Centimetre accuracy for the French Transportable Laser Ranging Station (FTLRS) through sub-system controls

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Improvement objectives

- Increase the instrument sensitivity (LAGEOS)
- Reach the 1cm level accuracy (JASON-1, ENVISAT, T2L2)
- Better stability of data quality

Main technological improvements

- Laser
  - Emission wavelength (green instead of IR)
  - Pulse length (35 ps instead of 100 ps)
- Return detector: C-SPAD
- New calibration device
- New start detection process
- Suppression of return signal transmission through the rotary contacts

Tests and accuracy measurements

- Chronometer qualification
- Return detector sensitivity to various parameters (gating signal, centre-edge effect, photons number, temperature)