

# Riga SLR station upgrade and status report

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**18th International Laser Ranging Workshop**  
**Fujiyoshida, Japan, Nov 11 – 15/2013**  
**13-Po34**

SLR station Riga since summer of 2013 is undergoing upgrade of major system components and partial infrastructure renovation. The upgrade will include station time and frequency standard, test and measuring equipment, new telescope control system, installing encoders and other modifications. Other activities include testing of system optical and electronic components to identify underperforming or failing parts. As a part of infrastructure renovation some old instrument buildings will be removed to improve station GNSS antenna performance and to improve measurement of local ties.

# Time and frequency reference standard



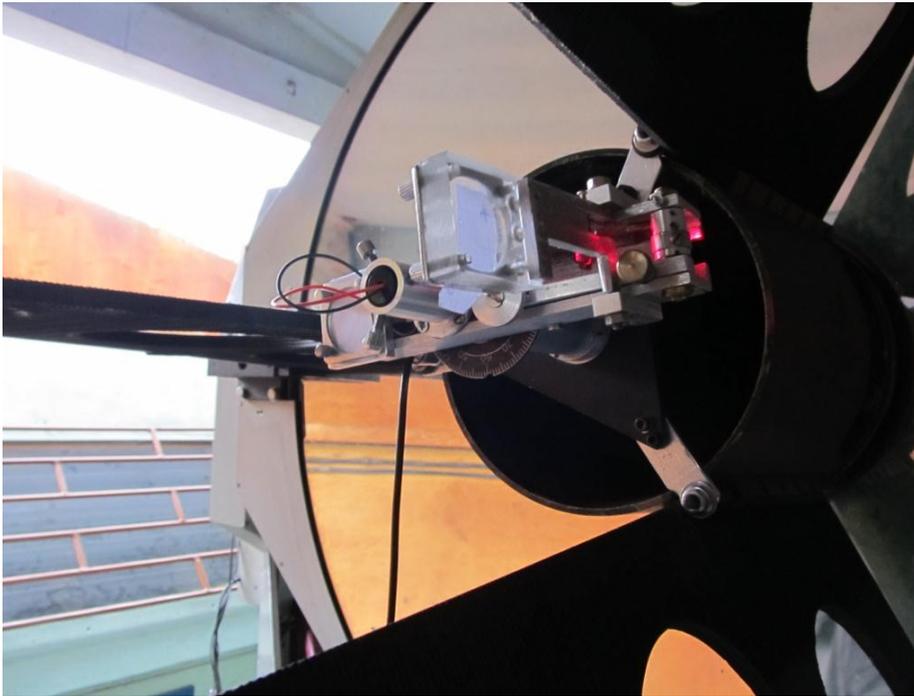
Old equipment will be replaced by Spectracom SecureSync GPS time standard with rubidium oscillator.

# Telescope control system



The telescope control system has to be updated to incorporate encoders and improve tracking accuracy.

# SLR system tests



Checking SLR telescope optical system alignment. Other tests are planned to identify failing or underperforming electrical and optical components

# GNSS receiver



New Leica GR25 receiver with GPS, GLONASS and GALILEO tracking capability and AR25 antenna installed on the auxiliary pillar for testing. It will later replace receiver on 12302M002 in IGS/EUREF networks.

# Receiver channel optimisation



The aim is to reduce number of optical surfaces in the receiver channel to improve efficiency. Two alternative approaches are under consideration.

# Infrastructure renovation



New building for SLR system - 2015?

# Current status of upgrade schedule

GNSS receiver Leica GR25 with calibrated AR25 antenna – by the end 2013

Timing and reference frequency standard Spectracom SecureSync – expected by the end of the year 2013

Improved telescope mount model – 2014

Calibration modification - 2014

New telescope control system – 2014/2015 (very optimistic)

Receiver path modification - 2014/2015

Infrastructure repair – 2013/2014

## Acknowledgments

This presentation is supported by EU FP7 grant REGPOT-CT-2011-285912-FOTONIKA