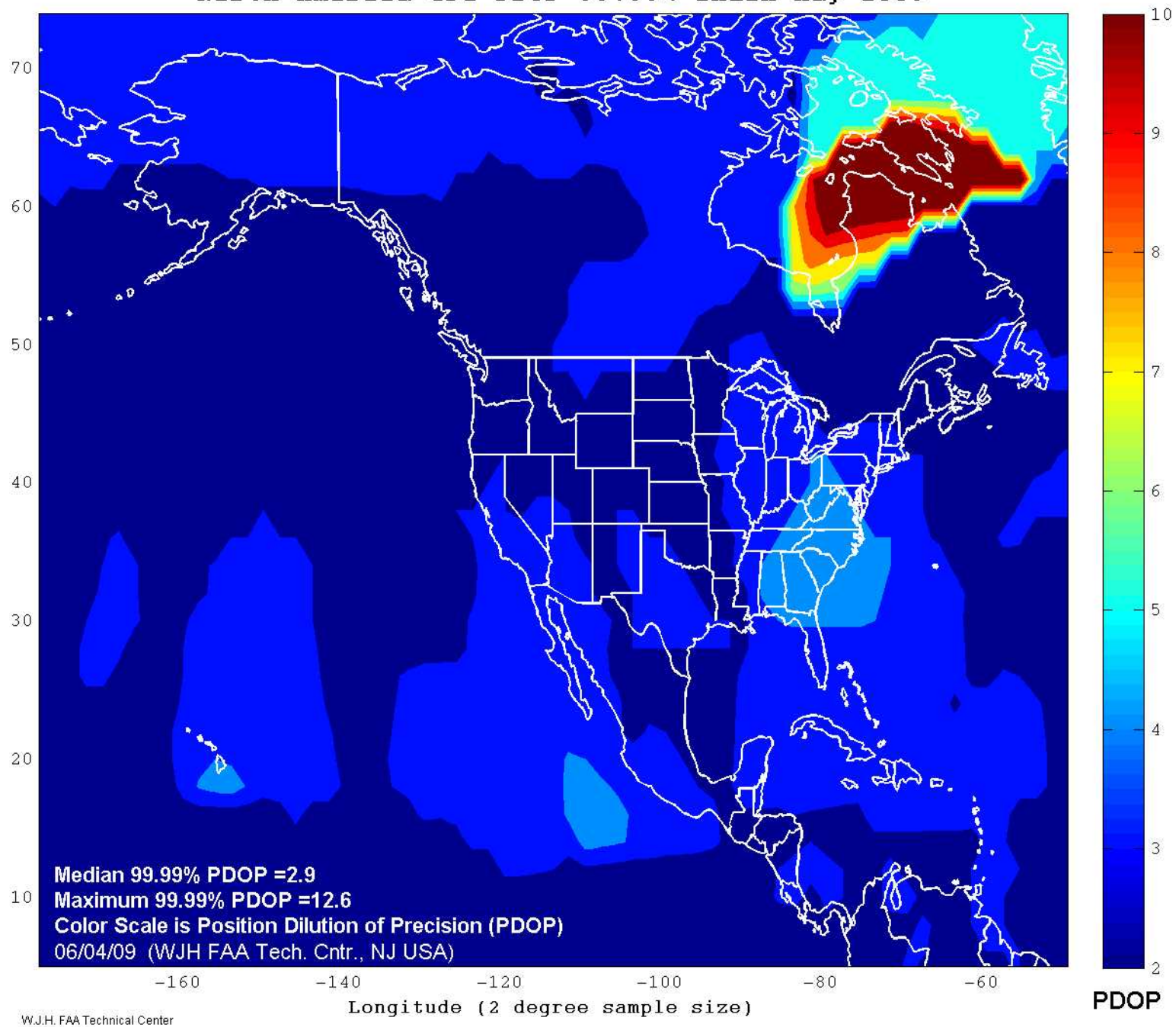
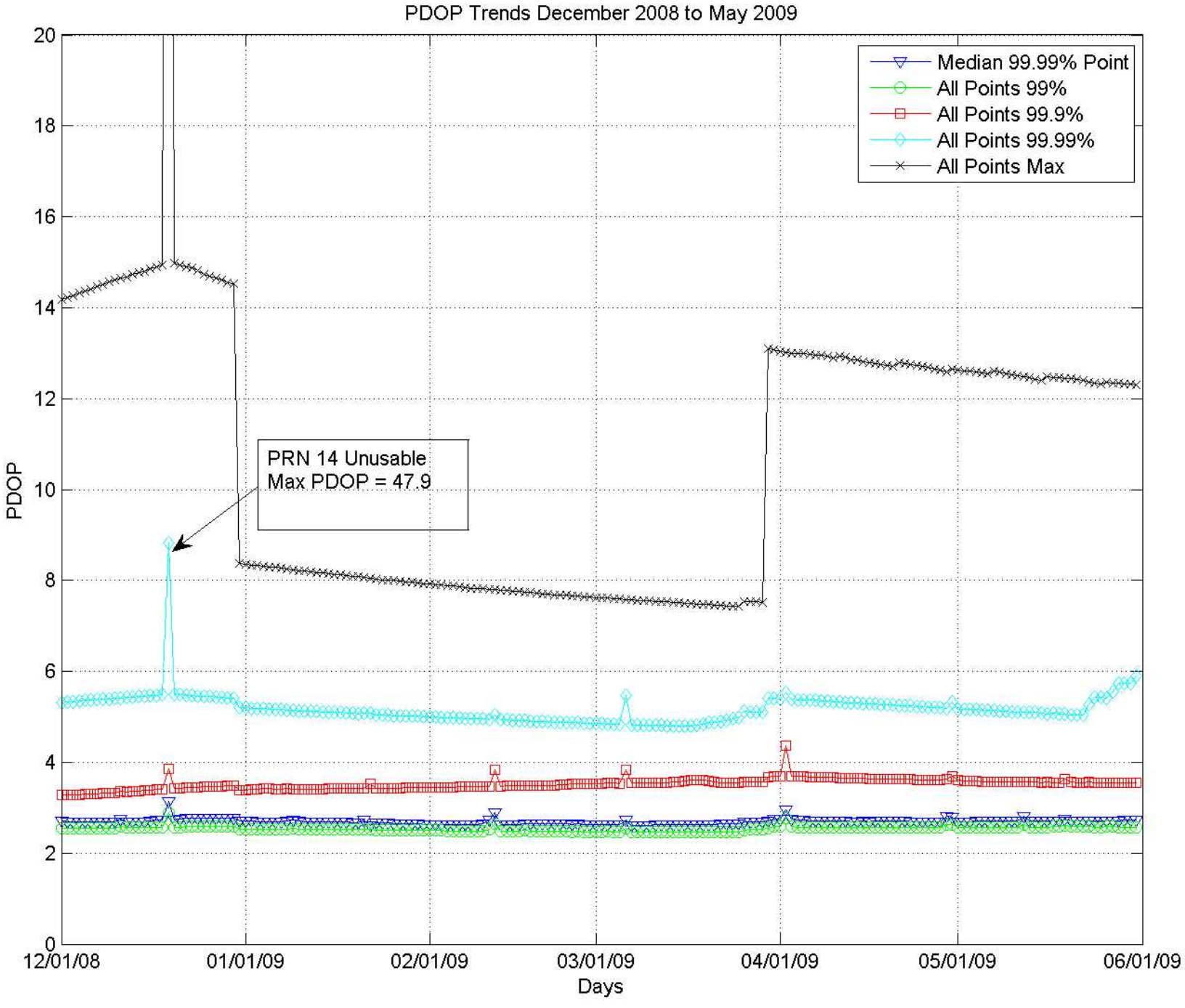
Civil Report Card On GPS Performance
May 2009

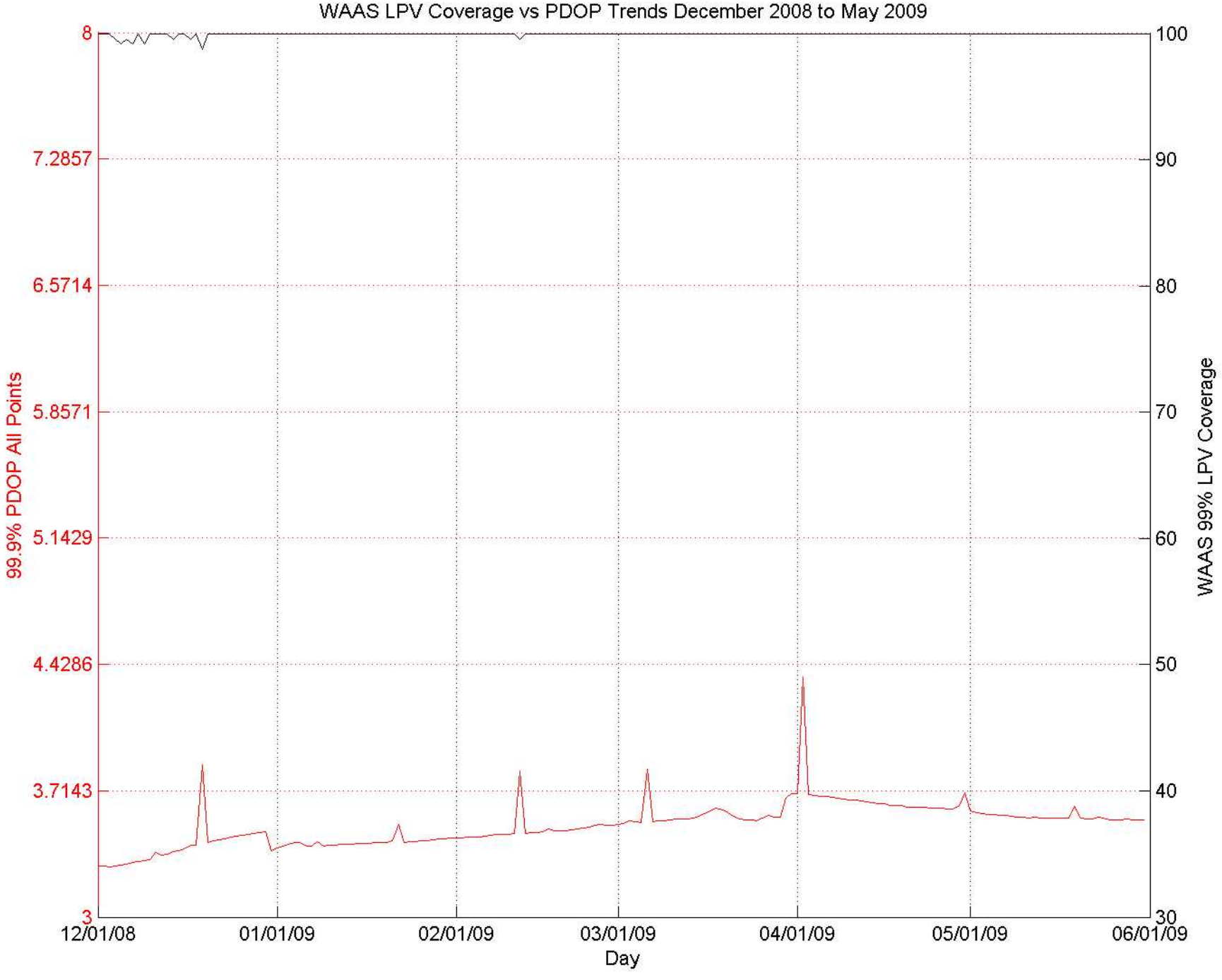
Operational Performance Parameter	CY 2008	Apr 2009	May 2009	Long term	Short term
Availability Parameters					
Average Number of satellites usable	30.48	30.98	30.98	↑	→
Average number of satellites usable in primary slots	23.95 (99.80%)	23.98 (99.92%)	23.98 (99.90%)	↑	→
Average availability of 6 satellites in view	99.99%	99.99%	99.99%	→	→
99.99% Horizontal DOP					
Area Median	1.8	1.5	1.4	↑	→
Worst Site	5.8	4.9	4.6	↑	↑
99.99% Vertical DOP					
Area Median	3.3	2.7	2.5	↑	↑
Worst Site	17.6	12.1	11.7	↑	↑
99.99% Position DOP (PDOP)					
Area Median	3.6	3.0	2.9	↑	→
Worst Site	18.3	13.0	12.6	↑	↑
Accuracy Parameters					
RMS Single Frequency User Range Error					
Constellation Median	1.72	1.86	1.57	↑	↑
Worst Satellite	2.14	2.34	1.96	↑	↑
95% Horizontal Error					
Area Median	2.36	2.20	2.08	↑	↑
Worst Site	3.35	3.79	2.99	↑	↑
Availability (% <4.5m (historical 3-sigma))	99.77%	99.89%	99.98%	↑	↑
95% Vertical Error					
Area Median	4.46	5.02	3.90	↑	↑
Worst Site	4.95	5.96	4.65	↑	↑
Availability (% < 9m (historical 3-sigma))	99.94%	99.98%	99.99%	↑	↑

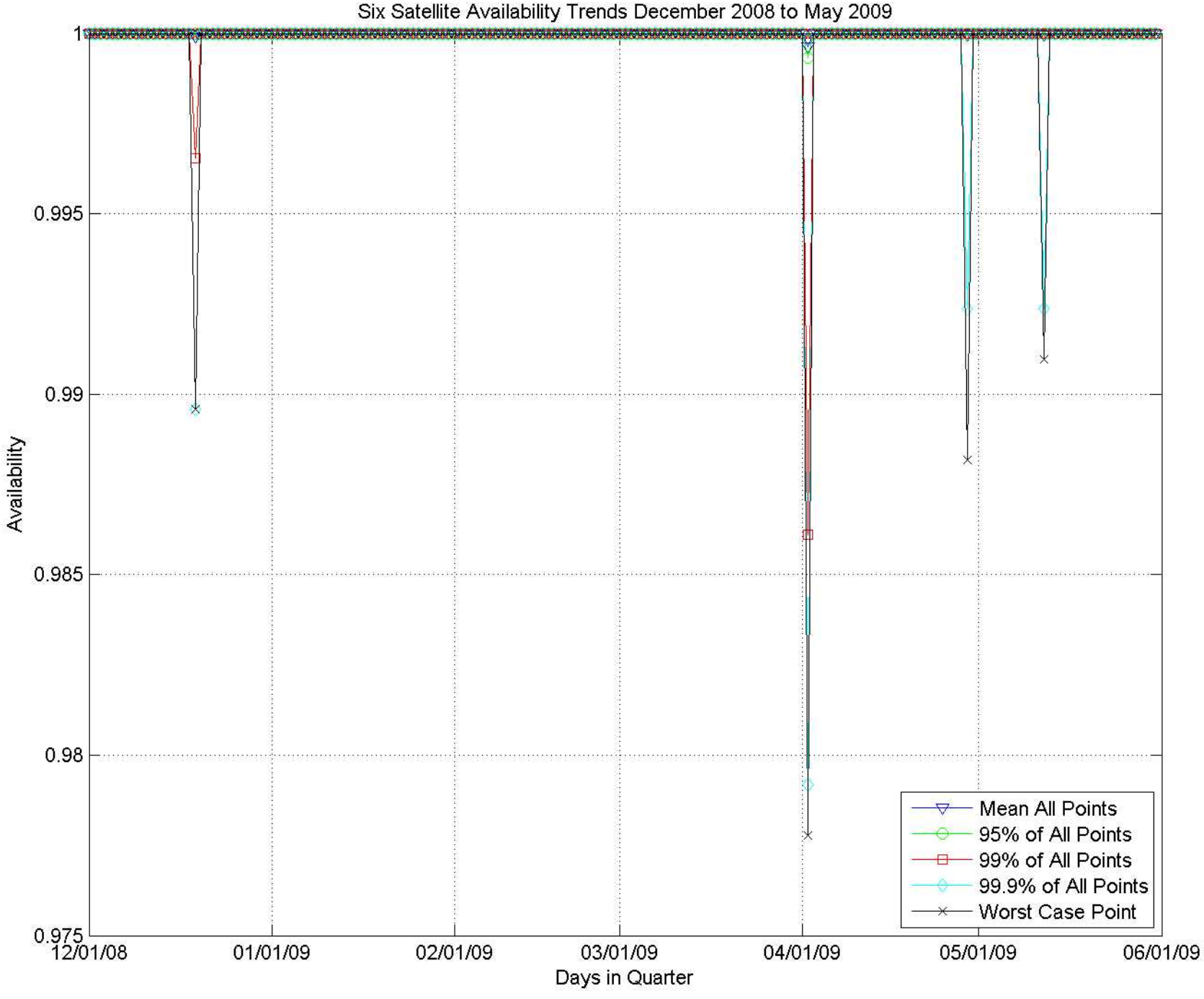
Key: ↑ improving ↓ worsening → no significant change
Long Term is current month vs. prior 24 months; Short Term is current month vs. prior month

Compiled from WAAS network as requested by the Defense Science Board


North America GPS PDOP 99.99% Index May 2009
70
60
50
40
30
20
10
Median 99.99% PDOP =2.9
Maximum 99.99% PDOP =12.6
Color Scale is Position Dilution of Precision (PDOP)
06/04/09 (WJH FAA Tech. Cntr., NJ USA)
-160
-140
-120
-100
-80
-60
Longitude (2 degree sample size)
10
9
8
7
6
5
4
3
2
PDOP
W.J.H. FAA Technical Center
WAAS Test Team
06/04/09


PDOP Trends December 2008 to May 2009
Median 99.99% Point
All Points 99%
All Points 99.9%
All Points 99.99%
All Points Max
PRN 14 Unusable
Max PDOP = 47.9
PDOP
Days
0
2
4
6
8
10
12
14
16
18
20
12/01/08
01/01/09
02/01/09
03/01/09
04/01/09
05/01/09
06/01/09


WAAS LPV Coverage vs PDOP Trends December 2008 to May 2009
99.9% PDOP All Points
WAAS 99% LPV Coverage
Day
8
7.2857
6.5714
5.8571
5.1429
4.4286
3.7143
3
100
90
80
70
60
50
40
30
12/01/08
01/01/09
02/01/09
03/01/09
04/01/09
05/01/09
06/01/09


Six Satellite Availability Trends December 2008 to May 2009
1
0.995
0.99
0.985
0.98
0.975
Availability
12/01/08
01/01/09
02/01/09
03/01/09
04/01/09
05/01/09
06/01/09
Days in Quarter
Mean All Points
95% of All Points
99% of All Points
99.9% of All Points
Worst Case Point