

Global View

program Pegasus
 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
 date 03/02/2016

Position Domain

start: 05:58:40 03.02.2016 (week: 1882 sec: 280720)
end: 13:44:40 03.02.2016 (week: 1882 sec: 308680)
duration: 07:46:01 ..

quality

valid samples 31808
total samples 32224

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	298521	1.80831	9.57797	0.188798	-	15.7927	0.0035919
max normVer	307495	1.18356	15.848	0.0746817	2.26322	17.6985	0.127877
max HPE	306662	23.921	856.796	0.0279192	8.83981	234.749	0.0376564
max VPE	295519	10.42	317.8	0.0327879	-12.9478	382.662	0.0338361
min HPL	310083	0.898264	8.59409	0.104521	-0.117579	15.4161	0.00762703
min VPL	283859	0.591287	9.5892	0.0616617	-0.645142	12.0401	0.0535828

Position discontinuity events :

#	Epoch	duration	stable period
1	295520	264	14439
2	306411	235	10627
3	312577	53	5931

APV-I discontinuity events :

#	Epoch	duration	stable period
1	295518	266	8227
2	304820	114	9036
3	305684	94	750
4	305875	856	1
5	310161	192	3430
6	312576	58	2223

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	295498	286	8207
2	302948	106	7164
3	304820	114	1642
4	305684	94	750
5	305875	856	1
6	310161	192	3430
7	312576	86	2223
8	312705	97	43

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	295498	286	8207
2	302948	106	7164
3	304820	114	1642
4	305684	94	750
5	305875	856	1
6	310161	192	3430
7	312576	86	2223
8	312705	97	43

First Glance analysis

Duration	27961
Number of Samples	32224
Number of invalid sample	416
Number of no position solution samples	574
Number of missing sample	-4263
Logging Loss	-15.2462
Processing Loss	1.291
Number of Misleading Information	0
Data gaps	21
Discontinuities	3

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
31234	30171	29883	0	29883

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.74655	1.69861	1.69968	NaN	1.69968
HPEscale 95%	NaN	5.44699	5.45178	NaN	5.45178
VPE 95%	1.63172	1.55574	1.56014	NaN	1.56014
VPEscale 95%	NaN	3.98301	2.8013	NaN	2.8013

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.981954	0.948535	0.939481	0	0.939481
measurements	0.969278	0.93629	0.927352	0	0.927352
Operational	1.11706	1.07904	1.06874	0	1.06874

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	3	41	71	--	71
Long	3	6	8	--	8
Independent	3	5	7	--	7
P(disc.)	0.00144074	0.00248583	0.0035137	NaN	0.0035137
P(slide)	0.00144074	0.00626429	0.0102399	NaN	0.0102399

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

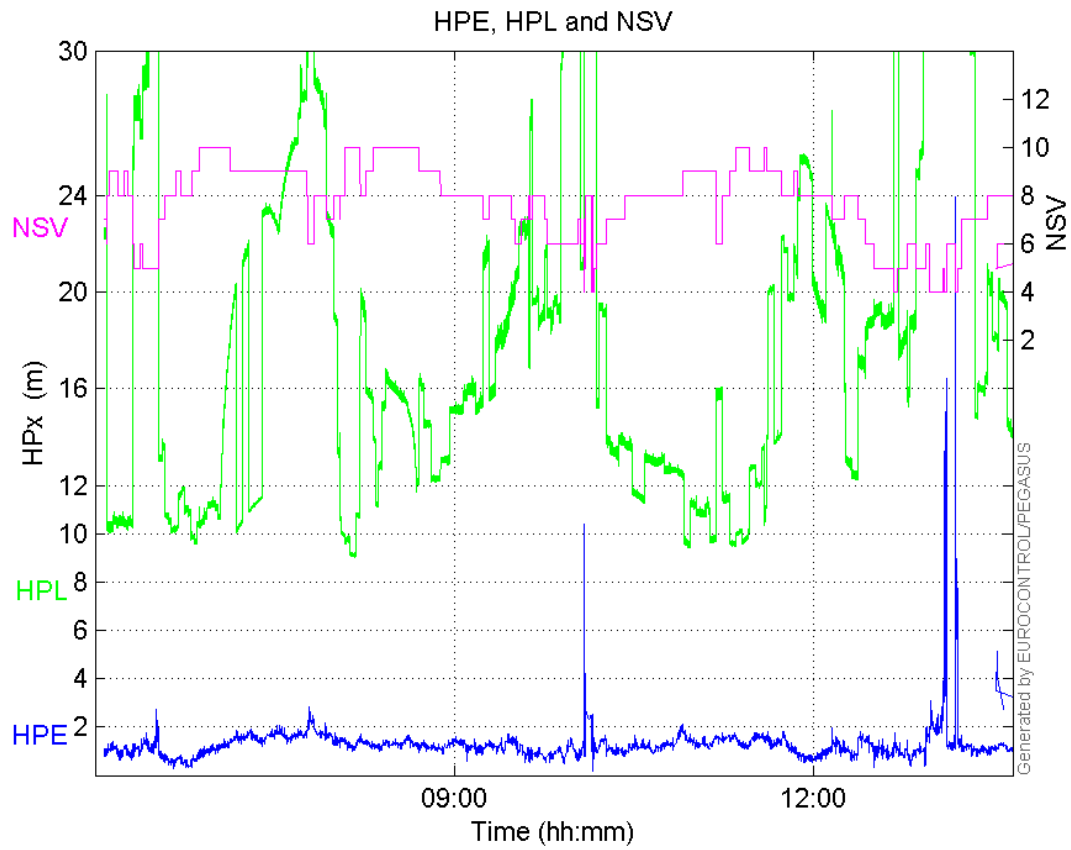
Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	31234	30171	29883	0	29883
SIS Availability	0.981954	0.948535	0.939481	0	0.939481
Local Availability	0.969278	0.93629	0.927352	0	0.927352
Operational Availability	1.11706	1.07904	1.06874	0	1.06874
HPE 95%	1.74655	1.69861	1.69968	NaN	1.69968
HPEscale 95%	NaN	5.44699	5.45178	NaN	5.45178
VPE 95%	1.63172	1.55574	1.56014	NaN	1.56014
VPEscale 95%	NaN	3.98301	2.8013	NaN	2.8013
All Discontinuity Events	3	41	71	--	71
Long Discontinuity Events	3	6	8	--	8
Independent Discontinuity Events	3	5	7	--	7
P(discontinuity)	0.00144074	0.00248583	0.0035137	NaN	0.0035137
P(sliding window)	0.00144074	0.00626429	0.0102399	NaN	0.0102399
All Integrity Events	0	0	0	0	0

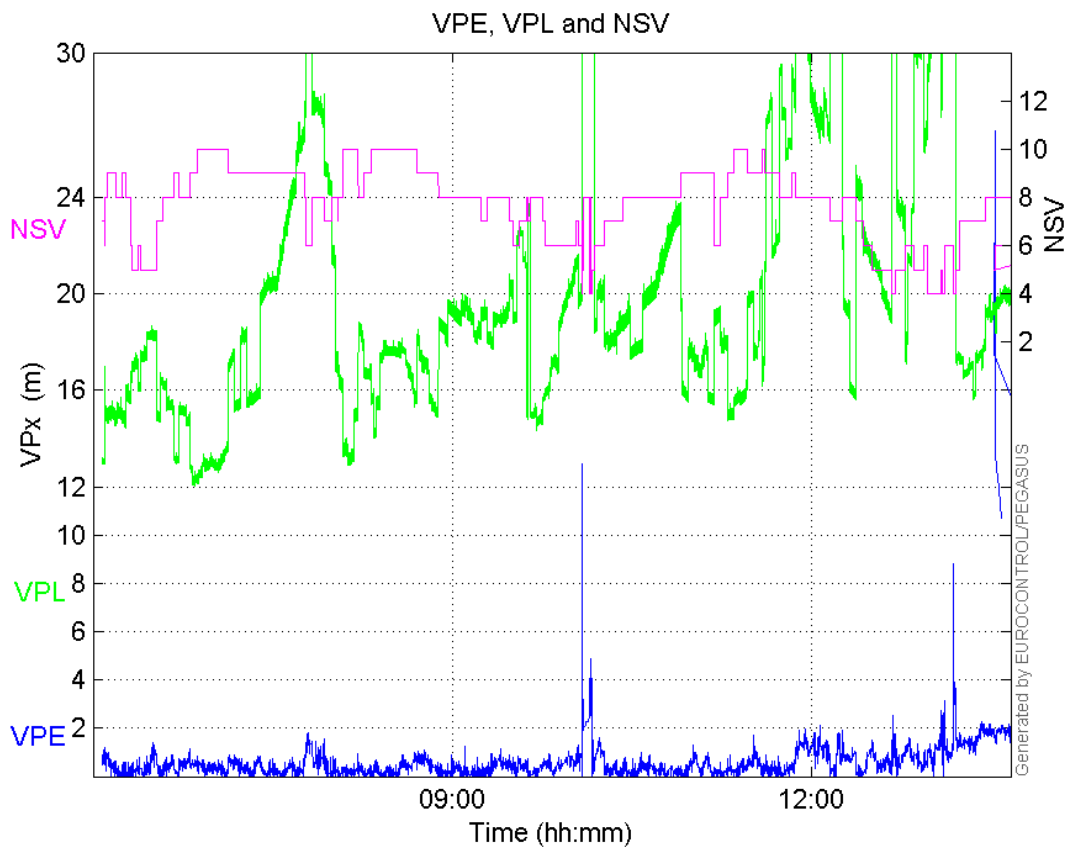
Horizontal Integrity Events	0	0	0	0	0
Vertical Integrity Events	0	0	0	0	0

Time Series

HPE, HPL and NSV:

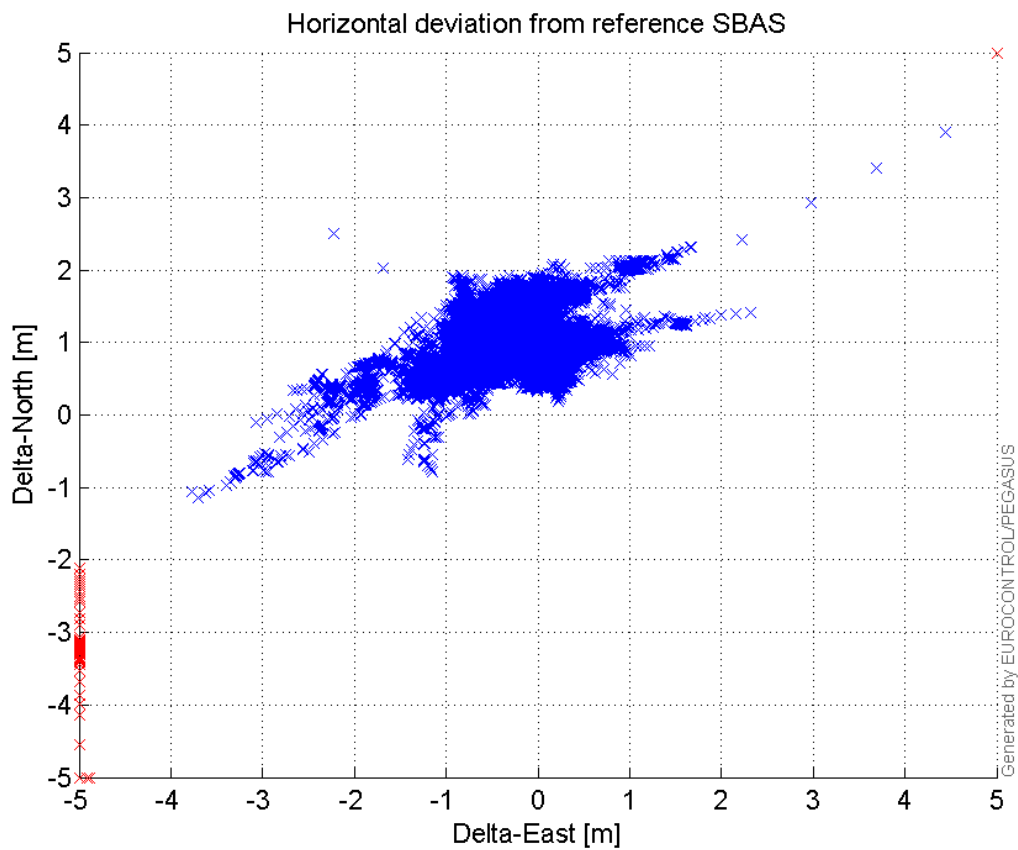


VPE, VPL and NSV:



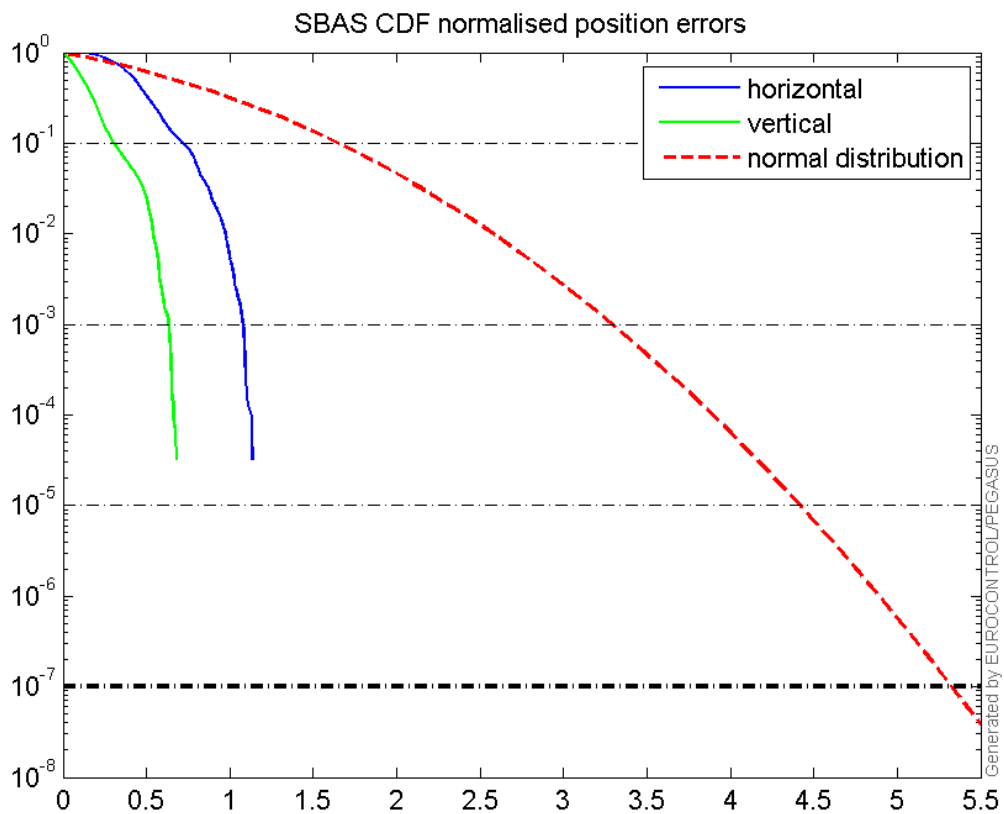
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

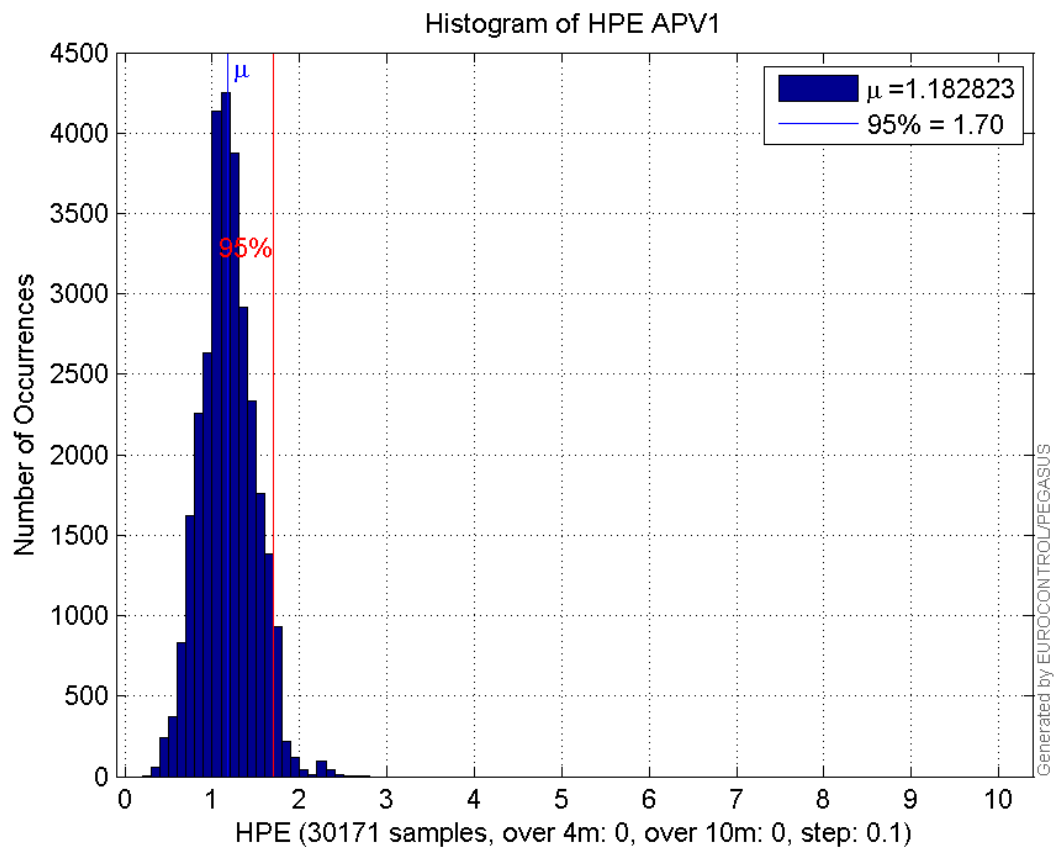
number	30171
sum	35686.958
sum2	45050.825
prctile95	1.6986129
prctile99	1.9409748
number	30171
sum	16788.51
sum2	15956.221
prctile95	1.5557357
prctile99	1.9523085
number	30171
sum	515743.75
sum2	10043712
prctile95	30.21762
prctile99	37.774574
number	30171
sum	607299.94
sum2	13049125
prctile95	30.148735
prctile99	34.866315
number	30171
sum	2318.4227

sum2 205.44795
prctile95 0.13617477
prctile99 0.16248695
number 30171
sum 841.79232
sum2 39.387948
prctile95 0.079660141
prctile99 0.10129434
number 29883
sum 35339.679
sum2 44619.71
prctile95 1.6996828
prctile99 1.9452455
number 29883
sum 16712.095
sum2 15926.125
prctile95 1.5601397
prctile99 1.9532398
number 29883
sum 509282.88
sum2 9893815
prctile95 30.20424
prctile99 37.798263
number 29883
sum 596357.25
sum2 12631529
prctile95 29.865085
prctile99 34.091135
number 29883
sum 2302.7648
sum2 204.57512
prctile95 0.13629453
prctile99 0.16251986
number 29883
sum 839.76213
sum2 39.366068
prctile95 0.080037223
prctile99 0.10134987

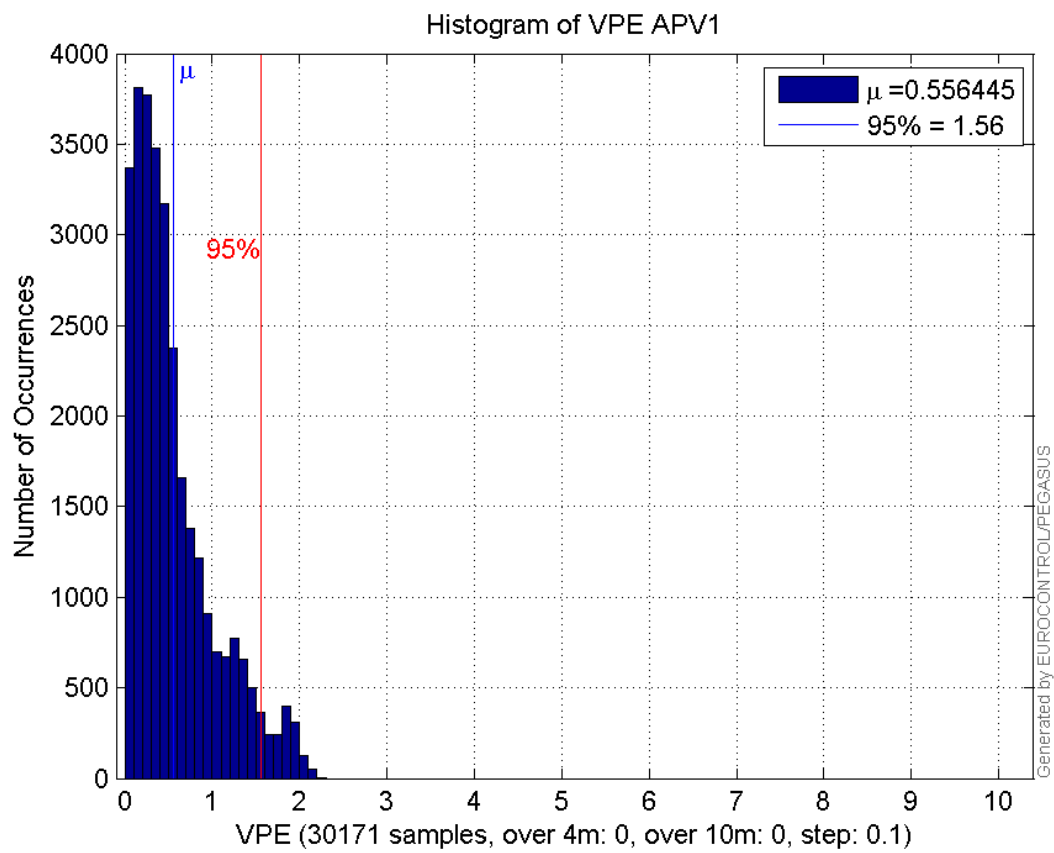
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.18282	0.306782	1.16798	1.69861	1.94097	1.22196
HPL	17.094	6.37877	15.8158	30.2176	37.7746	18.2454
VPE	0.556445	0.468226	0.420019	1.55574	1.95231	0.727227
VPL	20.1286	5.22934	18.7308	30.1487	34.8663	20.7968

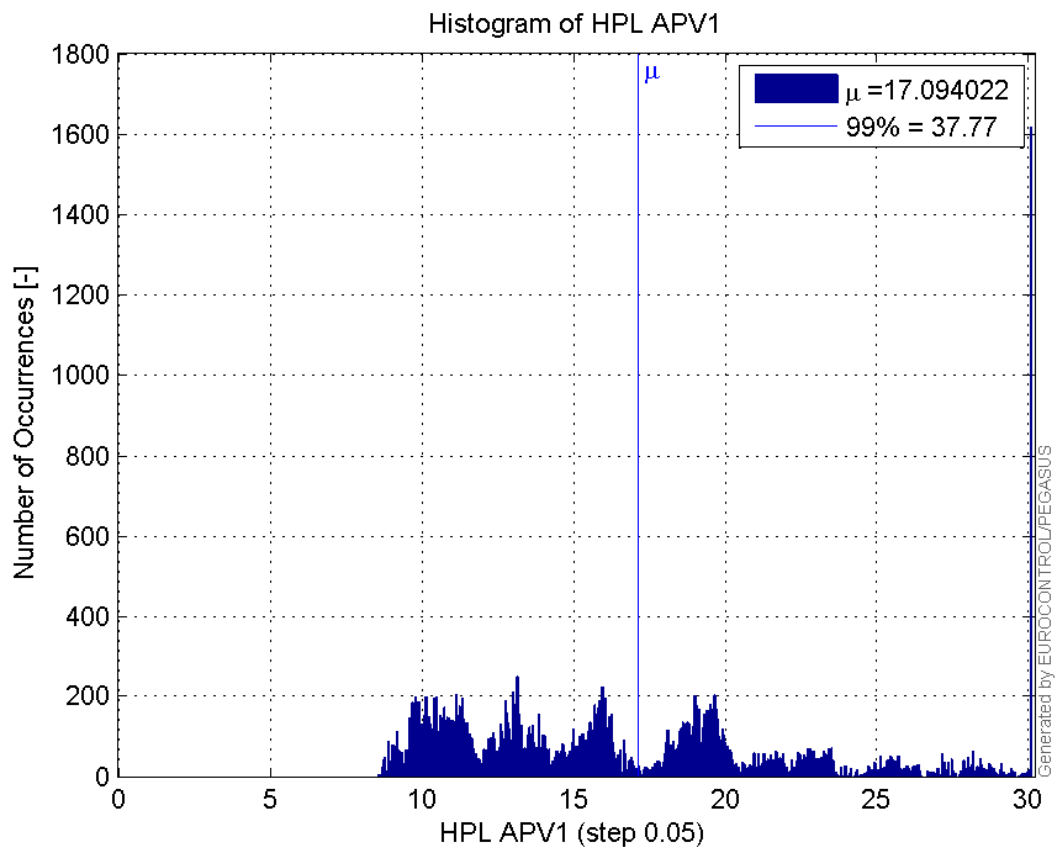
Histogram of HPE APV1:



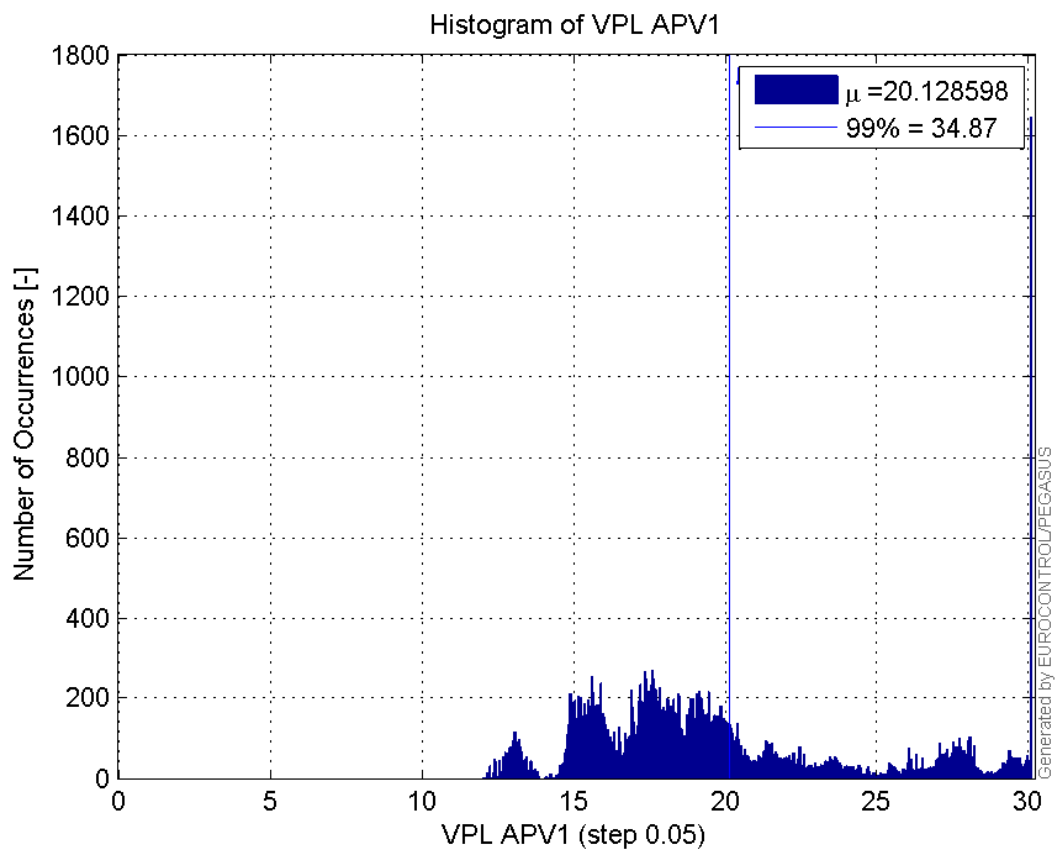
Histogram of VPE APV1:



Histogram of HPL APV1:

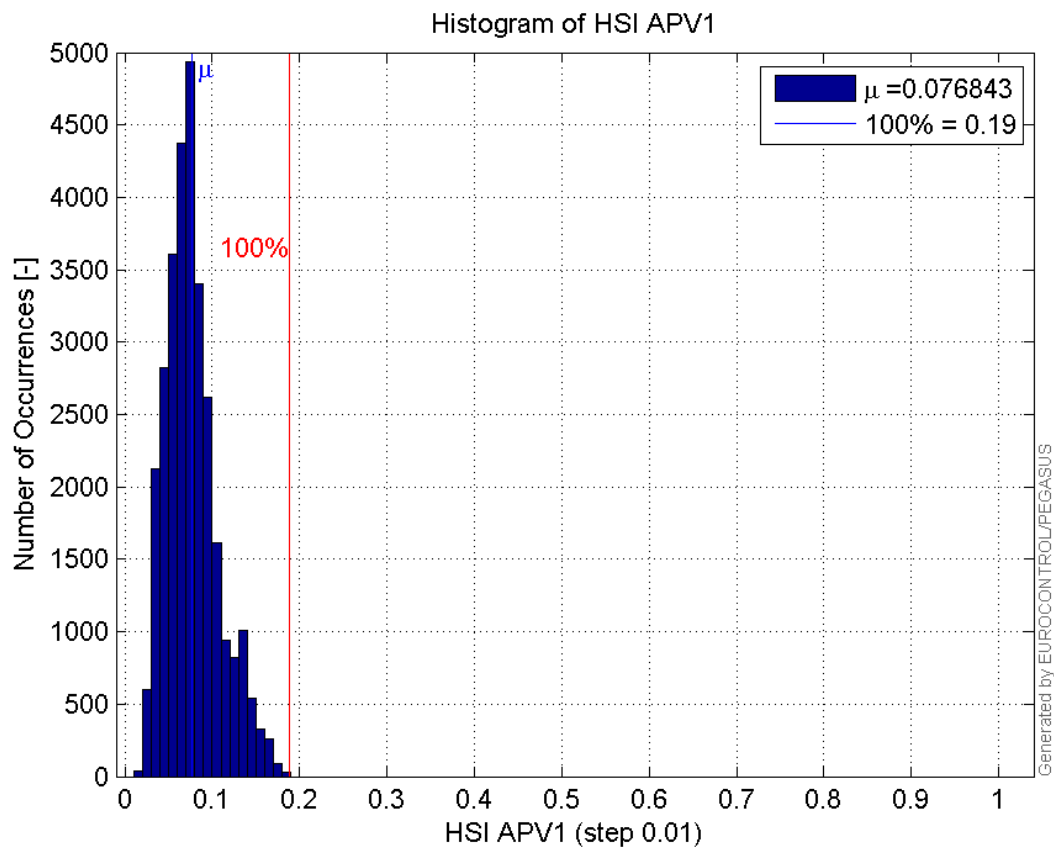


Histogram of VPL APV1:

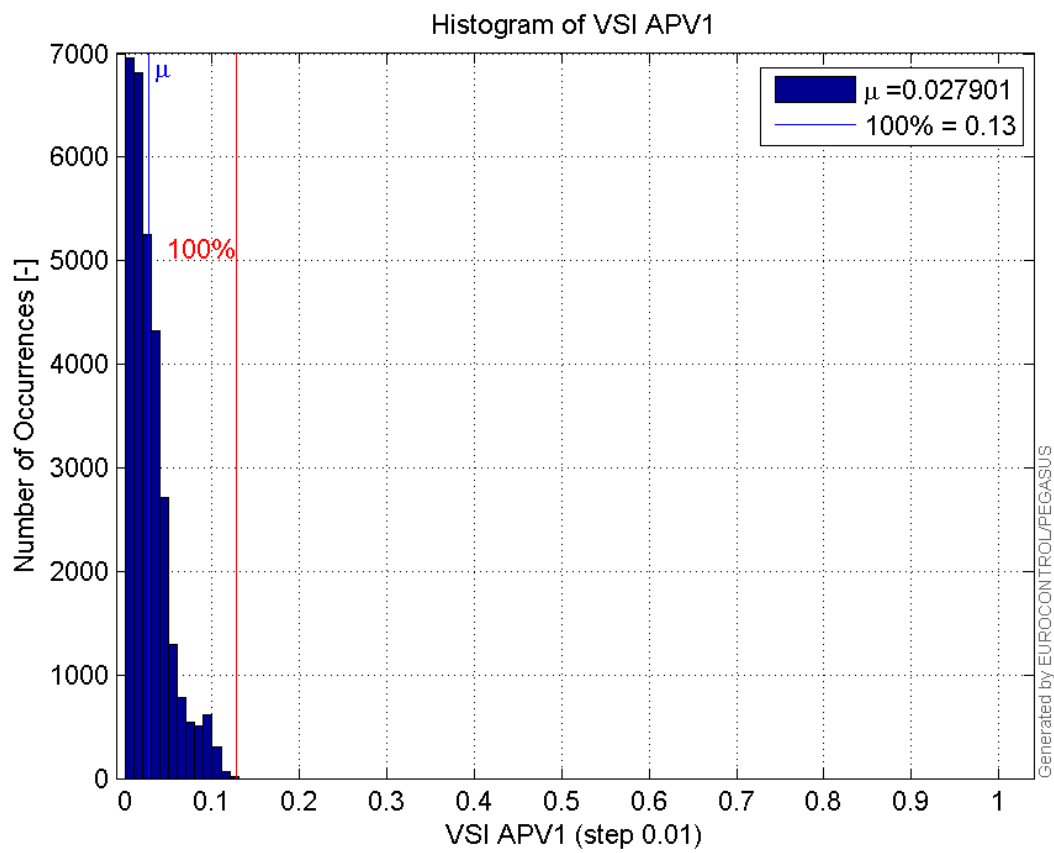


99

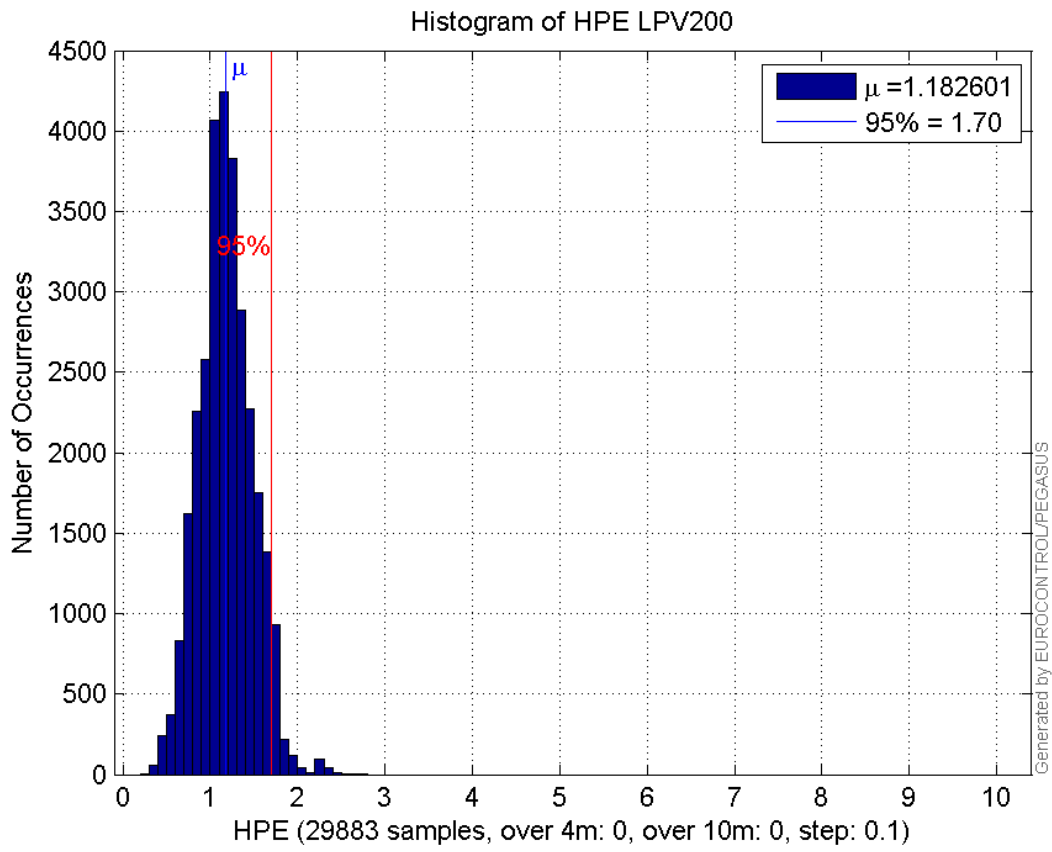
Histogram of HSI APV1:



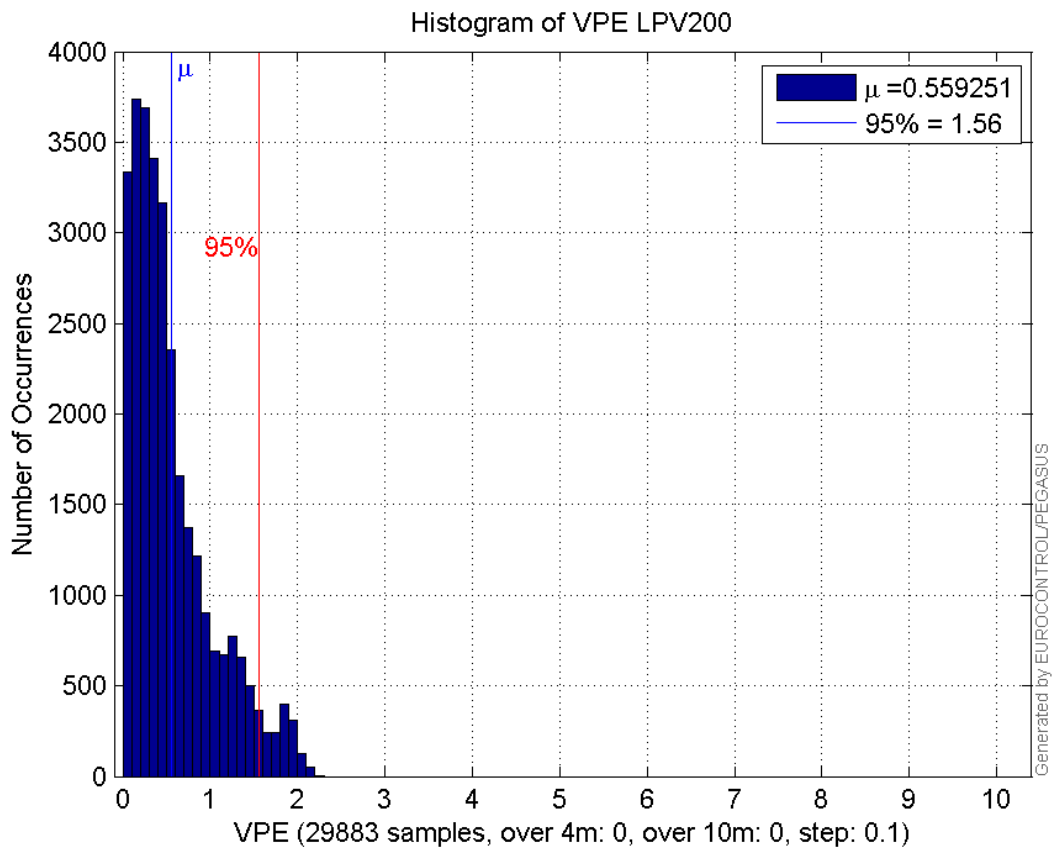
Histogram of VSI APV1:



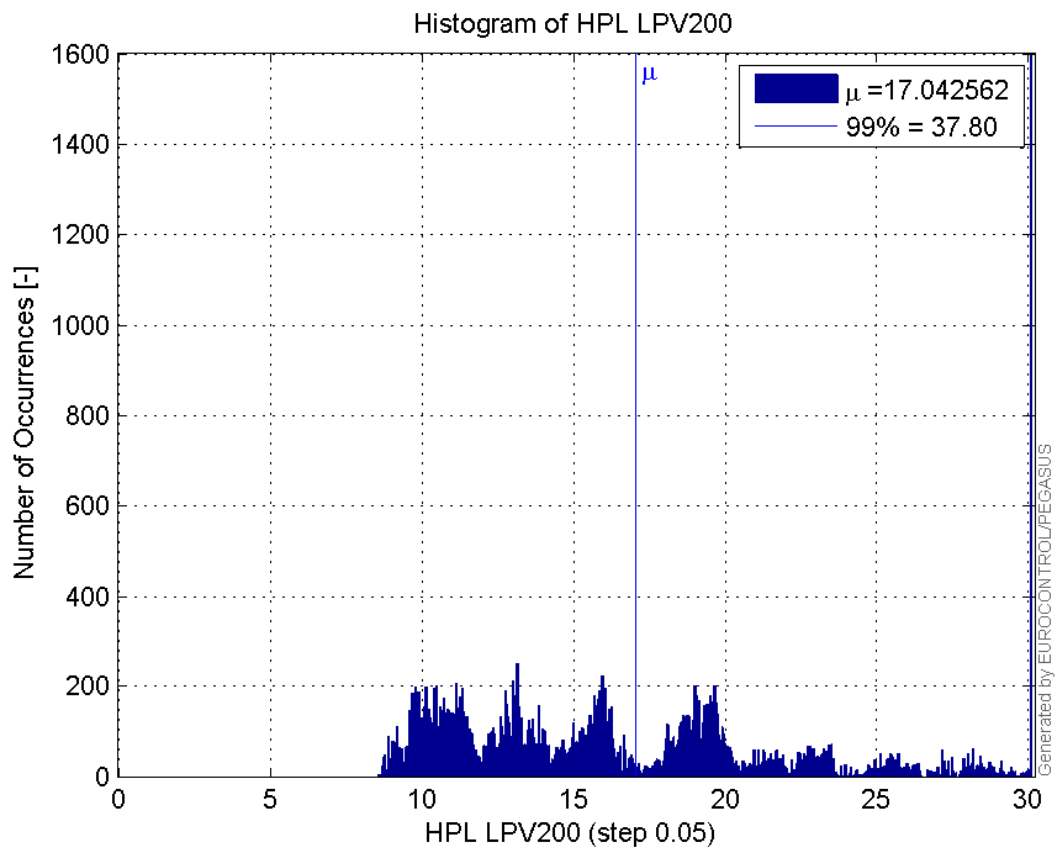
Histogram of HPE LPV200:



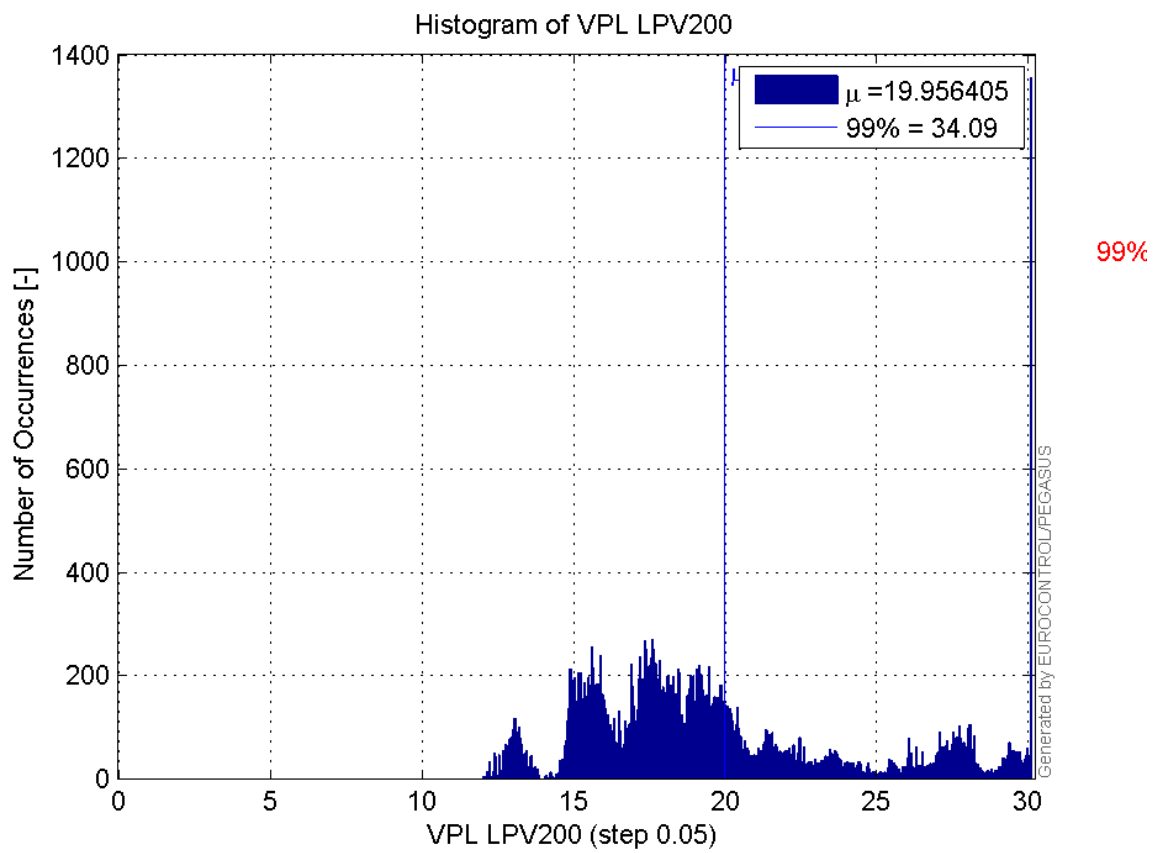
Histogram of VPE LPV200:



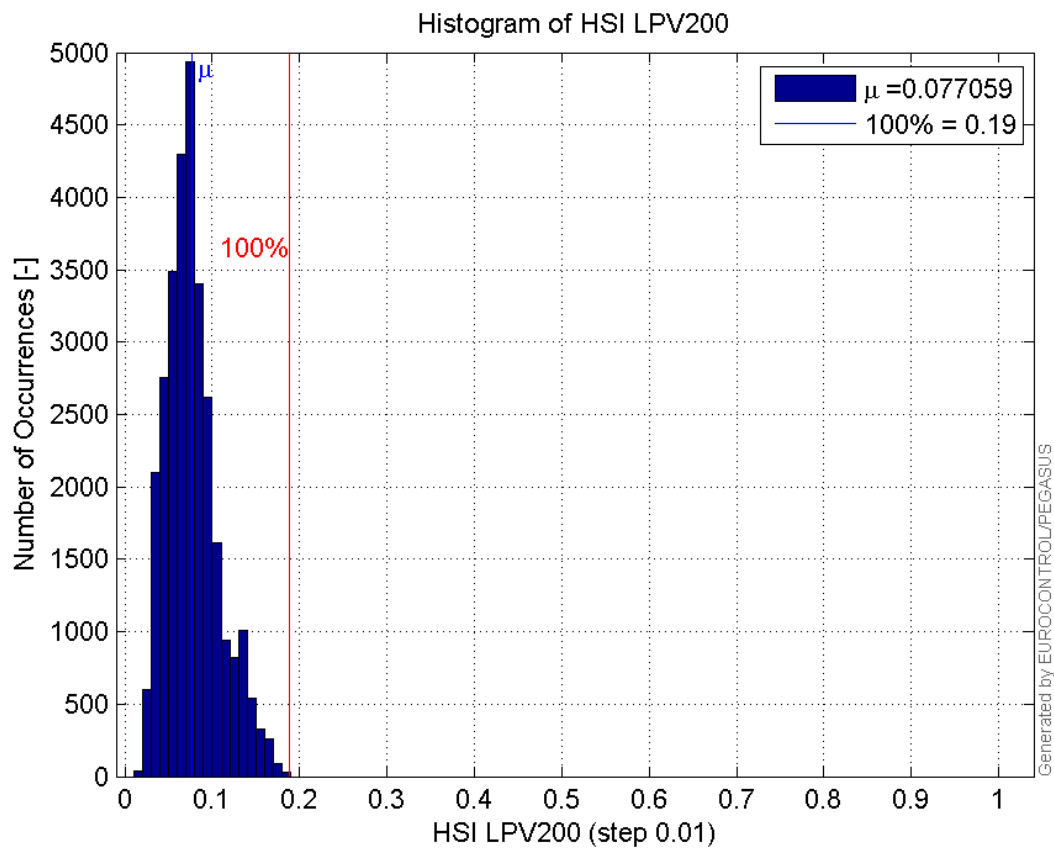
Histogram of HPL LPV200:



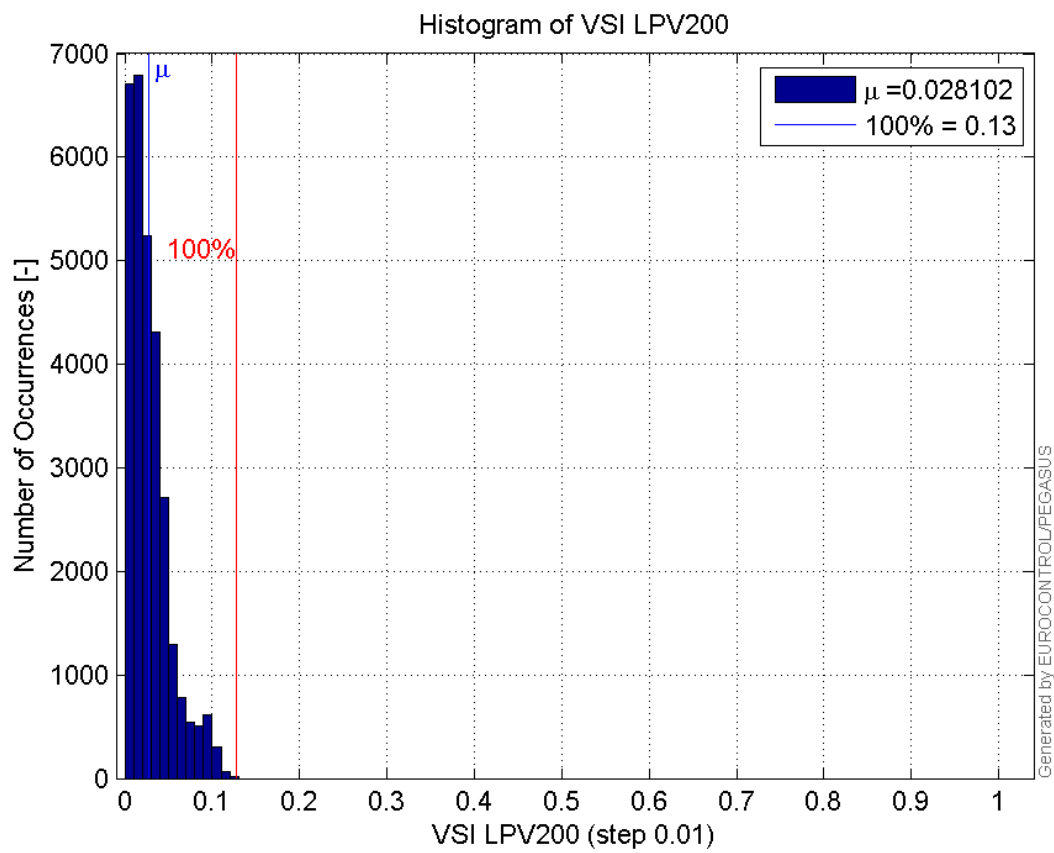
Histogram of VPL LPV200:



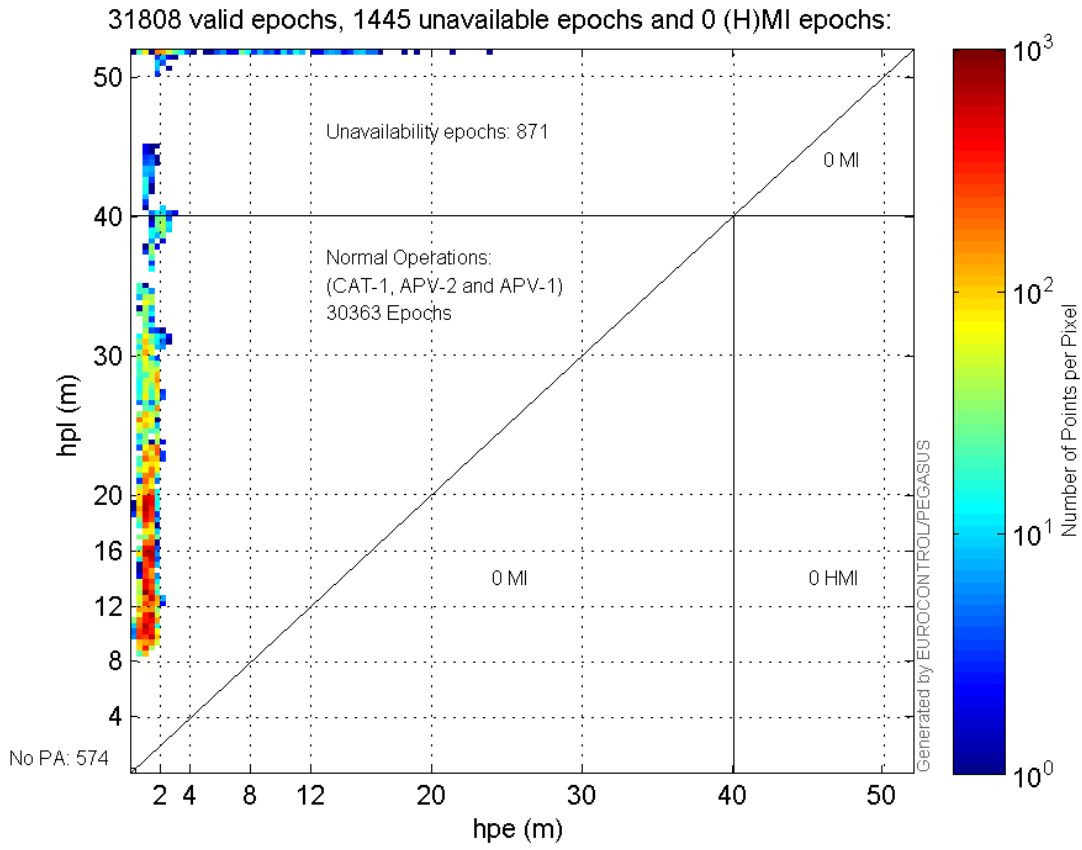
Histogram of HSI LPV200:



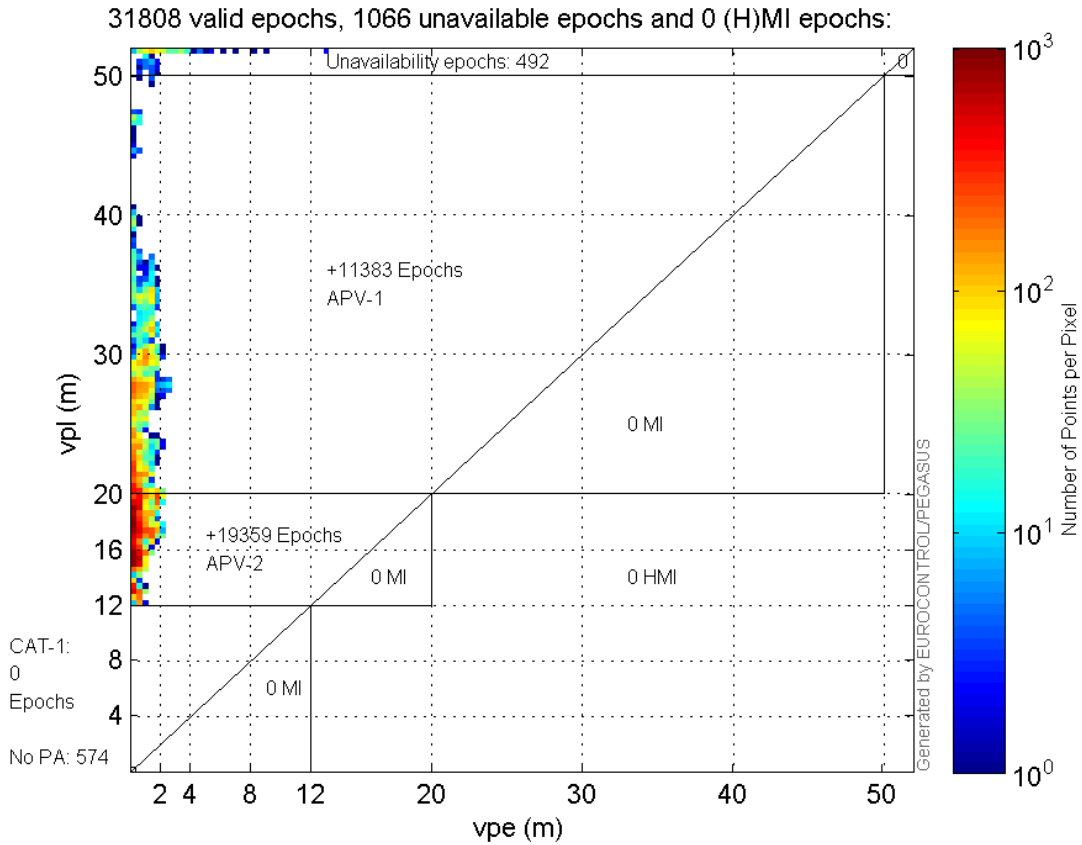
Histogram of VSI LPV200:



Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateGob/job/2016_02_03EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_03EGNOS/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	30.4296
init_alt	results	231.4052
mi_numbers	results	0

Range Domain

start: 05:58:40 03.02.2016 (week: 1882 sec: 280720)
end: 13:44:40 03.02.2016 (week: 1882 sec: 308680)
duration: 07:46:01 ..

quality

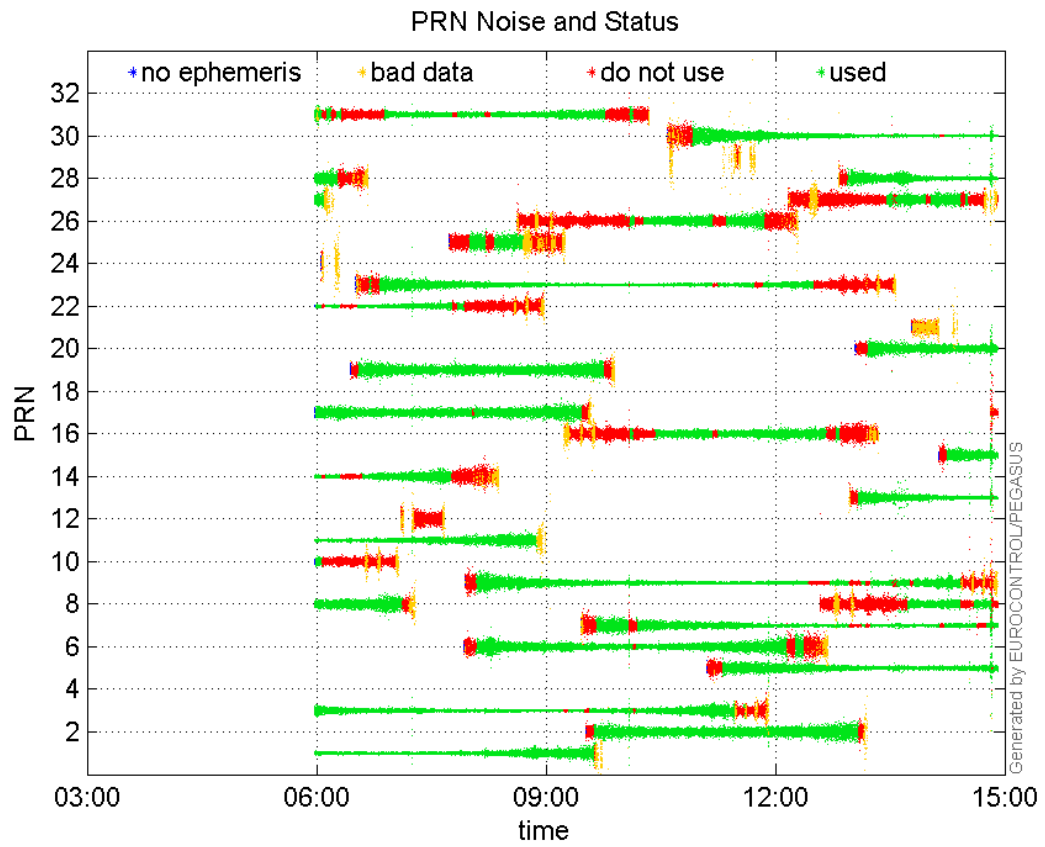
valid samples 32147
total samples 32147

PRN overview

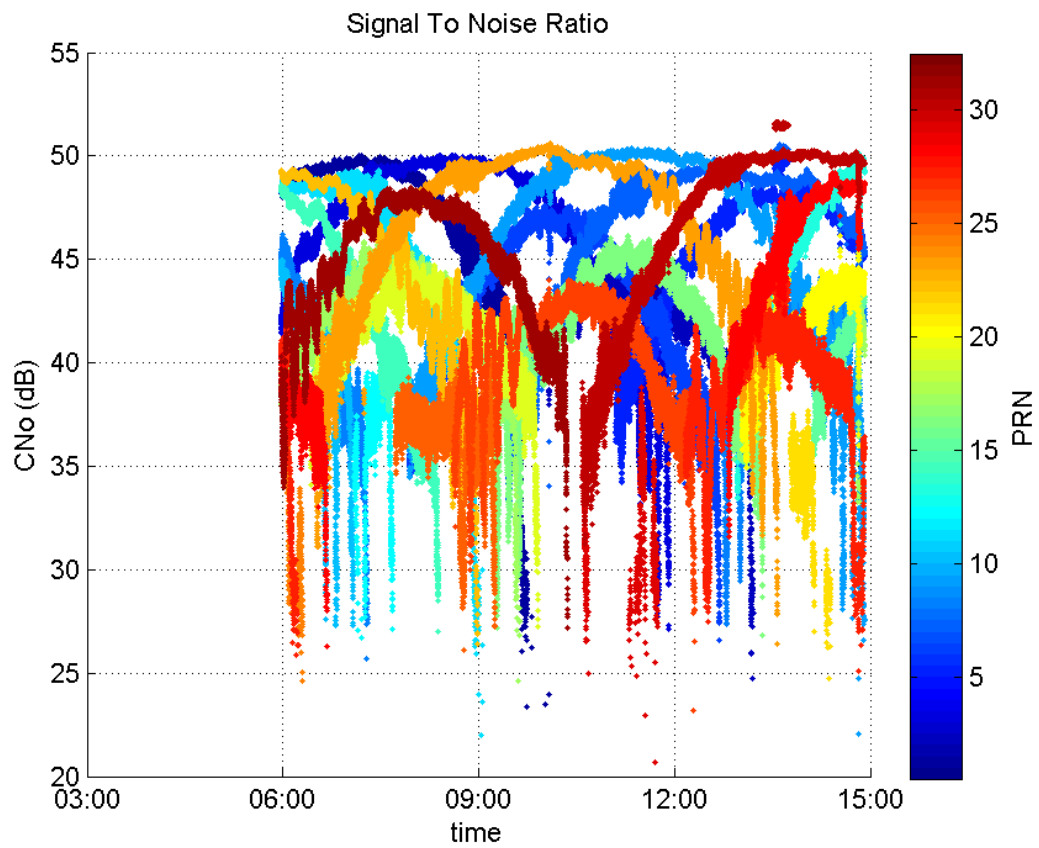
Number of Visible GPS Satellites 29
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



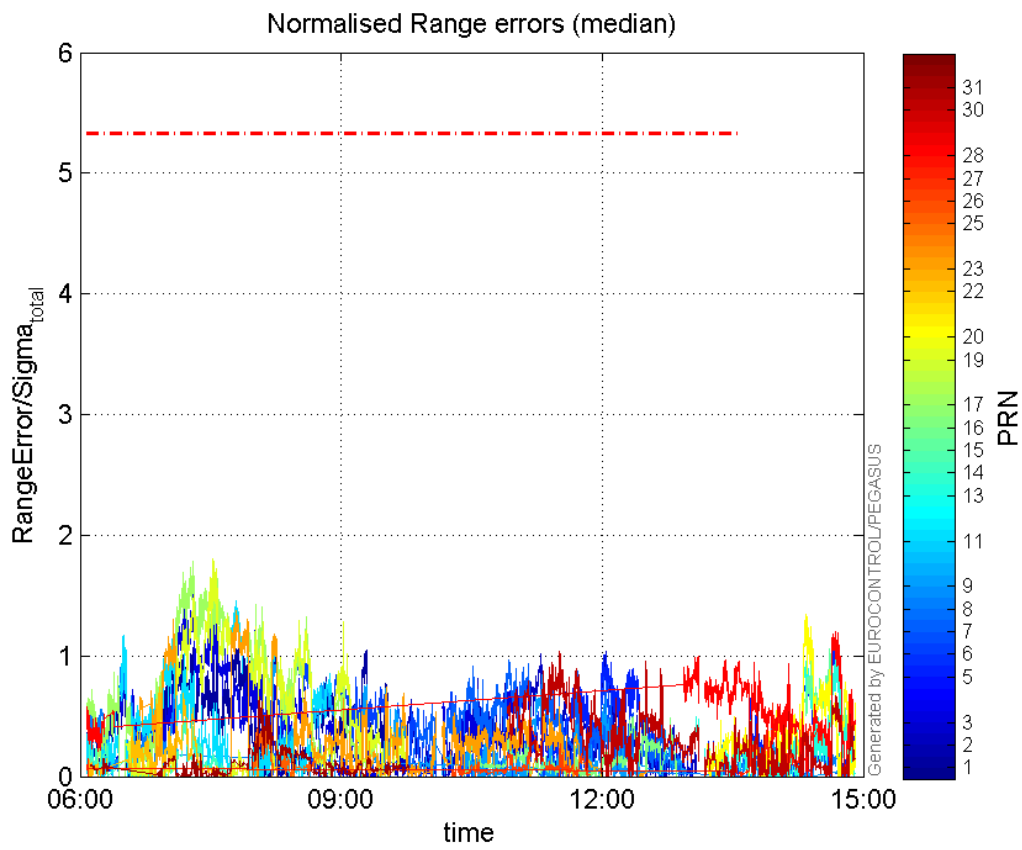
range errors

Number of Overbounding Norm Errors 0

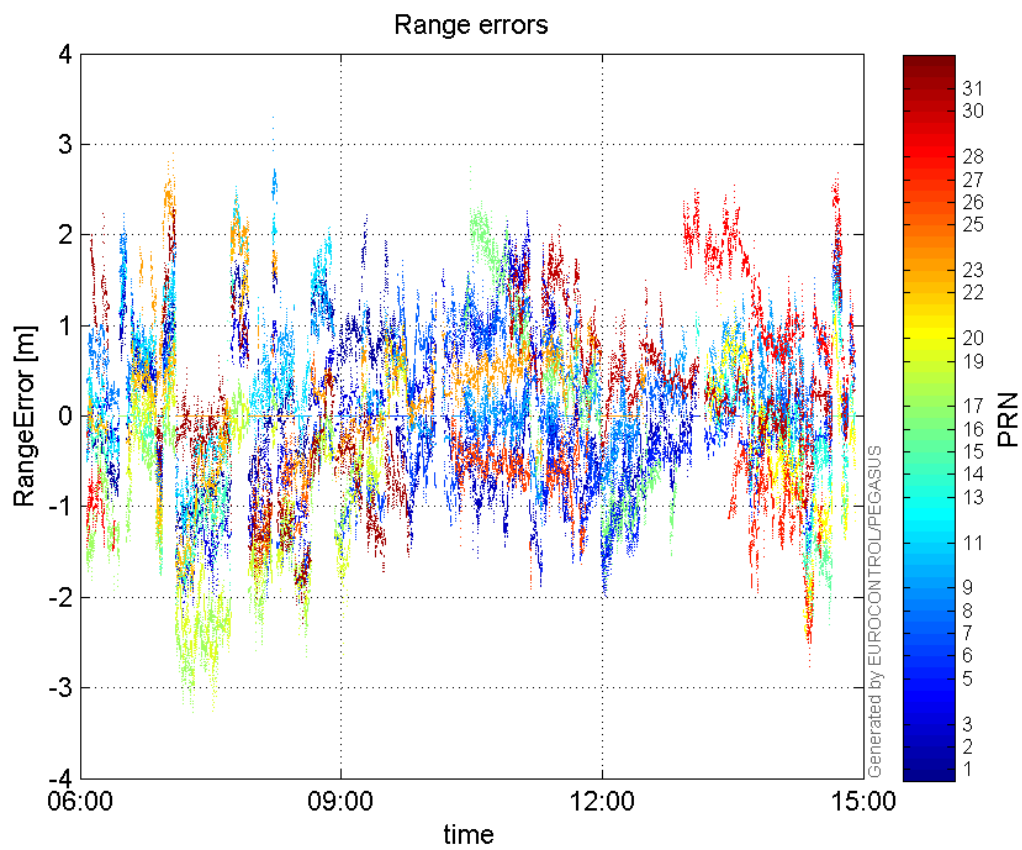
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1882	288784	1	1.12526	1.79537	1.59552
1882	302582	2	1.03469	-1.98908	1.92239
1882	285447	3	1.50372	-2.06124	1.37076
1882	312175	5	1.13877	1.95653	1.71811
1882	290087	6	1.04682	-2.02821	1.9375
1882	298524	7	0.970785	1.67525	1.72567
1882	282623	8	1.01484	2.23505	2.20237
1882	288801	9	1.10114	3.30184	2.99857
1882	287250	11	1.45232	2.46604	1.698
1882	312125	13	1.07644	1.59874	1.48521
1882	285071	14	0.489824	-1.96074	4.00295
1882	311788	15	1.05987	-2.30294	2.17285
1882	303659	16	0.493234	-1.39319	2.82461
1882	285445	17	1.78233	-3.16892	1.77796
1882	286269	19	1.80361	-3.25414	1.80424
1882	310812	20	1.34517	-2.45808	1.82734
1882	284104	22	0.741141	-1.61781	2.18286
1882	287246	23	1.37891	2.40078	1.74108
1882	288542	25	0.471704	-1.6908	3.58445
1882	299448	26	0.488243	-1.90975	3.91148
1882	309456	27	0.610377	-1.35552	2.22079
1882	312045	28	1.19702	2.61044	2.18078
1882	300640	30	1.03365	2.11775	2.0488
1882	288241	31	0.658159	-1.73138	2.63064

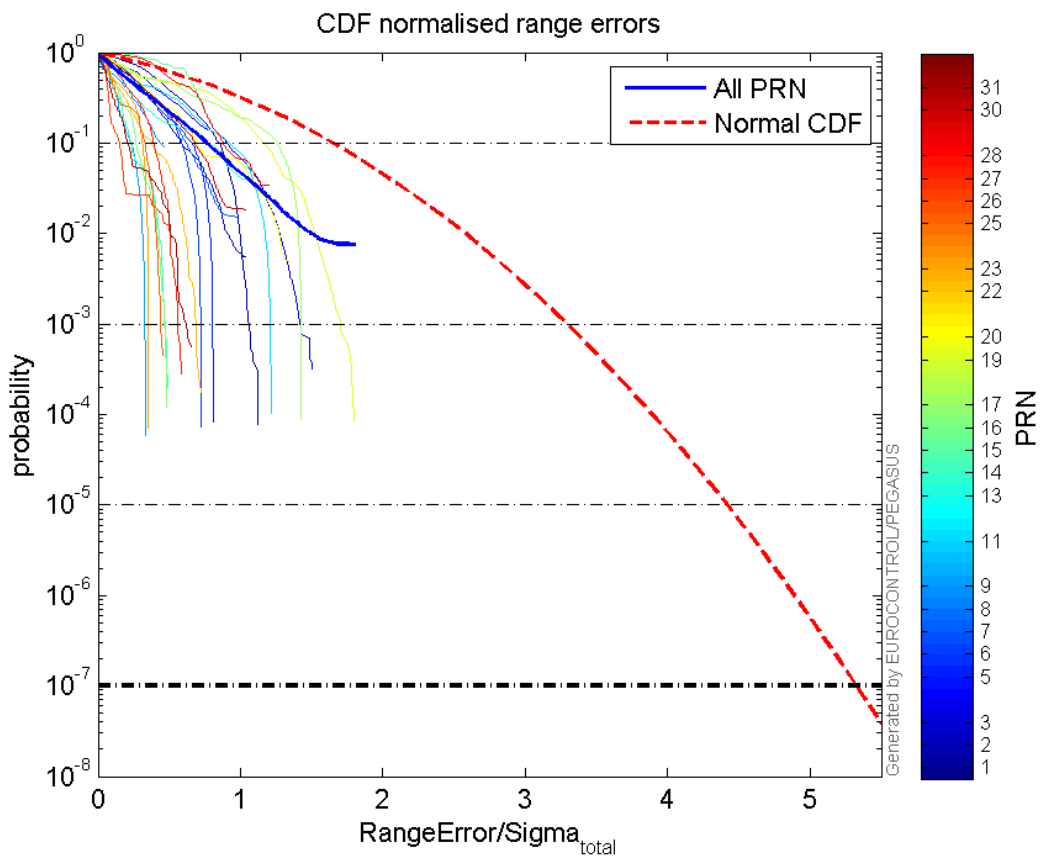
Normalised Range errors (median):



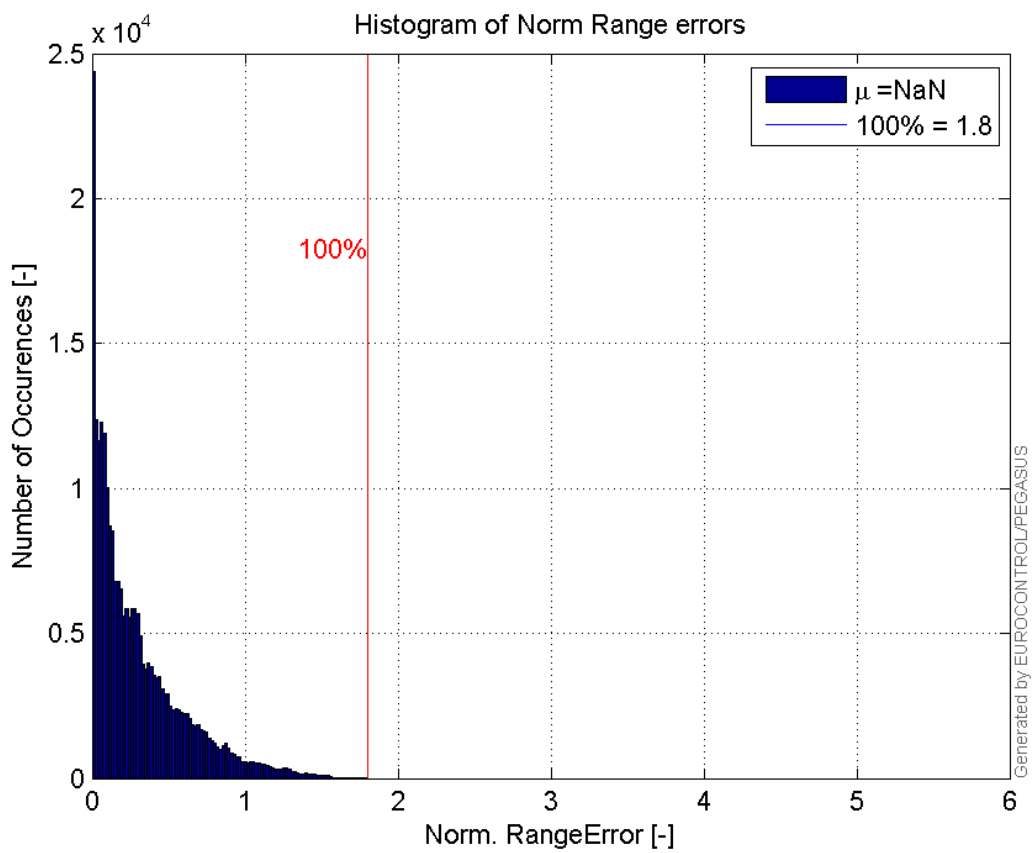
Range errors:



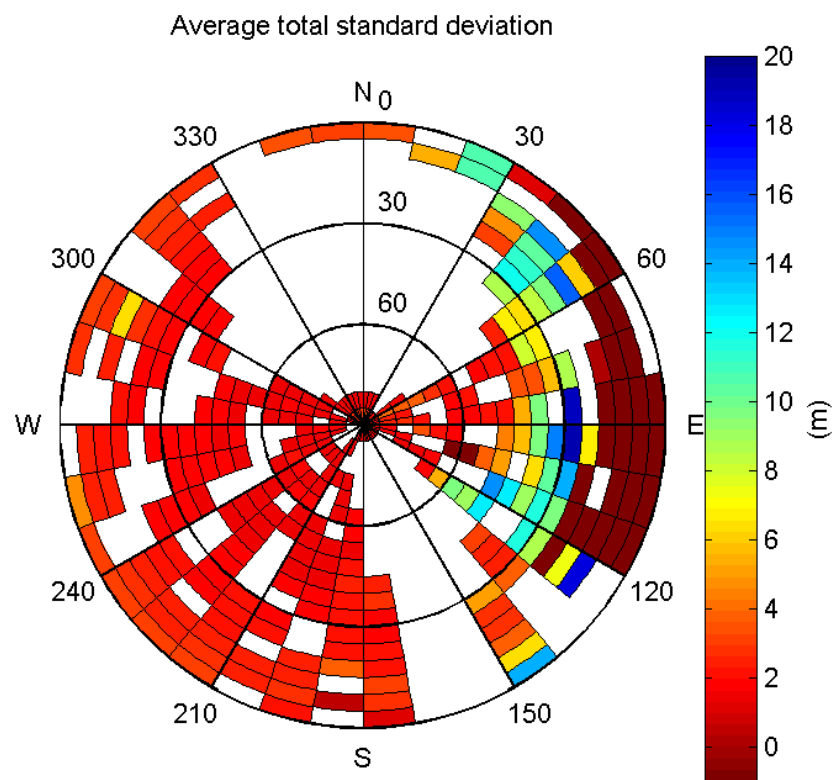
CDF normalised range errors:



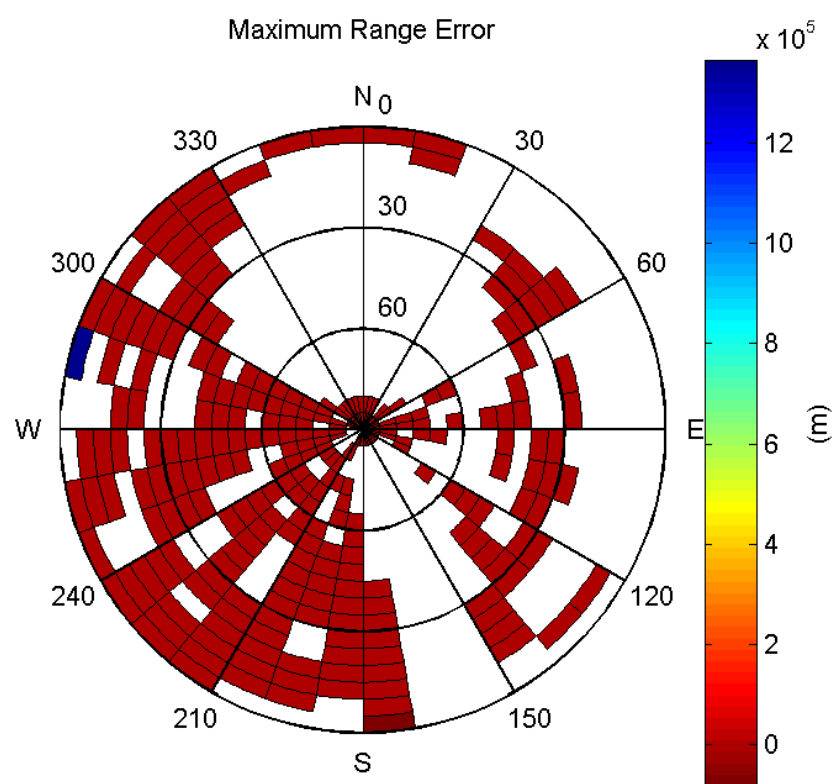
Histogram of Norm Range errors:



Sigma Sky Plot:

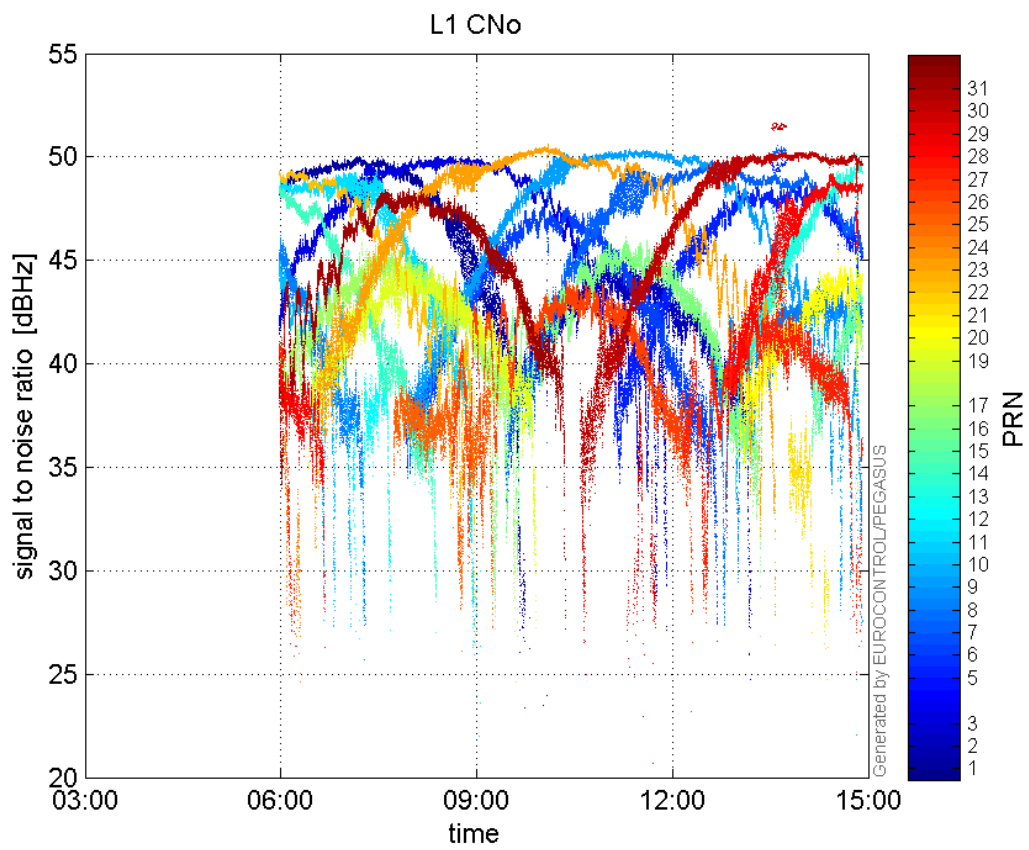


Norm Error Sky Plot:

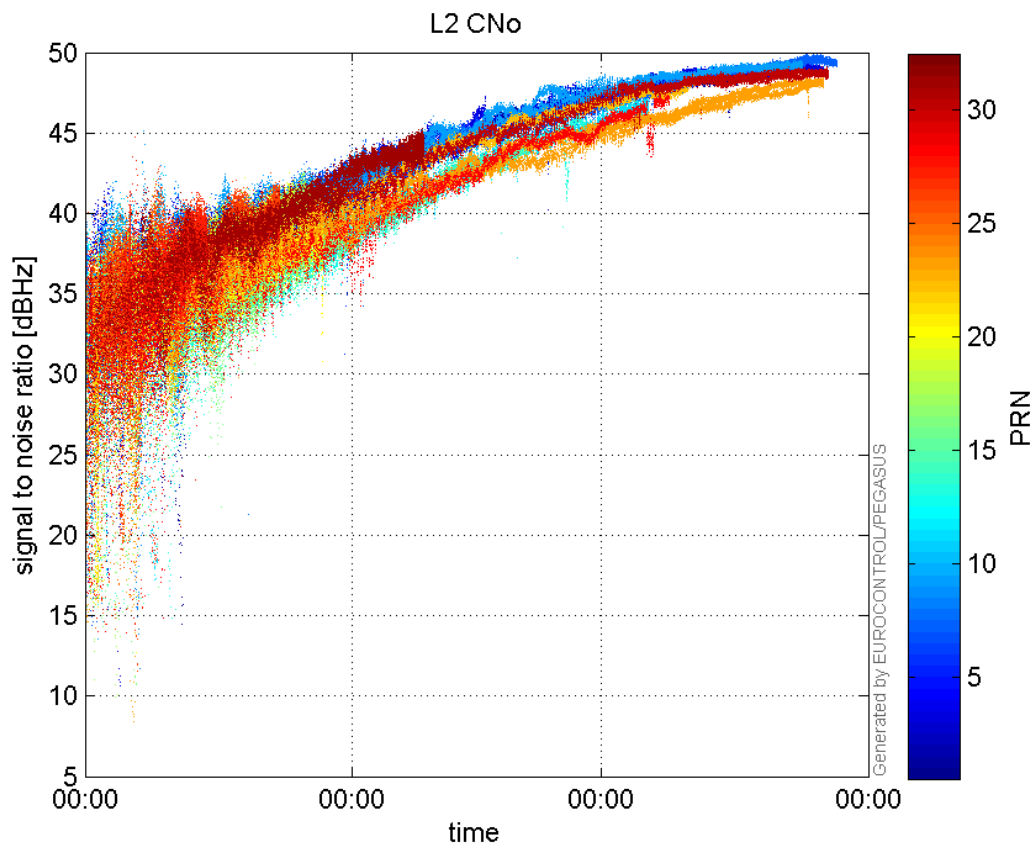


signal quality

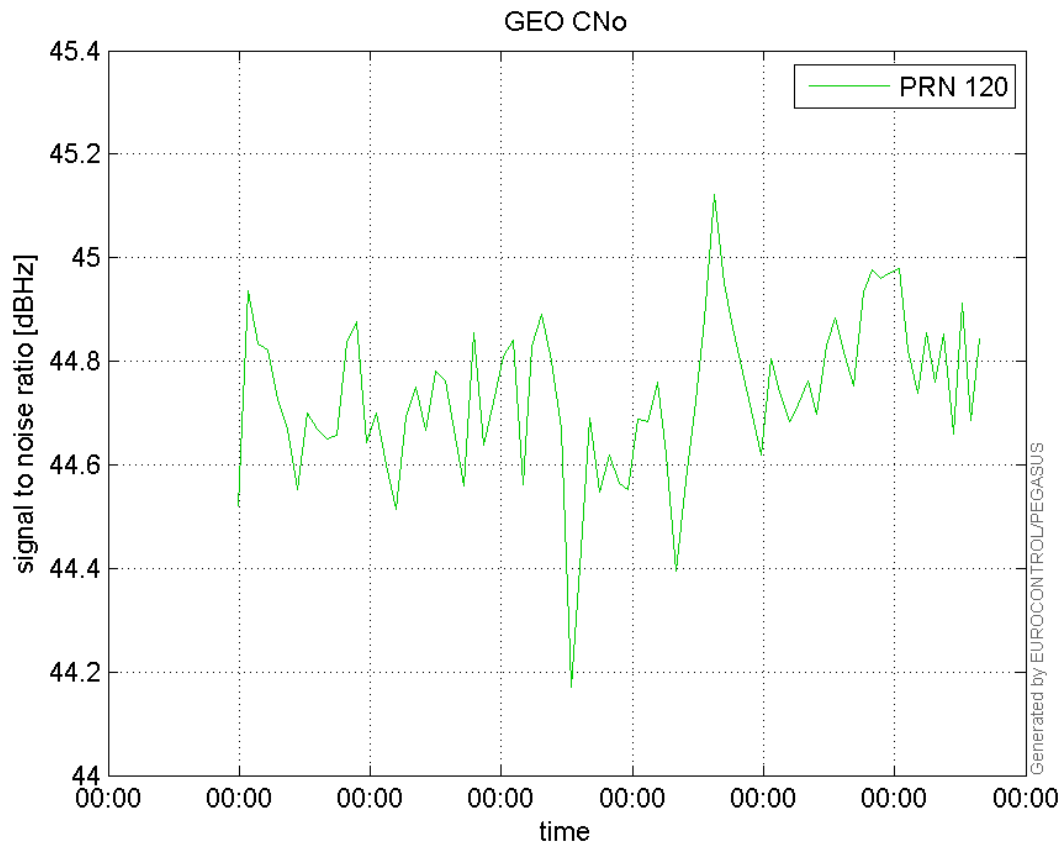
L1 CNo:



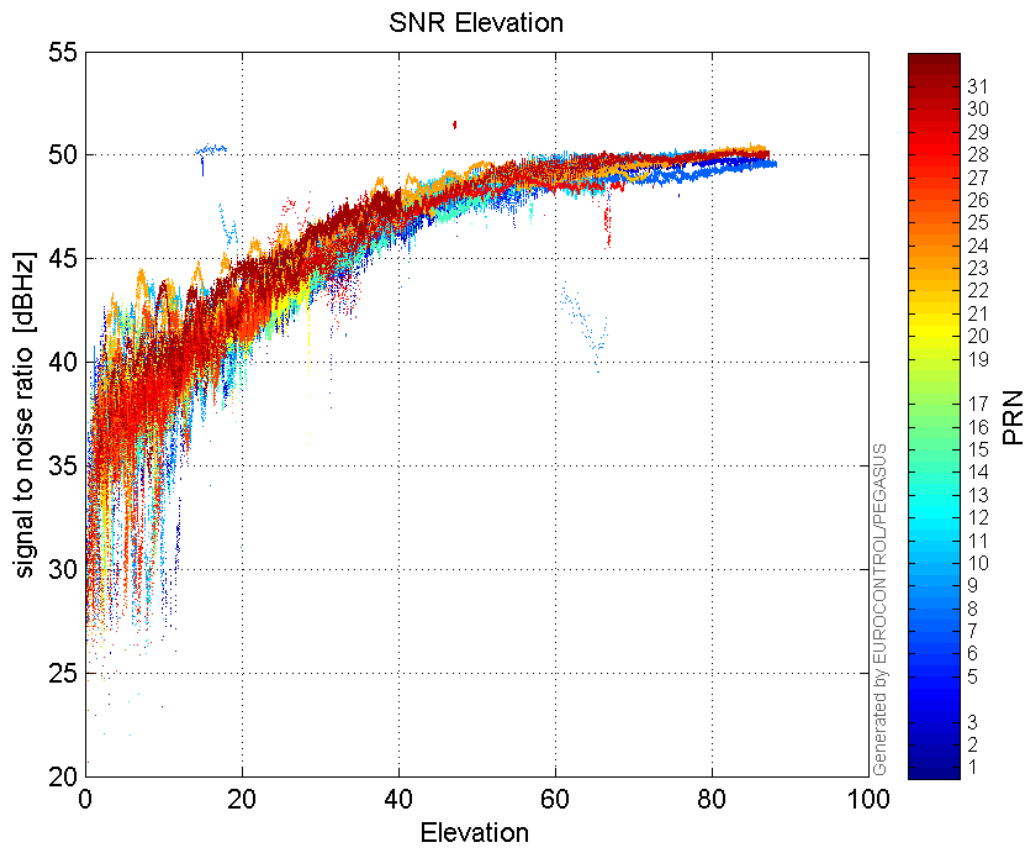
L2 CNo:



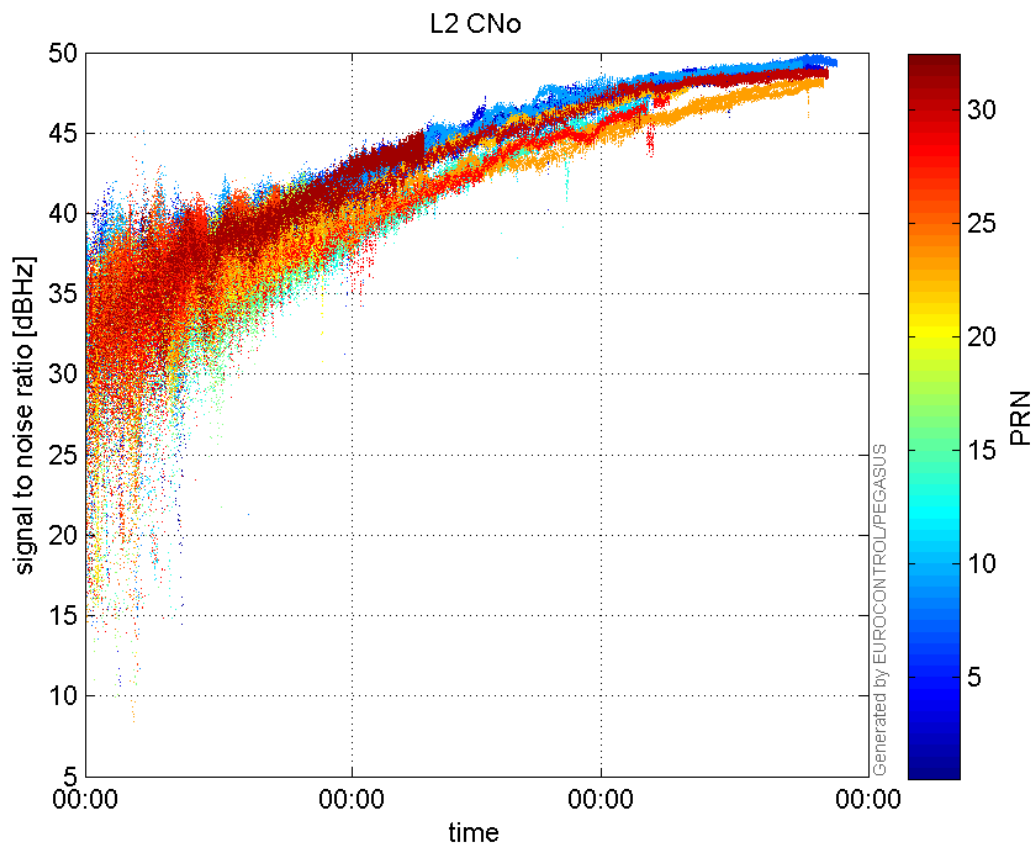
GEO CNo:



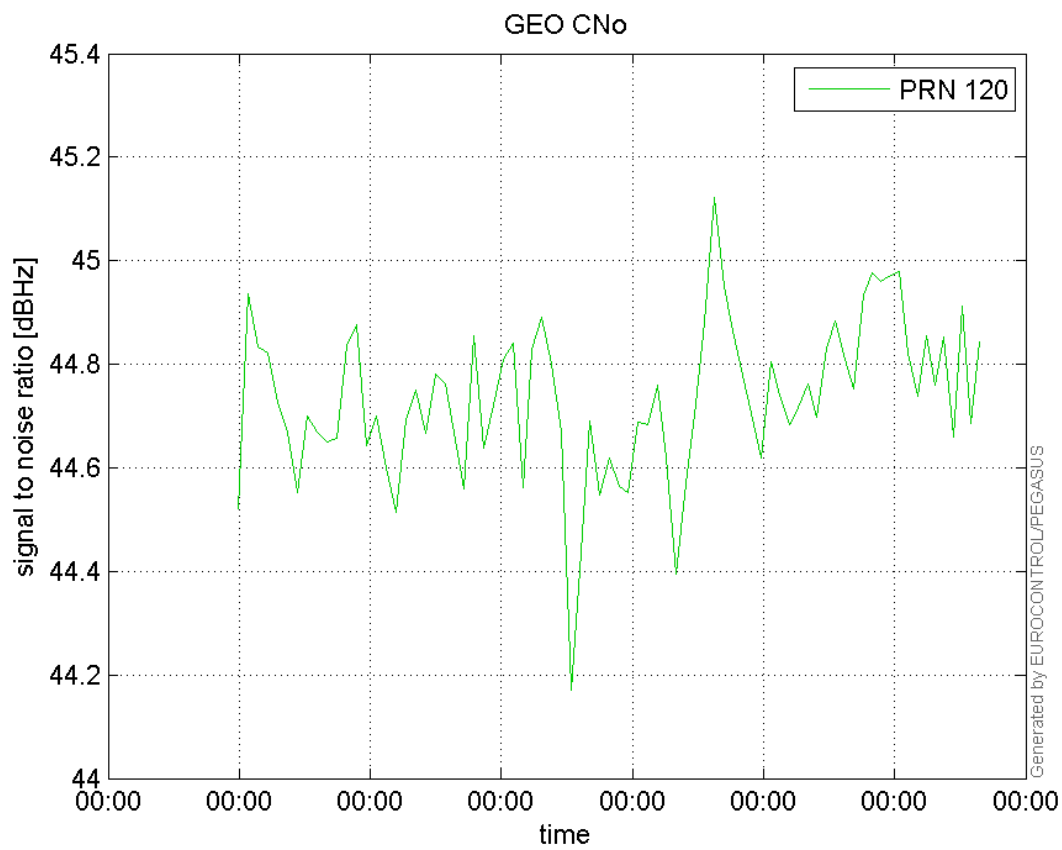
SNR Elevation:



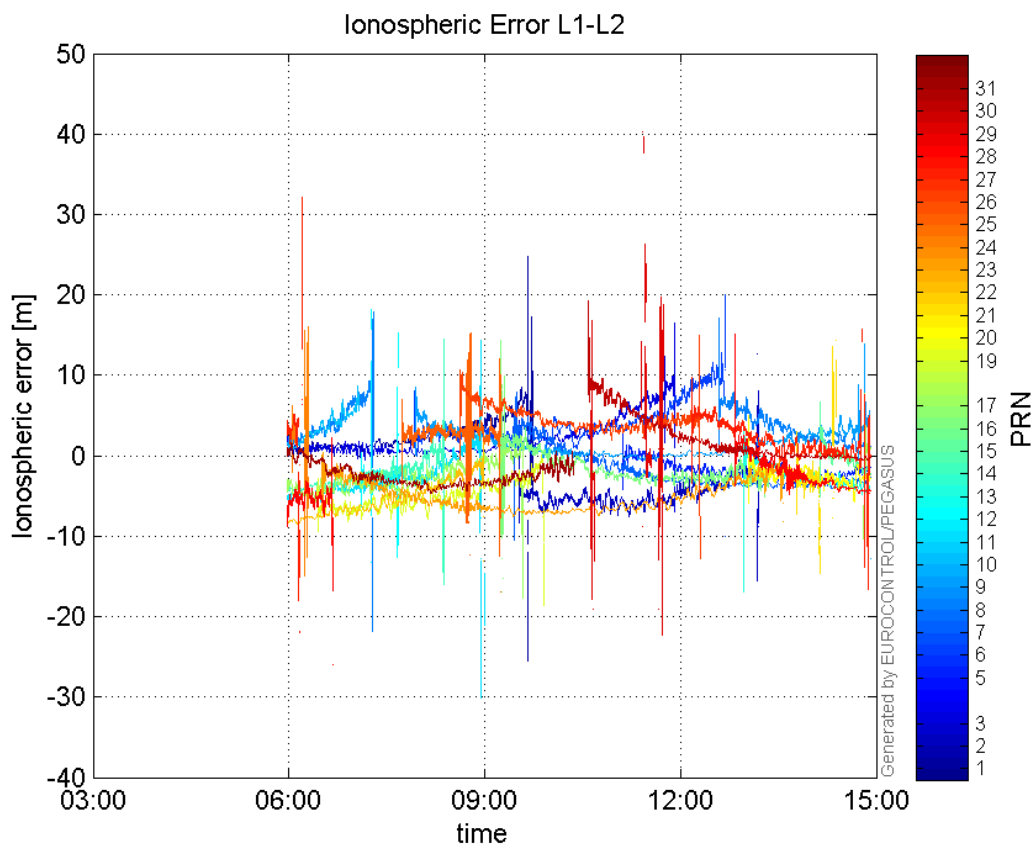
L2 CNo:



GEO CNo:



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_03EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_03EGNOS/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	30.4296
init_alt	results	231.4052
mi_numbers	results	0

SBAS Messages

start: 05:58:39.129 03.02.2016 (week: 1882 sec: 280719.129)
end: 14:54:25.129 03.02.2016 (week: 1882 sec: 312865.129)
duration: 08:55:46 ..

quality

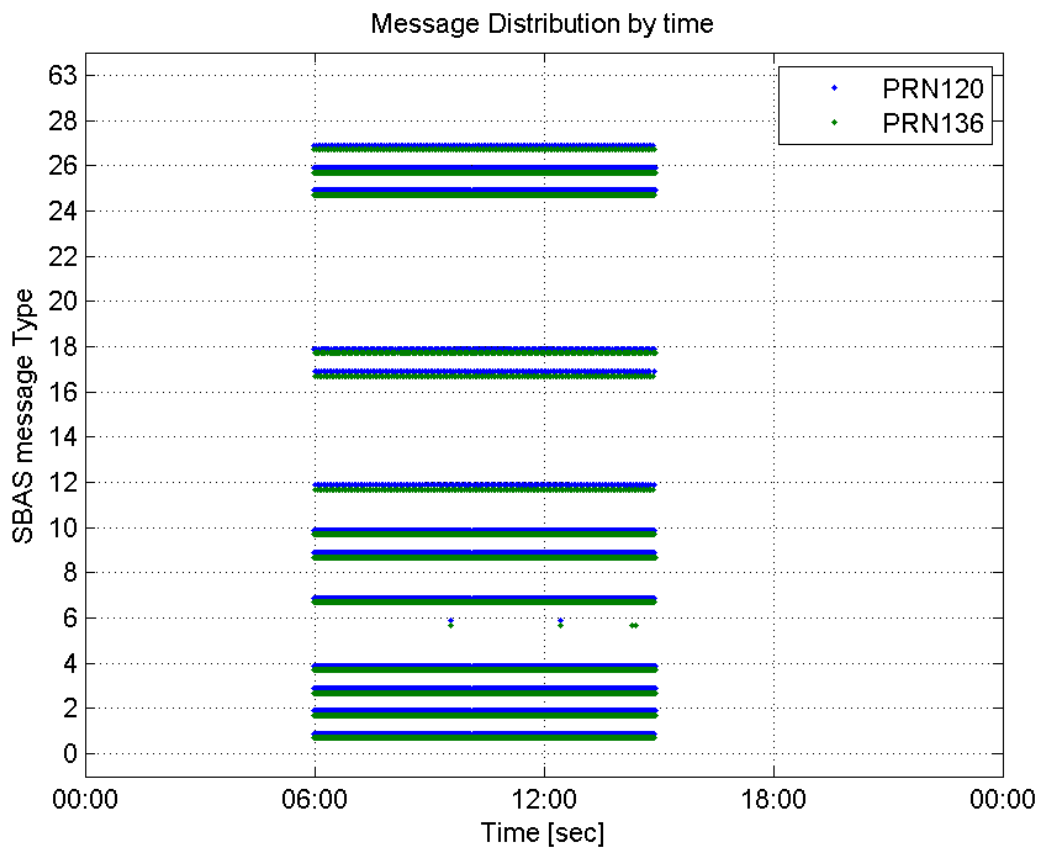
valid samples 64030
total samples 64030
number of SBAS PRNs 2

SBAS SIS Overview

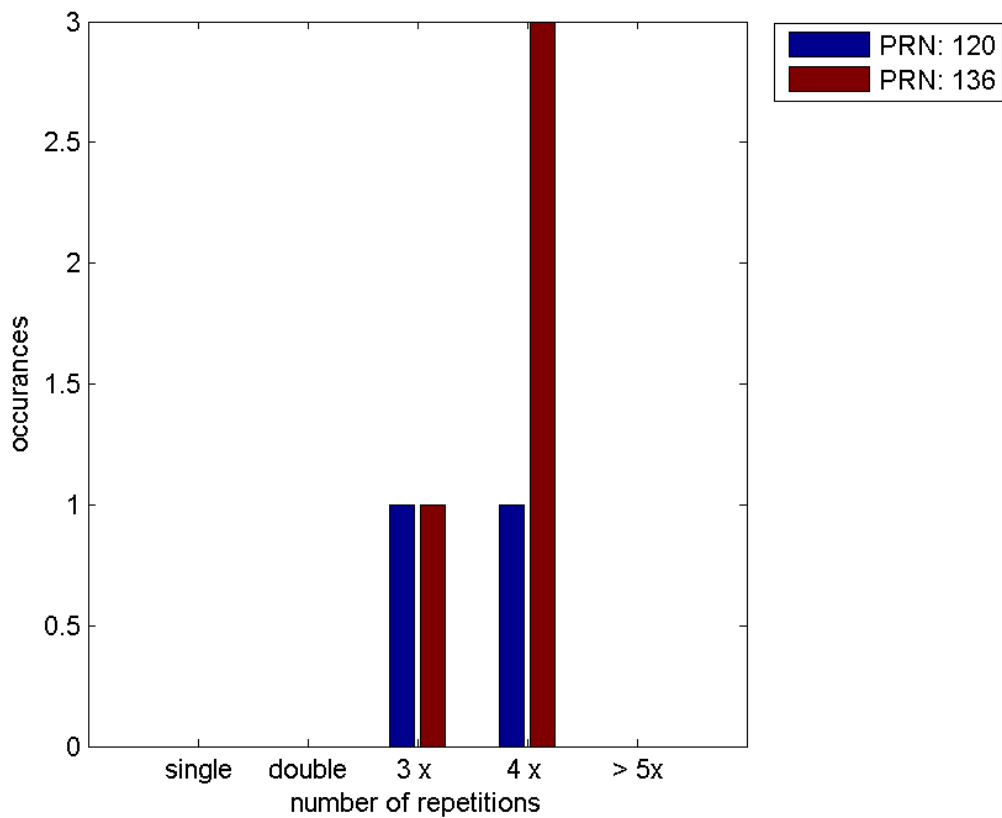
Message Type 6 repetitions :

	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	1	0
PRN 136	0	0	1	3	0

 Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

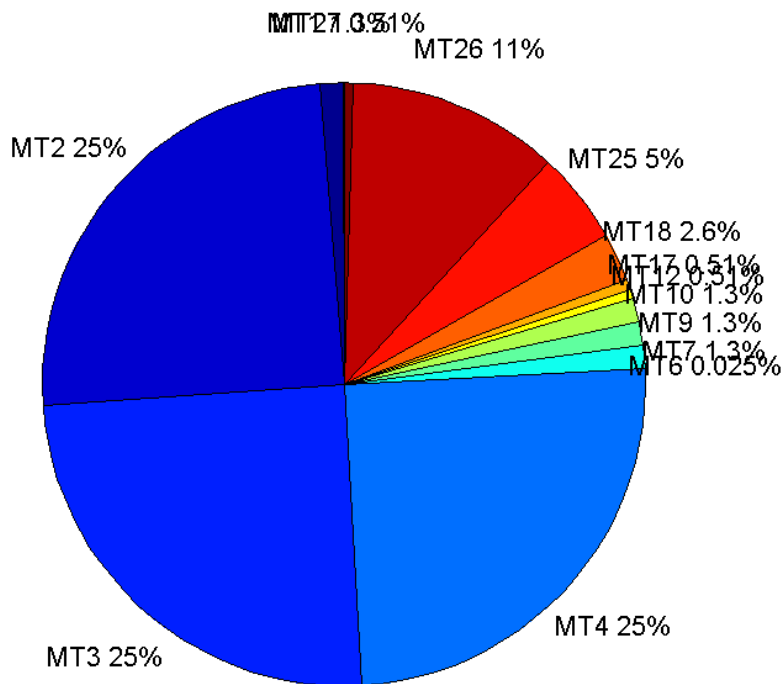
	number of messages	%
MT 0	0	0
MT 1	400	1.25459
MT 2	7924	24.8534
MT 3	7924	24.8534
MT 4	7925	24.8565
MT 5	0	0
MT 6	8	0.0250917
MT 7	401	1.25772
MT 9	400	1.25459
MT 10	401	1.25772
MT 12	163	0.511244
MT 17	163	0.511244
MT 18	820	2.5719
MT 24	0	0
MT 25	1589	4.98385
MT 26	3601	11.2944
MT 27	164	0.514381
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	31883	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	320	80.2732	1	0	0
MT 2	4	208	4.05705	4	2	2
MT 3	4	212	4.05692	4	2	2
MT 4	4	208	4.05641	4	2	2
MT 5	--	--	--	--	--	--
MT 6	1	10352	1479.71	1	1	1
MT 7	76	240	80.2325	2	0	0
MT 9	76	321	80.2732	0	0	0
MT 10	76	240	80.2425	2	0	0
MT 12	188	395	197.093	162	2	2
MT 17	188	388	197.093	0	0	0
MT 18	4	348	39.0342	1	0	0
MT 24	--	--	--	--	--	--
MT 25	3	208	20.238	0	0	0
MT						

26	4	220	8.92722	0	0	0
MT 27	188	389	195.883	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

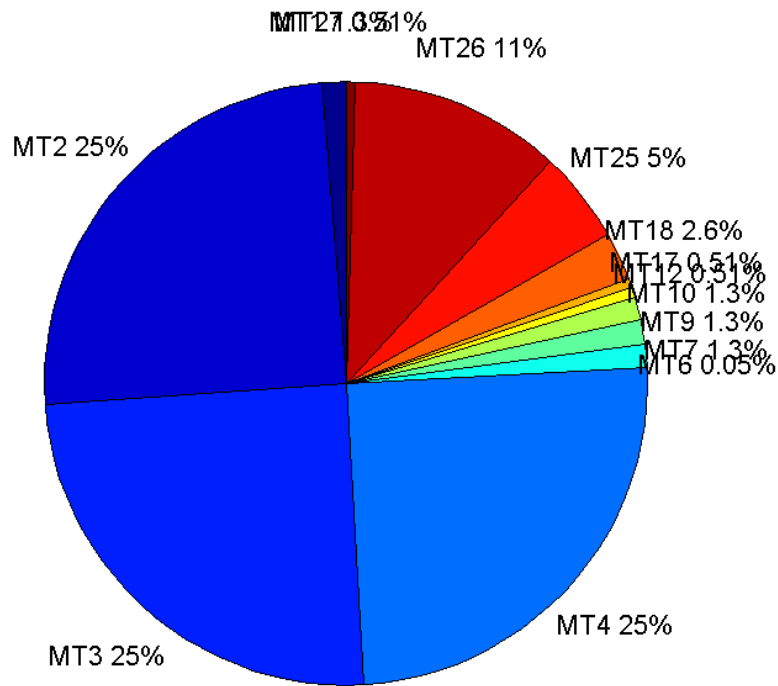
	number of messages	%
MT 0	0	0
MT 1	403	1.25362
MT 2	7990	24.8546
MT 3	7990	24.8546
MT 4	7989	24.8515
MT 5	0	0
MT 6	16	0.0497714
MT 7	404	1.25673
MT 9	404	1.25673

MT 10	404	1.25673
MT 12	164	0.510156
MT 17	164	0.510156
MT 18	825	2.56634
MT 24	0	0
MT 25	1604	4.98958
MT 26	3625	11.2763
MT 27	165	0.513267
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	32147	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.6592	0	0	0
MT 2	4	8	4.02353	4	0	0
MT 3	4	8	4.02353	4	0	0
MT 4	4	8	4.02366	4	0	0
MT 5	--	--	--	--	--	--
MT 6	1	10352	1160.87	3	3	3
MT 7	76	81	79.5707	0	0	0
MT 9	76	82	79.67	0	0	0
MT 10	74	82	79.5608	0	0	0
MT 12	188	201	195.086	163	0	0
MT 17	184	201	195.061	0	0	0
MT 18	4	164	38.8714	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	60	20.0418	0	0	0
MT 26	4	32	8.86617	0	0	0
MT 27	185	206	195.043	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_03EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2016_02_03EGNOS/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