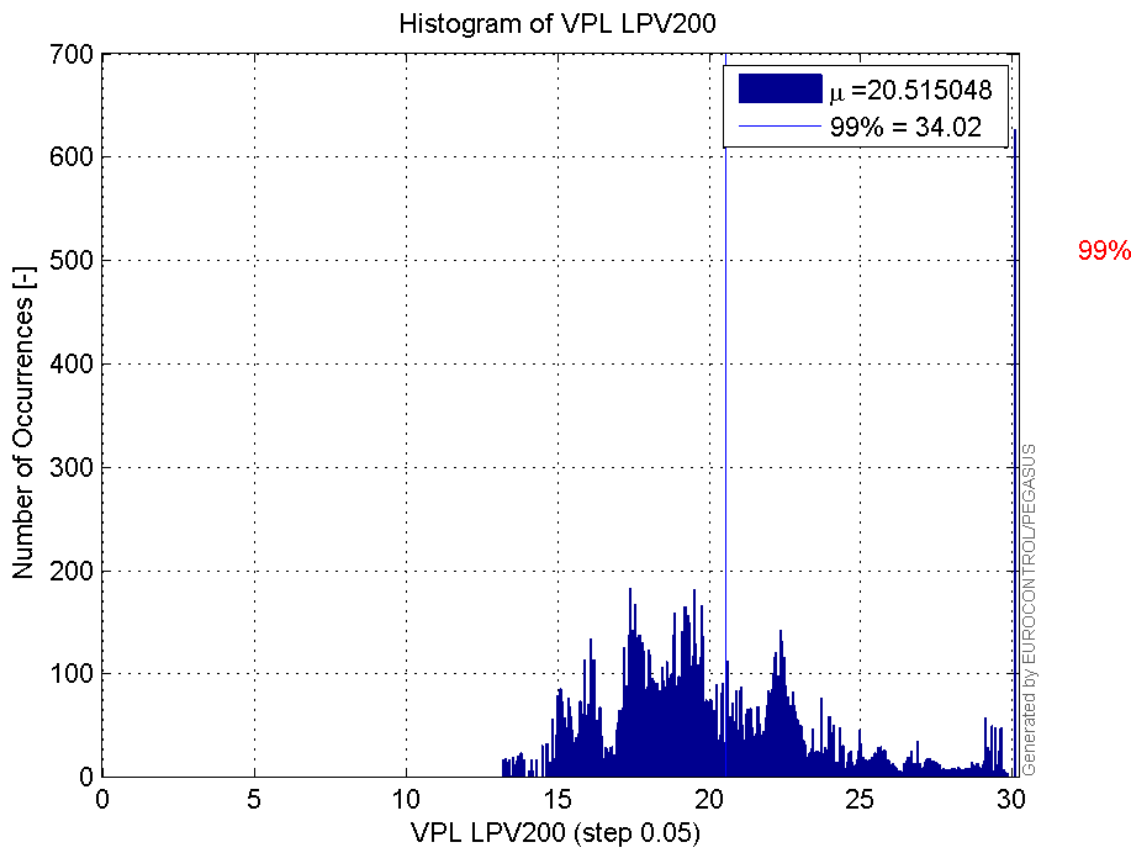
Histogram of VPE LPV200:



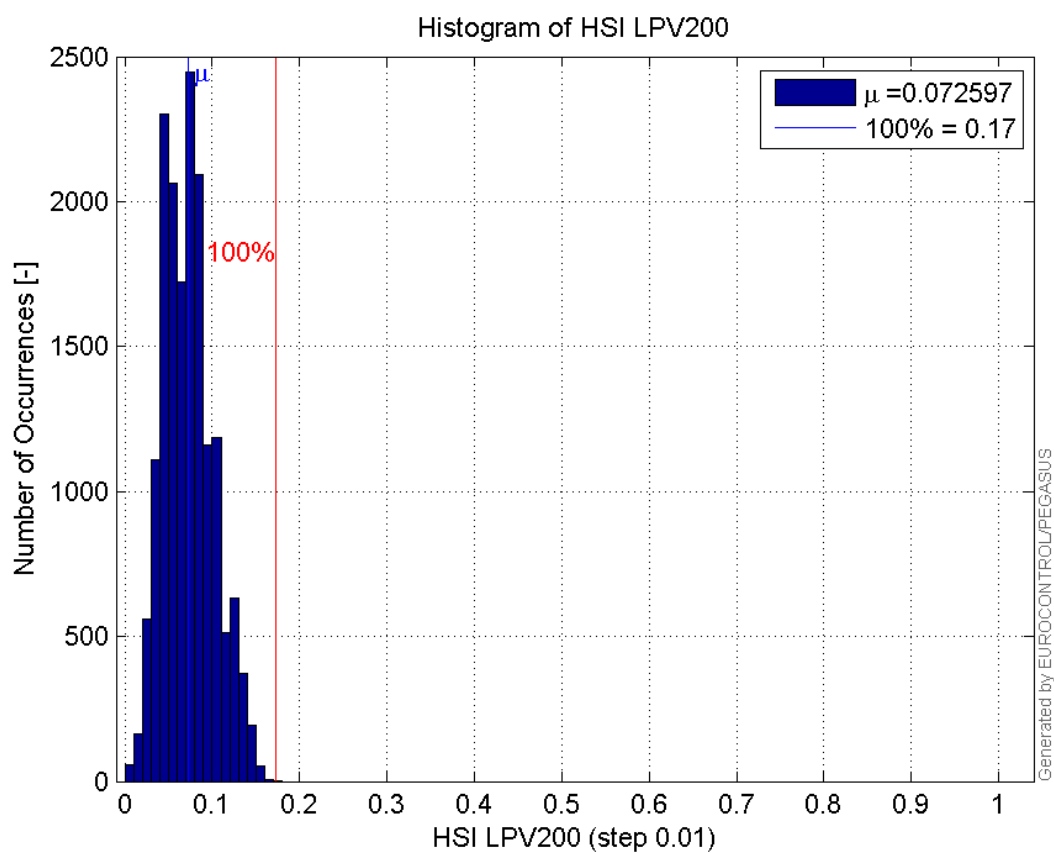
Histogram of HPL LPV200:



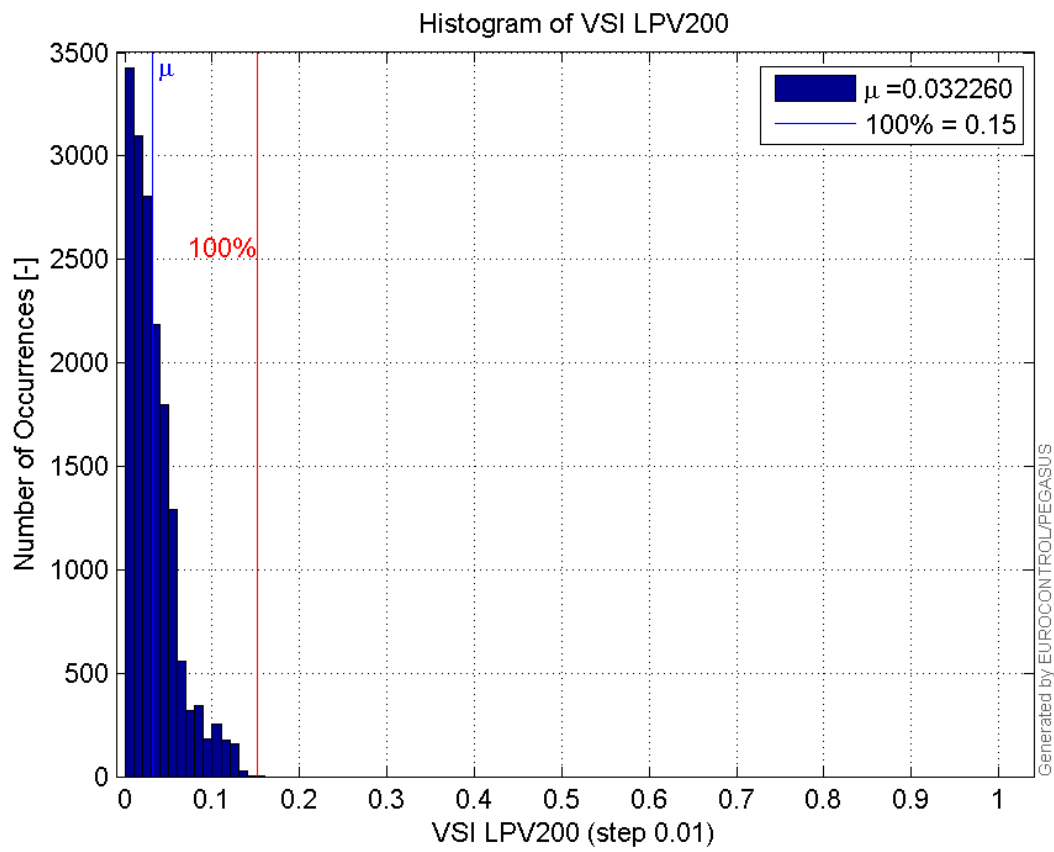
Histogram of VPL LPV200:



Histogram of HSI LPV200:

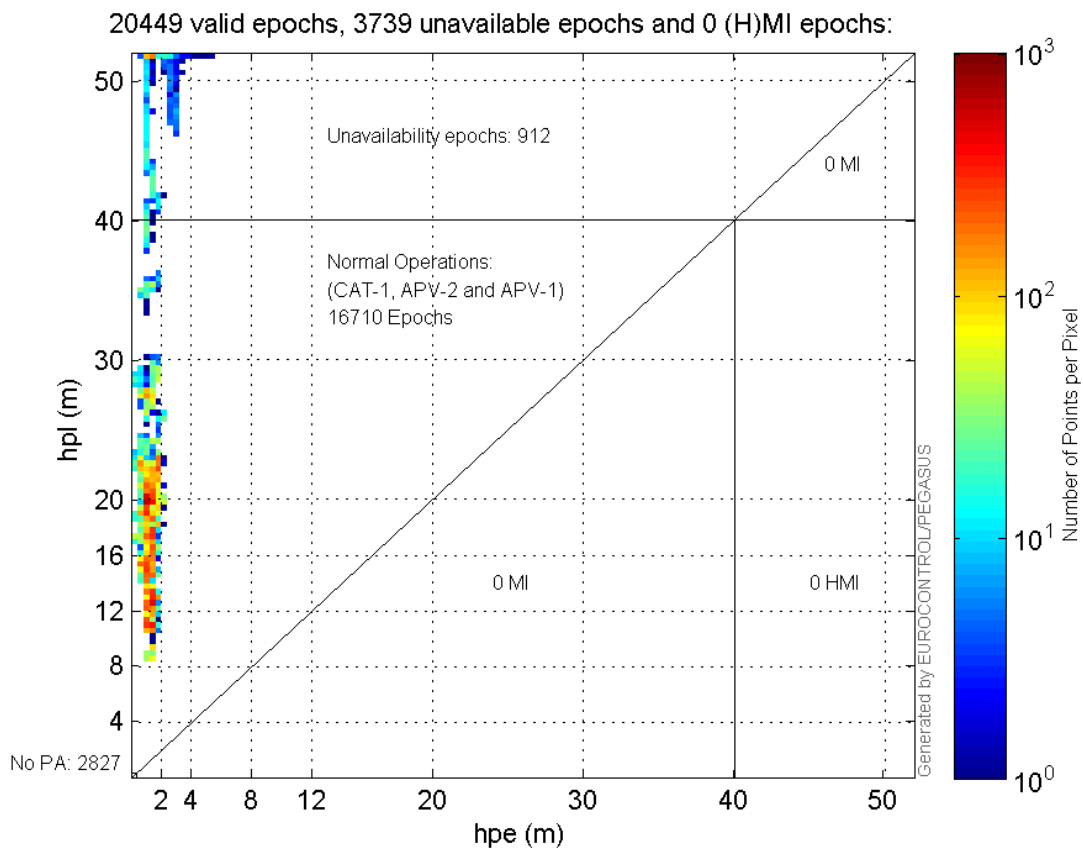


Histogram of VSI LPV200:

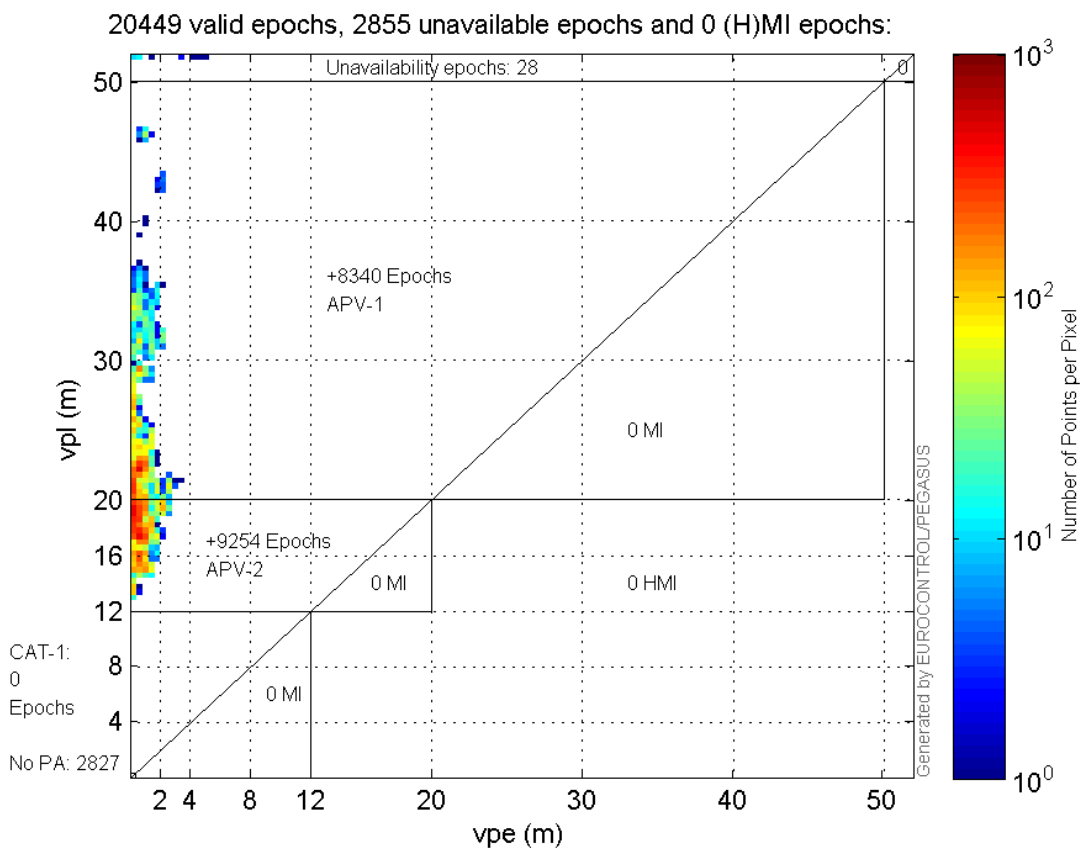


Stanford Plots

Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateGob/job/2016_02_20EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_20EGNOS/03_GNSS_Solution/03_GNSS_Solution_sol

settings

Name	Section	Value
ref_lat	settings	50.439
ref_lon	settings	30.4297
ref_alt	settings	215.271
smoothing	settings	yes
smoothing_constant	settings	100
smoothing_max_gap	settings	10
smoothing_max_divergence	settings	3
min_elevation	settings	5
aad_model	settings	a
output_range_file	settings	yes
sbas_prn	settings	120
gnss_mode	settings	sbas

results		
Name	Section	Value
init_lat	results	50.439
init_lon	results	30.4297
init_alt	results	218.6855
mi_numbers	results	0