

Global View

comment Debugging
 program Pegasus
 version 4.8.2
 country Ukraine
 abbreviation NAU
 city Kiev
 site Laboratory satellite systems
 date 20/10/2015

Position Domain

start: 04:50:02 16.09.2015 (week: 1862 sec: 276602)
end: 11:52:06 16.09.2015 (week: 1862 sec: 301926)
duration: 07:02:05 ..

quality

valid samples 24964
total samples 25325

Event tables

Position discontinuity events type no (0)
APV-I discontinuity events type long
APV-35m discontinuity events type all
LPV-200 discontinuity events type all
CAT-I discontinuity events type nothing

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	301580	1.40861	10.8411	0.129932	1.04863	20.3693	0.0514809
max normVer	287230	3.35759	31.5556	0.106402	2.29754	17.0996	0.134362
max HPE	287069	3.85193	82.3282	0.0467875	-0.74939	32.1339	0.0233209
max VPE	279134	3.05102	69.503	0.0438977	-3.68107	73.2813	0.050232
min HPL	292797	0.457	8.76265	0.0521532	-	17.9647	0.00854431
min VPL	287348	0.446335	11.0704	0.0403179	0.317023	13.8784	0.0228429

APV-I discontinuity events :

#	Epoch	duration	stable period
1	278572	17	1
2	278612	1573	1
3	284776	21	4591
4	284917	19	120

5	285603	110	1
6	286380	160	667
7	287023	135	483
8	287296	50	138
9	296900	59	6128

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	278553	1632	1590
2	284776	21	4591
3	284917	19	120
4	285096	641	160
5	285989	10	252
6	286380	160	381
7	287023	135	483
8	287296	50	138
9	290597	278	3251
10	296900	59	6025

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	278553	1632	1590
2	284776	21	4591
3	284917	19	120
4	285096	641	160
5	285989	10	252
6	286380	160	381
7	287023	135	483
8	287296	50	138
9	290597	278	3251
10	296900	59	6025

First Glance analysis

Duration	25325
Number of Samples	25325
Number of invalid sample	361
Number of no position solution samples	0
Number of missing sample	0
Logging Loss	0
Processing Loss	1.4255
Number of Misleading Information	0
Data gaps	0
Discontinuities	0

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
24964	22793	21959	0	21959

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.68244	1.3706	1.38175	NaN	1.38175
HPEscale 95%	NaN	3.58937	3.60446	NaN	3.60446
VPE 95%	1.60808	1.50527	1.50887	NaN	1.50887
VPEscale 95%	NaN	3.93669	2.77104	NaN	2.77104

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.913035	0.879627	0	0.879627
measurements	0.985745	0.90002	0.867088	0	0.867088
Operational	0.985745	0.90002	0.867088	0	0.867088

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	33	10	--	10
Long	--	9	10	--	10
Independent	--	6	10	--	10
P(disc.)	NaN	0.00394858	0.00683091	NaN	0.00683091
P(slide)	NaN	0.00728294	0.00683091	NaN	0.00683091

Integrity events :

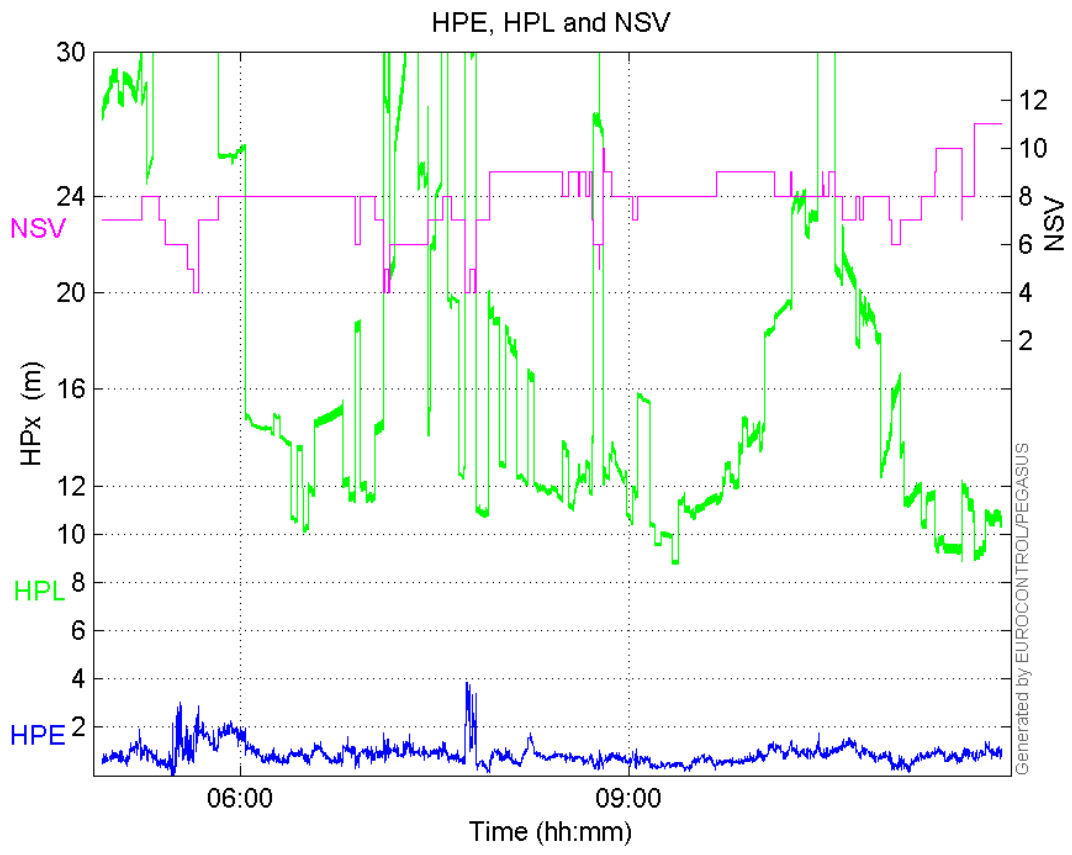
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

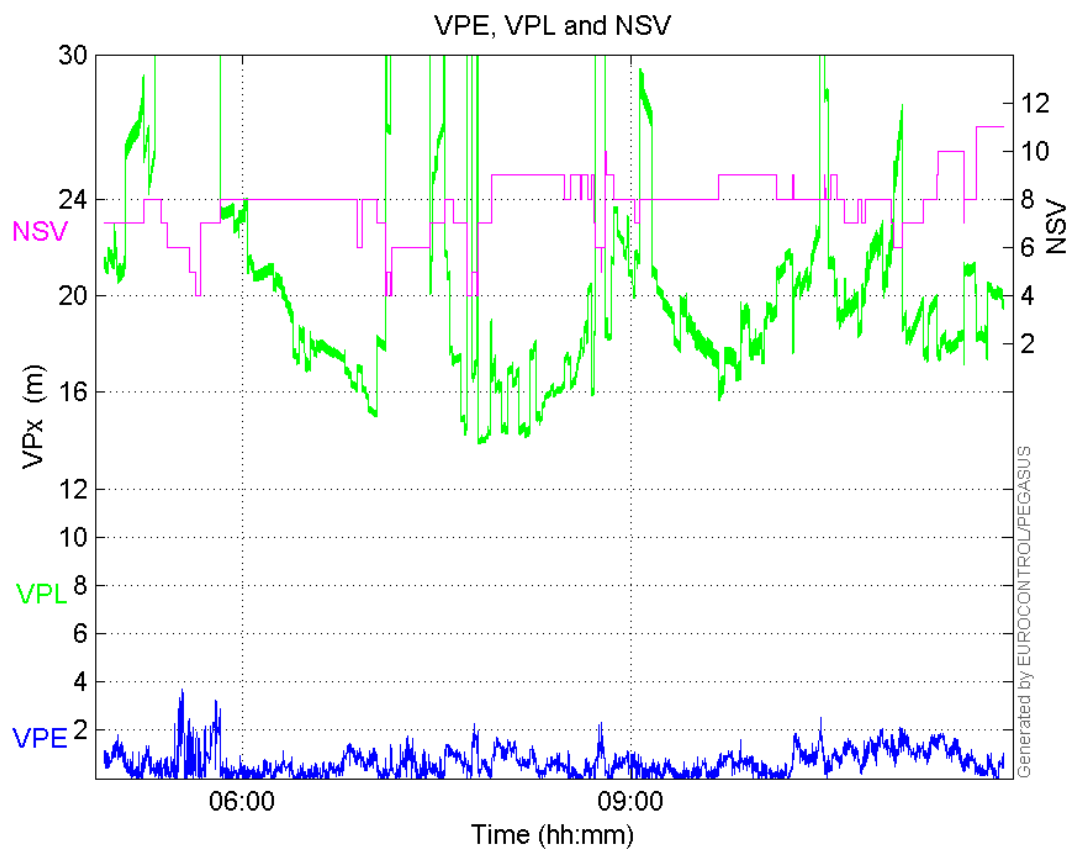
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	24964	22793	21959	0	21959
SIS Availability	1	0.913035	0.879627	0	0.879627
Local Availability	0.985745	0.90002	0.867088	0	0.867088
Operational Availability	0.985745	0.90002	0.867088	0	0.867088
HPE 95%	1.68244	1.3706	1.38175	NaN	1.38175
HPEscale 95%	NaN	3.58937	3.60446	NaN	3.60446
VPE 95%	1.60808	1.50527	1.50887	NaN	1.50887
VPEscale 95%	NaN	3.93669	2.77104	NaN	2.77104
All Discontinuity Events	--	33	10	--	10
Long Discontinuity Events	--	9	10	--	10
Independent Discontinuity Events	--	6	10	--	10
P(discontinuity)	NaN	0.00394858	0.00683091	NaN	0.00683091
P(sliding window)	NaN	0.00728294	0.00683091	NaN	0.00683091
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:

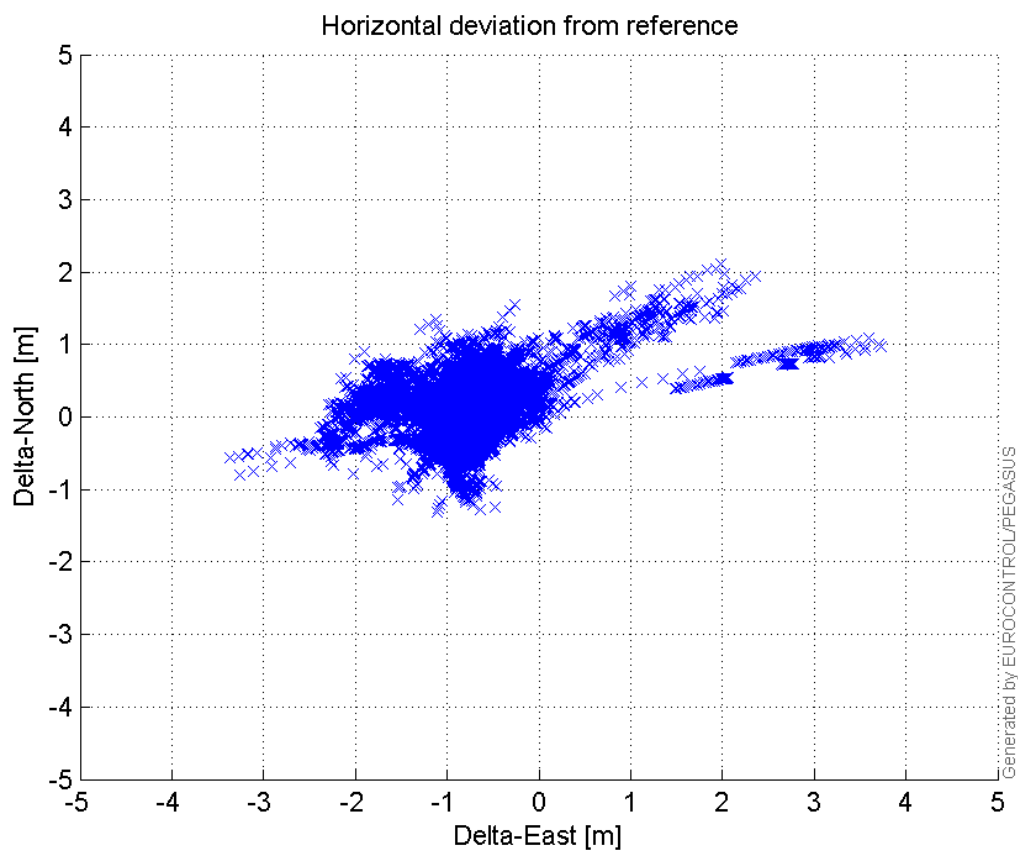


VPE, VPL and NSV:



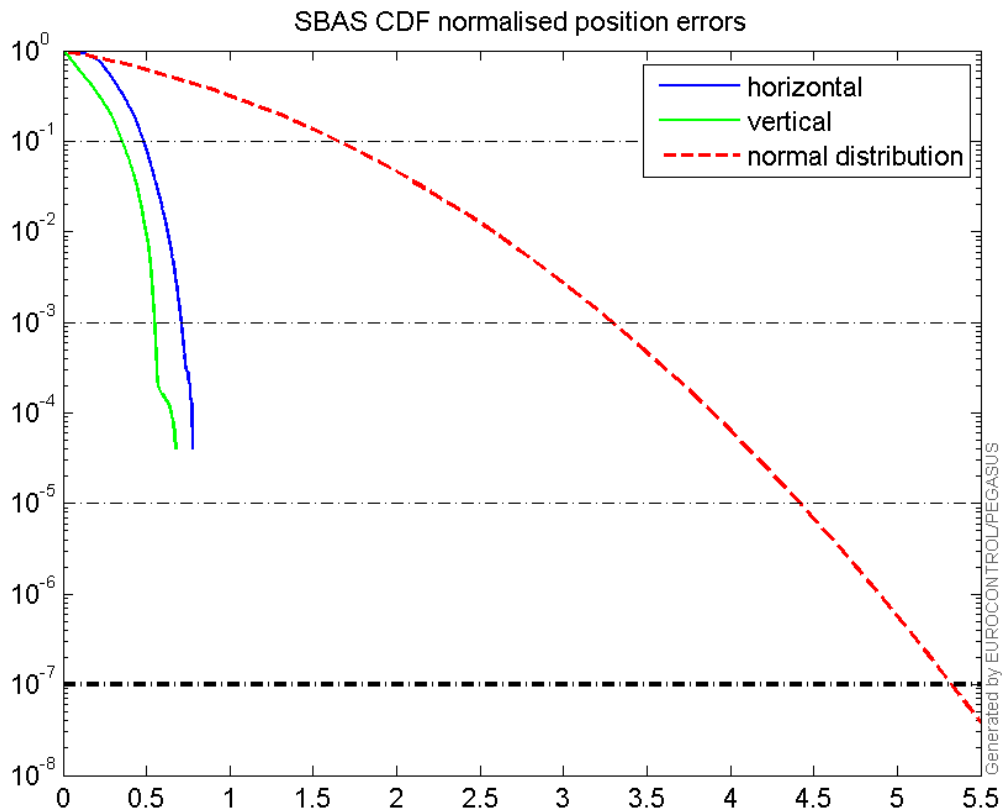
Horizontal deviation

Horizontal deviation from reference :



CDF position

SBAS CDF position domain:



Statistics

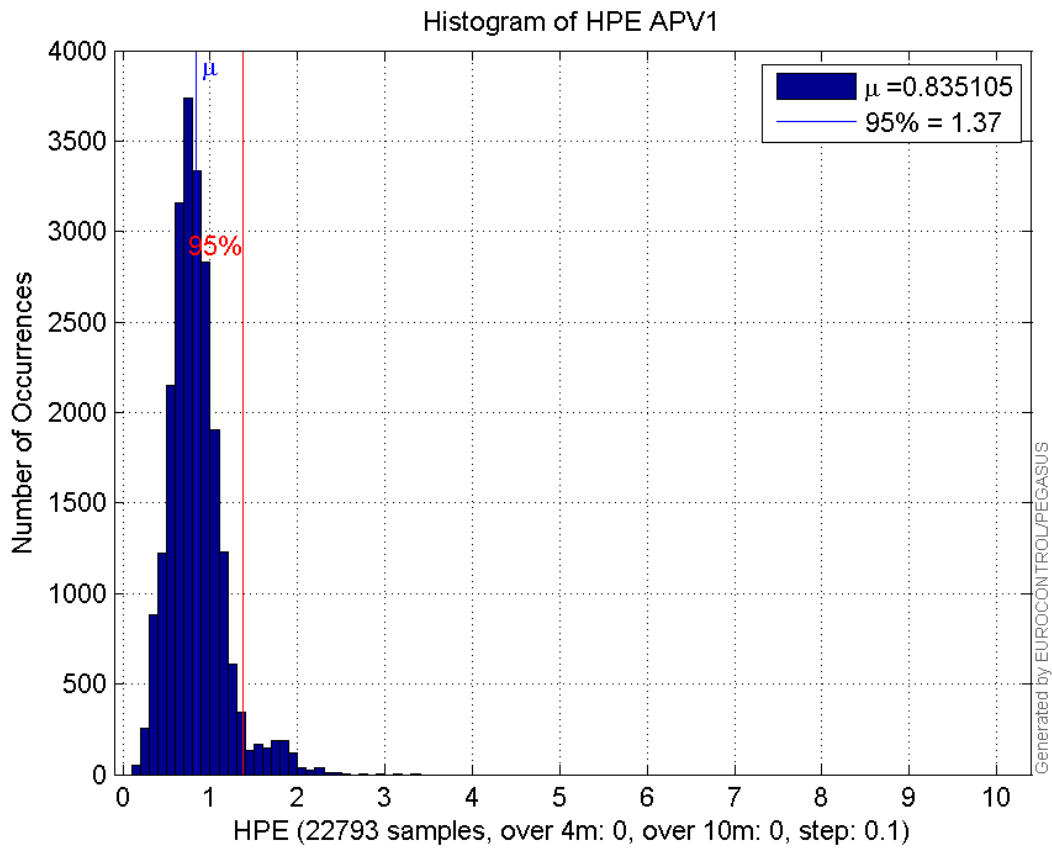
number	22793
sum	19034.554
sum2	18120.561
prctile95	1.3705972
prctile99	1.9106418
number	22793
sum	14480.957
sum2	13972.795
prctile95	1.5052743
prctile99	1.780754
number	22793
sum	381402.58
sum2	7381015.9
prctile95	29.248725
prctile99	33.131283
number	22793
sum	473479.47
sum2	10543460
prctile95	32.58829
prctile99	42.50956
number	22793
sum	1229.6088

sum2 75.425414
prctile95 0.089734293
prctile99 0.10527705
number 22793
sum 736.59188
sum2 37.100231
prctile95 0.078733881
prctile99 0.093743526
number 21959
sum 18344.38
sum2 17466.975
prctile95 1.3817504
prctile99 1.912576
number 21959
sum 13794.025
sum2 13275.882
prctile95 1.5088721
prctile99 1.7817657
number 21959
sum 357113.09
sum2 6665024.7
prctile95 28.797355
prctile99 31.98641
number 21959
sum 438732.35
sum2 9086640.9
prctile95 27.70111
prctile99 33.266002
number 21959
sum 1206.059
sum2 74.676914
prctile95 0.090111585
prctile99 0.10543011
number 21959
sum 719.94663
sum2 36.687321
prctile95 0.079172475
prctile99 0.094060547

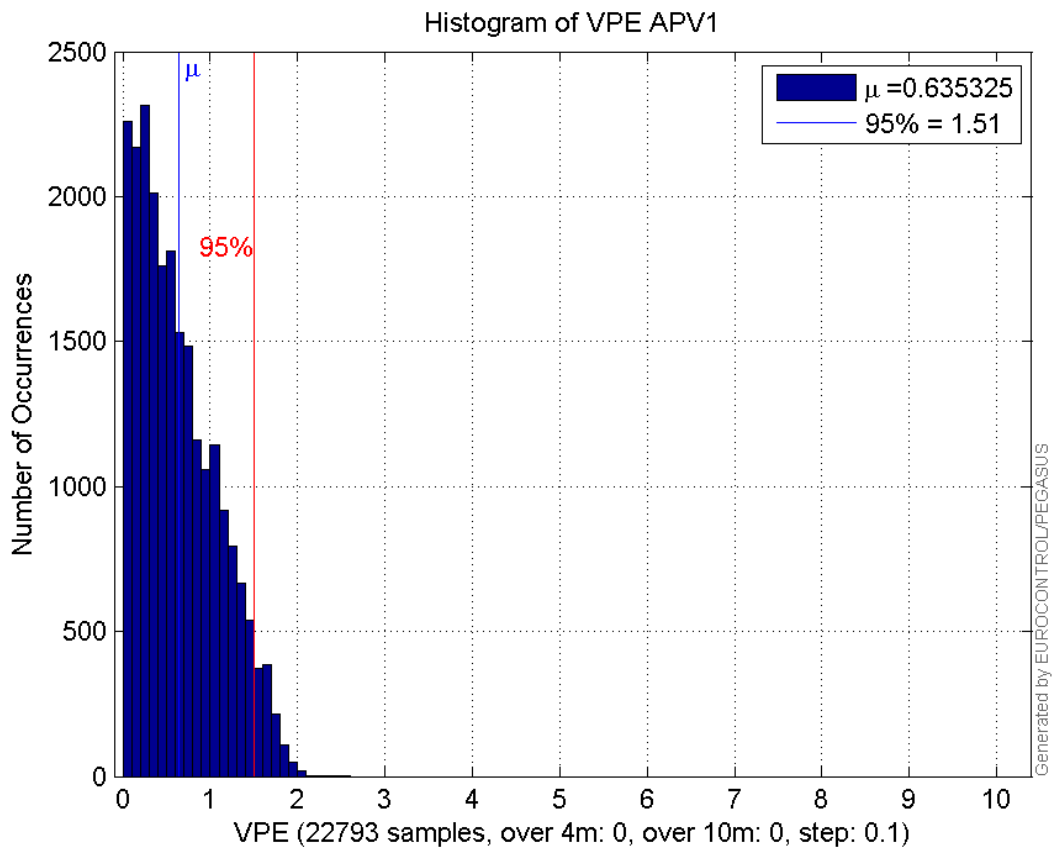
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	0.835105	0.312424	0.798347	1.3706	1.91064	0.891631
HPL	16.7333	6.62013	14.2758	29.2487	33.1313	17.9952
VPE	0.635325	0.457604	0.551594	1.50527	1.78075	0.782962
VPL	20.773	5.57292	19.3614	32.5883	42.5096	21.5075

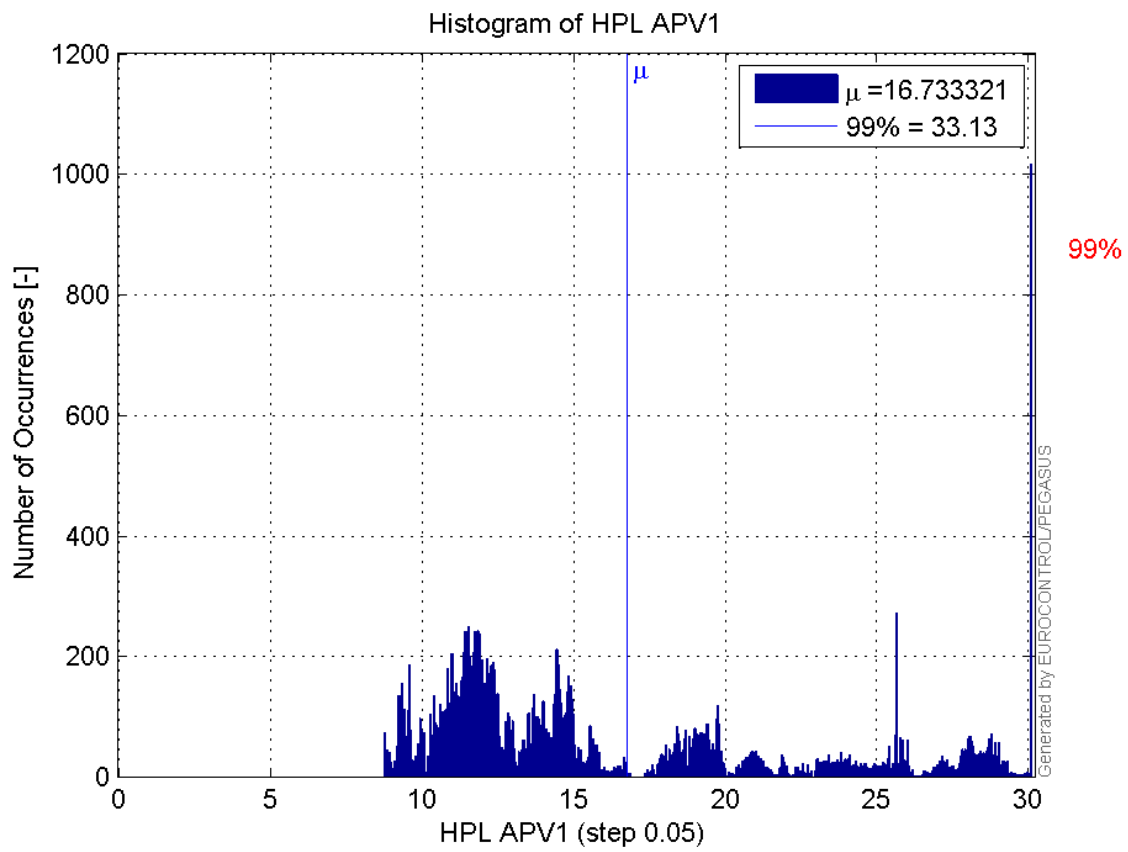
Histogram of HPE APV1:



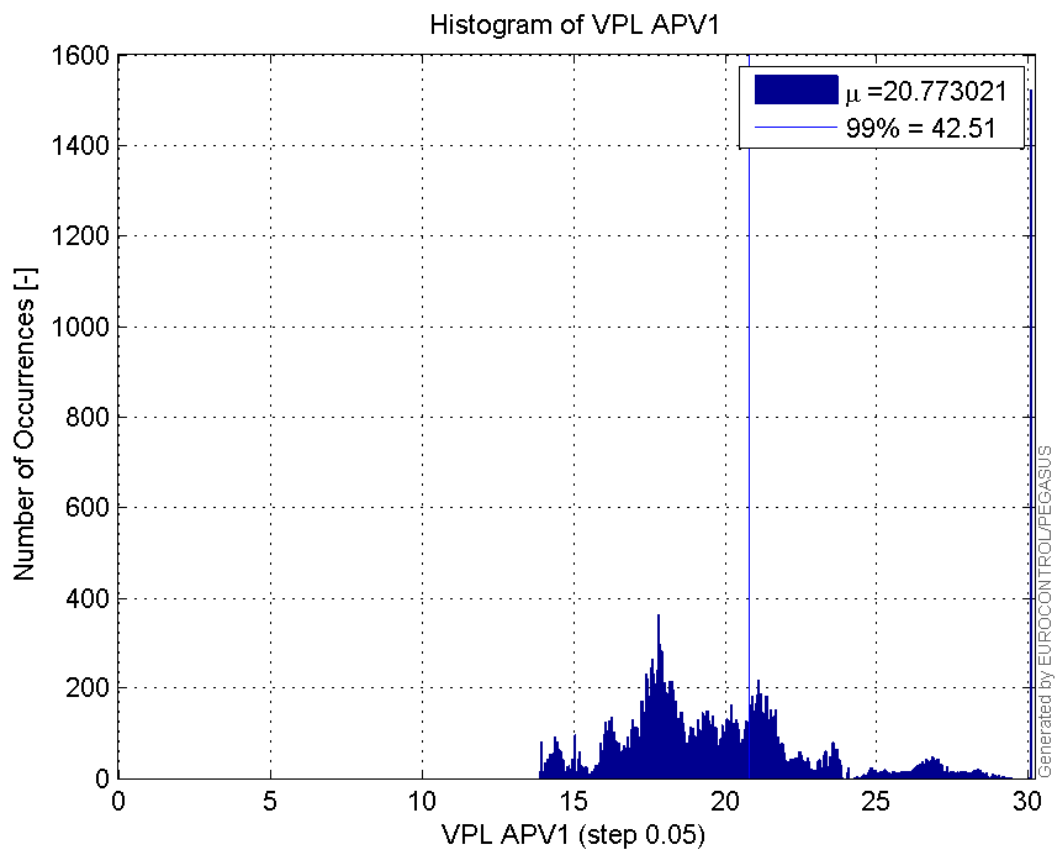
Histogram of VPE APV1:



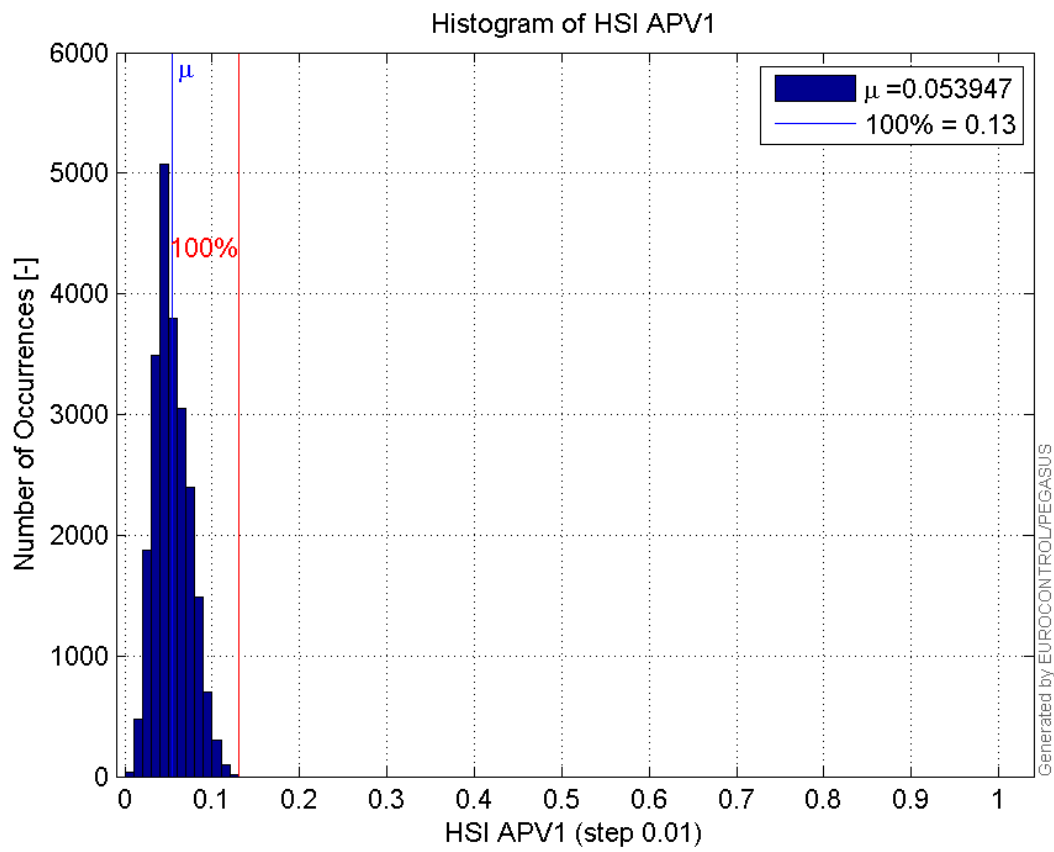
Histogram of HPL APV1:



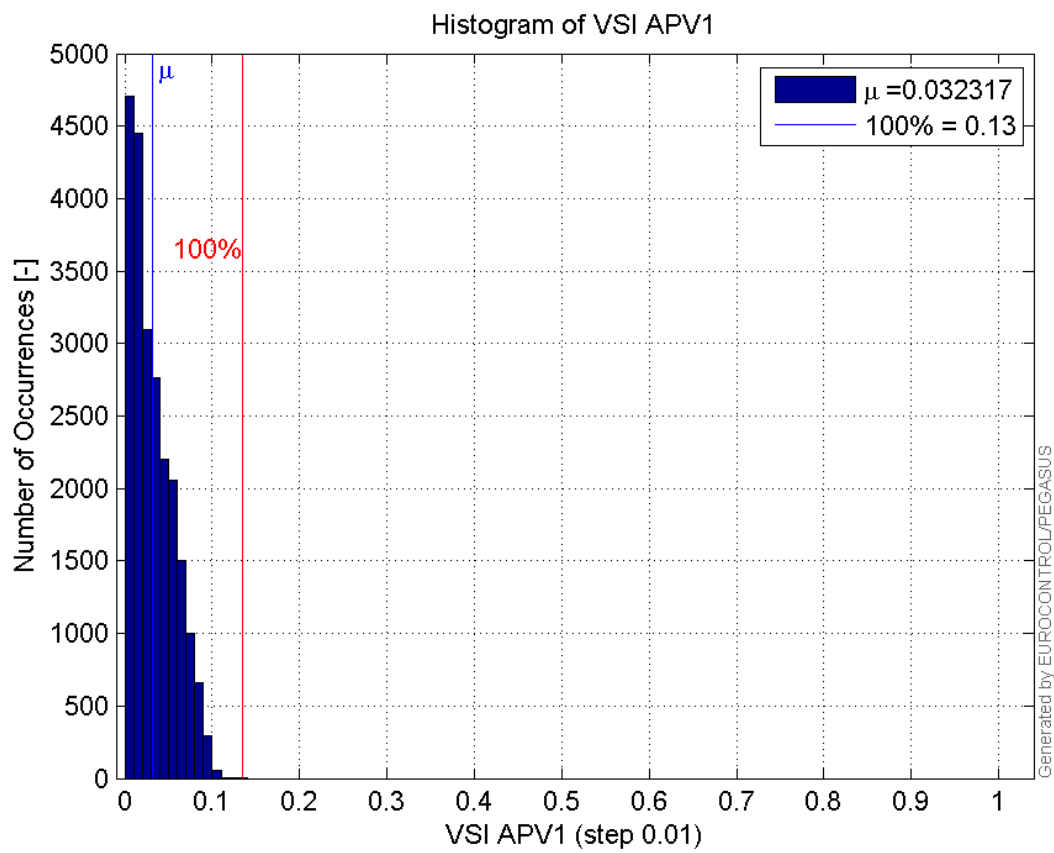
Histogram of VPL APV1:



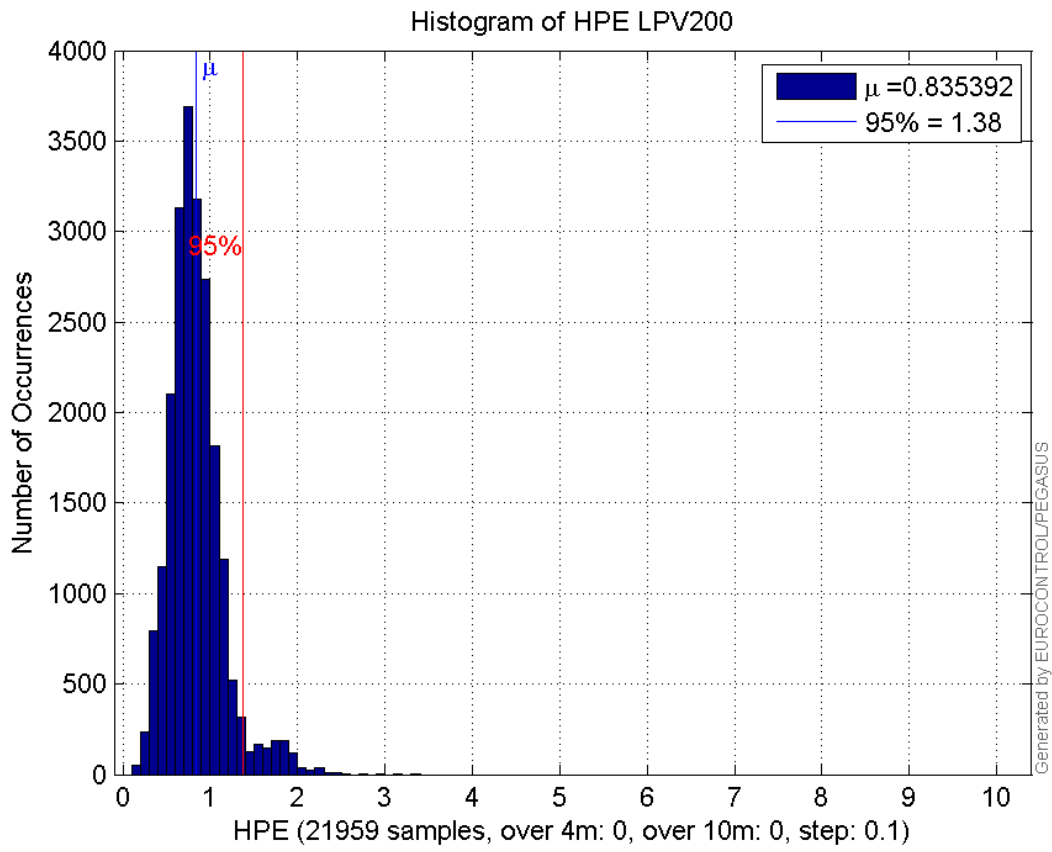
Histogram of HSI APV1:



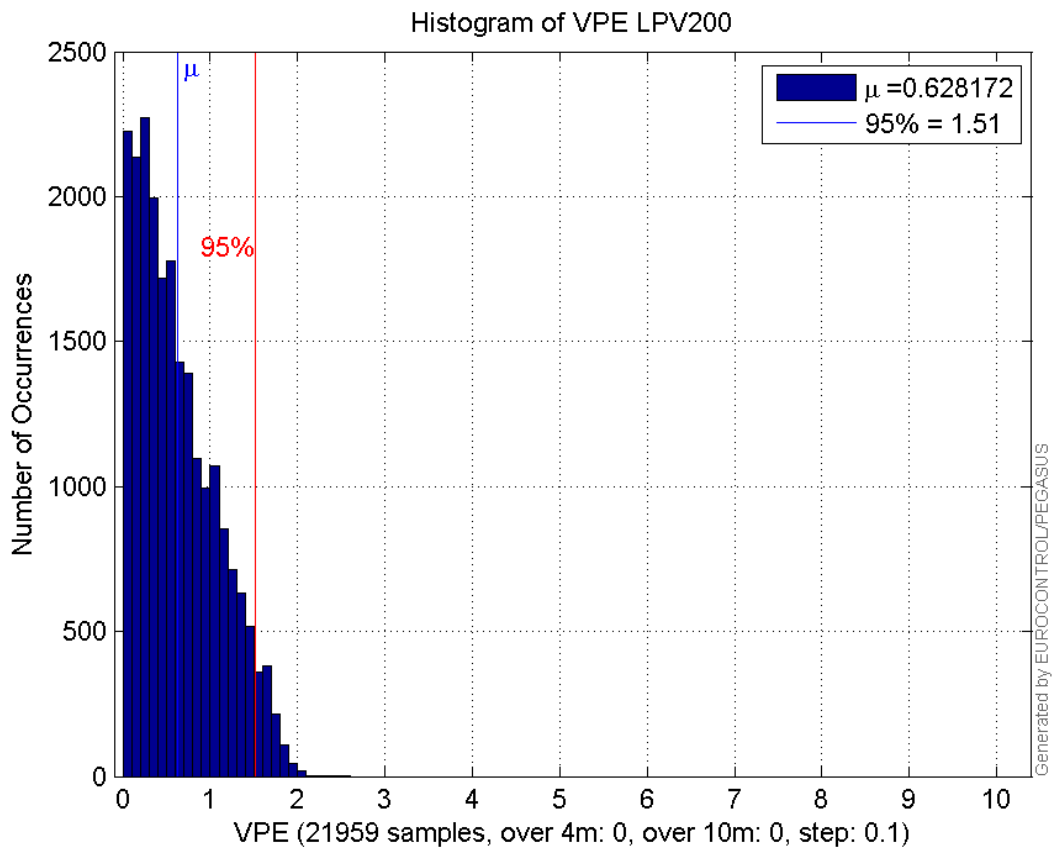
Histogram of VSI APV1:



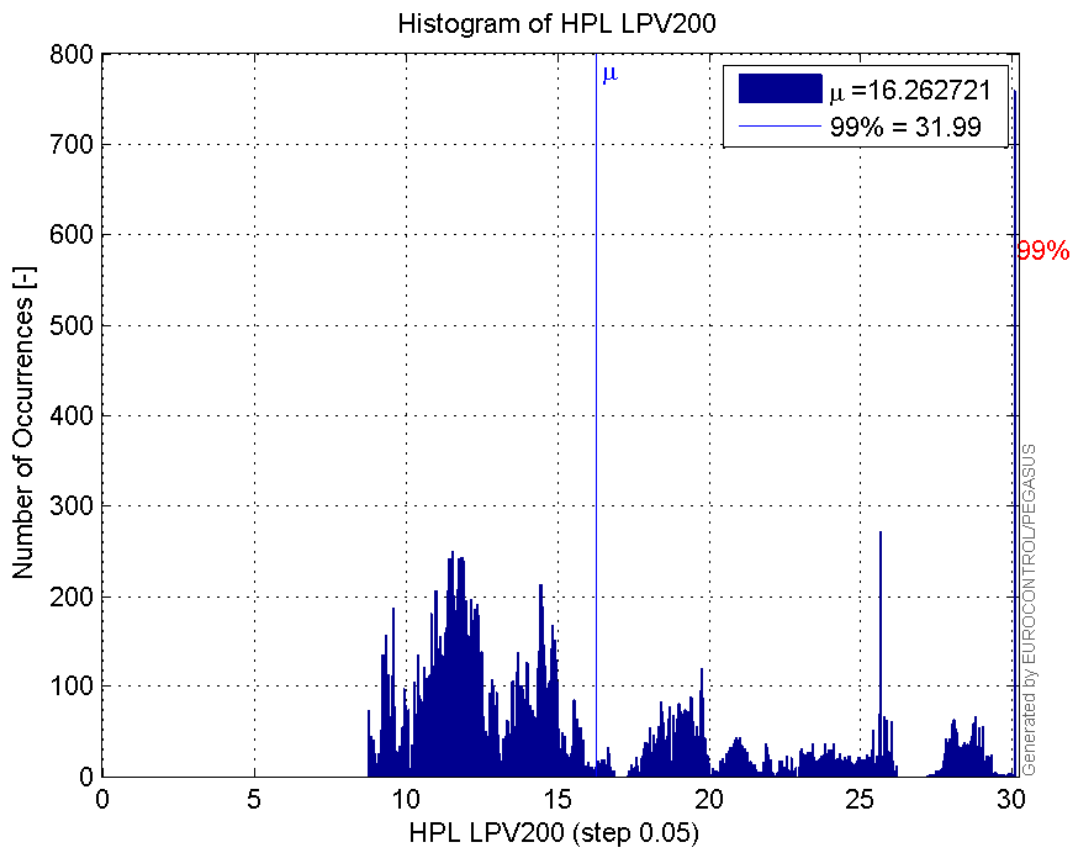
Histogram of HPE LPV200:



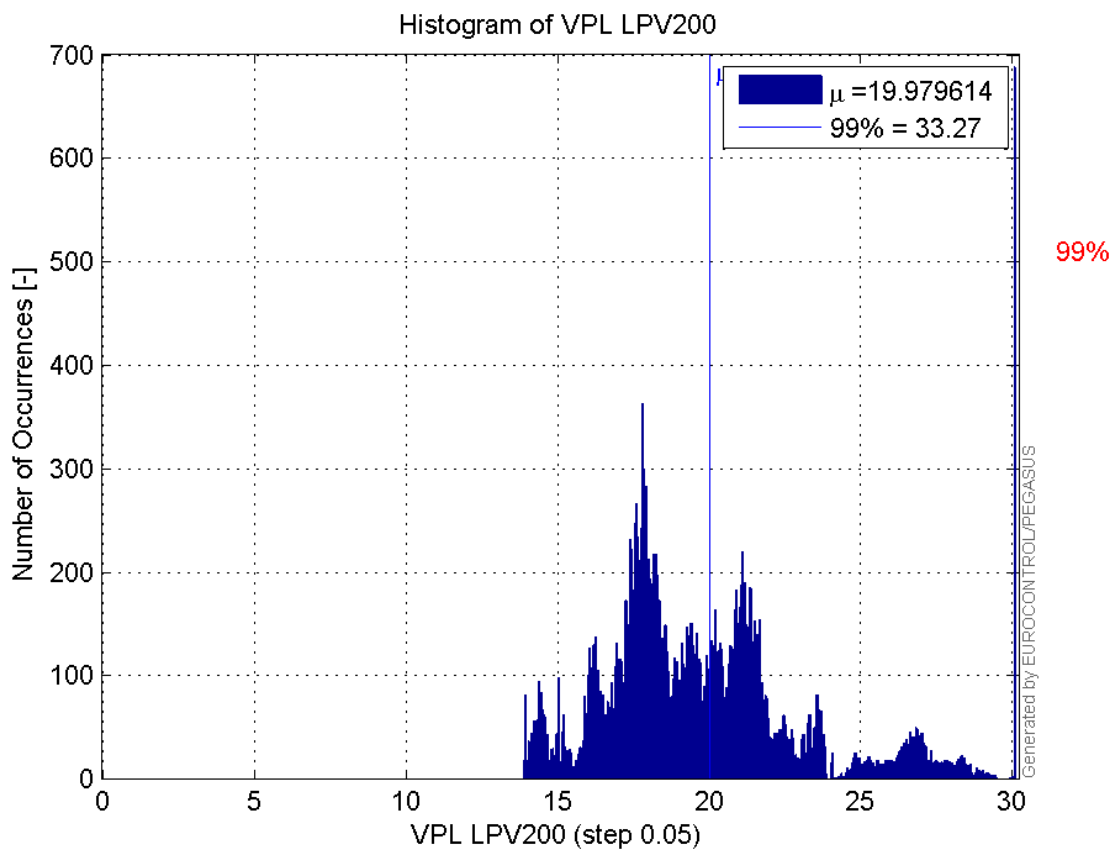
Histogram of VPE LPV200:



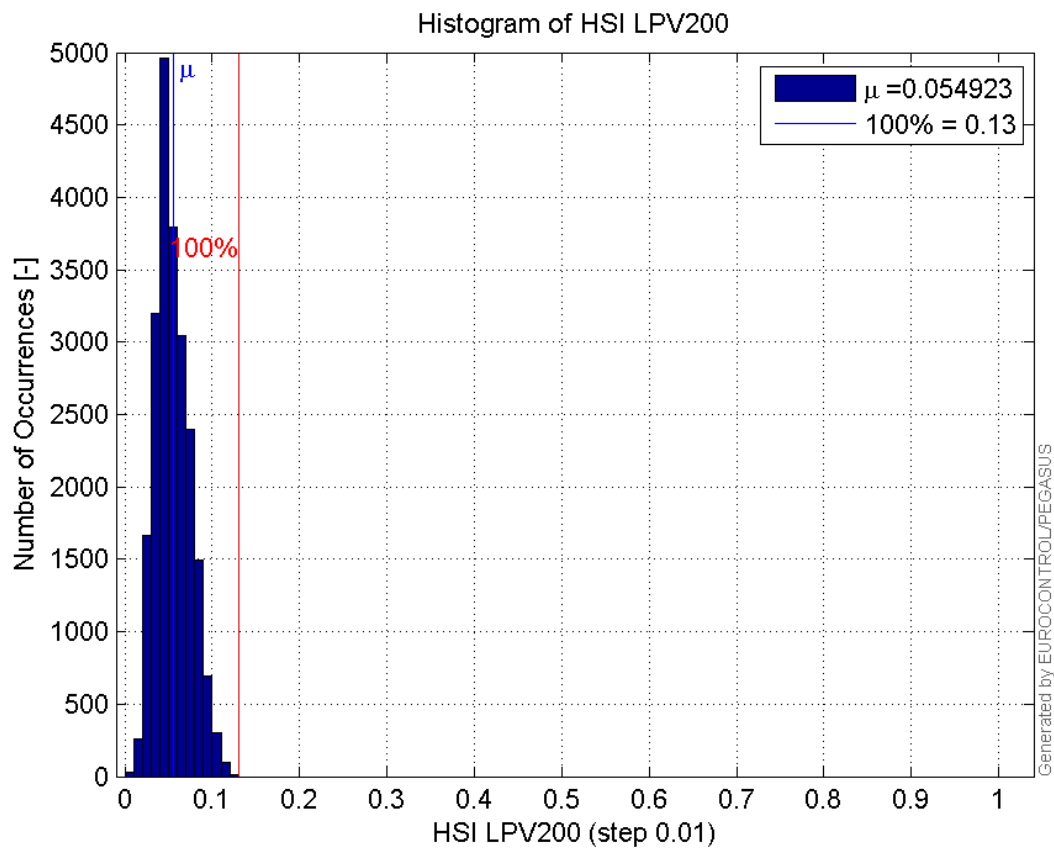
Histogram of HPL LPV200:



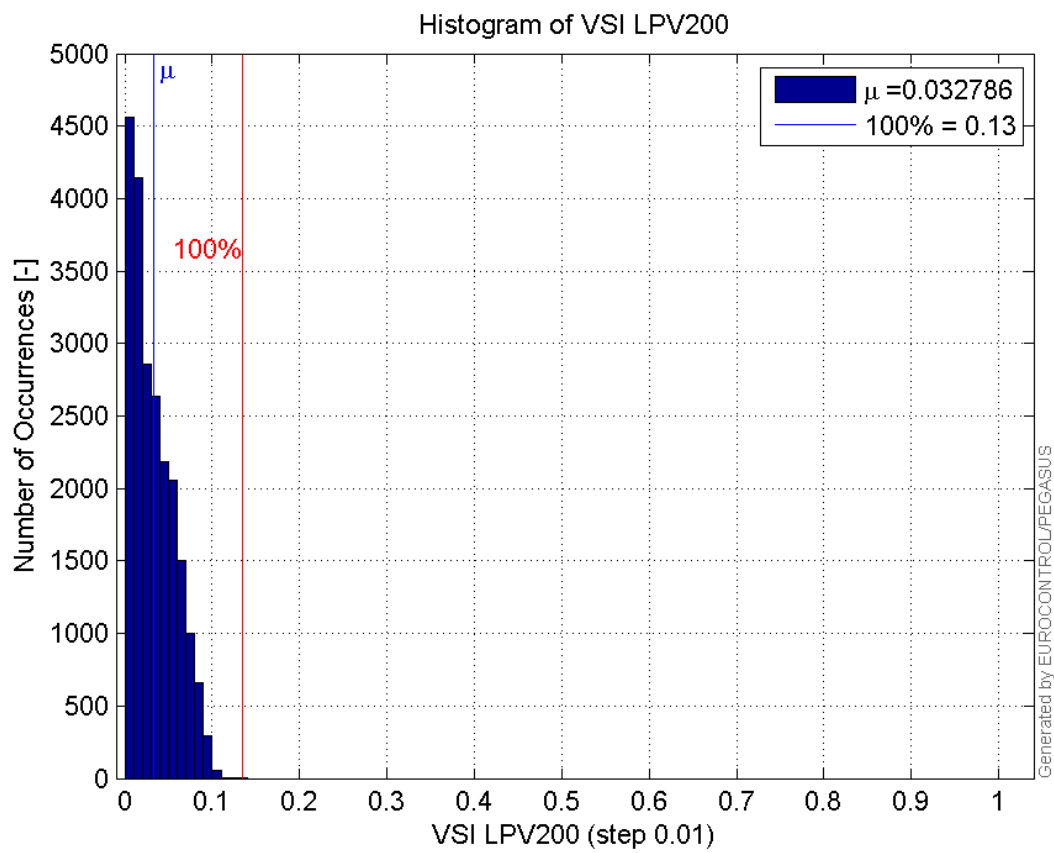
Histogram of VPL LPV200:



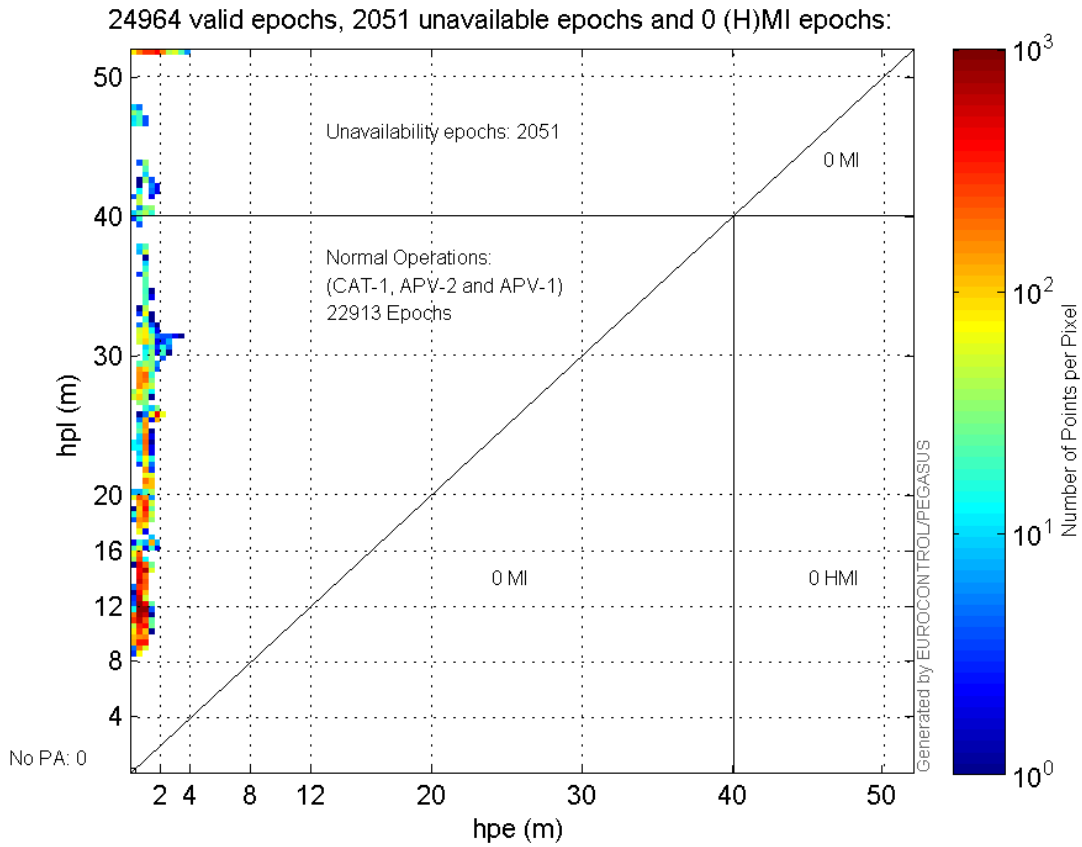
Histogram of HSI LPV200:



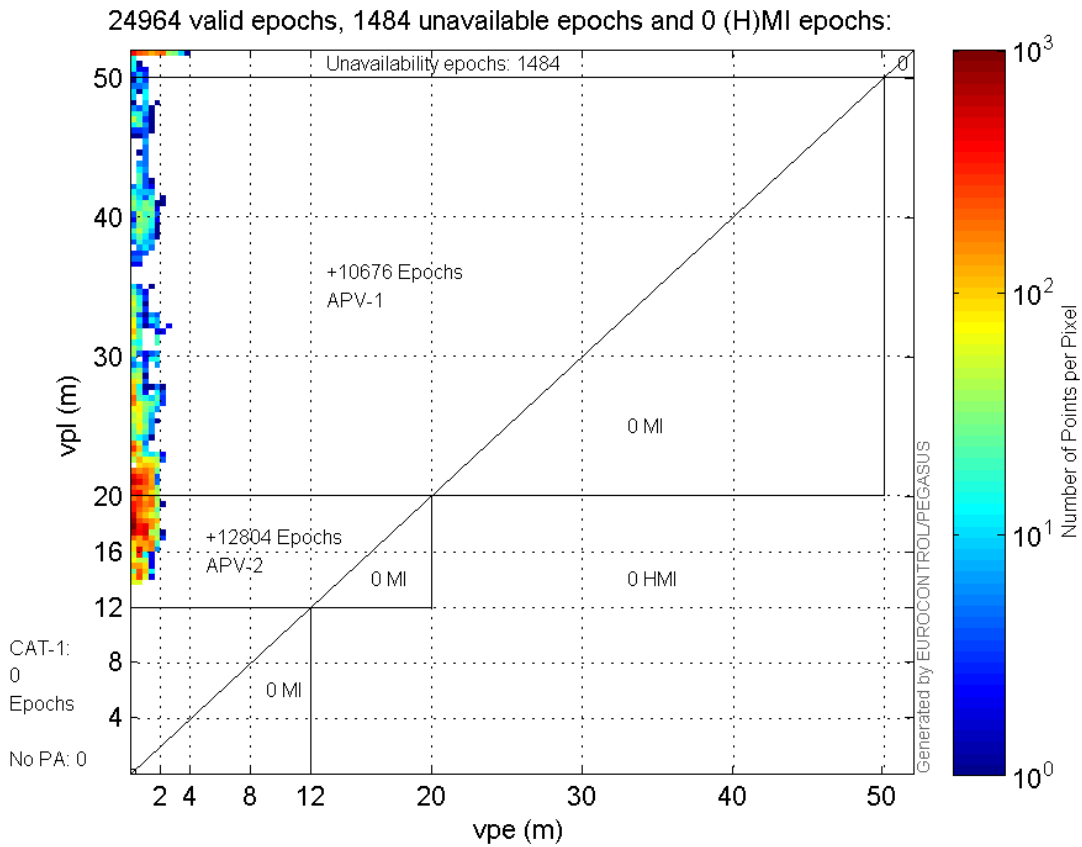
Histogram of VSI LPV200:



Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_09_16EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_09_16EGNOS/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	50.4389
init_lon	results	30.4296
init_alt	results	265.3351
mi_numbers	results	0

Range Domain

start: 04:50:02 16.09.2015 (week: 1862 sec: 276602)
end: 11:52:06 16.09.2015 (week: 1862 sec: 301926)
duration: 07:02:05 ..

quality

valid samples 25325
total samples 25325

PRN overview

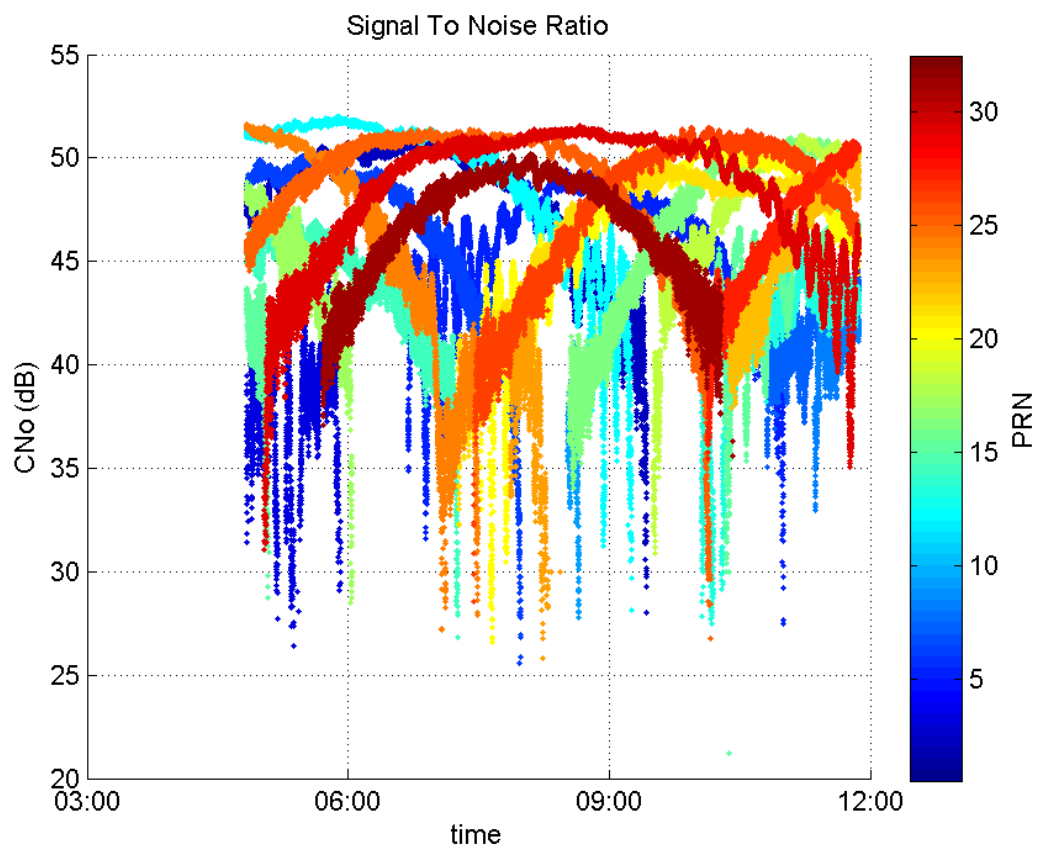
Number of Visible GPS Satellites 24
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



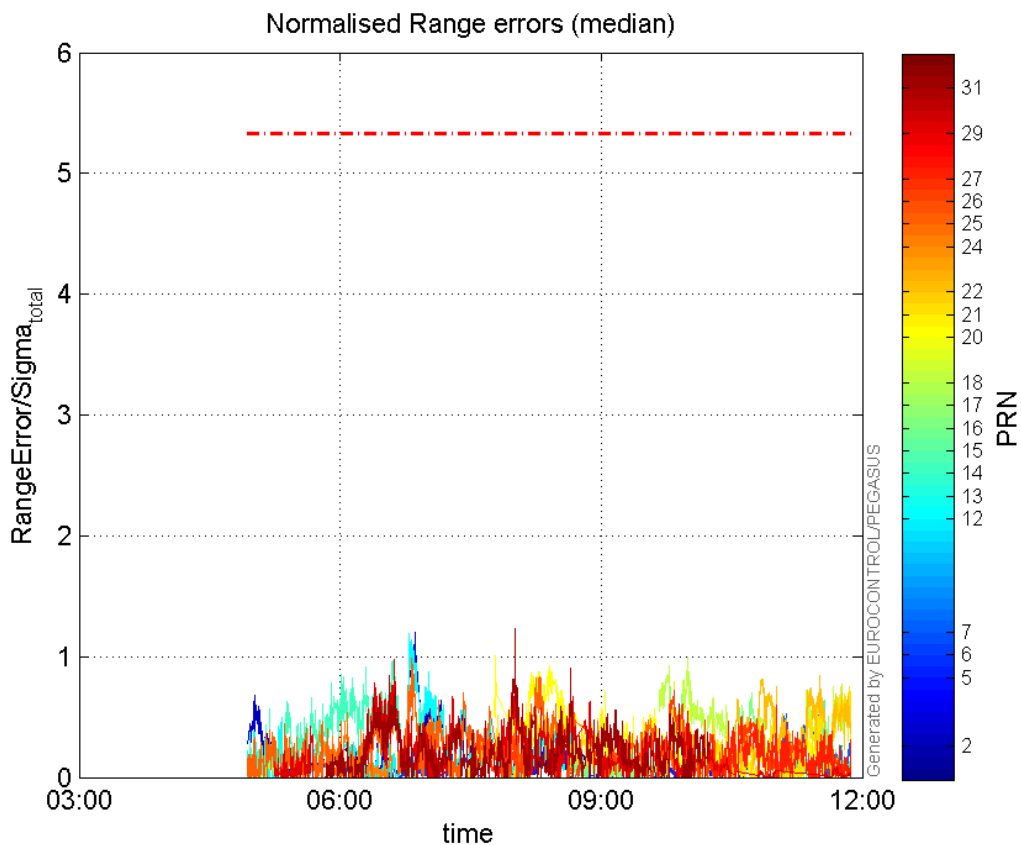
range errors

Number of Overbounding Norm Errors 0

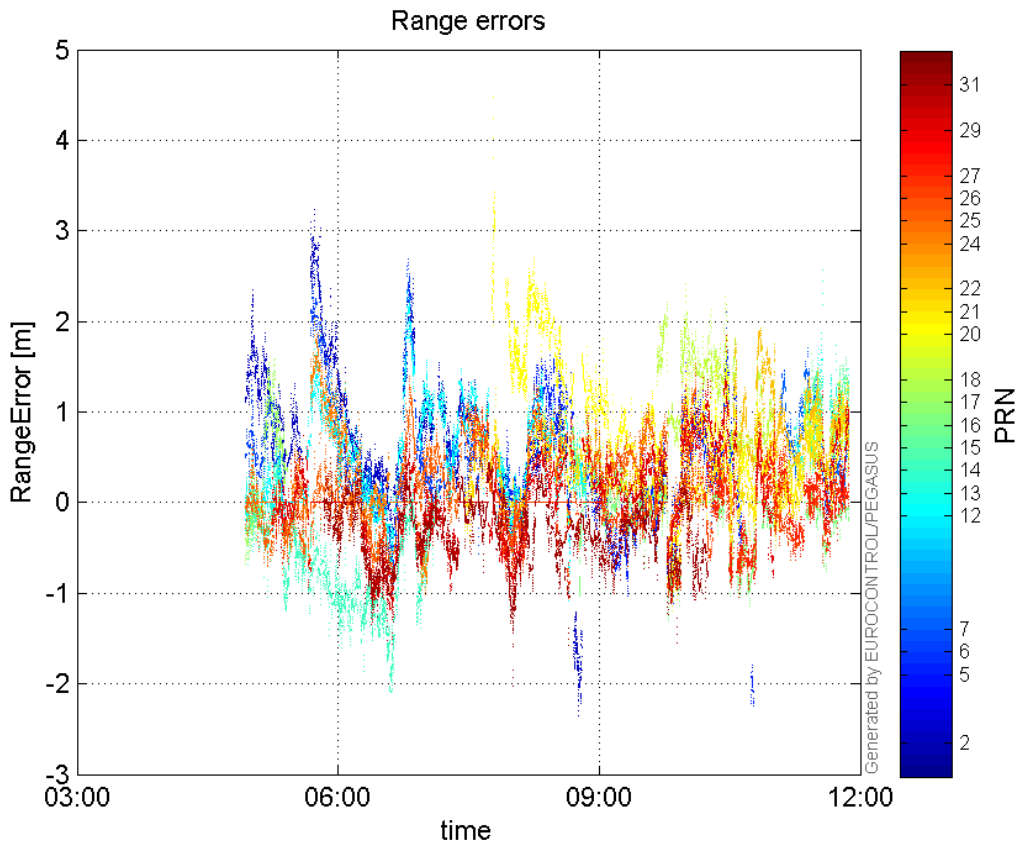
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1862	283894	2	1.20188	2.47545	2.05965
1862	292801	5	0.323765	-0.838618	2.59021
1862	283826	6	0.226375	2.18082	9.63366
1862	300230	7	0.626525	1.70399	2.71974
1862	283665	12	1.1864	2.33674	1.96961
1862	300826	13	0.642539	2.56565	3.99299
1862	282970	14	0.96388	-2.09133	2.1697
1862	301330	15	0.130878	1.1048	8.44148
1862	294449	16	0.748437	-1.30165	1.73916
1862	277920	17	0.146552	1.54301	10.5288
1862	295161	18	1.0004	2.41105	2.41009
1862	287230	20	1.0116	4.47317	4.42186
1862	294621	21	0.790229	-1.19328	1.51004
1862	300628	22	0.841548	1.47047	1.74734
1862	281093	24	0.534766	1.32692	2.48132
1862	283764	25	0.981662	1.36955	1.39513
1862	294618	26	0.722725	-1.0519	1.45546
1862	298856	27	0.593483	1.07544	1.81208
1862	283038	29	0.974169	-1.56742	1.60899
1862	288018	31	1.22954	-2.02861	1.64989

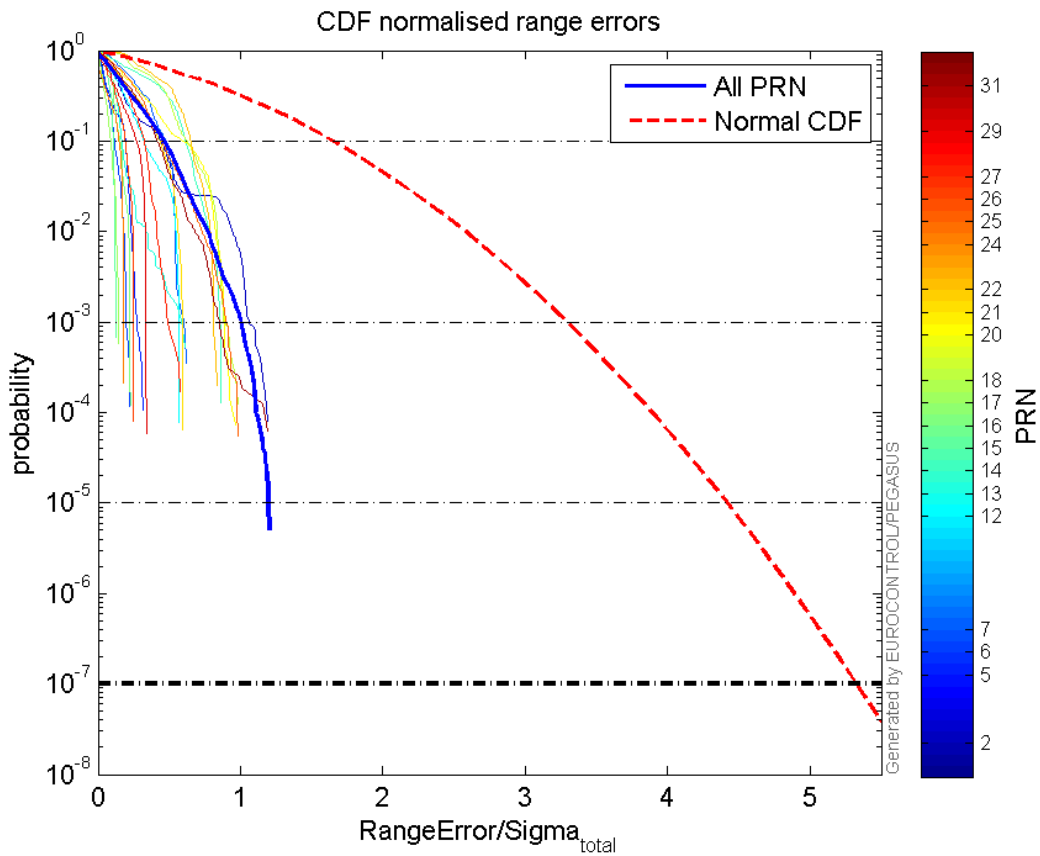
Normalised Range errors (median):



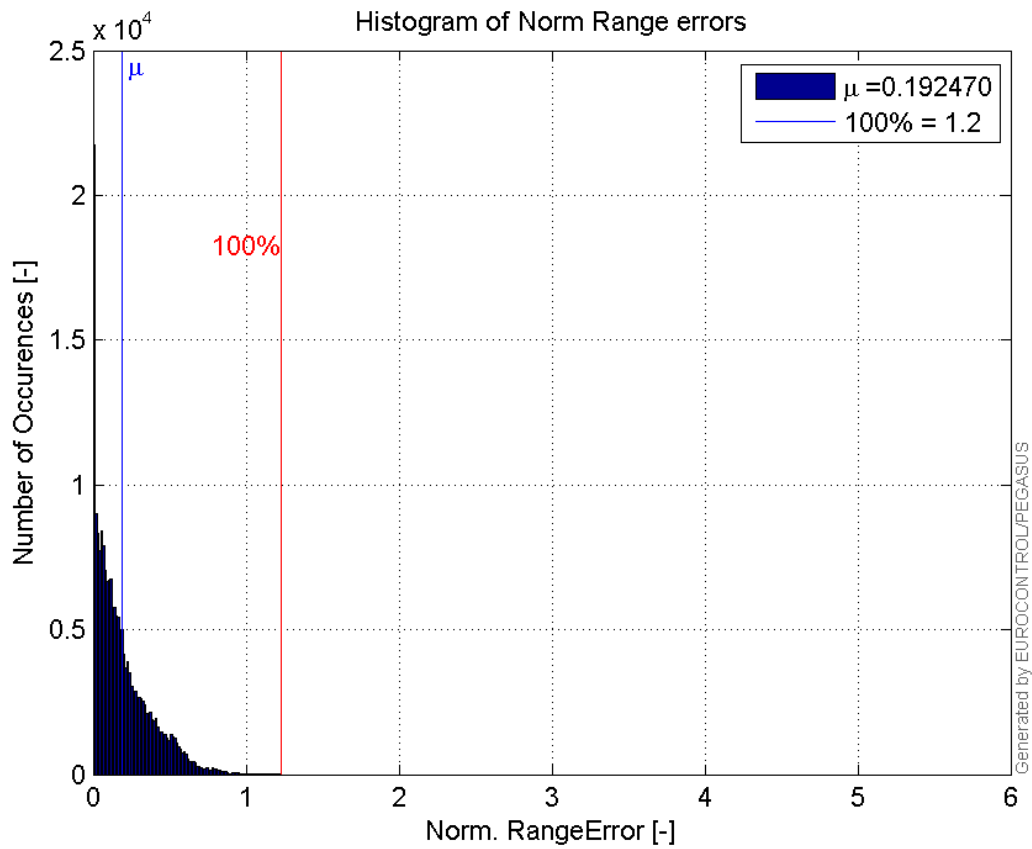
Range errors:



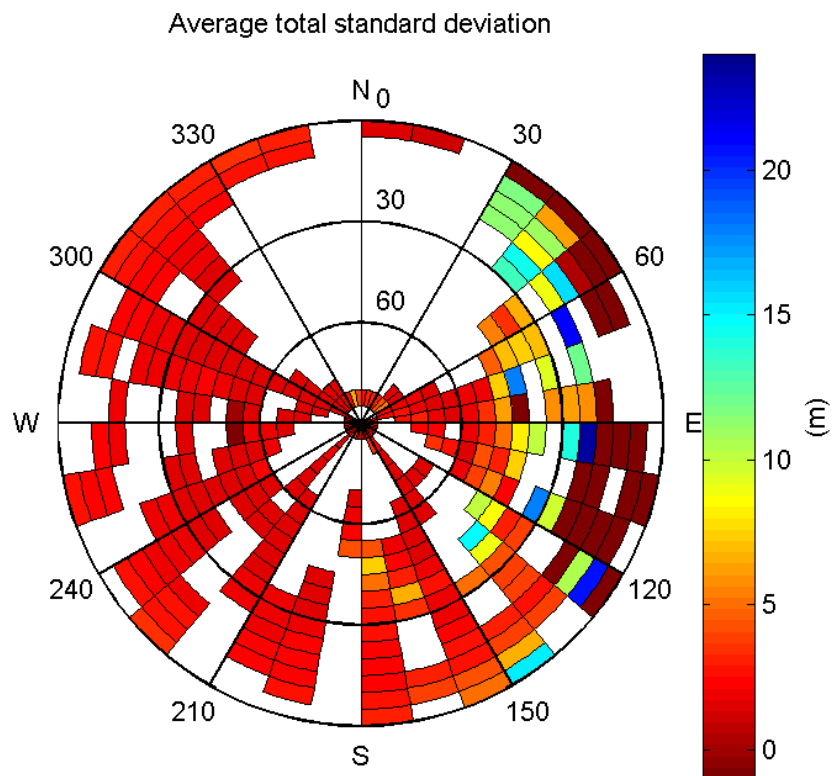
CDF normalised range errors:



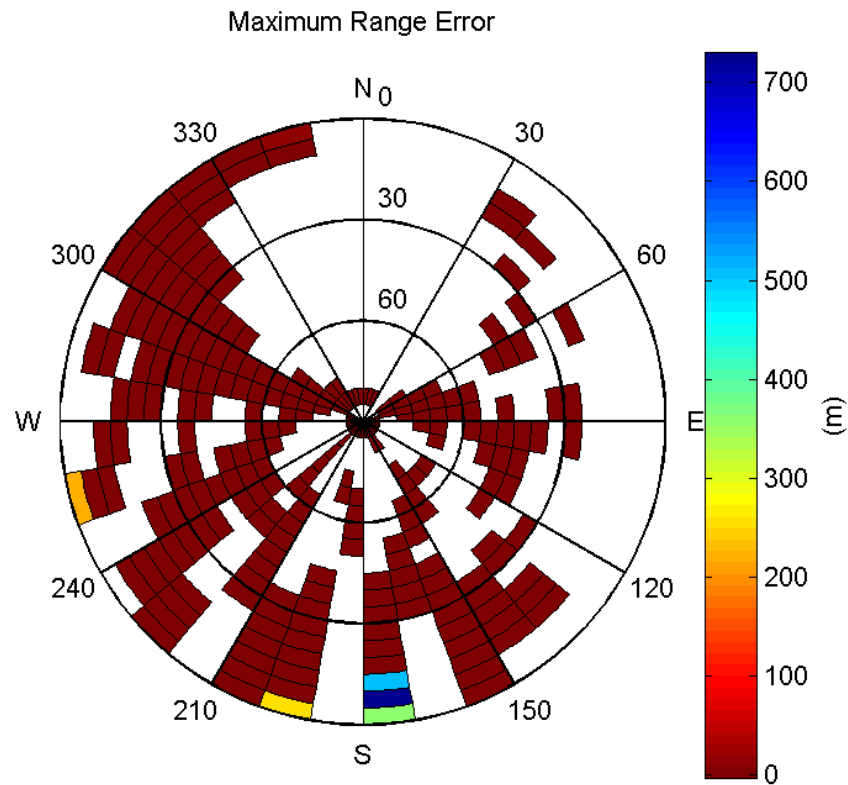
Histogram of Norm Range errors:



Sigma Sky Plot:

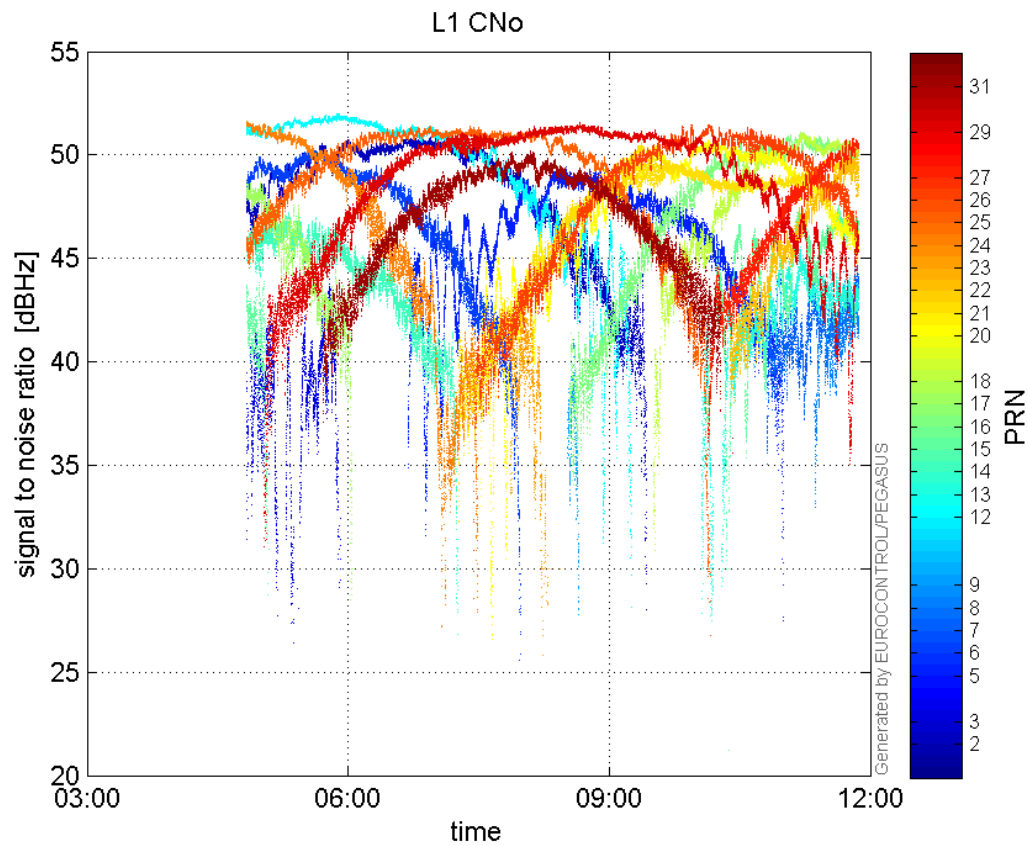


Norm Error Sky Plot:

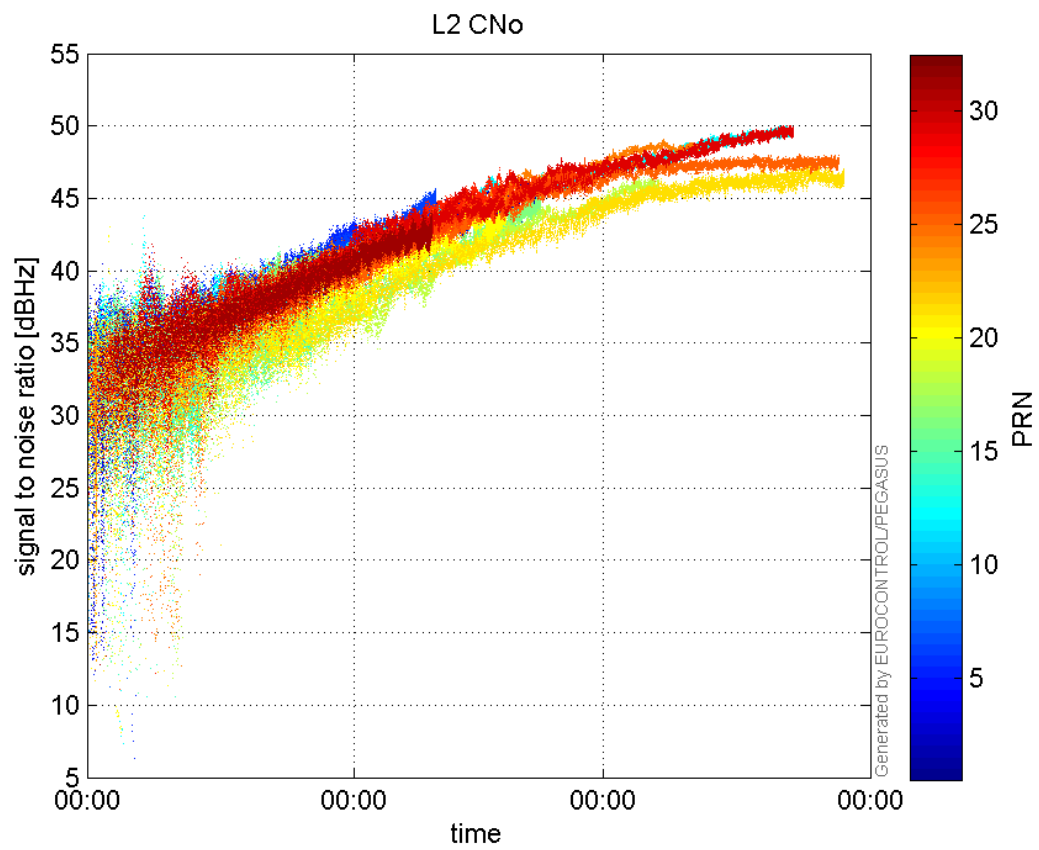


signal quality

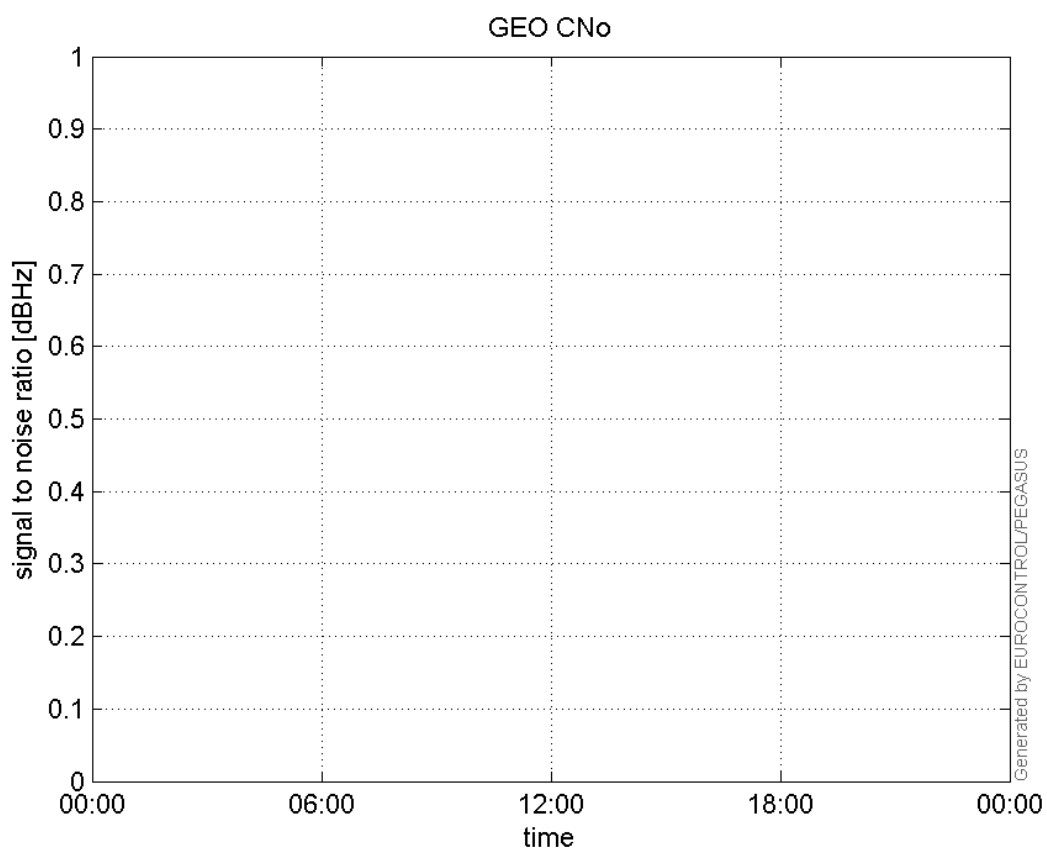
L1 CNo:



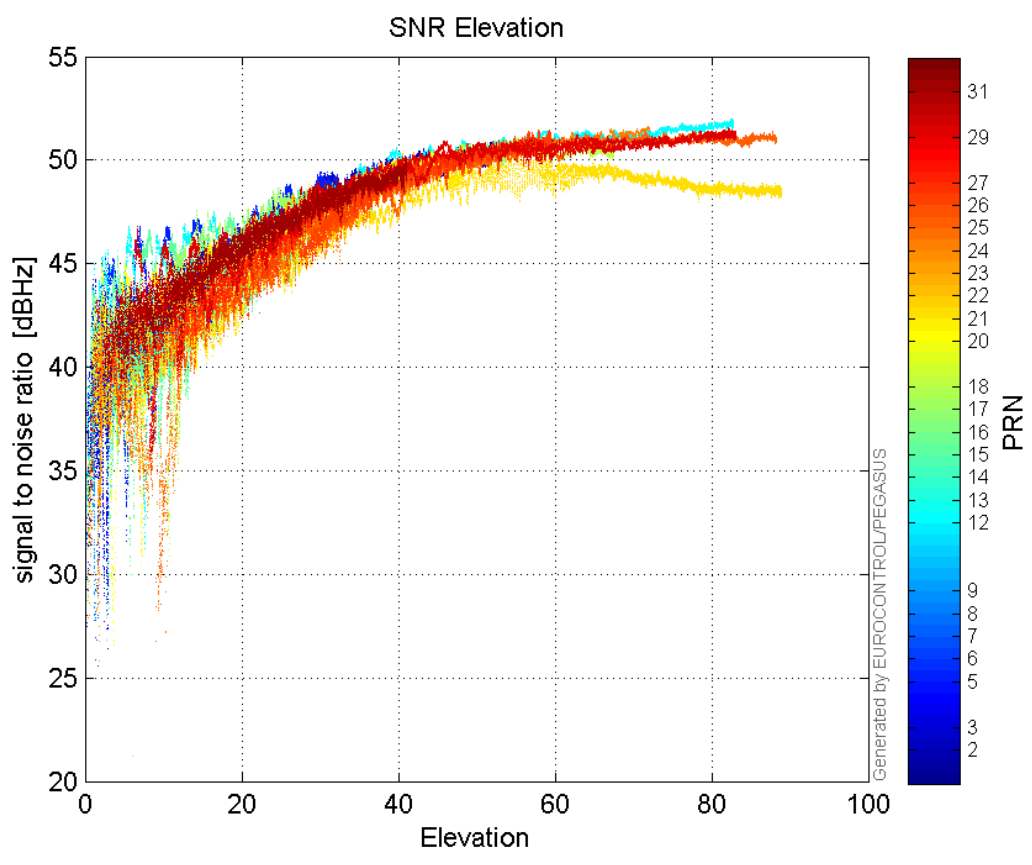
L2 CNo:



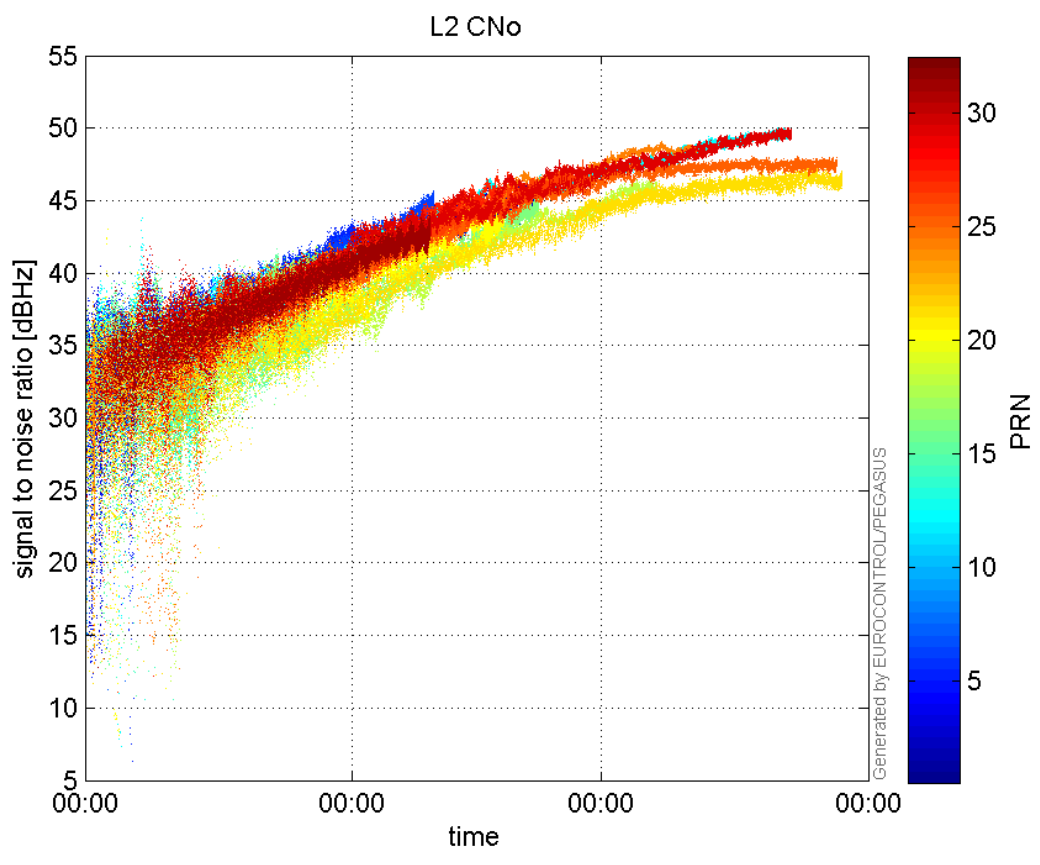
GEO CNo:



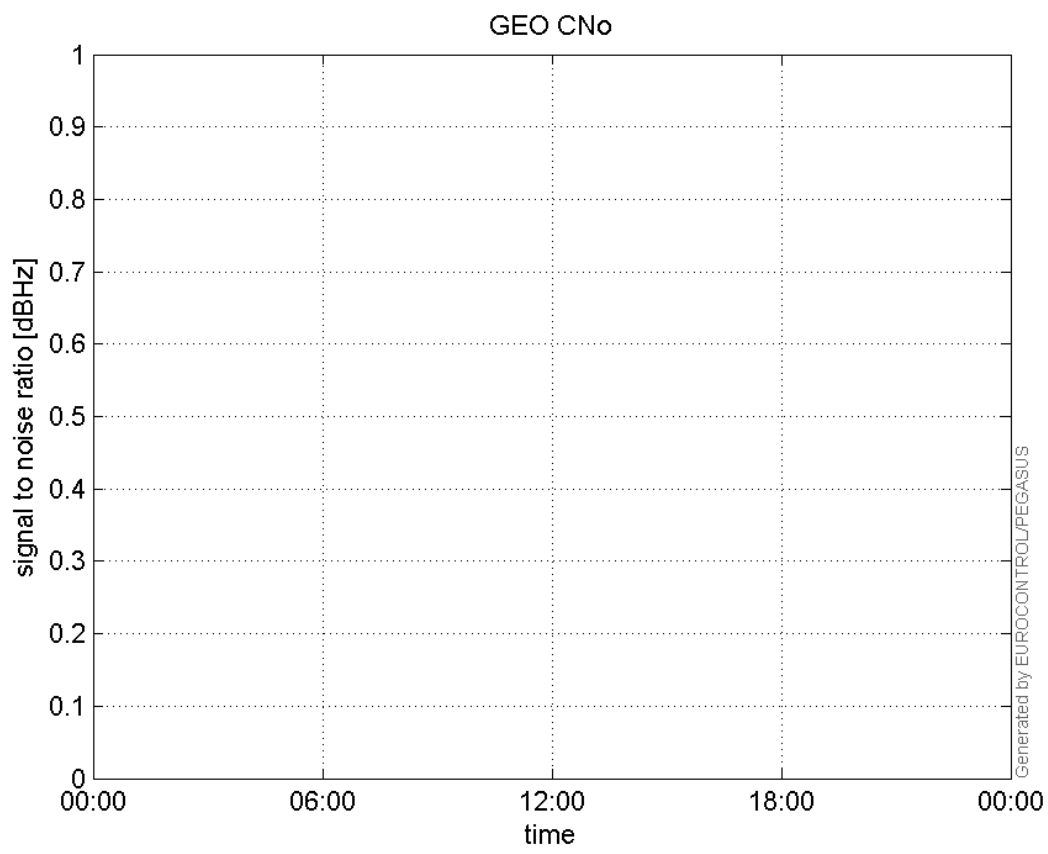
SNR Elevation:



L2 CNo:

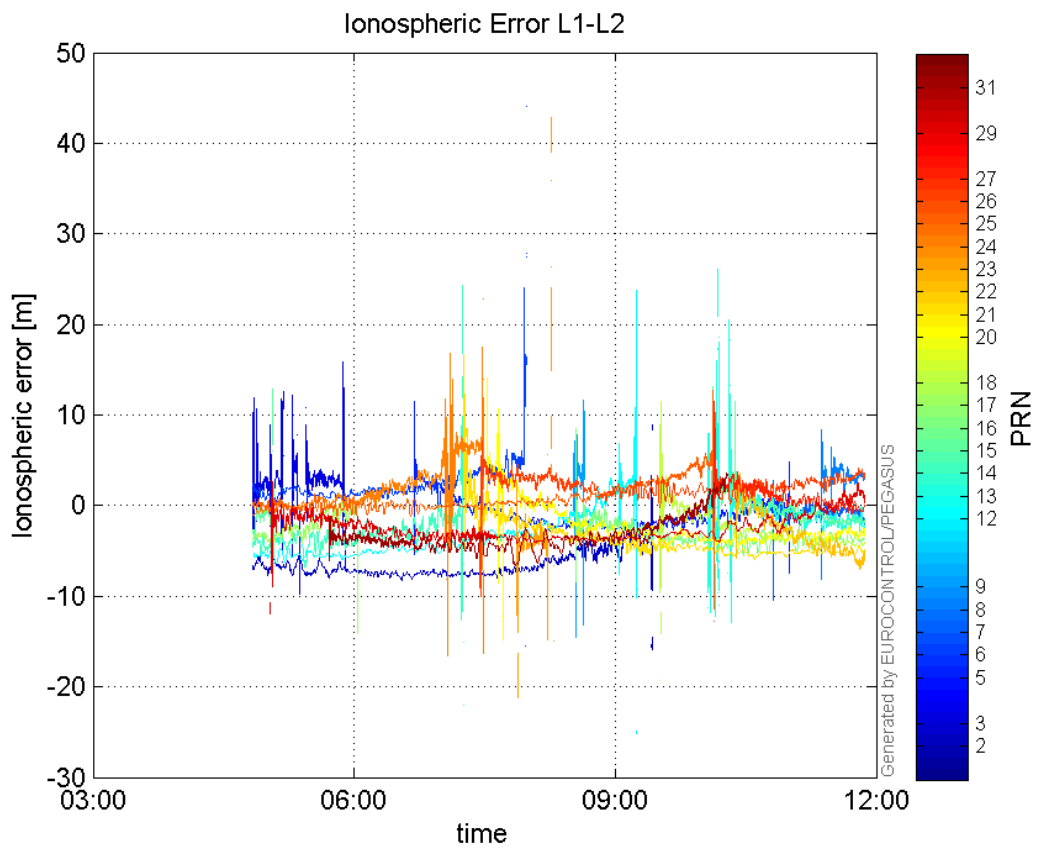


GEO CNo:



dual frequency

Ionospheric Error L1-L2:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_09_16EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_09_16EGNOS/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	50.4389
init_lon	results	30.4296
init_alt	results	265.3351
mi_numbers	results	0

SBAS Messages

start: 04:50:1.129 16.09.2015 (week: 1862 sec: 276601.129)
end: 11:52:5.129 16.09.2015 (week: 1862 sec: 301925.129)
duration: 07:02:04 ..

quality

valid samples 50650
total samples 50650
number of SBAS PRNs 2

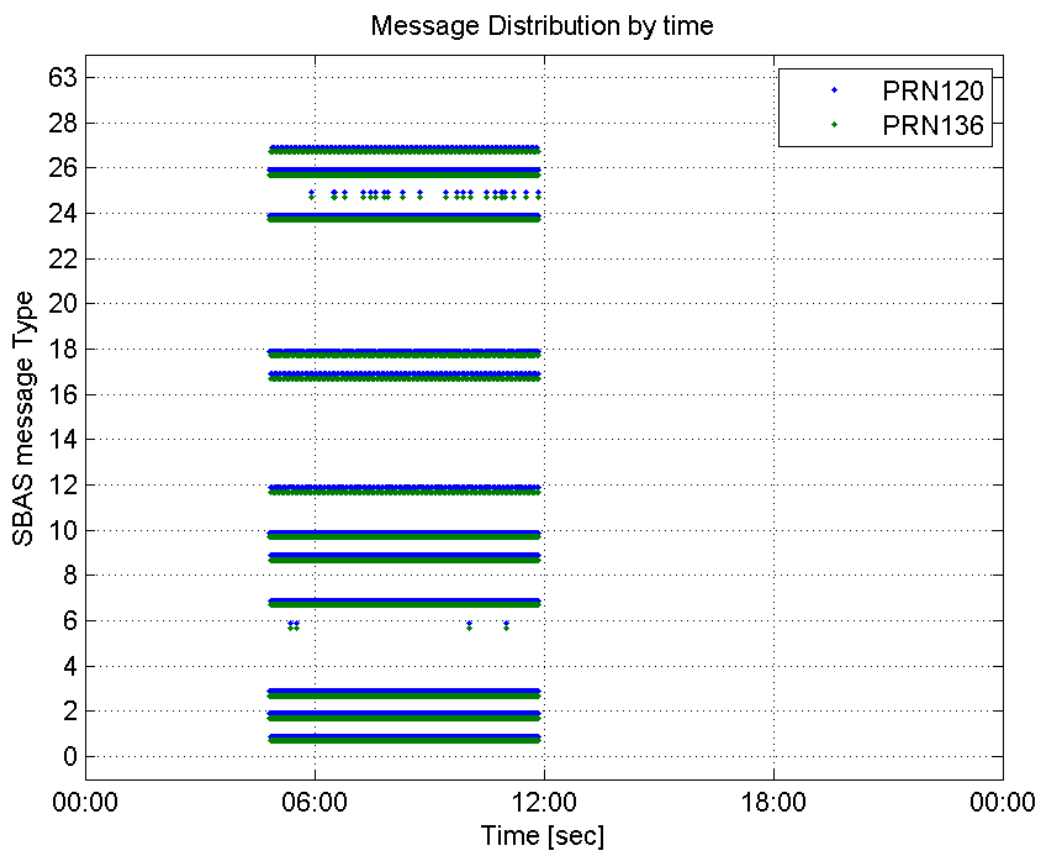
SBAS SIS Overview

Message Type 6 repetitions :

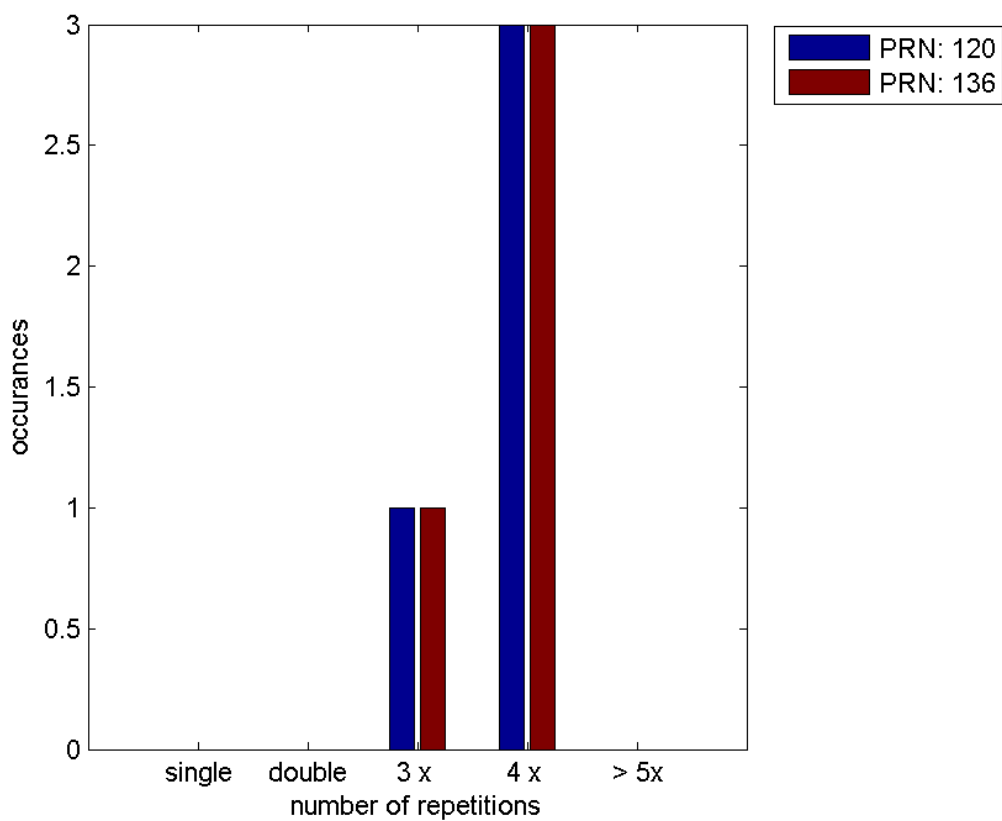
	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	3	0

PRN 136	0	0	1	3	0
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Message Distribution by time:



Message Type 6 repetitions:



SBAS SIS Analysis

PRN 120

Broadcast SBAS Messages :

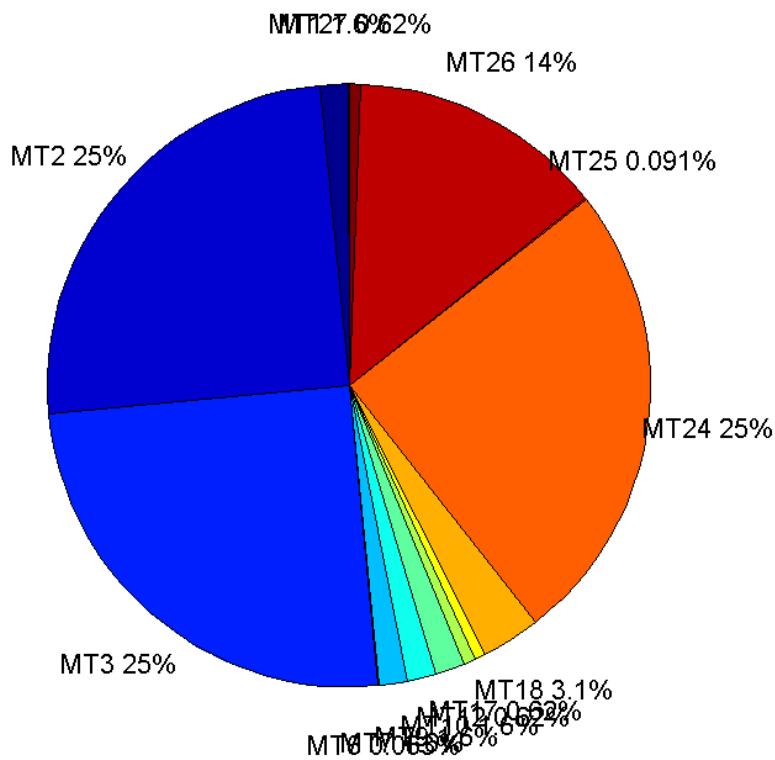
	number of messages	%
MT 0	0	0
MT 1	394	1.55577
MT 2	6325	24.9753
MT 3	6325	24.9753
MT 4	0	0
MT 5	0	0
MT 6	16	0.0631787
MT 7	394	1.55577
MT 9	394	1.55577
MT 10	395	1.55972
MT 12	158	0.623889
MT 17	158	0.623889
MT 18	790	3.11945
MT 24	6325	24.9753
MT 25	23	0.0908193
MT 26	3471	13.7058
MT 27	157	0.619941
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	25325	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	70	64.2112	0	0	0
MT 2	4	8	4.00395	4	0	0
MT 3	4	8	4.0038	4	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	16287	1353.93	3	3	3
MT 7	64	71	64.2316	0	0	0
MT 9	64	71	64.2112	0	0	0
MT 10	64	71	64.2411	0	0	0
MT 12	160	167	160.503	157	0	0
MT 17	156	171	160.478	0	0	0
MT 18	4	131	31.9785	0	0	0

MT 24	4	8	4.0038	0	0	0
MT 25	121	2409	971.182	0	0	0
MT 26	4	32	7.29769	0	0	0
MT 27	156	170	160.481	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

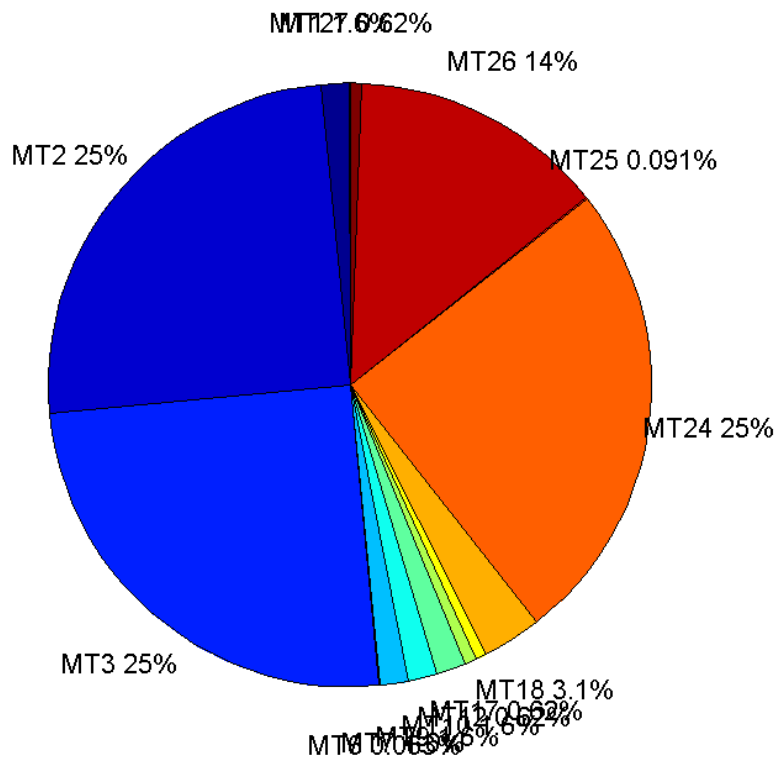
	number of messages	%
MT 0	0	0
MT 1	394	1.55577
MT 2	6325	24.9753
MT 3	6325	24.9753
MT 4	0	0
MT 5	0	0

MT 6	16	0.0631787
MT 7	394	1.55577
MT 9	394	1.55577
MT 10	395	1.55972
MT 12	158	0.623889
MT 17	158	0.623889
MT 18	790	3.11945
MT 24	6325	24.9753
MT 25	23	0.0908193
MT 26	3470	13.7019
MT 27	158	0.623889
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	25325	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	70	64.2214	0	0	0
MT 2	4	8	4.0038	4	0	0
MT 3	4	8	4.0038	4	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	16287	1353.93	3	3	3
MT 7	64	71	64.2316	0	0	0
MT 9	64	71	64.2214	0	0	0
MT 10	64	71	64.2411	0	0	0
MT 12	156	171	160.478	157	0	0
MT 17	160	167	160.503	0	0	0
MT 18	4	147	31.9582	0	0	0
MT 24	4	8	4.00395	0	0	0
MT 25	121	2409	971.182	0	0	0
MT 26	4	51	7.2998	0	0	0
MT 27	156	171	160.478	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/2015_09_16EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2015_09_16EGNOS/02_Convertor/02_Convertor

Configuration

Name	Section	Value
Receiver	Configuration	Novatel OEM4
Leap_Seconds	Configuration	15
Correction_mode	Configuration	SBAS MODE 0
Dual_Frequency	Configuration	no