

# Civil Report Card On GPS Performance

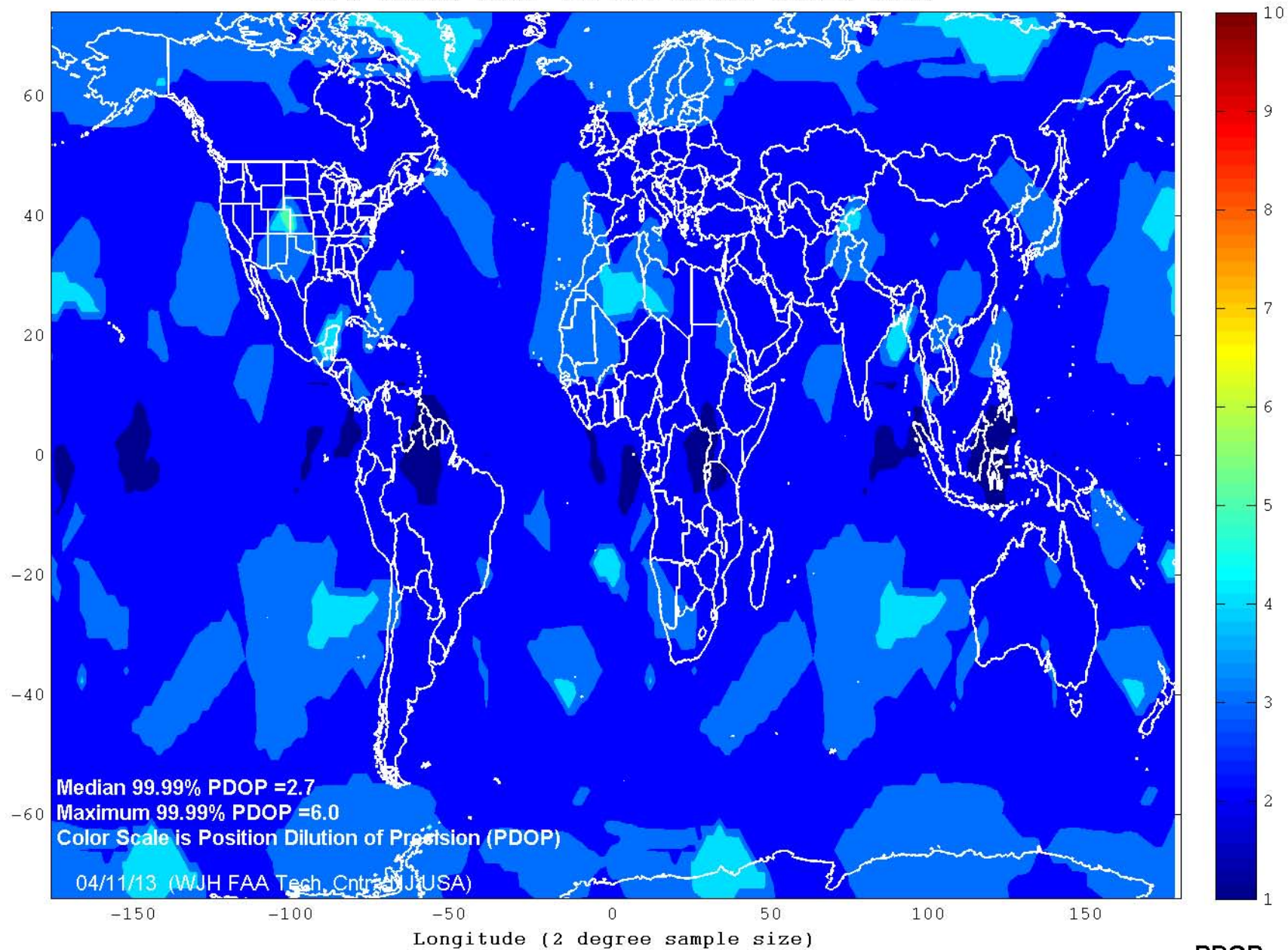
## March 2013

| Operational Performance Parameter                           | CY 2012           | Feb 2013          | Mar 2013          | Long term | Short term |
|-------------------------------------------------------------|-------------------|-------------------|-------------------|-----------|------------|
| <b>Availability Parameters</b>                              |                   |                   |                   |           |            |
| <i>Average Number of satellites usable</i>                  | 30.92             | 30.97             | 30.99             | ↑         | ↑          |
| <i>Average number of satellites usable in primary slots</i> | 23.99<br>(99.95%) | 23.99<br>(99.97%) | 23.99<br>(99.97%) | ↑         | →          |
| <i>Average availability of 6 satellites in view</i>         | 99.99%            | 100%              | 99.99%            | →         | ↓          |
| <b>99.99% Horizontal DOP</b>                                |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 1.3               | 1.3               | 1.4               | ↓         | ↓          |
| <i>Worst Site</i>                                           | 4.0               | 2.6               | 2.3               | ↑         | ↑          |
| <b>99.99% Vertical DOP</b>                                  |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 2.4               | 2.3               | 2.4               | →         | ↓          |
| <i>Worst Site</i>                                           | 10.2              | 6.6               | 5.8               | ↑         | ↑          |
| <b>99.99% Position DOP (PDOP)</b>                           |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 2.7               | 2.6               | 2.7               | →         | ↓          |
| <i>Worst Site</i>                                           | 10.6              | 6.6               | 6.0               | ↑         | ↑          |
| <b>100% RAIM Availability (HAL=185m)</b>                    |                   |                   |                   |           |            |
| <i>NPA Service Area (NSA)</i>                               | 83.70%            | 65.47%            | 70.42%            | ↓         | ↑          |
| <i>World</i>                                                | 85.37%            | 64.71%            | 65.72%            | ↓         | ↑          |
| <b>Accuracy Parameters</b>                                  |                   |                   |                   |           |            |
| <b>RMS Single Frequency User Range Error</b>                |                   |                   |                   |           |            |
| <i>Constellation Median</i>                                 | 2.00              | 1.77              | 1.92              | ↑         | ↓          |
| <i>Worst Satellite</i>                                      | 2.38              | 2.51              | 2.67              | ↓         | ↓          |
| <b>95% Horizontal Error</b>                                 |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 2.88              | 2.49              | 2.89              | ↓         | ↓          |
| <i>Worst Site</i>                                           | 8.26              | 7.16              | 7.40              | ↑         | ↓          |
| <i>Availability (% &lt;4.5m (historical 3-sigma))</i>       | 99.89%            | 99.88%            | 99.78%            | ↑         | ↓          |
| <b>95% Vertical Error</b>                                   |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 4.93              | 4.13              | 4.60              | ↑         | ↓          |
| <i>Worst Site</i>                                           | 9.21              | 7.24              | 6.24              | ↑         | ↑          |
| <i>Availability (% &lt; 9m (historical 3-sigma))</i>        | 99.89%            | 99.97%            | 99.99%            | ↑         | ↑          |

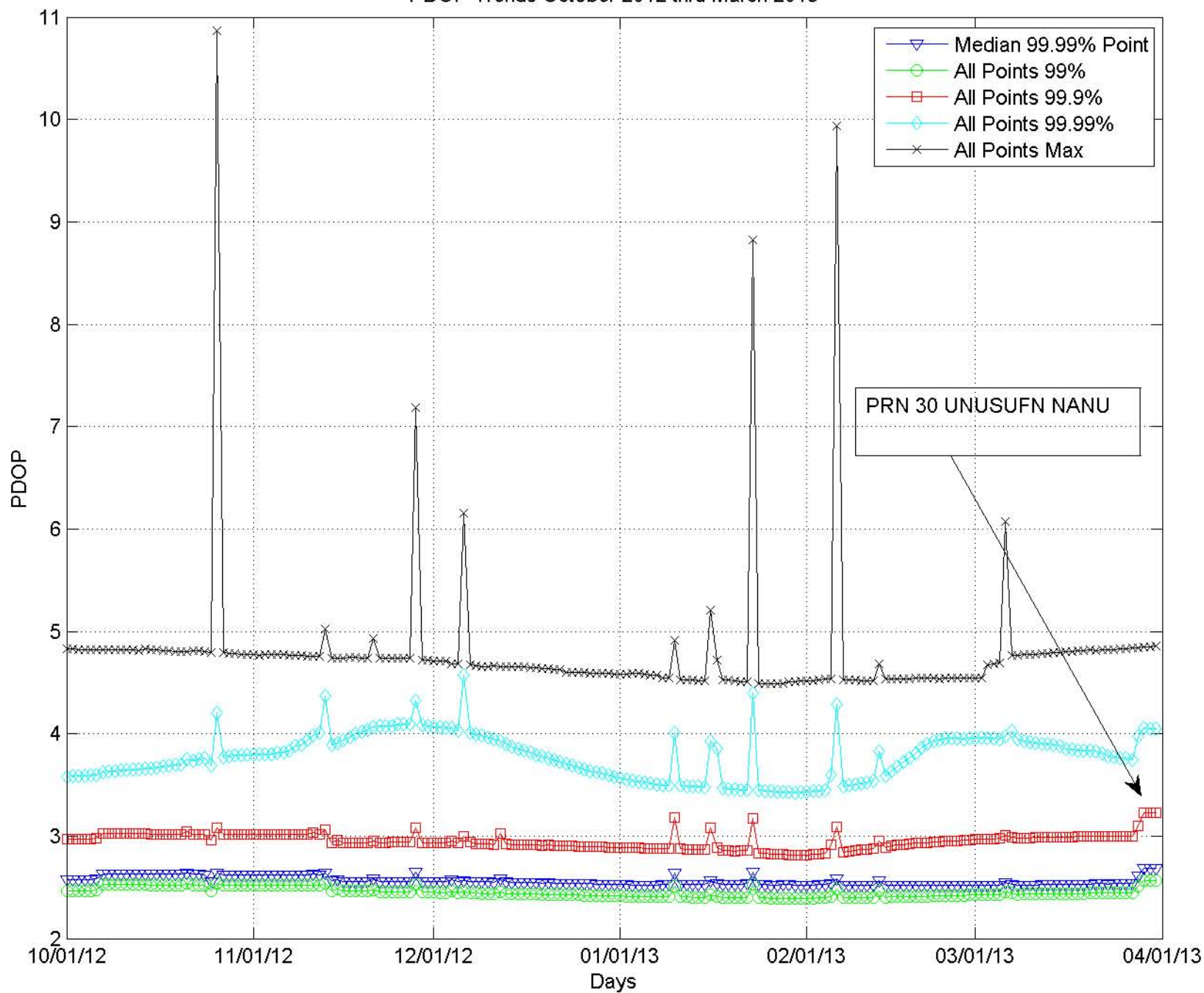
Key: ↑ improving ↓ worsening → no significant change

Long Term is current month vs. prior 24 months; Short Term is current month vs. prior month

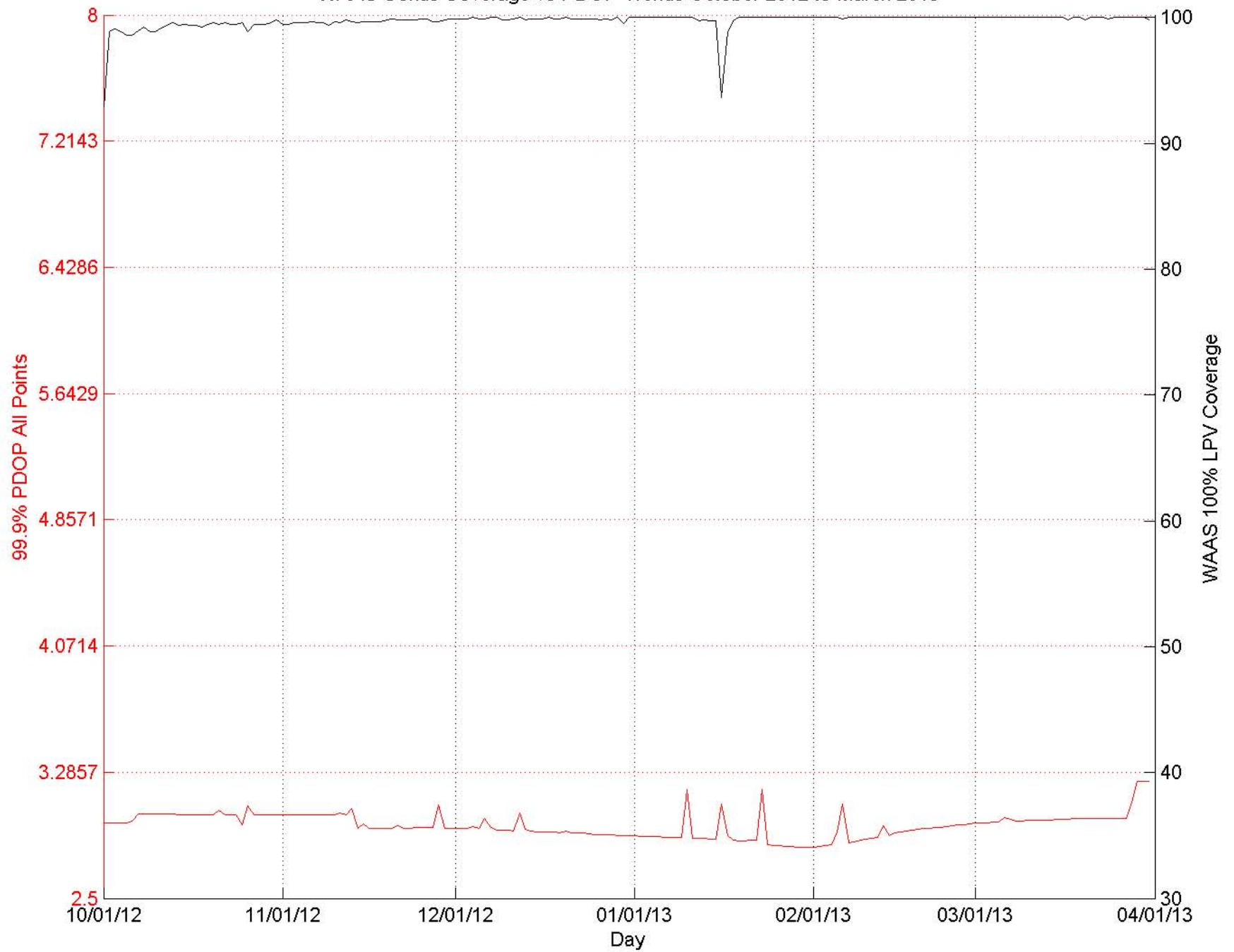
# GPS World PDOP 99.99% Index March 2013



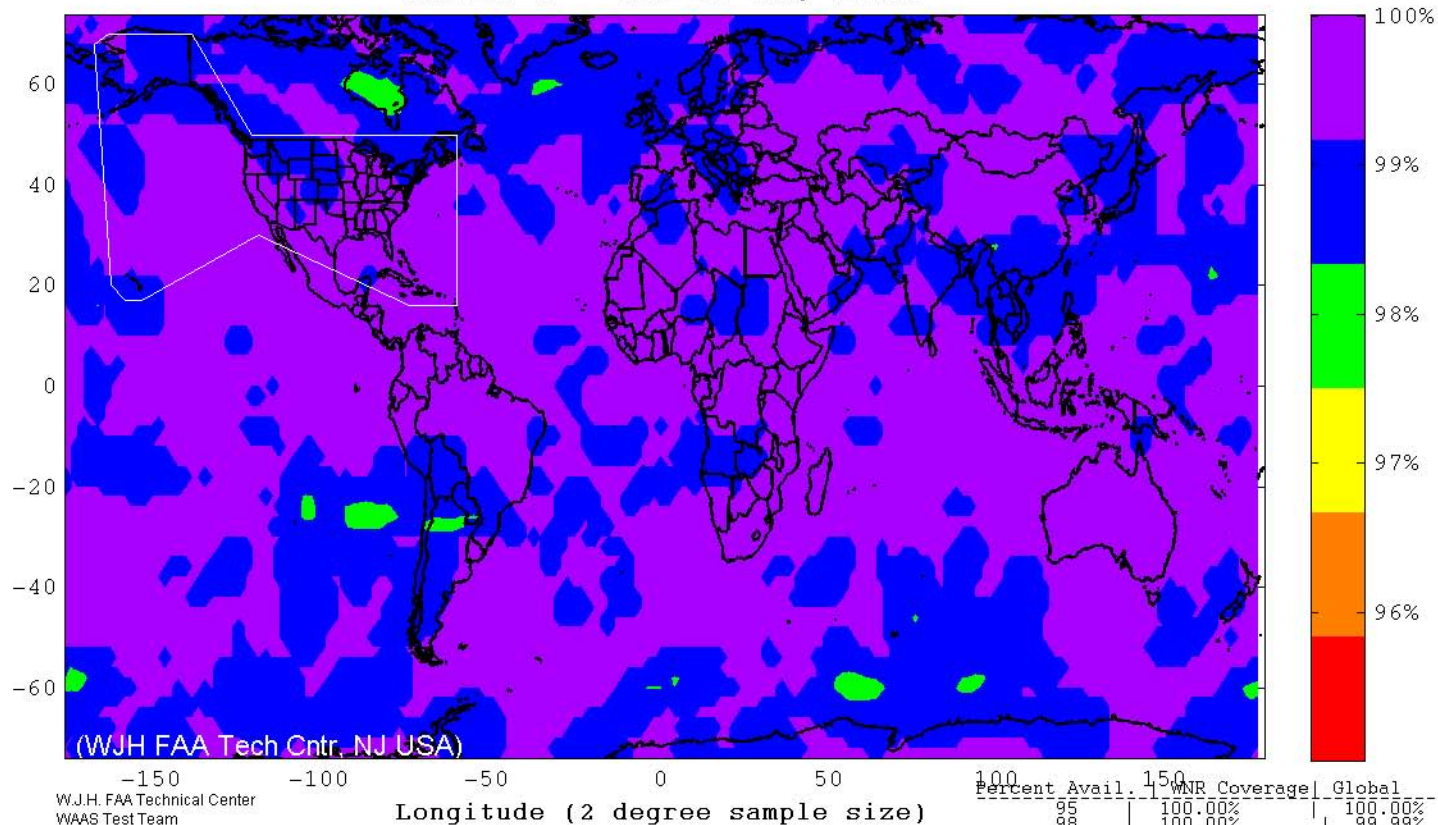
PDOP Trends October 2012 thru March 2013



WAAS Conus Coverage vs PDOP Trends October 2012 to March 2013



SPS RAIM RNP 0.1 (HAL = 185m) Availability  
 FD Only, SA Off, without Baro-Aiding  
 March 1 - March 31, 2013



(WJH FAA Tech Cntr, NJ USA)

W.J.H. FAA Technical Center  
 WAAS Test Team  
 04/16/13

SPS RAIM RNP 0.3 (HAL = 556m) Availability  
 FD Only, SA Off, without Baro-Aiding  
 March 1 - March 31, 2013

