

Space Geodesy in the Kingdom of Saudi Arabia

Nasr A. Al-Sahhaf, PhD

Director, Space Geodesy Center

King Abdulaziz City for Science and Technology (KACST)

ABSTRACT

The Saudi Laser Ranging Observatory (SALRO) is an instrument in the science of space geodesy providing data to the scientific community since 1995 for the study of planetary geodynamics, supporting the International Terrestrial Reference Frame (ITRF) and related studies of the solid Earth, its atmosphere and oceans as well as contributing data for geospatial analysis to those who have the applicable processing software.

Status: SALRO is currently undergoing a laser upgrade and after commissioning of the new laser system we will schedule and upgrade its computerized operating and processing system (hardware and software) including all of the essential interface electronics and subsystems required. This will restore and exceed SALRO's operational competitiveness to the level it was many years ago after initial commissioning of the system.

SLR Plan: It is our plan to implement a preventative maintenance and upgrade program to ensure that the SLR instrument will not fall behind technology again and to make provision for migration to the New Generation Satellite Laser Ranging (NGSLR) technique when fully developed.

Progress: Recently we have tied-in two important geodetic instruments (SLR and GPS) co-located at SALRO with the initiative and support of the IGN and we are glad to report that we are progressing well with our Continuous Operating GNSS Network– (COGNET) program.

Future Plans: Our plan is to co-location, install and commission a Very Long Baseline Interferometry – VLBI system and a multi-mode SLR, LUNAR Laser Ranging – LLR and Space Debris Tracking System - SDT on the SALRO site.

We will probably consider a name change since SALRO will be transformed into a Core Geodetic Station in compliance with international standards.