

# BROADCAST UTC(SU) BY GLONASS



# RIRT

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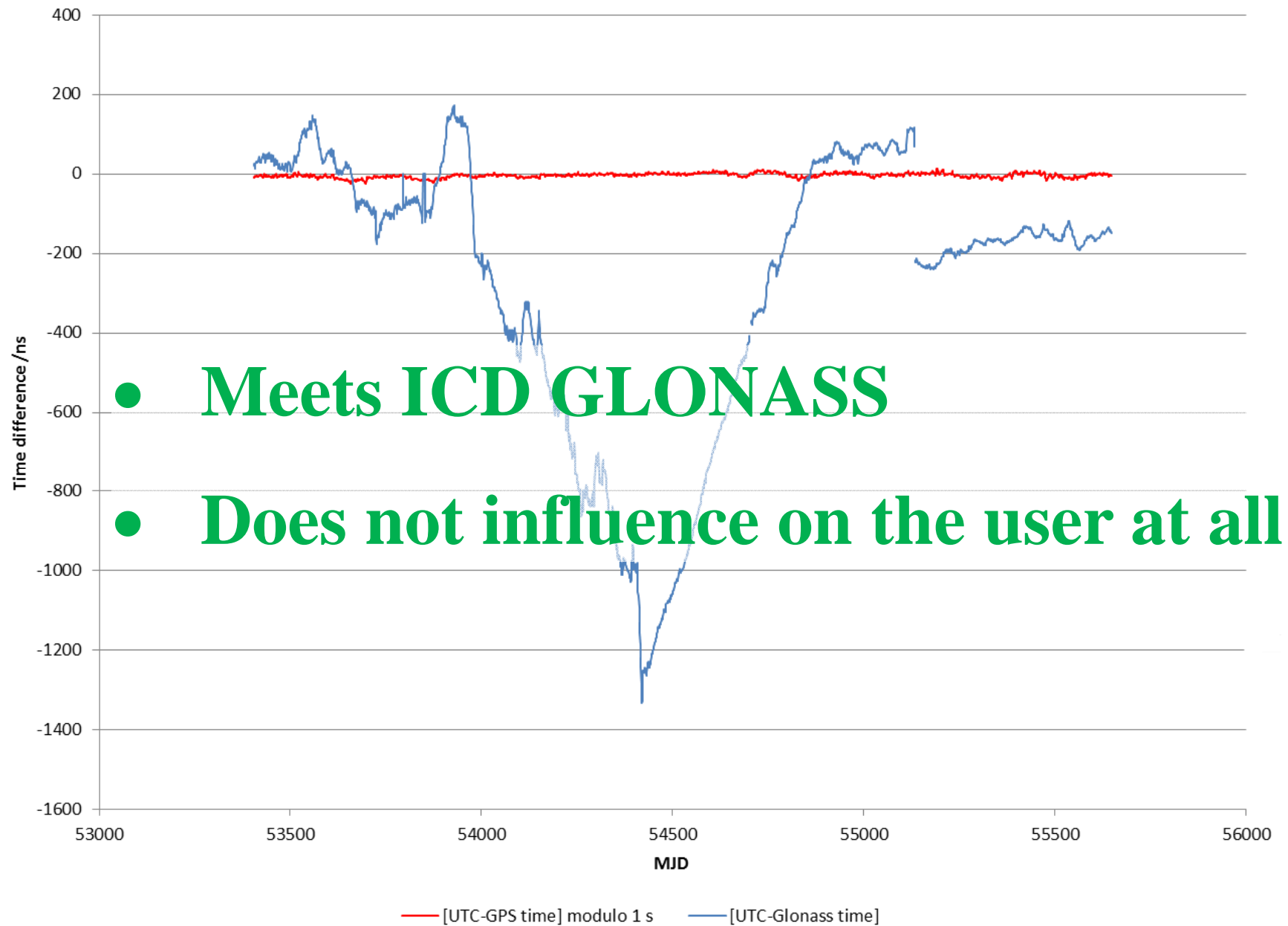
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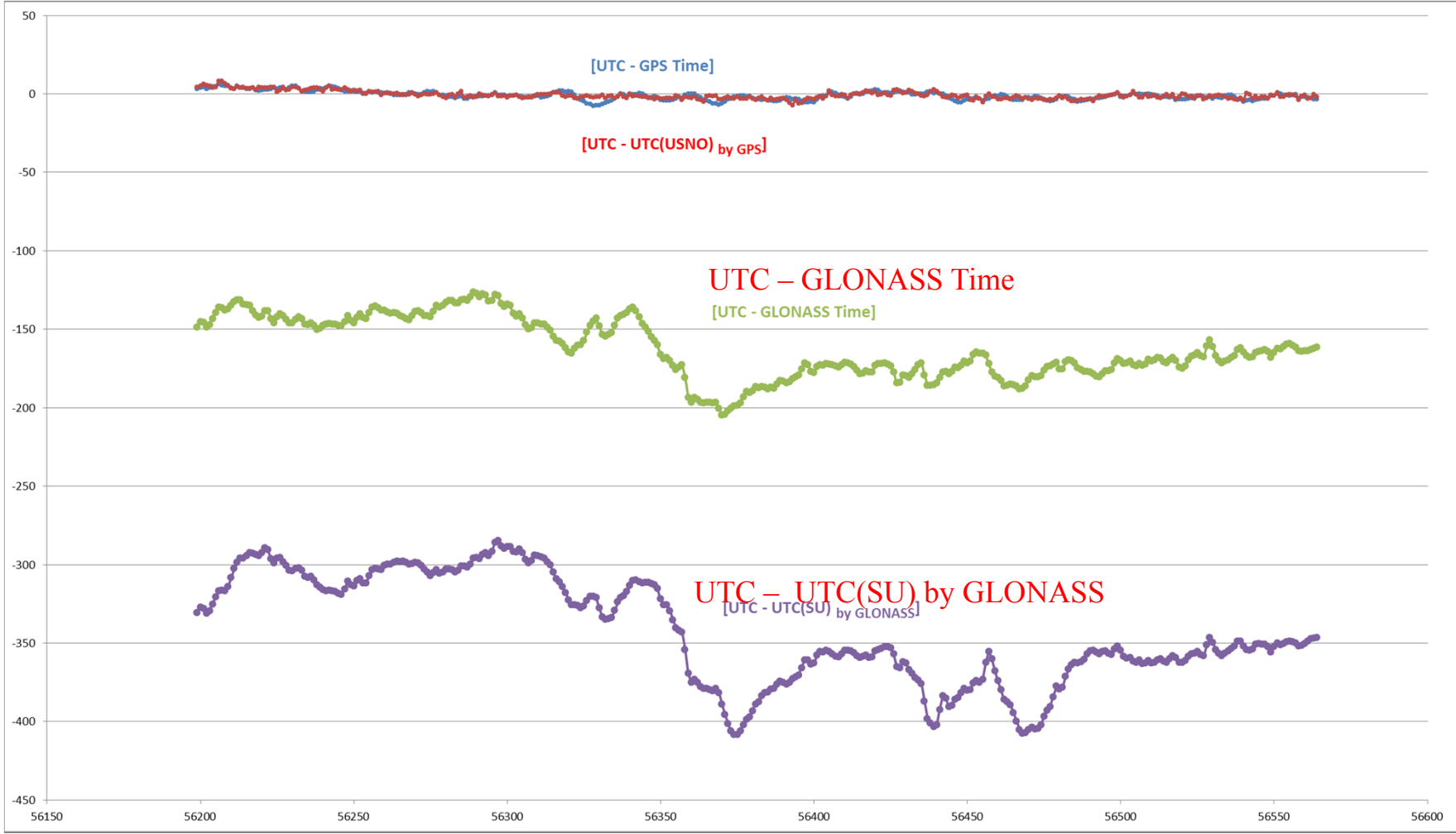
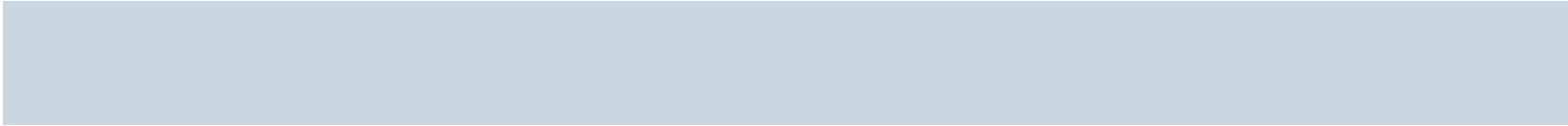


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1. 1. The presentation "Impact of a possible redefinition of Coordinated Universal Time in GNSS interoperability" was made by the representative of BIPM Mr. W. Levandovsky on the ICG plenary session on 10 of November 2013. This presentation was analyzed by the specialists of Russian Institute of Radionavigation and Time. We found a number of incorrect statements according to the estimation of the GNSS GLONASS parameters.



2013	<i>UTC- ....</i>			
	GPS time +15 s /ns	UTC(USNO) by GPS /ns	UTC(SU) by GLONASS /ns	GLONASS time /ns
AUG 1	-0.3	-0.2	-173.4	-362.5
AUG 2	-0.1	-2.3	-171.8	-361.0
AUG 3	-0.2	-2.2	-173.1	-363.0
AUG 4	-0.2	-0.2	-172.1	-362.9
AUG 5	0.0	-2.0	-169.3	-361.2
AUG 6	-0.4	-1.4	-170.2	-362.7
AUG 7	-1.1	-0.6	-169.7	-362.2
AUG 8	-1.2	-2.2	-168.1	-360.7
AUG 9	-2.4	-2.5	-168.4	-360.2
AUG 10	-2.1	-1.6	-170.7	-361.7
AUG 11	-1.8	-0.5	-171.7	-362.3
AUG 12	-2.2	-1.8	-169.7	-359.9
AUG 13	-2.1	-0.5	-168.2	-358.1
AUG 14	-3.8	-3.1	-169.9	-359.1
AUG 15	-3.6	-2.0	-174.1	-362.3
<b>Stand. dev.</b>	<b>1.1</b>	<b>1.2</b>	<b>6.3</b>	<b>6.3</b>
<b>Uncert. uB</b>	<b>10.0</b>	<b>10.0</b>	<b>500.0</b>	<b>500.0</b>



# Summary

## on quality of broadcast time scales

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- **GPS is broadcasting its two time scales with an uncertainty of a few ns, fulfilling needs of most demanding users.**
- **GLONASS is broadcasting its two time scales with an uncertainty of some microseconds, which does not meet requirements of professional users.**
- **GLONASS is broadcasting its two time scales with an uncertainty of < 500 ns for STS and < 200 ns for UTC(SU), which does meet requirements of most professional users.**

# **Summary on safety of life issues**

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- **GNSS providers choose always flat system times to avoid a risk of any disruption**
- **Only GLONASS is taking a risk of stepping its system time**



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### 8. Conclusion

All characteristics of GNSS GLONASS are completely corresponded with ICD and fully meet requirements of professional users (needs of most demanding users).

It seems to be expedient to organize in the ranks of ICG some kind of undependable working group for monitoring and analysis the characteristics of Time Scale during GNSS with the help of agreed methods and measuring means.