Overview

The SLR Station 7841 Potsdam was upgraded in 2011 from a 10 Hz system to high-repetition rate (2 kHz). The Range Gate Generator (RGG) is an in-house development based on the widely used ARM7 microprocessor with an internal clock frequency of 60 MHz. This allows for a range gate resolution of 16.7 ns which has proven to be sufficient for most applications so far. The system is operated in strict single-photon regime (few per cent of return rate).

In 2012 the tracking software was transferred and upgraded from the historic DOS-based system to a Linux-based “all-in-one” system with a lot more flexibility.

Recently, all peripheral (non time-critical) functions were concentrated on a single Windows™ based PC.

Architecture of RGG

Ovenized narrowband daylight filter (0.4 nm with 40% peak transmission) and wideband nighttime filter (3 nm with 97% peak transmission) selected under PC control.

Sky surveillance cameras selectable between colour CCD for daylight and stacked B&W for nighttime operation; even faint stars and thin clouds are clearly visible.