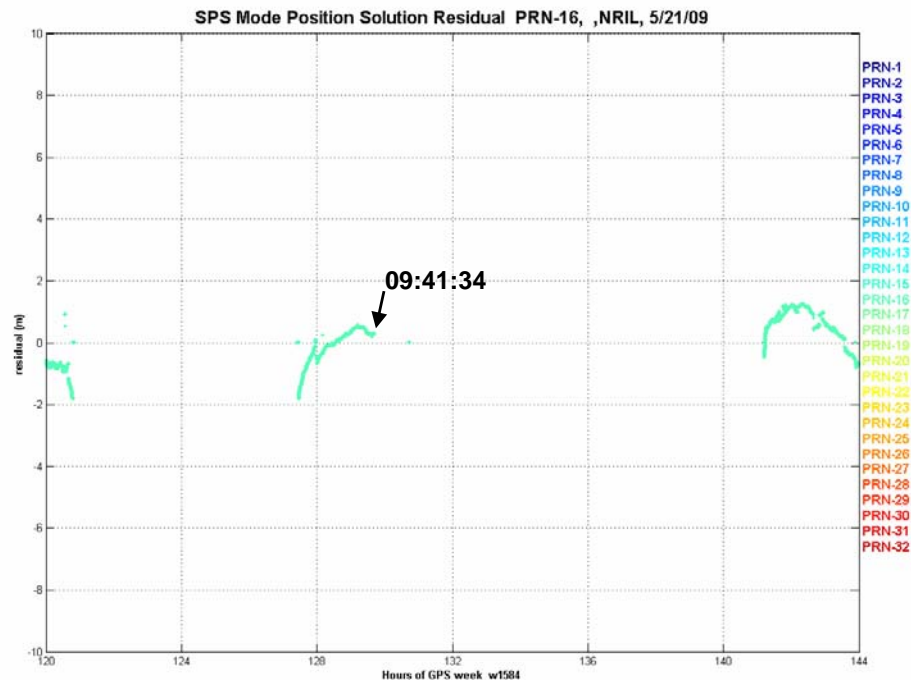


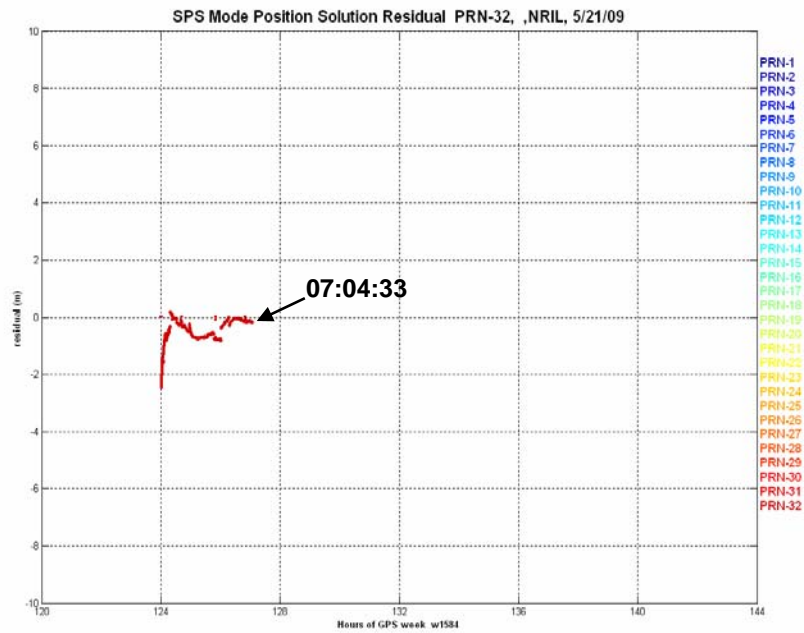
WAAS Technical Memorandum
William J. Hughes Technical Center
Pomona, New Jersey
8/2/2010
Author(s): Tom McHugh

DR #95 PRN16 and PRN32 Unplanned Outages
GPS Week/Day: Week 1584 Day 5 (5/21/2010)

Background:

- PRN-32 and PRN-16 both experienced unplanned outages on 5/21/10
 - see NANUs 201094 thru 201097
- Simultaneous GPS outages are expected to be extremely rare
 - Potential threat to RAIM users if multiple clock ramps are present simultaneously
- Data from 4 high rate IGS sites was examined
 - Dededo, Guam (GUAM)
 - Stopped tracking PRN-16 at 09:41:34 (34.7 deg elevation)
 - Did not track PRN-32
 - Norilsk, Russian Federation (NRIL)
 - Stopped tracking PRN-16 at 09:41:34 (59.3 deg elevation)
 - Stopped tracking PRN-32 at 07:04:33 (53.9 deg elevation)
 - Petropavlovsk-Kamchatka, Russian Federation (PETS)
 - Stopped tracking PRN-16 at 09:41:34 (53.4 deg elevation)
 - Stopped tracking PRN-32 at 07:04:33 (16.9 deg elevation)
 - Usuda, Japan (USUD)
 - Stopped tracking PRN-16 at 09:41:34 (61.0 deg elevation)
 - Stopped tracking PRN-32 at 07:04:33 (18.9 deg elevation)





Conclusion:

- **PRN-32 was un-trackable before PRN-16 event started**
 - Events were not overlapping, other than as an availability reduction
- **Neither event appears to be a clock ramp**
- **Event was not a threat to RAIM users**