

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 11/02/2016

SBAS Messages

start: 09:13:32.129 08.02.2016 (week: 1883 sec: 119612.129)
end: 16:33:34.129 08.02.2016 (week: 1883 sec: 146014.129)
duration: 07:20:02 ..

quality

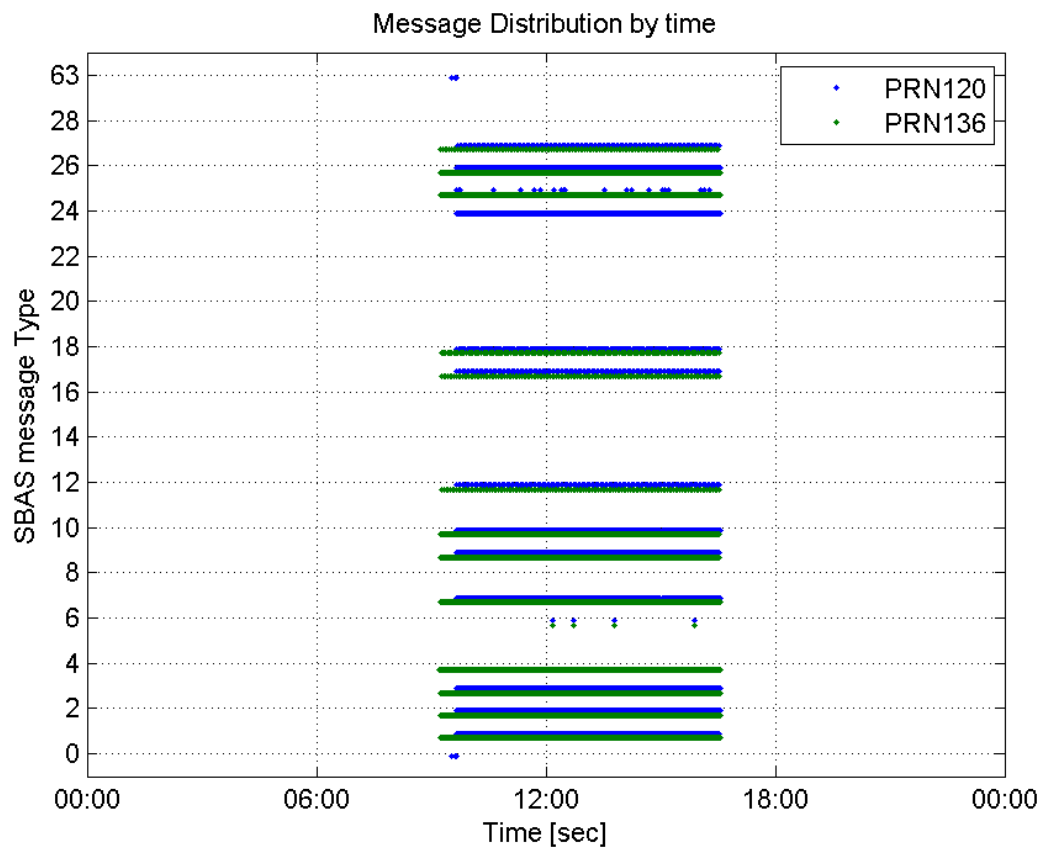
valid samples 51255
total samples 51255
number of SBAS PRNs 2

SBAS SIS Overview

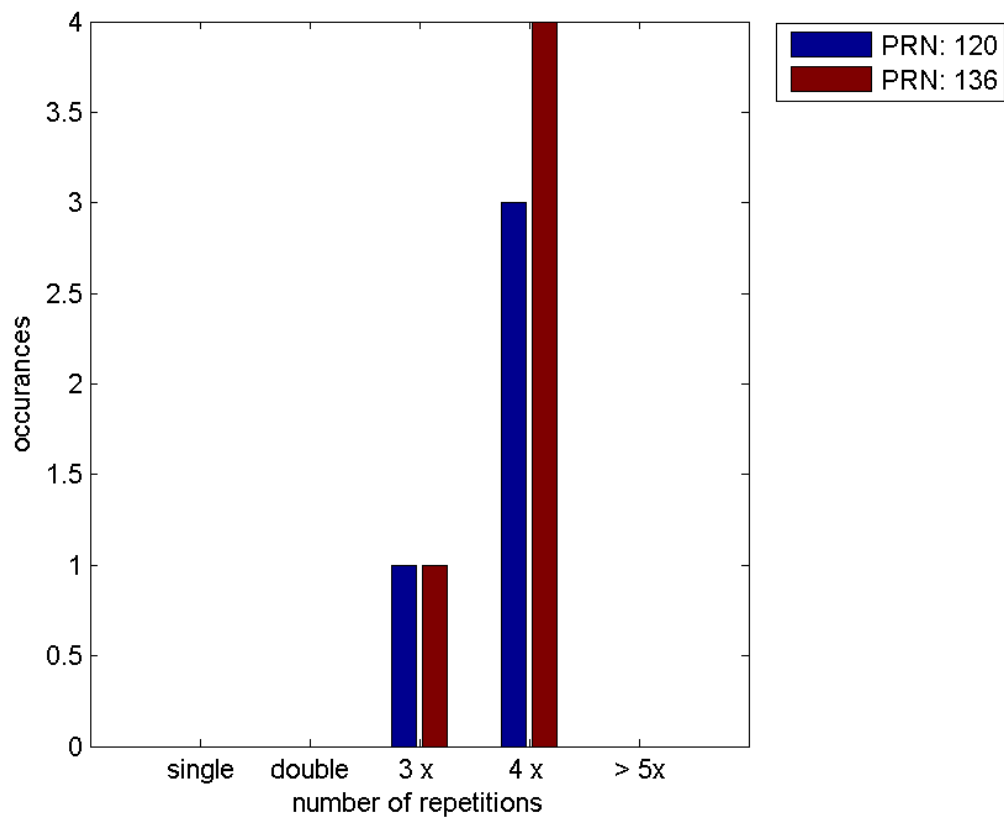
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

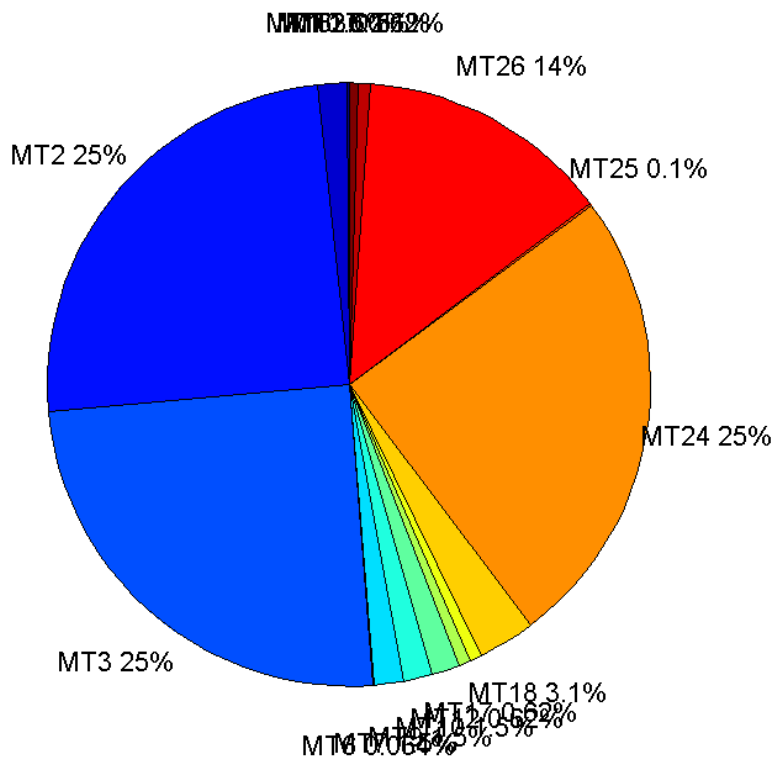
	number of messages	%
MT 0	26	0.104619
MT 1	387	1.55722
MT 2	6164	24.8028
MT 3	6166	24.8109
MT 4	0	0
MT 5	0	0
MT 6	16	0.0643811
MT 7	384	1.54515
MT 9	384	1.54515
MT 10	384	1.54515
MT 12	155	0.623692
MT 17	155	0.623692
MT 18	773	3.11041
MT 24	6165	24.8069
MT 25	26	0.104619
MT 26	3387	13.6287
MT 27	153	0.615645
MT 28	0	0
MT 62	0	0
MT 63	127	0.511025
Total	24852	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	6	318	21.12	2	0	0
MT 1	1	129	64.1269	1	0	0
MT 2	3	113	4.02385	7	3	3
MT 3	3	109	4.02303	7	3	3
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	7500	891.2	3	3	3
MT 7	61	193	64.6997	1	0	0
MT 9	61	193	64.6397	0	0	0
MT 10	61	193	64.7154	1	0	0
MT 12	153	201	160.617	154	0	0
MT 17	151	197	160.552	0	0	0
MT 18	1	154	32.0311	0	0	0
MT 24	3	113	4.02369	0	0	0
MT 25	1	3651	950.04	0	0	0
MT						

26	1	116	7.3228	0	0	0
MT 27	156	322	162.105	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	1	312	4.19048	0	0	0

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

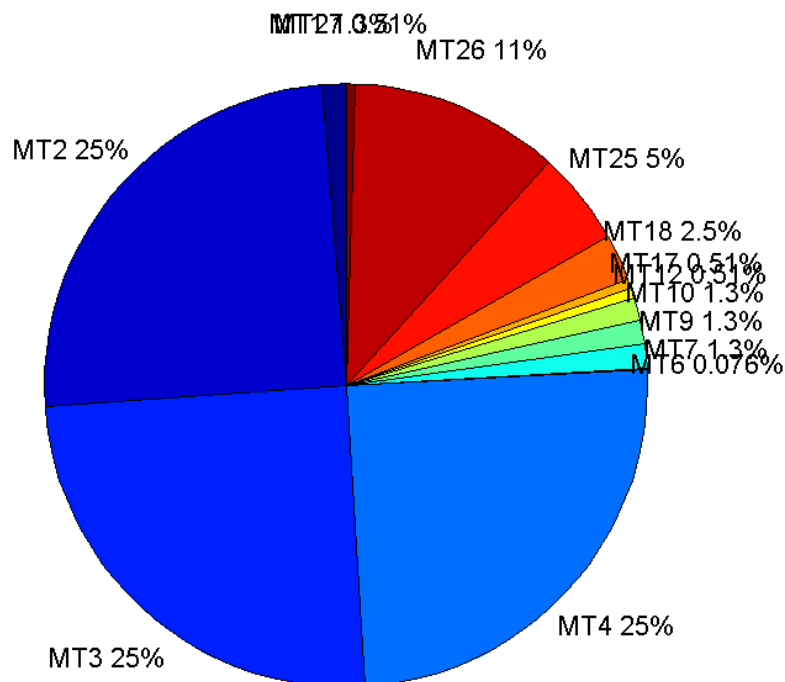
	number of messages	%
MT 0	0	0
MT 1	332	1.25743
MT 2	6566	24.8684
MT 3	6566	24.8684
MT 4	6567	24.8722
MT 5	0	0
MT 6	20	0.075749
MT 7	332	1.25743
MT 9	332	1.25743

MT 10	332	1.25743
MT 12	134	0.507518
MT 17	134	0.507518
MT 18	670	2.53759
MT 24	0	0
MT 25	1323	5.01079
MT 26	2961	11.2146
MT 27	134	0.507518
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	26403	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	83	79.6556	0	0	0
MT 2	4	8	4.02102	5	0	0
MT 3	4	8	4.02102	5	0	0
MT 4	4	8	4.02102	5	0	0
MT 5	--	--	--	--	--	--
MT 6	1	7500	703.632	4	4	4
MT 7	75	81	79.6073	0	0	0
MT 9	75	81	79.5468	0	0	0
MT 10	75	81	79.5468	0	0	0
MT 12	184	203	196.429	133	0	0
MT 17	187	205	196.368	0	0	0
MT 18	4	161	39.1016	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	55	19.938	0	0	0
MT 26	1	36	8.91554	0	0	0
MT 27	184	201	196.338	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_08EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2016_02_08EGNOS/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: 09:13:33 08.02.2016 (week: 1883 sec: 119613)
end: 16:33:35 08.02.2016 (week: 1883 sec: 146015)
duration: 07:20:03 ..

quality

valid samples 26042
total samples 26403

Event tables

Position discontinuity events type all
APV-I discontinuity events type all
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	145125	1.43562	8.98104	0.15985	0.770118	15.8694	0.0485285
max normVer	133095	2.16065	32.1734	0.0671564	2.65953	17.2146	0.154493
max HPE	132362	9.2681	912.738	0.0101542	-0.567981	244.515	0.00232289
max VPE	132691	1.31855	38.5755	0.0341811	2.88824	53.7894	0.0536953
min HPL	145109	1.22724	8.50459	0.144303	-0.0310783	14.6142	0.00212658
min VPL	141250	0.877931	9.59102	0.0915368	0.0615148	12.7064	0.00484124

Position discontinuity events :

#	Epoch	duration	stable period
1	131769	14	10326
2	132376	115	593
3	140378	101	7887

APV-I discontinuity events :

#	Epoch	duration	stable period
1	122309	164	830
2	131541	1035	9068
3	132664	160	88
4	140204	398	7380

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	122309	164	830
2	131541	1035	9068
3	132664	160	88
4	136427	9	3603
5	140204	398	3768

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	122309	164	830
2	131541	1035	9068

3	132664	160	88
4	136427	9	3603
5	140204	398	3768

First Glance analysis

Duration	26403
Number of Samples	26403
Number of invalid sample	361
Number of no position solution samples	1699
Number of missing sample	0
Logging Loss	0
Processing Loss	1.3673
Number of Misleading Information	0
Data gaps	0
Discontinuities	3

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
24343	22780	22771	0	22771

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.47273	1.39991	1.39997	NaN	1.39997
HPEscale 95%	NaN	4.78013	4.78017	NaN	4.78017
VPE 95%	1.87536	1.81407	1.8141	NaN	1.8141
VPEscale 95%	NaN	4.08626	2.86081	NaN	2.86081

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.934759	0.874741	0.874395	0	0.874395
measurements	0.921979	0.862781	0.86244	0	0.86244
Operational	0.921979	0.862781	0.86244	0	0.86244

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	3	4	5	--	5
Long	3	4	5	--	5
Independent	3	4	5	--	5
P(disc.)	0.00184858	0.00263389	0.00329366	NaN	0.00329366
P(slide)	0.00184858	0.00263389	0.00329366	NaN	0.00329366

Integrity events :

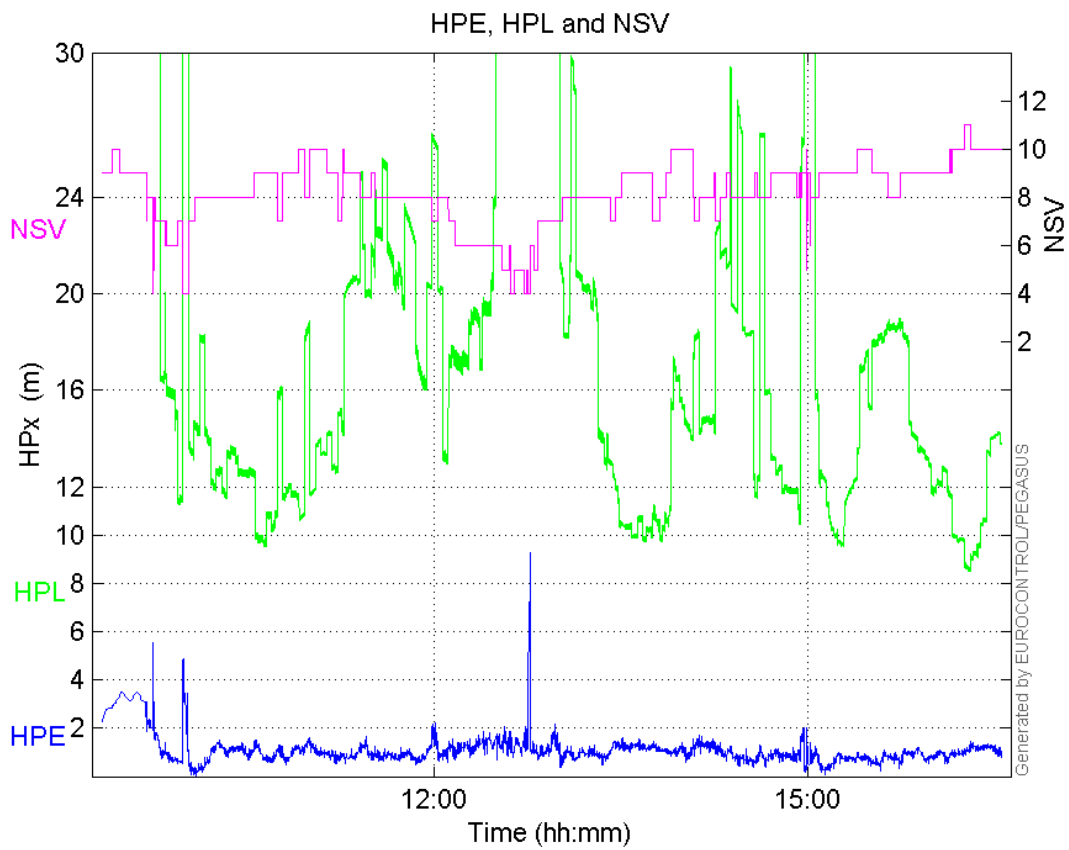
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

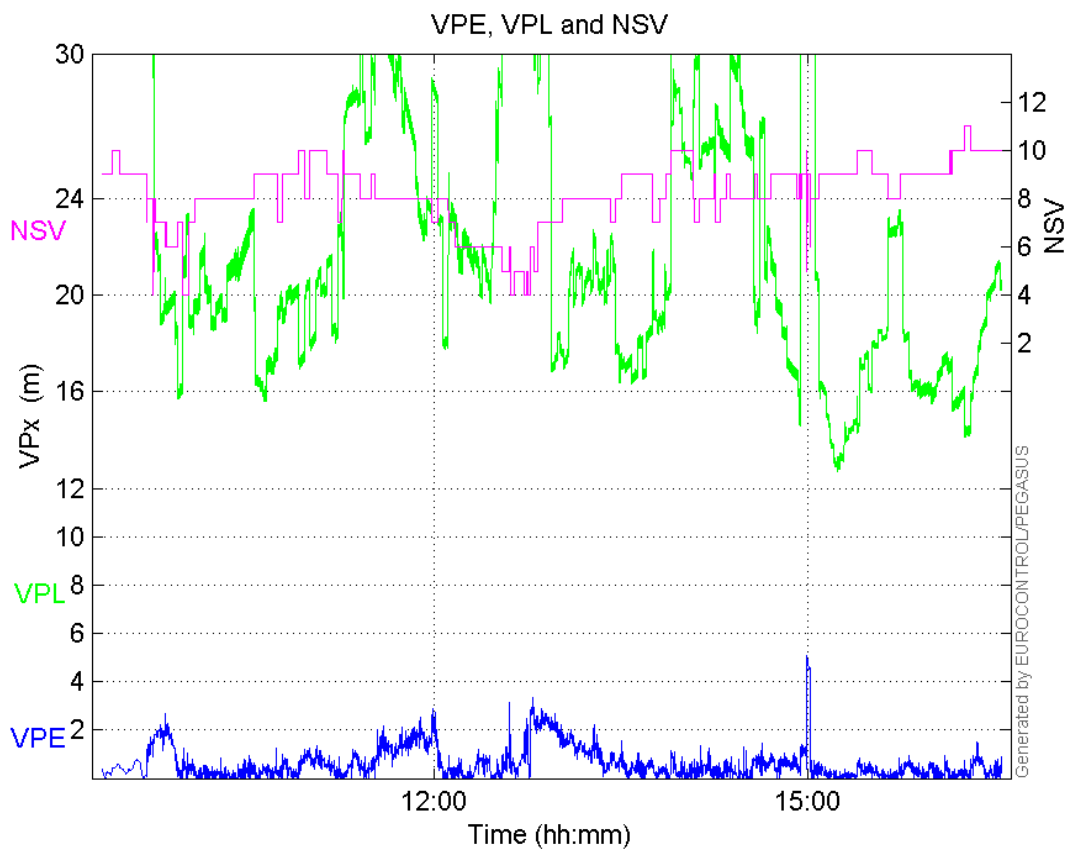
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	24343	22780	22771	0	22771
SIS Availability	0.934759	0.874741	0.874395	0	0.874395
Local Availability	0.921979	0.862781	0.86244	0	0.86244
Operational Availability	0.921979	0.862781	0.86244	0	0.86244
HPE 95%	1.47273	1.39991	1.39997	NaN	1.39997
HPEScale 95%	NaN	4.78013	4.78017	NaN	4.78017
VPE 95%	1.87536	1.81407	1.8141	NaN	1.8141
VPEscale 95%	NaN	4.08626	2.86081	NaN	2.86081
All Discontinuity Events	3	4	5	--	5
Long Discontinuity Events	3	4	5	--	5
Independent Discontinuity Events	3	4	5	--	5
P(discontinuity)	0.00184858	0.00263389	0.00329366	NaN	0.00329366
P(sliding window)	0.00184858	0.00263389	0.00329366	NaN	0.00329366
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:

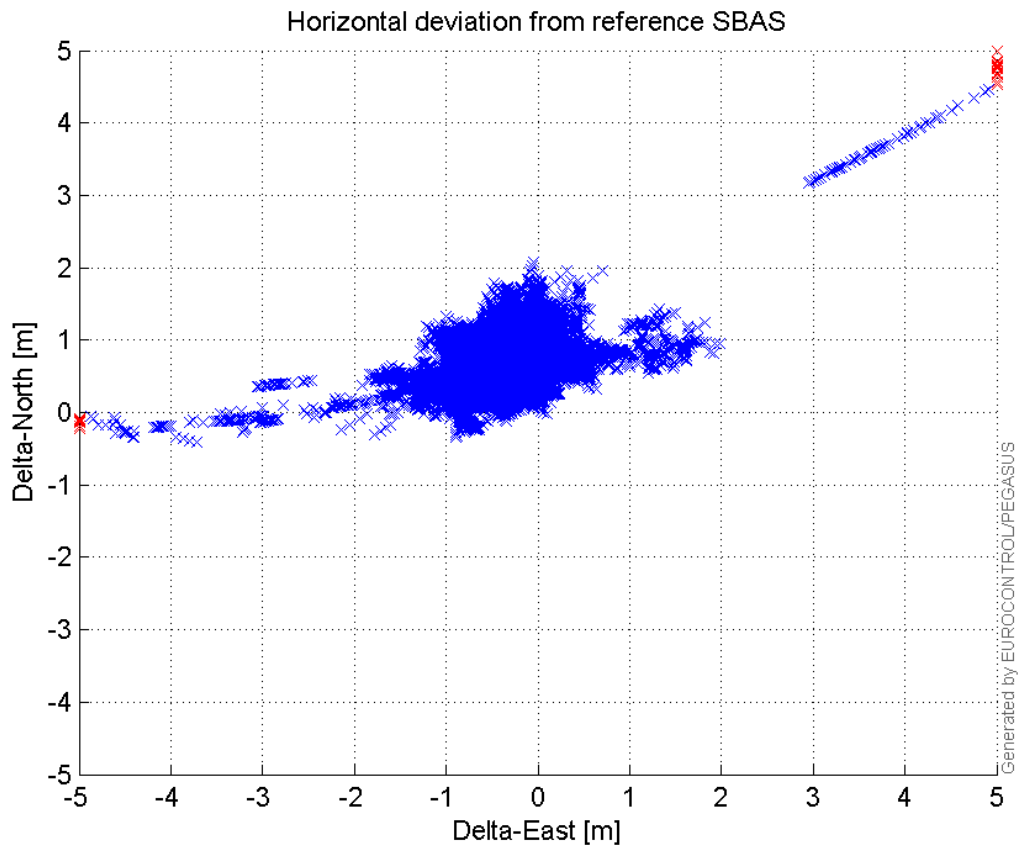


VPE, VPL and NSV:



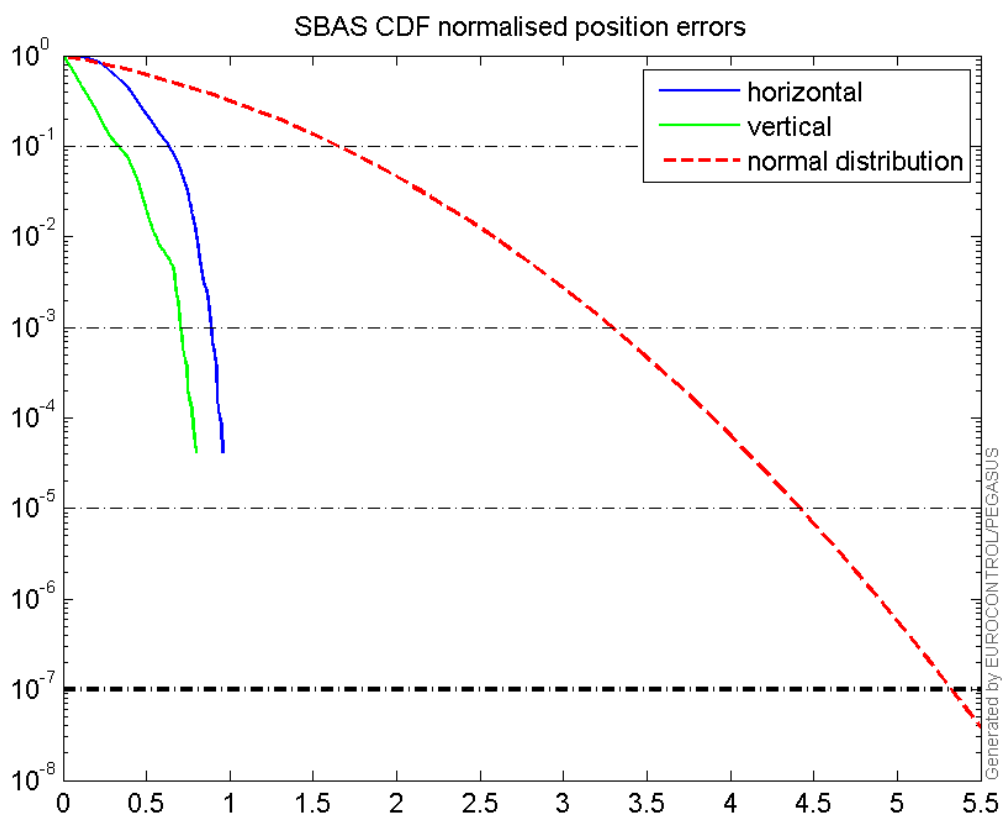
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

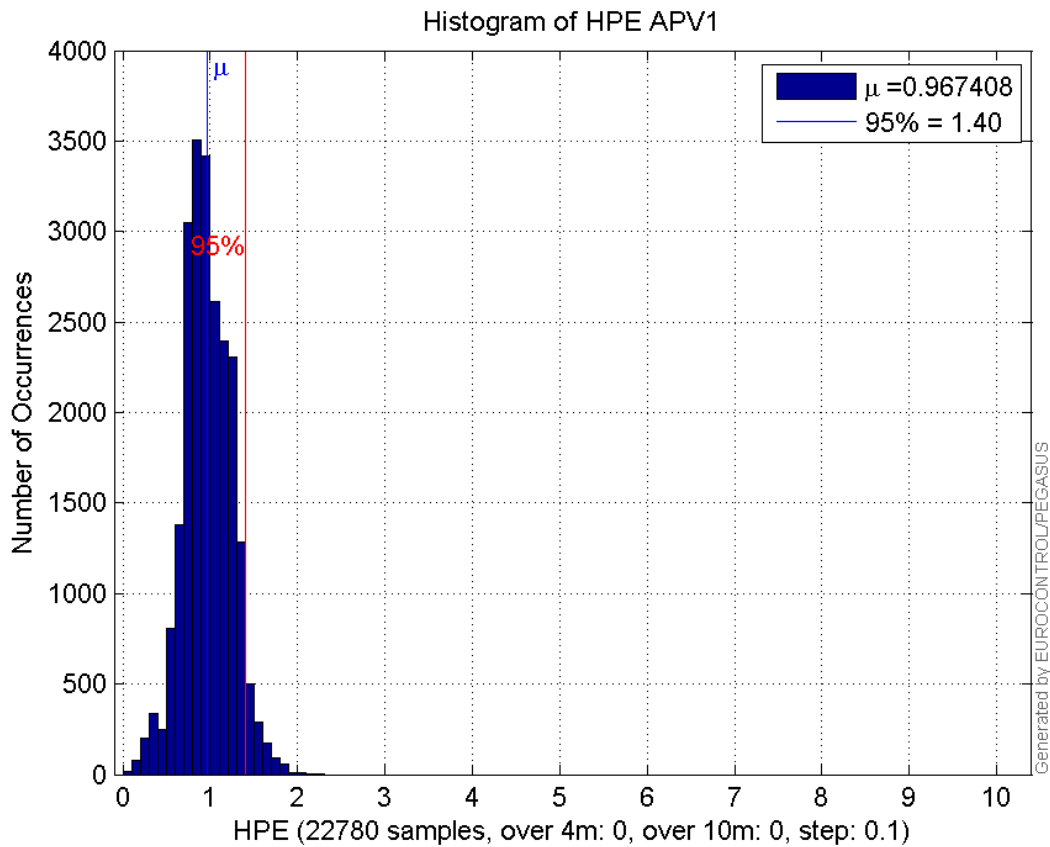
number	22780
sum	22037.554
sum2	23033.286
prctile95	1.3999115
prctile99	1.6611138
number	22780
sum	13005.42
sum2	14260.528
prctile95	1.8140677
prctile99	2.2734416
number	22780
sum	368365.94
sum2	6659436.7
prctile95	26.8032
prctile99	34.65822
number	22780
sum	479540.89
sum2	10545760
prctile95	29.4207
prctile99	31.50172
number	22780
sum	1499.1409
sum2	115.72324
prctile95	0.11950332
prctile99	0.13387026
number	22780
sum	611.48899
sum2	30.377295
prctile95	0.081725178
prctile99	0.10596424
number	22771
sum	22029.608
sum2	23026.271
prctile95	1.3999656
prctile99	1.6611335
number	22771
sum	13002.988
sum2	14259.87
prctile95	1.8140995
prctile99	2.2734913
number	22771
sum	368225.95
sum2	6657259.1
prctile95	26.81157
prctile99	34.658274
number	22771
sum	479217.89
sum2	10534168
prctile95	29.400745

prctile99 31.46367
number 22771
sum 1498.6301
sum2 115.69425
prctile95 0.11950426
prctile99 0.13387522
number 22771
sum 611.42123
sum2 30.376784
prctile95 0.081737571
prctile99 0.10597926

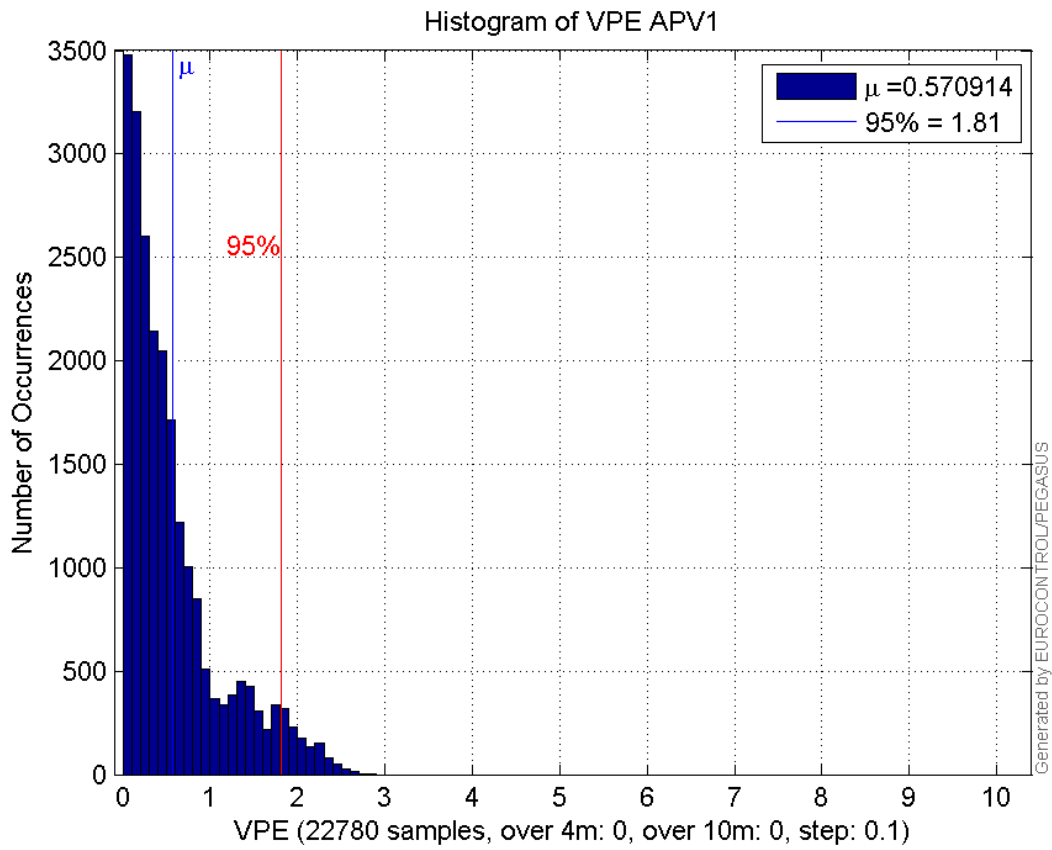
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	0.967408	0.274306	0.954206	1.39991	1.66111	1.00554
HPL	16.1706	5.55432	14.6034	26.8032	34.6582	17.0979
VPE	0.570914	0.547797	0.398486	1.81407	2.27344	0.791209
VPL	21.051	4.44942	20.2286	29.4207	31.5017	21.516

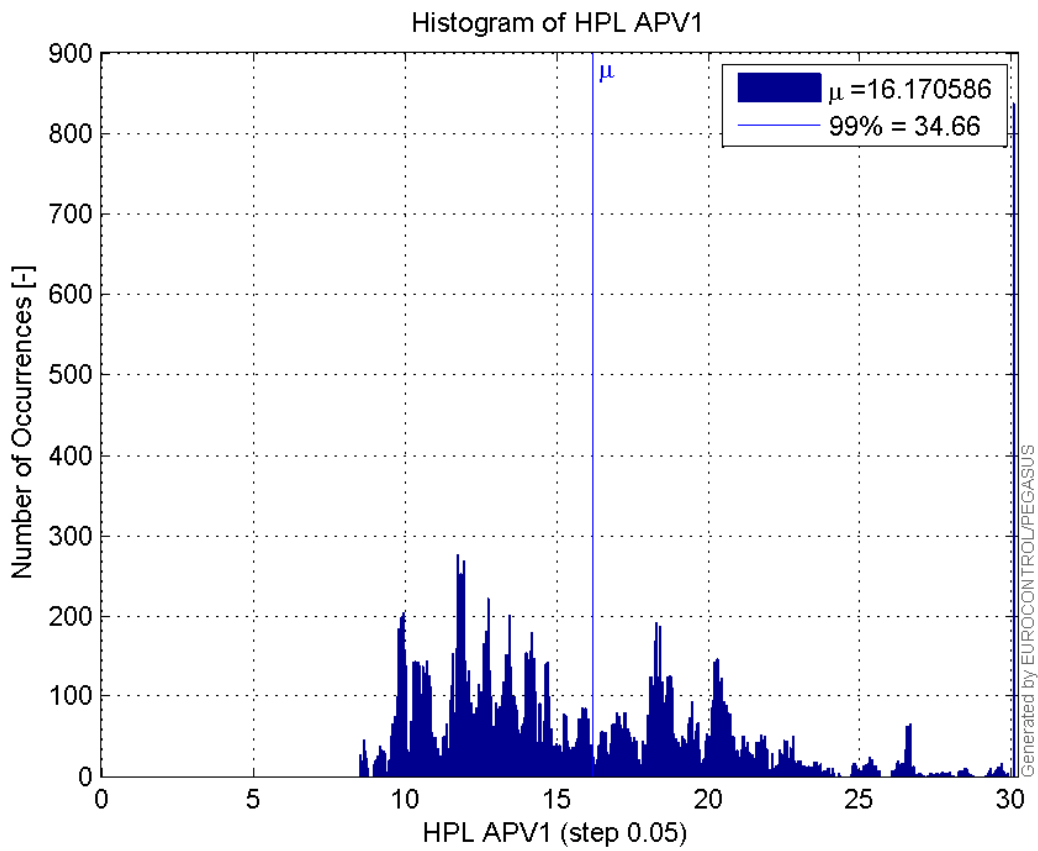
Histogram of HPE APV1:



Histogram of VPE APV1:

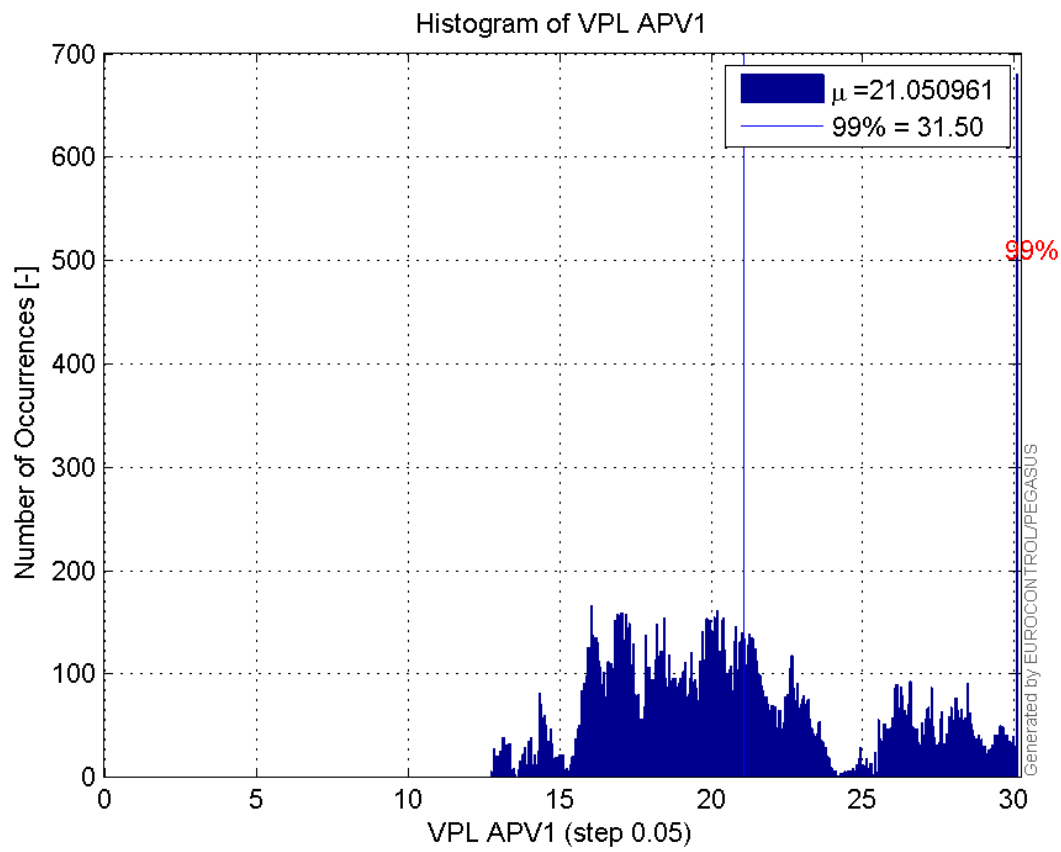


Histogram of HPL APV1:

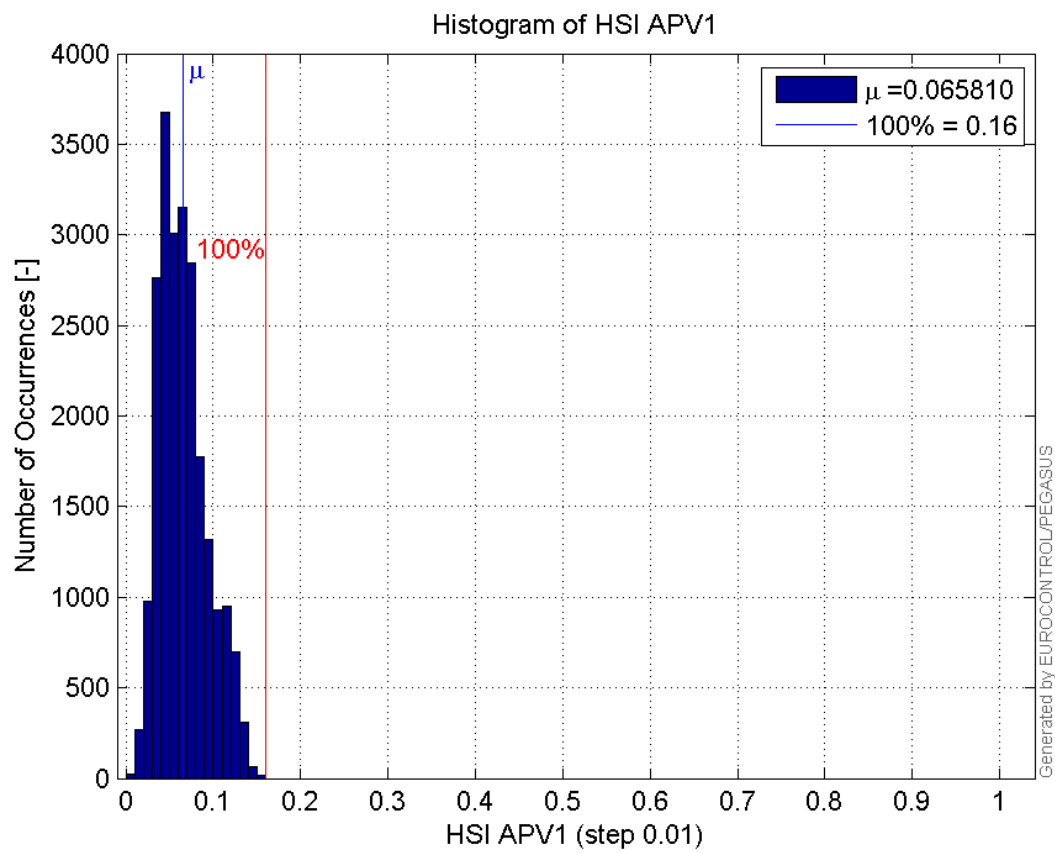


99'

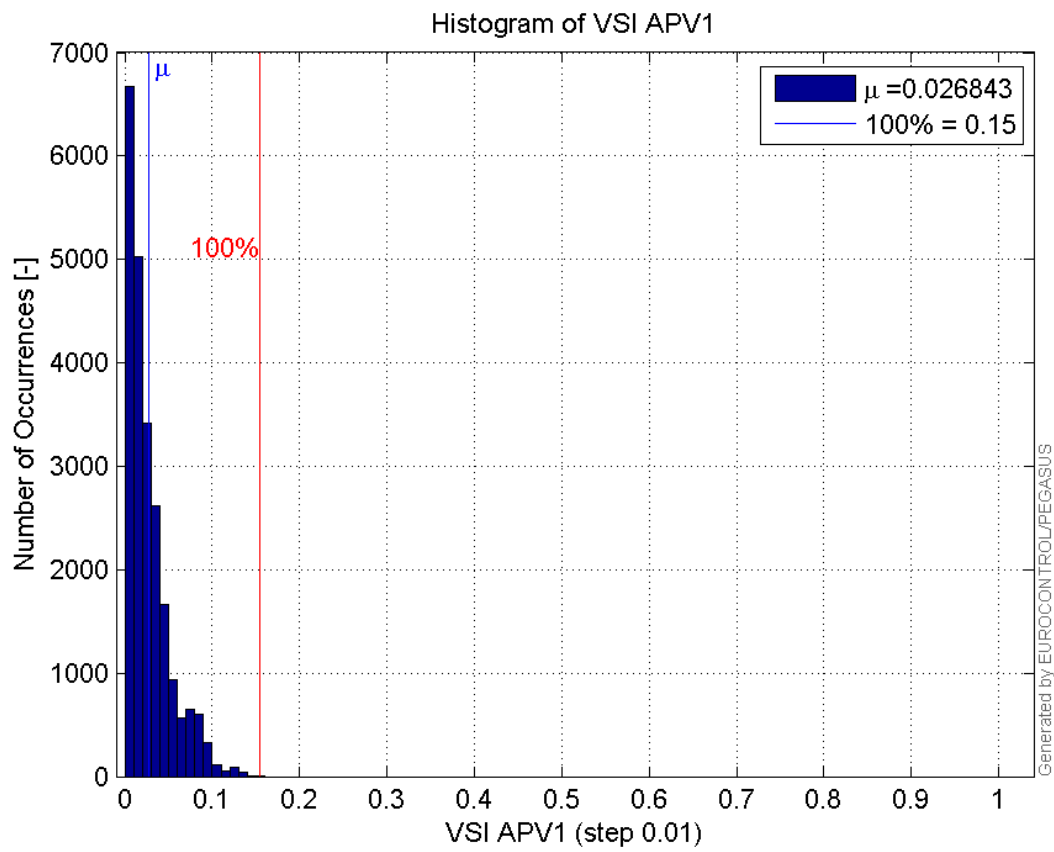
Histogram of VPL APV1:



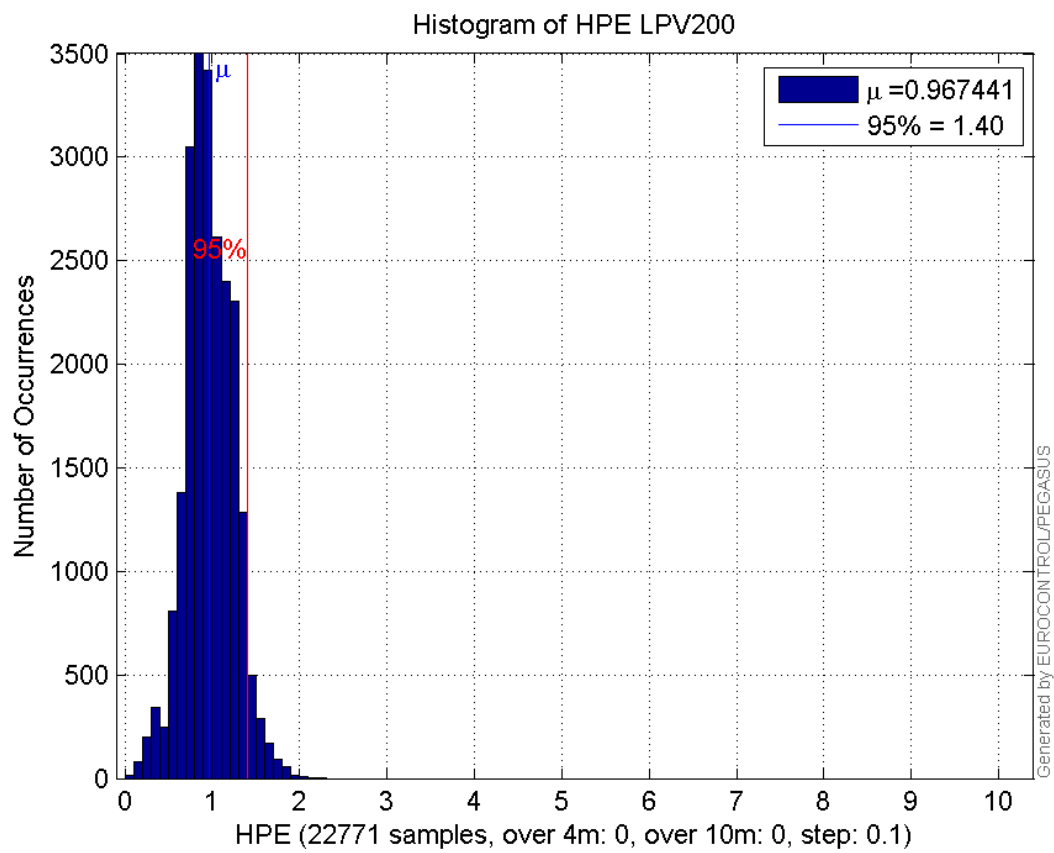
Histogram of HSI APV1:



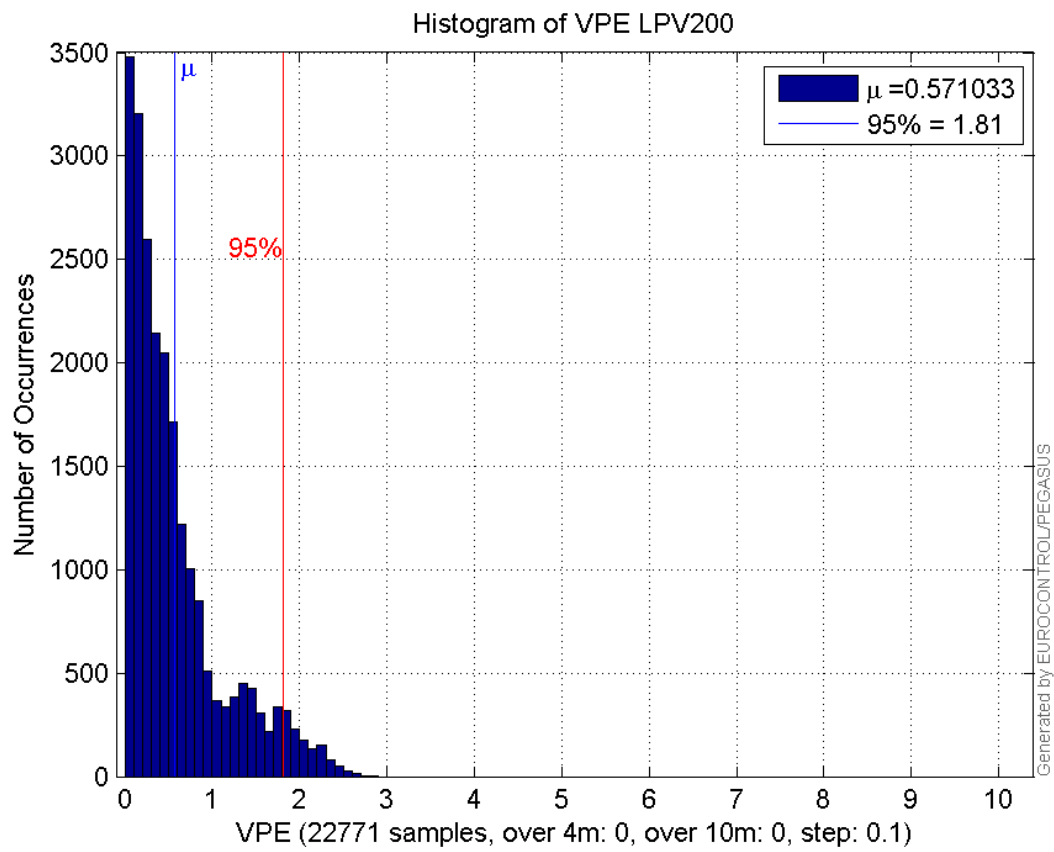
Histogram of VSI APV1:



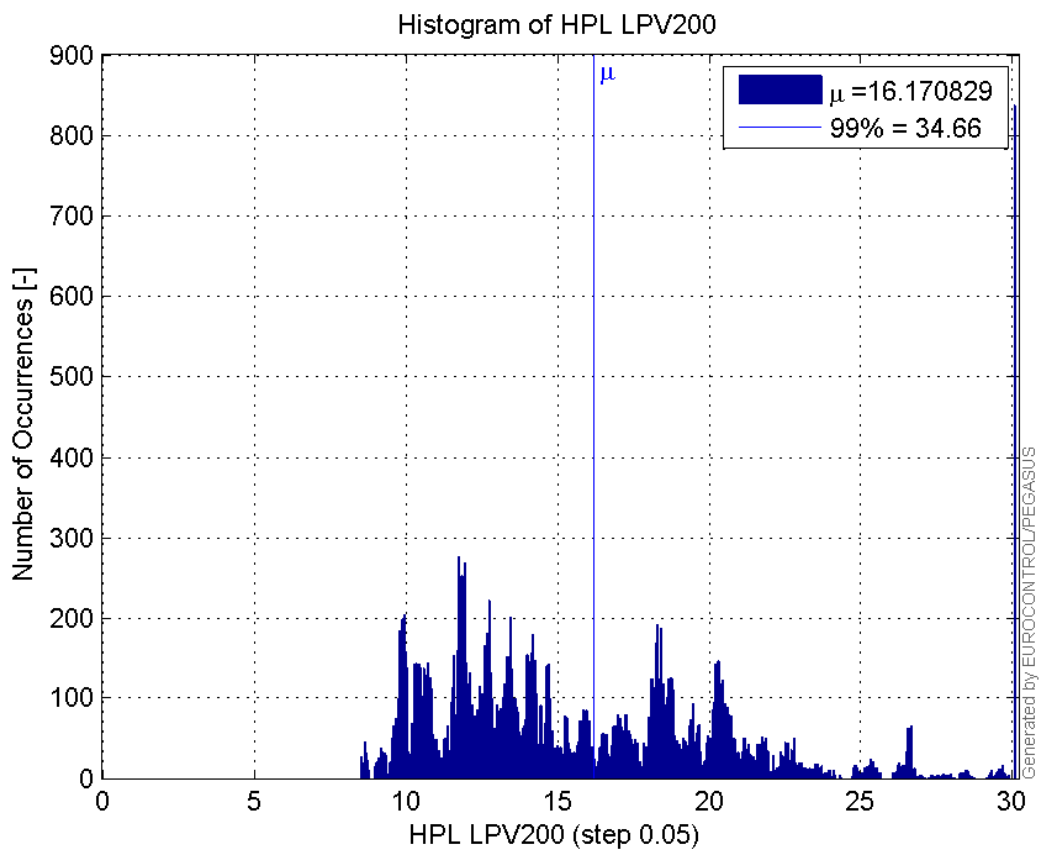
Histogram of HPE LPV200:



Histogram of VPE LPV200:

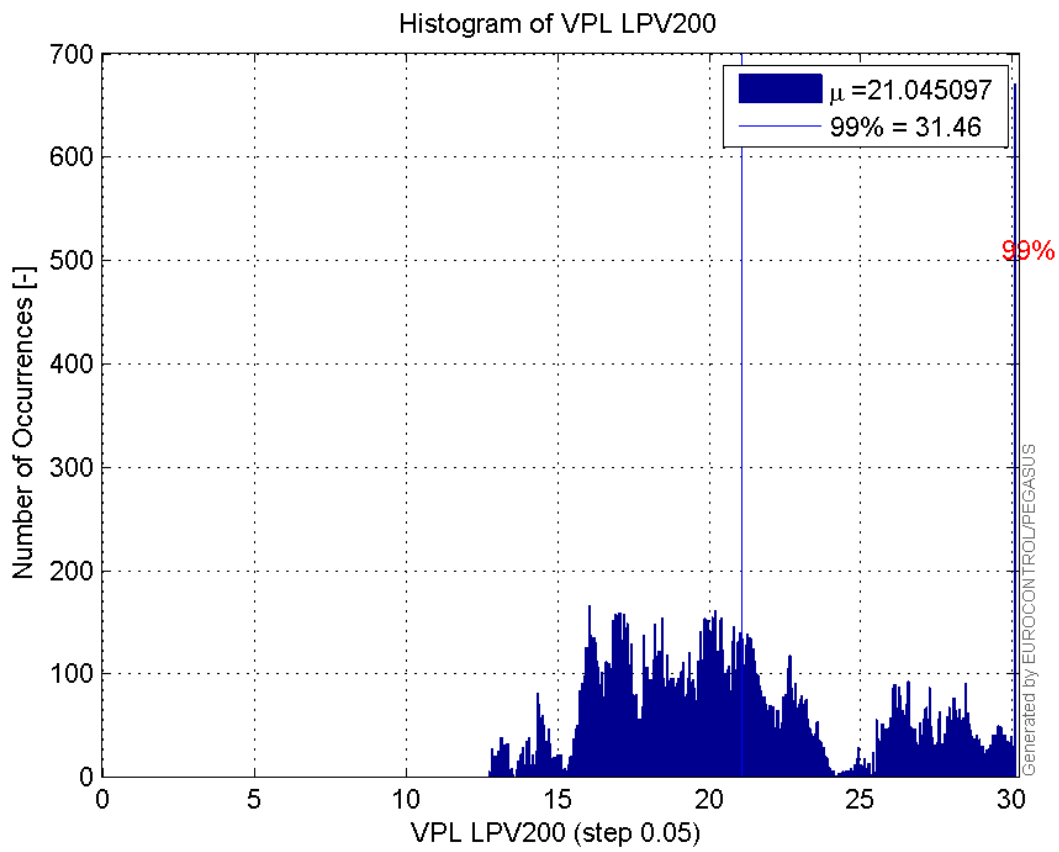


Histogram of HPL LPV200:

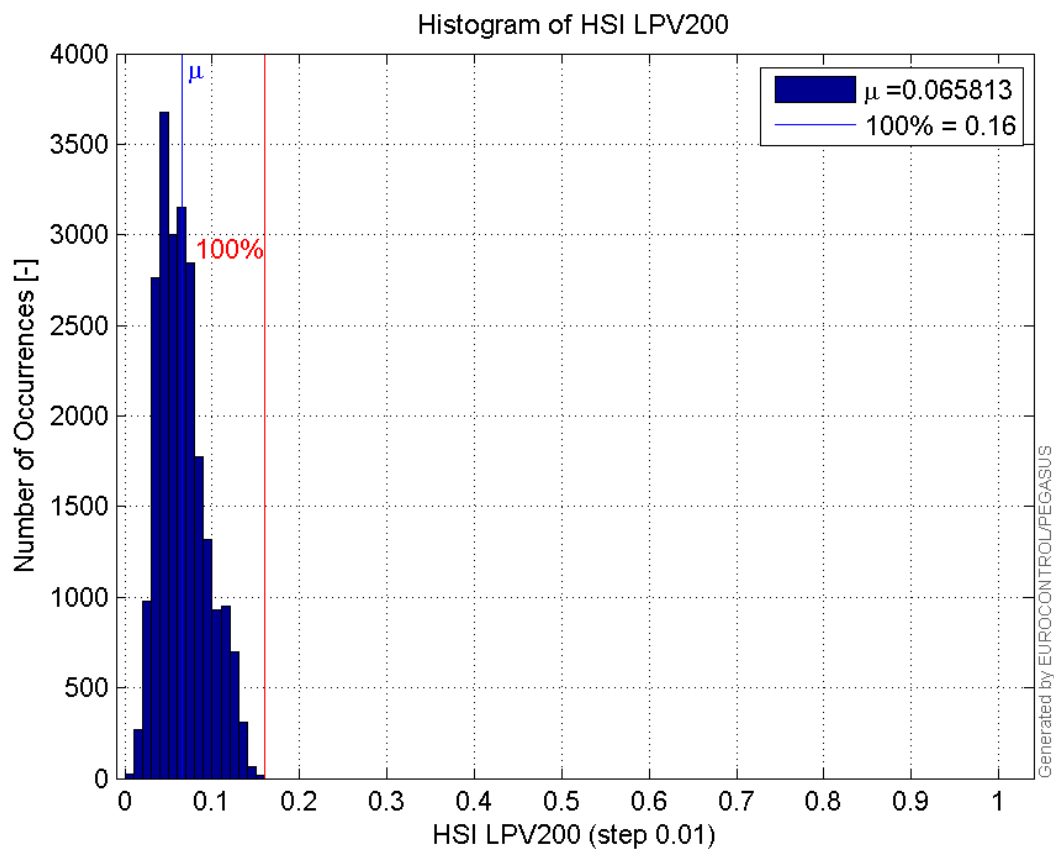


99'

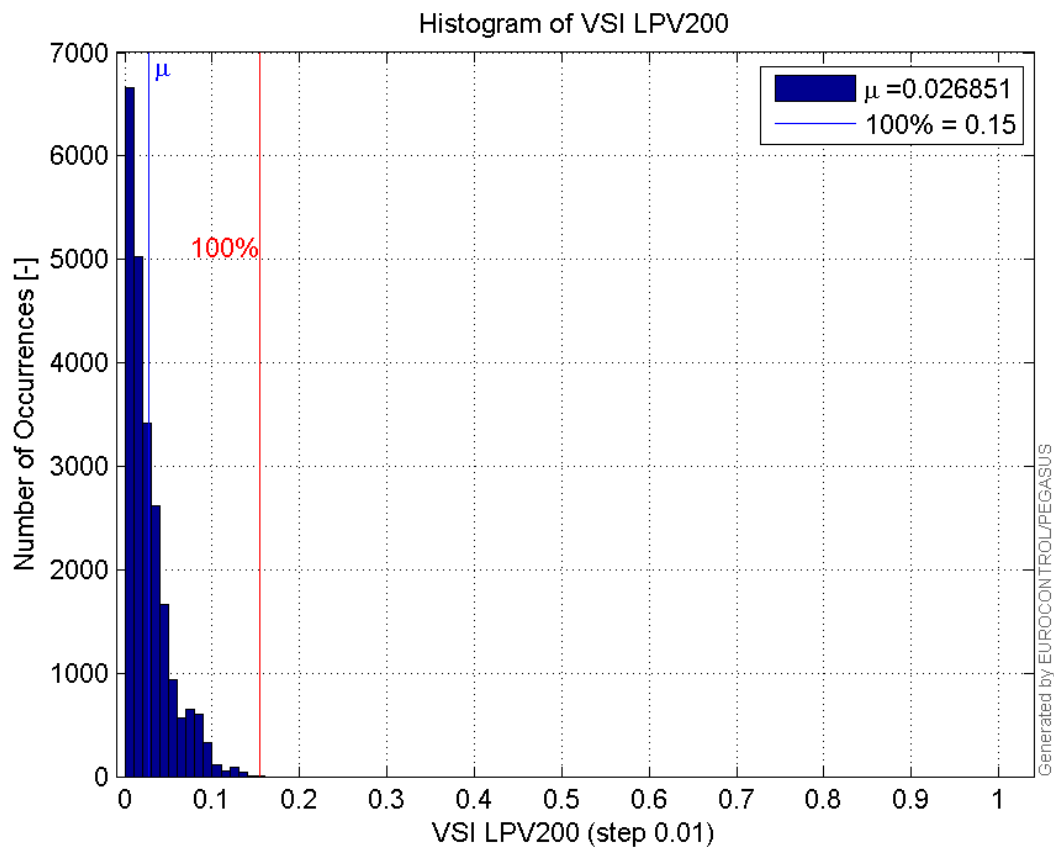
Histogram of VPL LPV200:



Histogram of HSI LPV200:

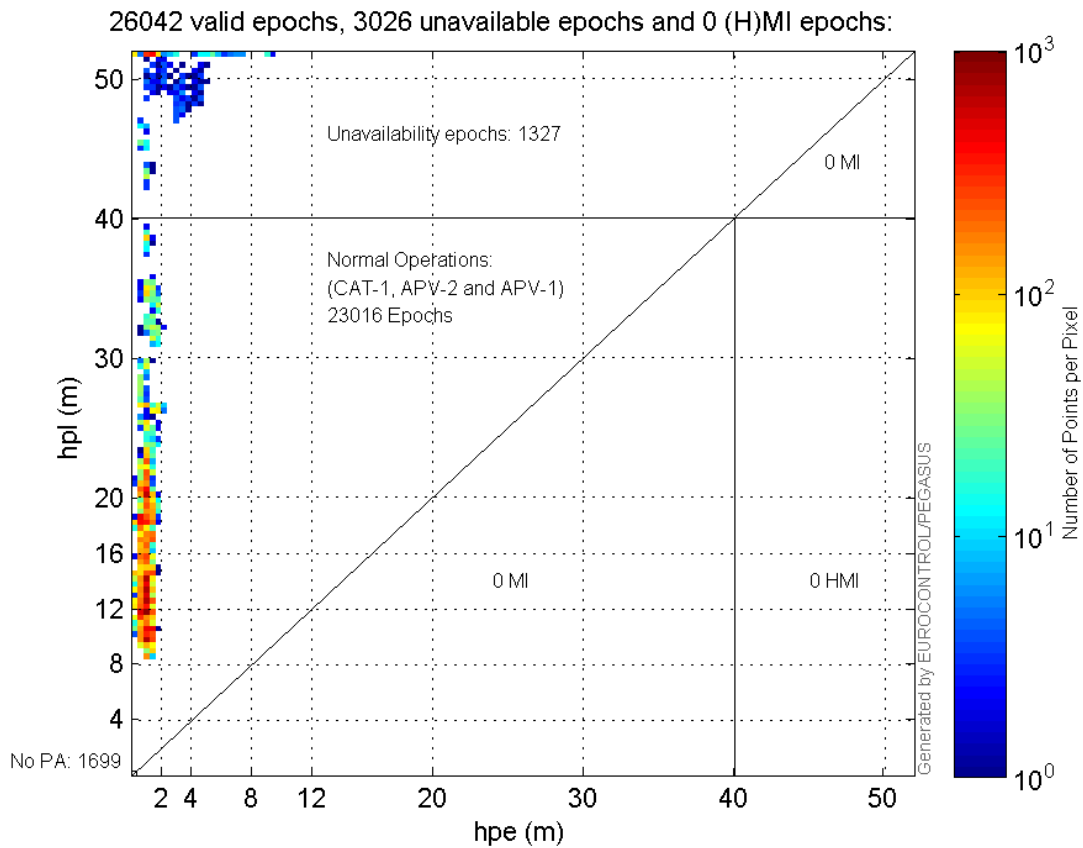


Histogram of VSI LPV200:

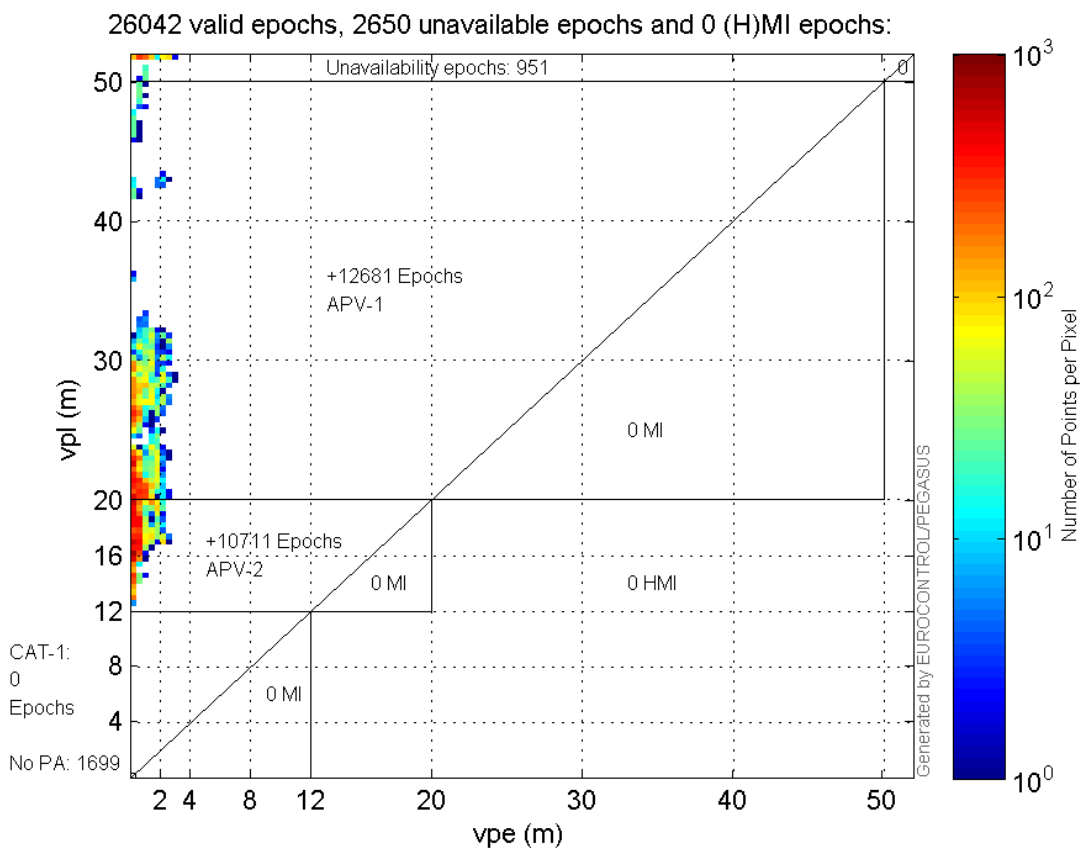


Stanford Plots

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_08EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_08EGNOS/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	50.4391
init_lon	results	30.4298
init_alt	results	240.7306
mi_numbers	results	0

Range Domain

start: 09:13:33 08.02.2016 (week: 1883 sec: 119613)
end: 16:33:35 08.02.2016 (week: 1883 sec: 146015)
duration: 07:20:03 ..

quality

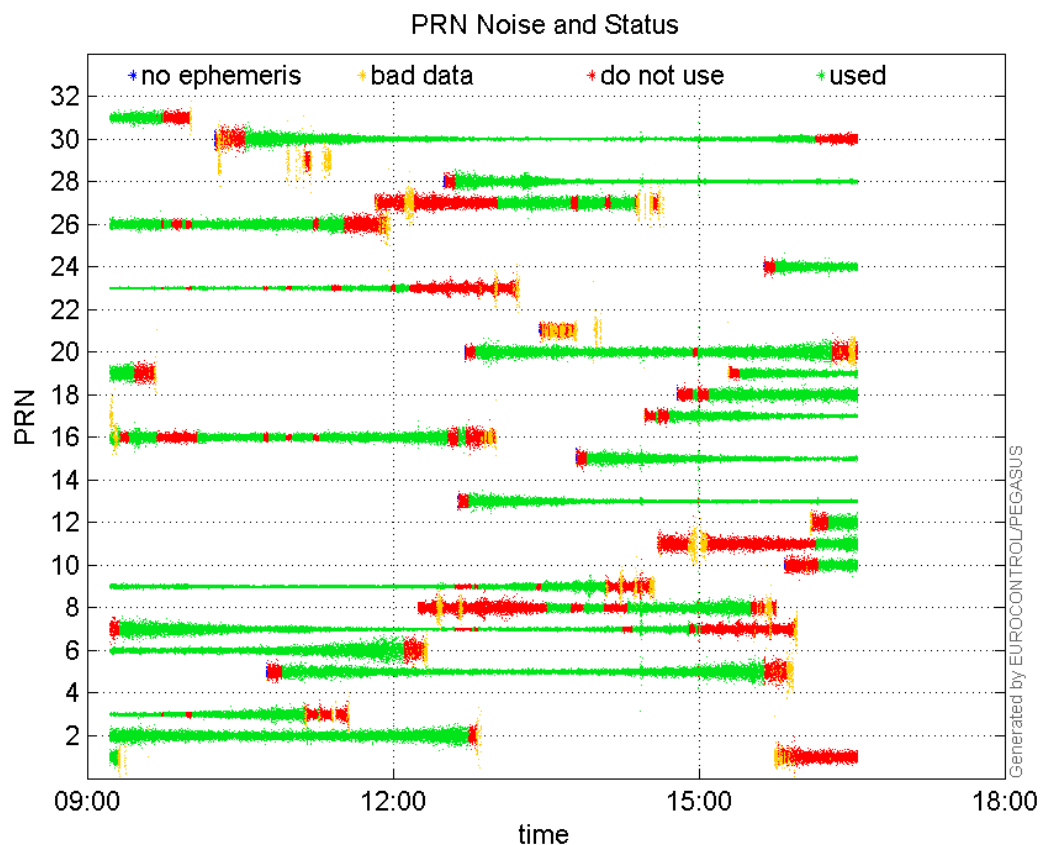
valid samples 26403
total samples 26403

PRN overview

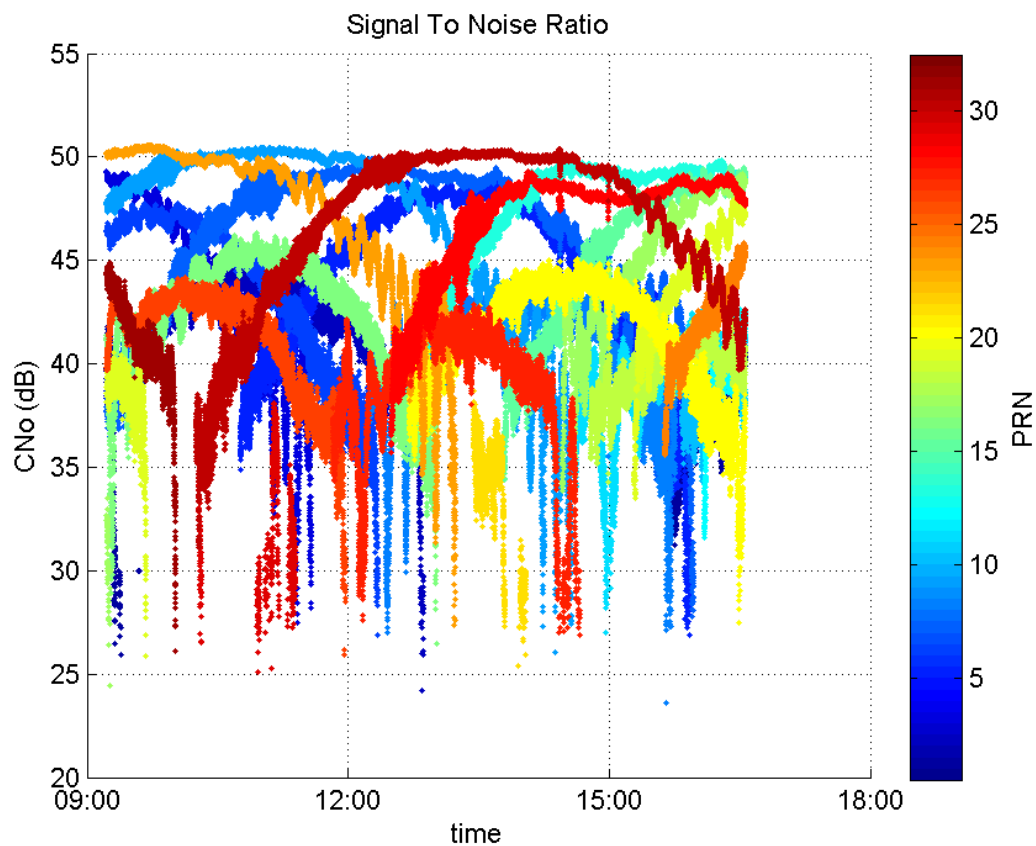
Number of Visible GPS Satellites 27
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



range errors

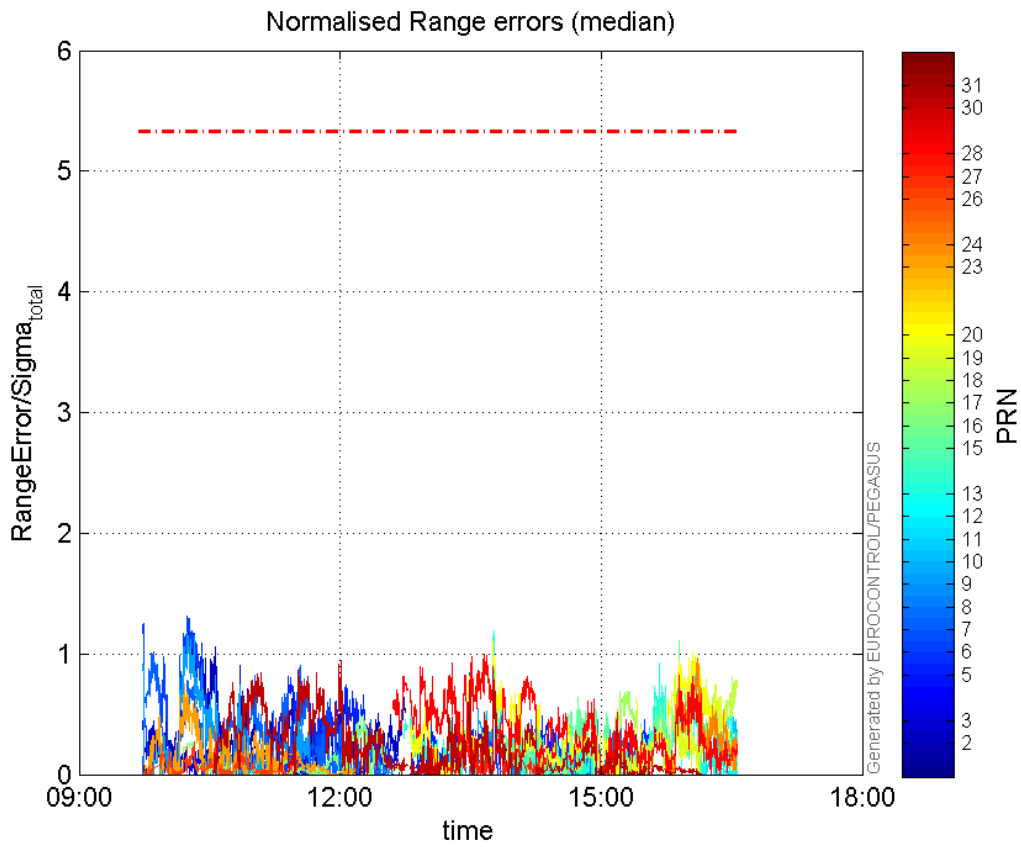
Number of Overbounding Norm Errors 0

Max Norm Errors :

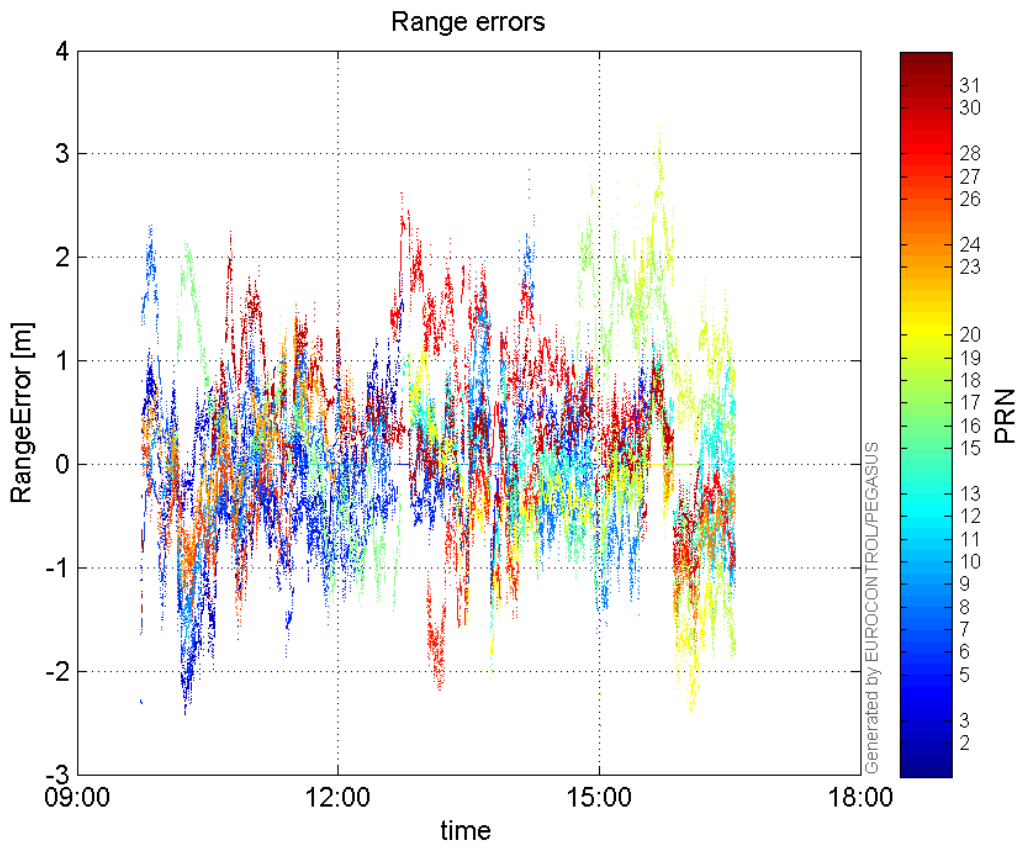
GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1883	123281	2	1.26788	-2.39808	1.8914
1883	121904	3	0.439847	1.05226	2.39233
1883	127462	5	0.808194	-1.86436	2.30682
1883	123281	6	1.31653	-2.12049	1.61067
1883	121896	7	1.01917	2.31025	2.2668
1883	140280	8	0.459948	-1.33465	2.90175
1883	123281	9	1.17944	-1.77947	1.50873
1883	145791	10	0.497182	-1.32273	2.66046
1883	145119	11	0.173084	-1.44583	8.35334
1883	145312	12	0.233234	0.64691	2.77365
1883	135945	13	1.19052	-1.99776	1.67806
1883	143615	15	1.11365	-1.73293	1.55608
1883	130555	16	0.493836	-1.36963	2.77346
1883	141559	17	0.694459	1.92567	2.7729
1883	145841	18	0.816499	-1.99451	2.44276
1883	143471	19	0.828905	2.48236	2.99475
1883	135929	20	1.09909	-2.07879	1.89137
1883	123155	23	0.746294	-1.34625	1.80391
1883	144383	24	0.965304	-1.82464	1.89023

1883	124447	26	0.349334	-1.40973	4.03549
1883	134973	27	0.460271	-1.41683	3.07826
1883	135562	28	0.995735	1.9331	1.94138
1883	129627	30	0.944441	1.5385	1.629
1883	121461	31	0.0740197	-1.62724	21.9838

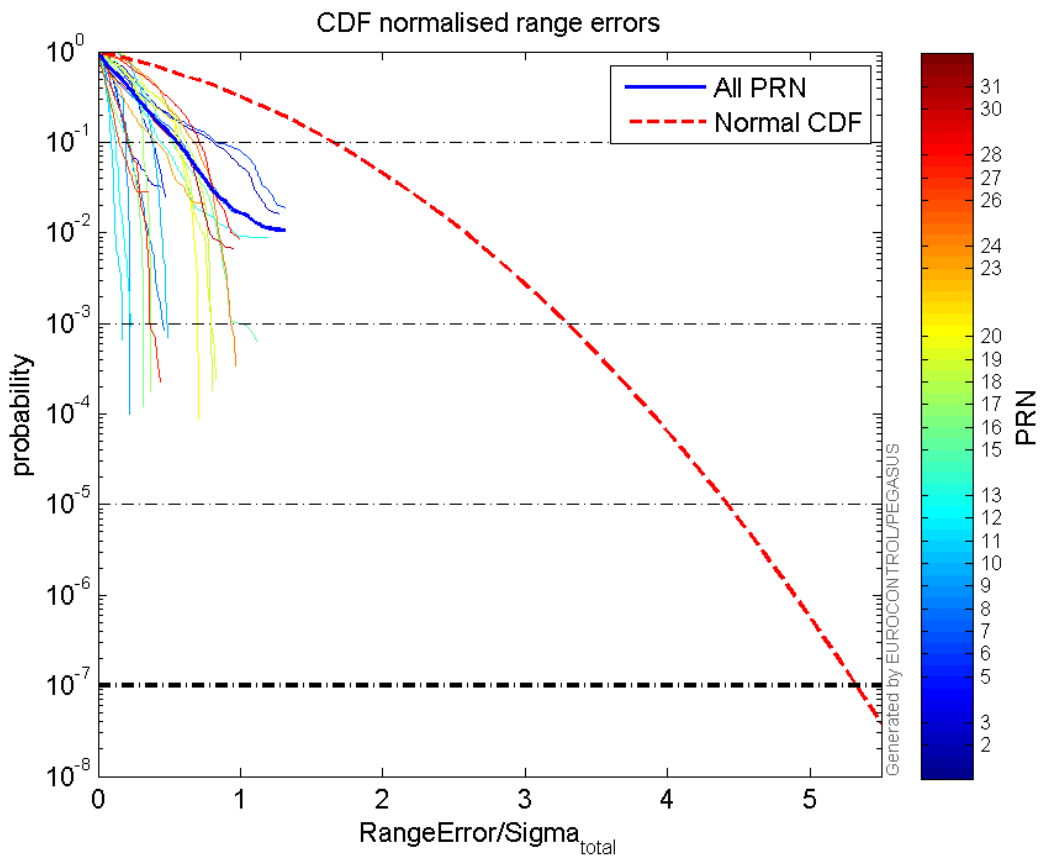
Normalised Range errors (median):



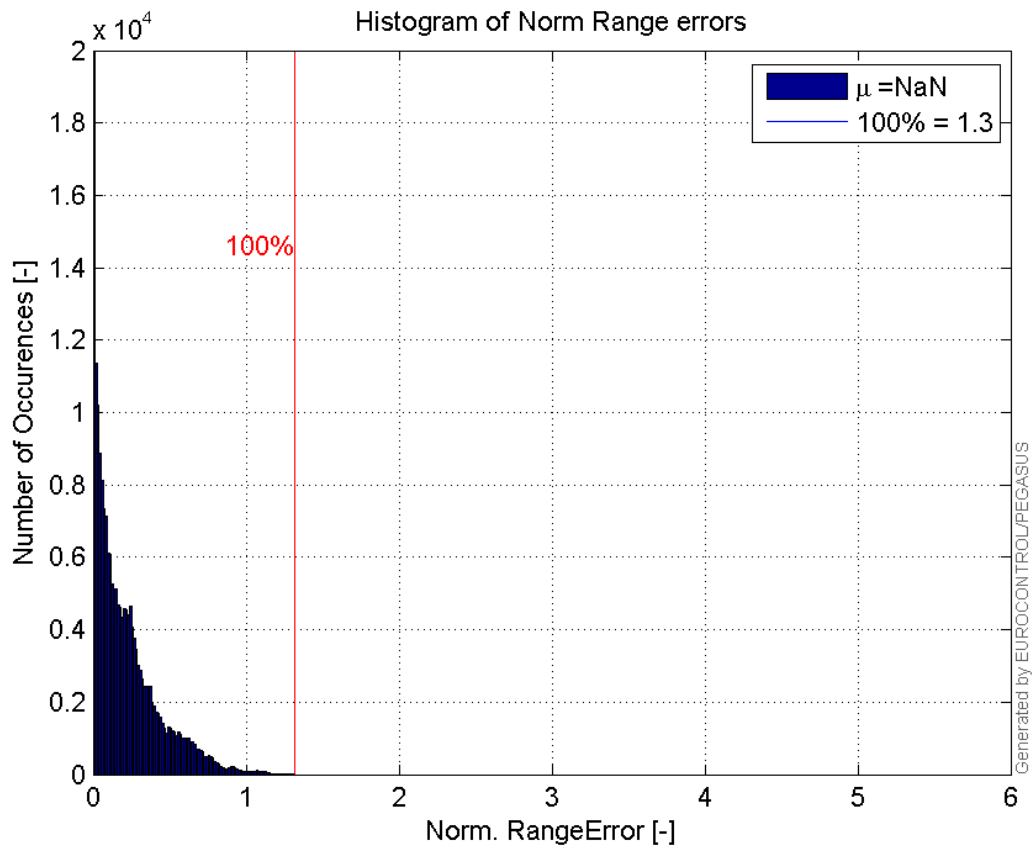
Range errors:



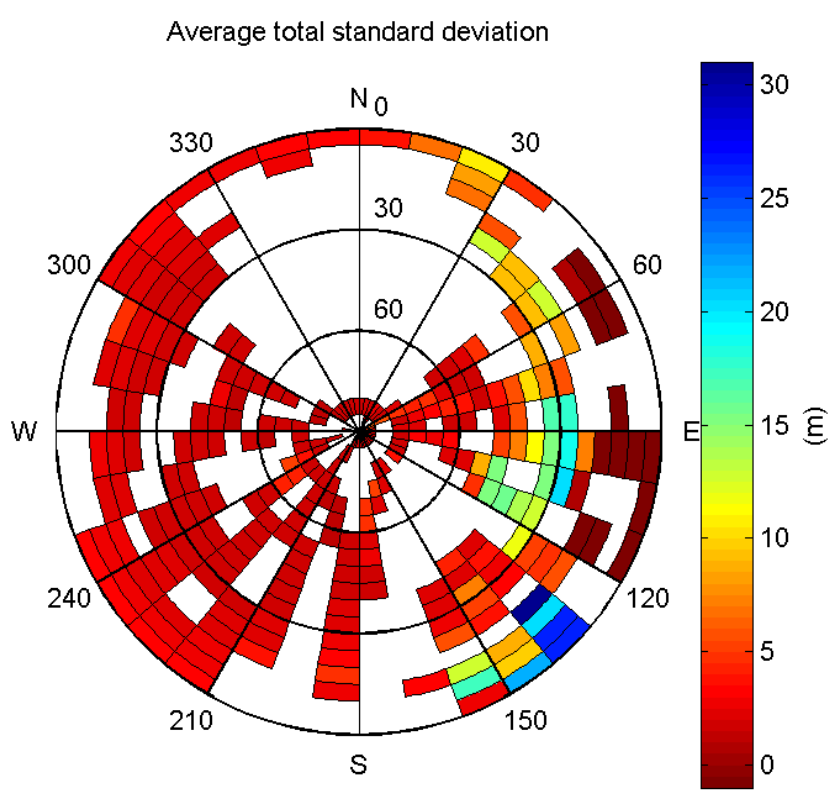
CDF normalised range errors:



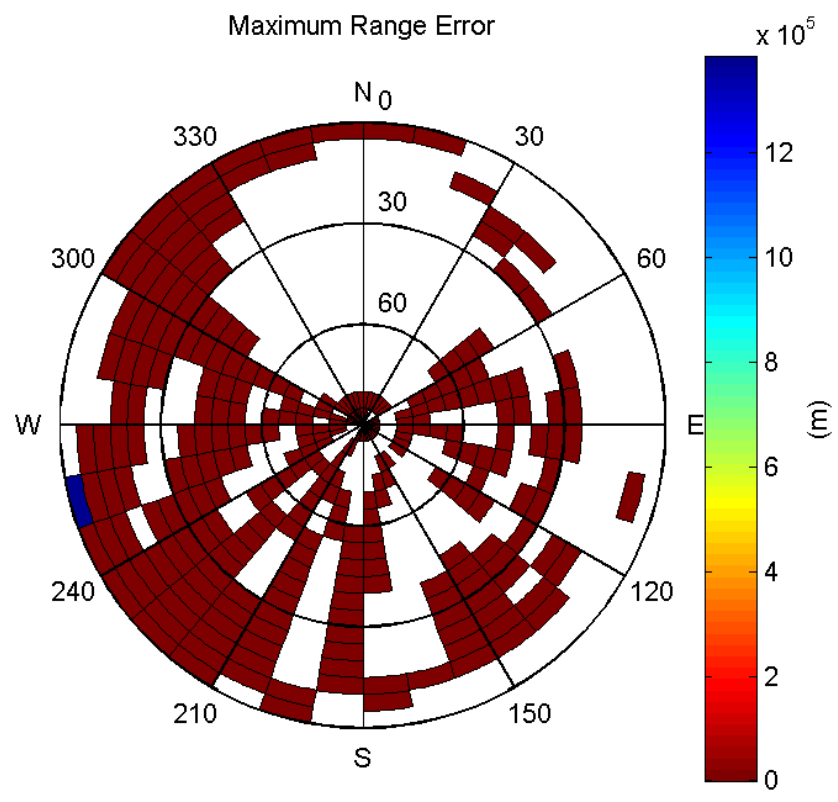
Histogram of Norm Range errors:



Sigma Sky Plot:

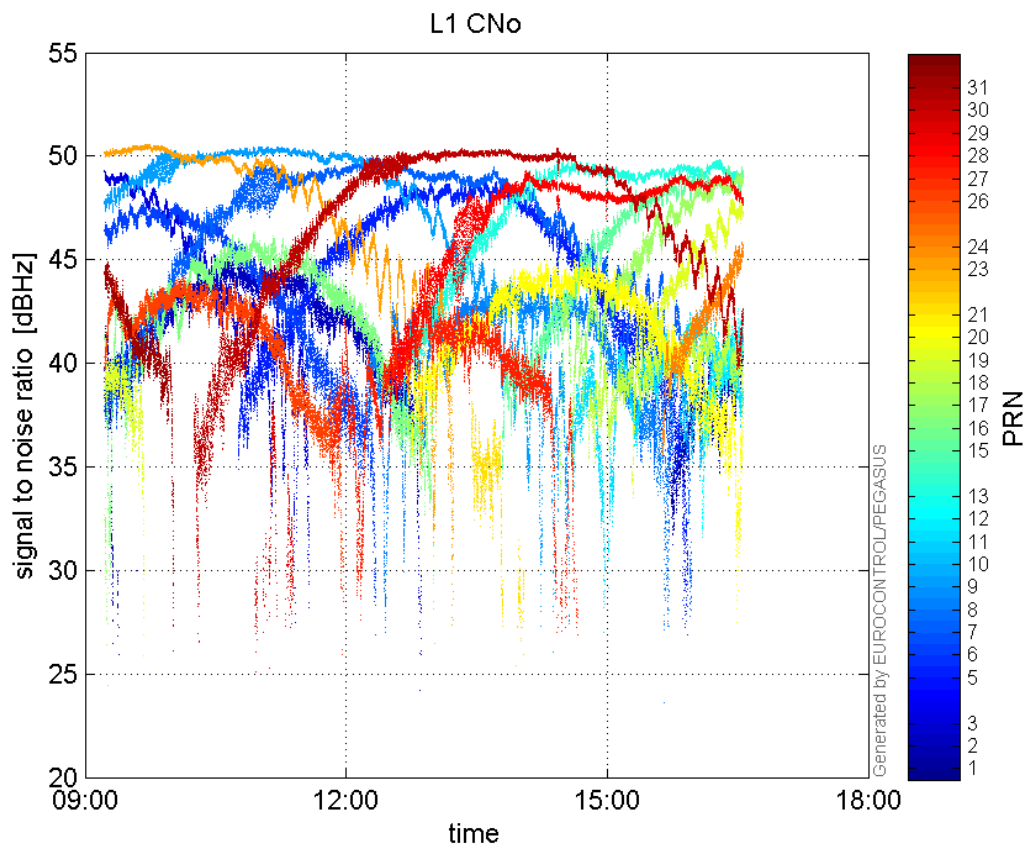


Norm Error Sky Plot:

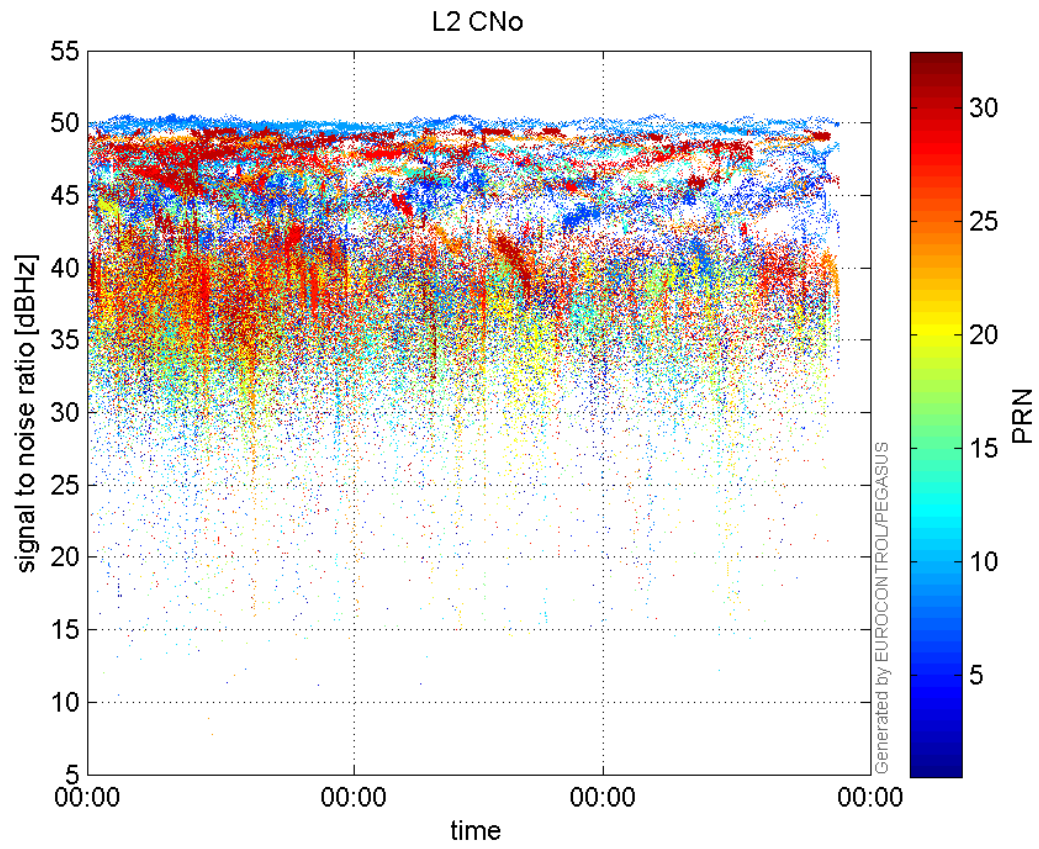


signal quality

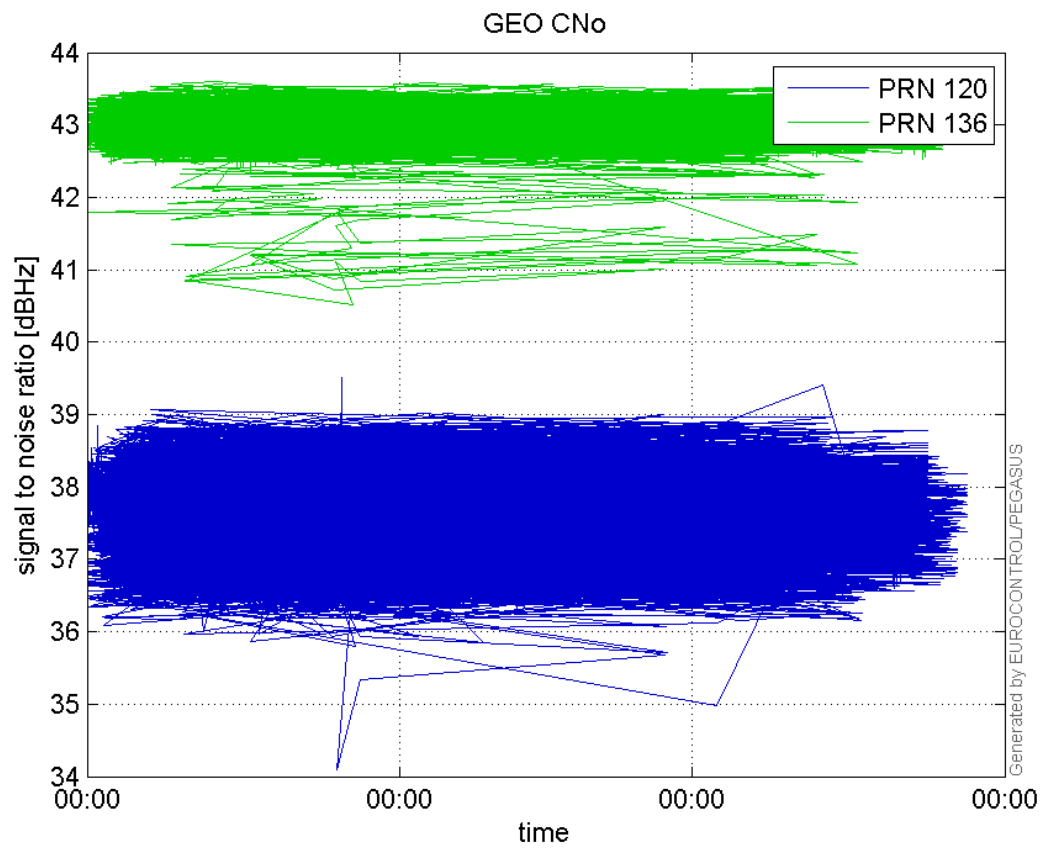
L1 CNo:



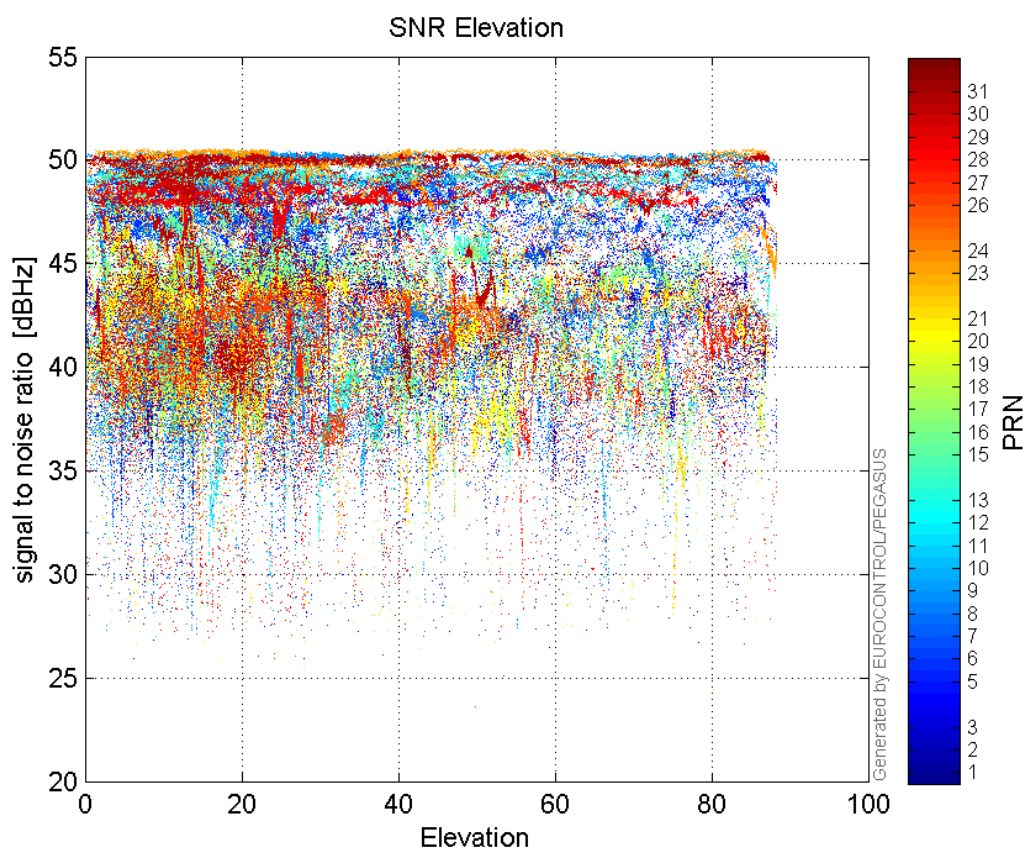
L2 CNo:



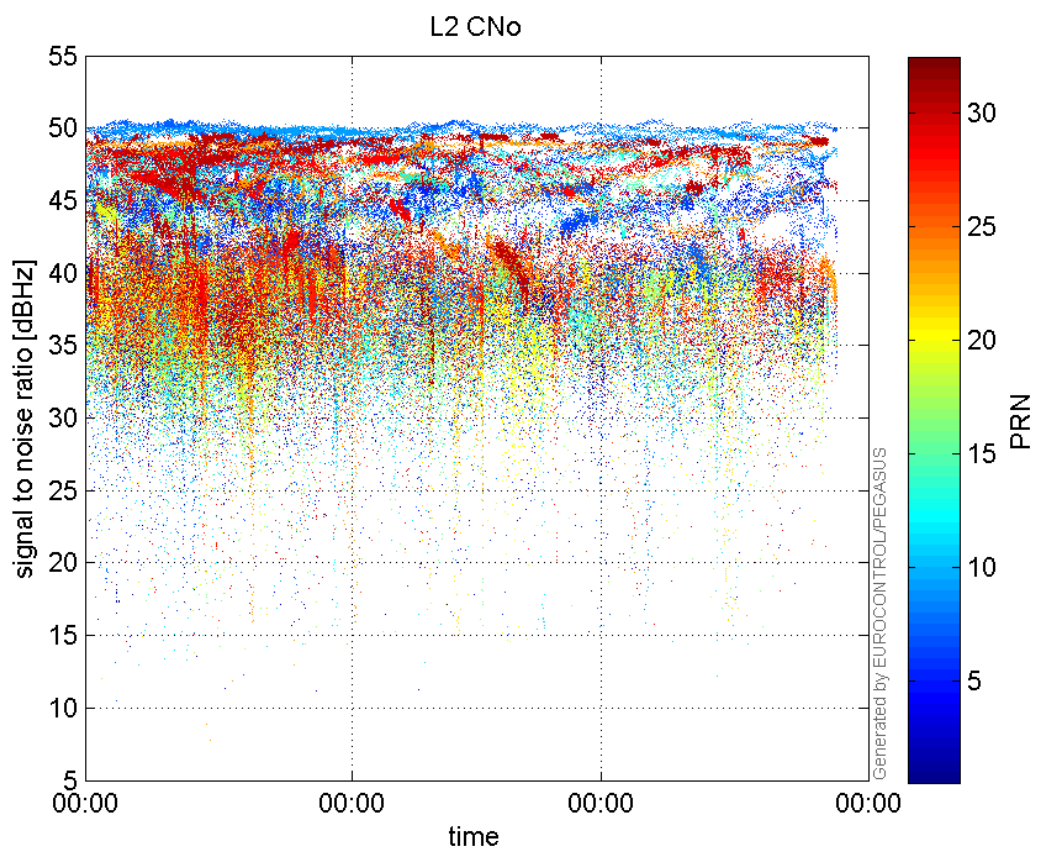
GEO CNo:



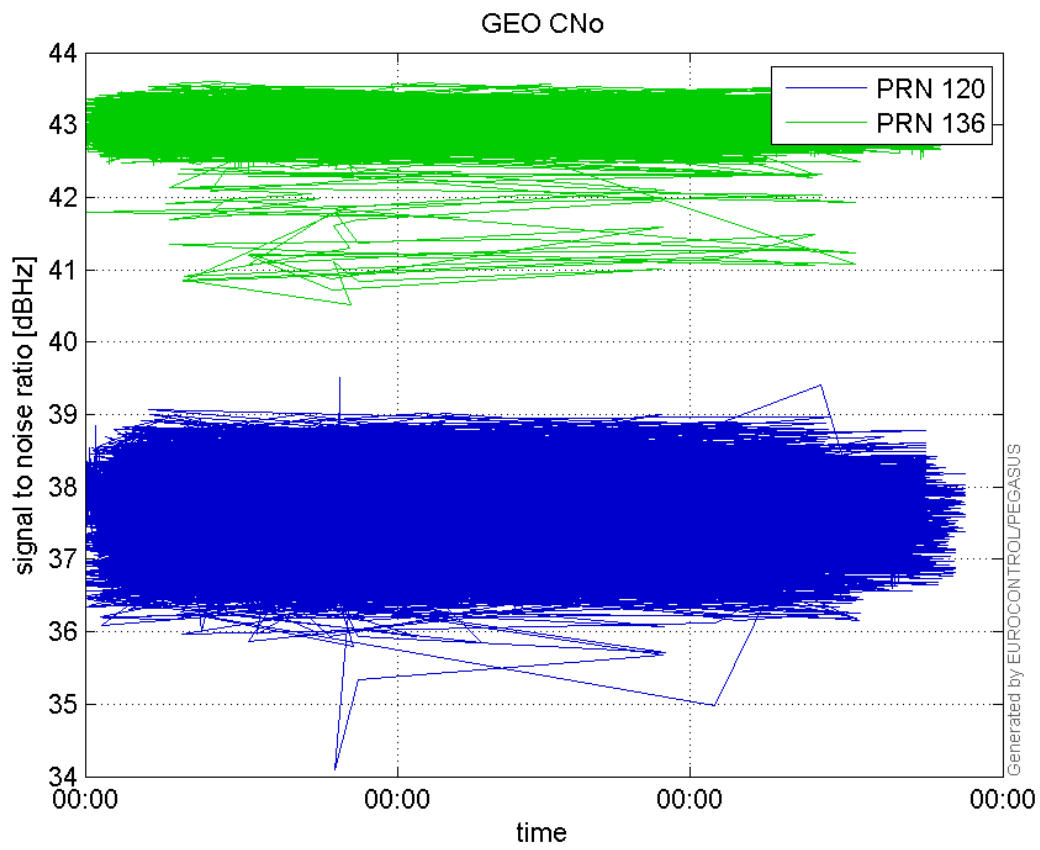
SNR Elevation:



L2 CNo:

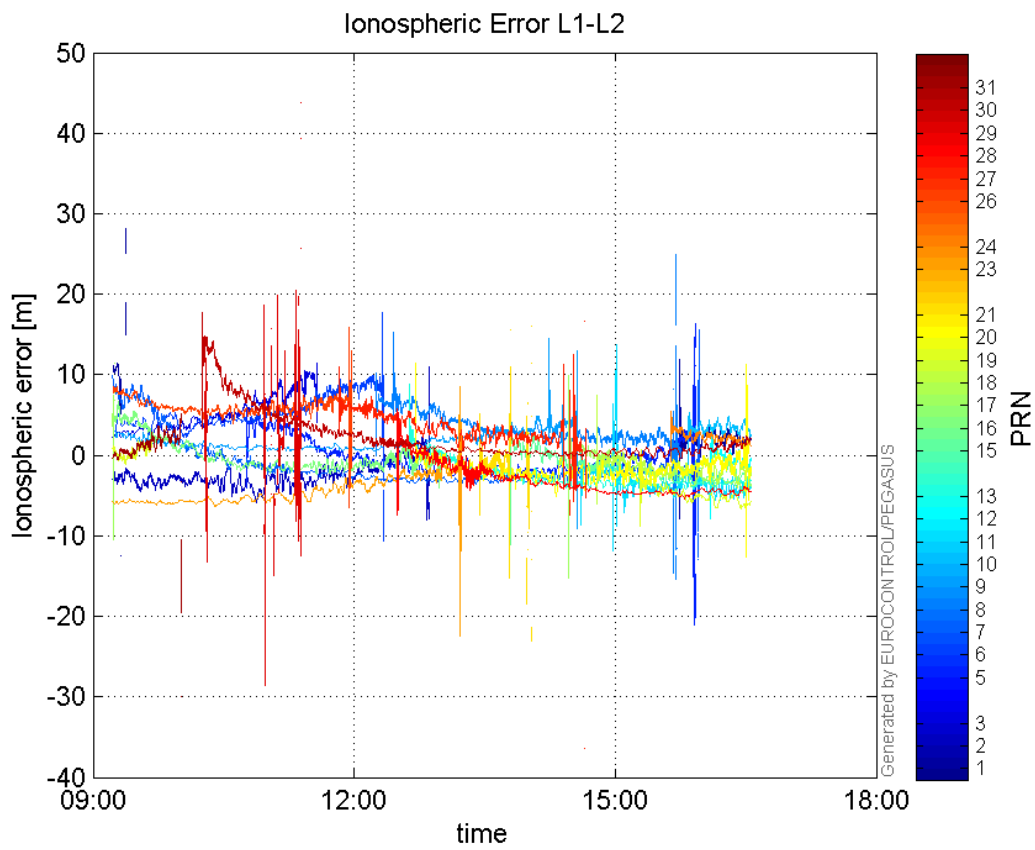


GEO CNo:



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_08EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_08EGNOS/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	50.4391
init_lon	results	30.4298
init_alt	results	240.7306
mi_numbers	results	0