

**WAAS Technical Report**  
**William J. Hughes Technical Center**  
**Pomona, New Jersey**  
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*Author(s): Brendan McDonnell*

**DR# 39: Abnormal AOR-W Switchover and Extended SIS Outage**  
**GPS Week/Day: Week 1396 Day 1 (10/9/06)**

**Discussion:**

On GPS Week 1396 Day 1, an abnormal AOR-W GUS switchover occurred. STA-A GUS was set to primary mode approximately 7 seconds into the SIS outage. The SIS outage lasted for 110 seconds, and no Type 0 messages were broadcasted when the AOR-W SIS resumed.

Table 1 shows the order of events.

**Table 1. Abnormal AOR-W GUS Switchover and Extended SIS Outage Order of Events**

<b>WAAS Time of Week</b>	<b>UTC</b>	<b>Event</b>
125429 – 125540	10:50:15 – 10:52:06	AOR-W SIS outage
125434	10:50:20	ZTL C&V switched CLK GUS to Backup mode
125436	10:50:22	CLK changed to Backup mode
125436	10:50:22	ZTL C&V switched STA-A GUS to Primary mode
125438	10:50:24	STA-A GUS changed to Primary mode
125441	10:50:27	All C&V's reported no GEO Measurements Received from AOR-W
125465	10:50:51	CLK GUS reported "Test Loop: L1 WAAS Msg Missing"
125472 – 125541	10:50:58 – 10:52:07	STA-A GUS had No Loop Lock
125541	10:52:07	AOR-W SIS resumed

Table 2 confirms the time and length of the SIS outage, and offers some additional details about the GUS component status at the time.

**Conclusions:**

On GPS Week 1396 Day 1, an abnormal AOR-W GUS switchover occurred. SIS stopped, STA-A GUS was set to Primary mode, but it took an abnormally long time to loop lock. Once the STA-A GUS had loop locked, AOR-W SIS resumed, but no Type 0 messages were broadcast from the GEO. Because of this lack of Type 0 messages, there was no definitive indication to the WAAS user that the switchover had taken place.

**Table 2. GUS Component Status (from Raytheon WAAS Performance Monitor).**

WST	Date	Time (UTC)	Validity	Initiated by	GEO	Sel. Src C&V	Primary GUS (From/To)	L1/L5 Transponder Offset (Hz)	MT61 C&V Tx	MT61 C&V Rx(SIS)	Time w/o SIS (secs)	Primary GUS Re-Lock Time	PR/BK GUS Loop Lock N of M Test (last 10 secs)
844426234	10/09/2006	10:50:20	Abnormal	GUS_Mode_Change	AORW	ZTL	CLK/STA-A	-156.9	37	0	107	181.2	10
844426236	10/09/2006	10:50:22	Abnormal	GUS_Mode_Change	AORW	ZTL	CLK/STA-A	-156.9	37	0	105	181.2	10

Table 2 was taken from  
[http://www.waasperformance.raytheon.com/performance/PERFMON/history/field/system\\_status/AGSVC\\_AORW\\_history.html](http://www.waasperformance.raytheon.com/performance/PERFMON/history/field/system_status/AGSVC_AORW_history.html)  
 on November 3, 2006.