

## **Time transfer through GLONASS: motivation, goals and technical implementation**

*S. Martynov<sup>[1]</sup>, N. Parkhomenko<sup>[1]</sup>, M. Sadovnikov<sup>[1]</sup>, V. Shargorodskiy<sup>[1]</sup>*

<sup>[1]</sup> Joint-stock Company «Research-and-Production Corporation  
«Precision Systems and Instruments», JC «RPC «PSI», Moscow, Russia

### **Abstract**

*The paper reviews the current status of activities on establishment of a system for precision time transfer through the navigation system GLONASS using laser measurements, including those from the State standard of time, frequency and national time scale.*

*The authors explain why it is necessary to establish such a system and give estimations of achievable accuracy of measurement of divergence between time scales and other parameters of highly stable time and frequency standards.*

*The paper also reviews the requirements for the time transfer equipment included into SLR stations and intended for operation in laser time transfer mode.*

*The paper gives a description of the time transfer equipment from the Tochka laser station kit and the results of evaluation of its technical capabilities.*

*The paper represents a description and technical characteristics of photoreceiving units installed aboard the SC «Glonass» to measure the moments of arrival of laser pulses in the onboard clock time scale.*

### **REFERENCES**

- [1] M. Sadovnikov, V. Shargorodskiy «The new generation SLR station for time transfer with the subnanosecond accuracy and laser ranging with the submillimeter accuracy in the daytime and night» // International Workshop on Laser Ranging, Annapolis, USA, 2014.
- [2] M. Sadovnikov, V. Shargorodskiy «Radio-laser stations for application in GNSS: requirements to technical characteristics and a way of their realization» // ILRS Technical Workshop on Laser Ranging, Matera, Italy, 2015.