

SOLAR RESOURCE MAPPING IN TANZANIA



Based on GEONICA's SEMS-2000 System an autonomous very low power consumption solar energy measurement solution

GEONICA has supplied a TIER1 measurement station for the activity “Resource Mapping and Geospatial Planning Tanzania”, funded and supported by the Energy Sector Management Assistance Program (ESMAP), a multi-donor trust fund administered by The World Bank, under a global initiative on Renewable Energy Resource Mapping.

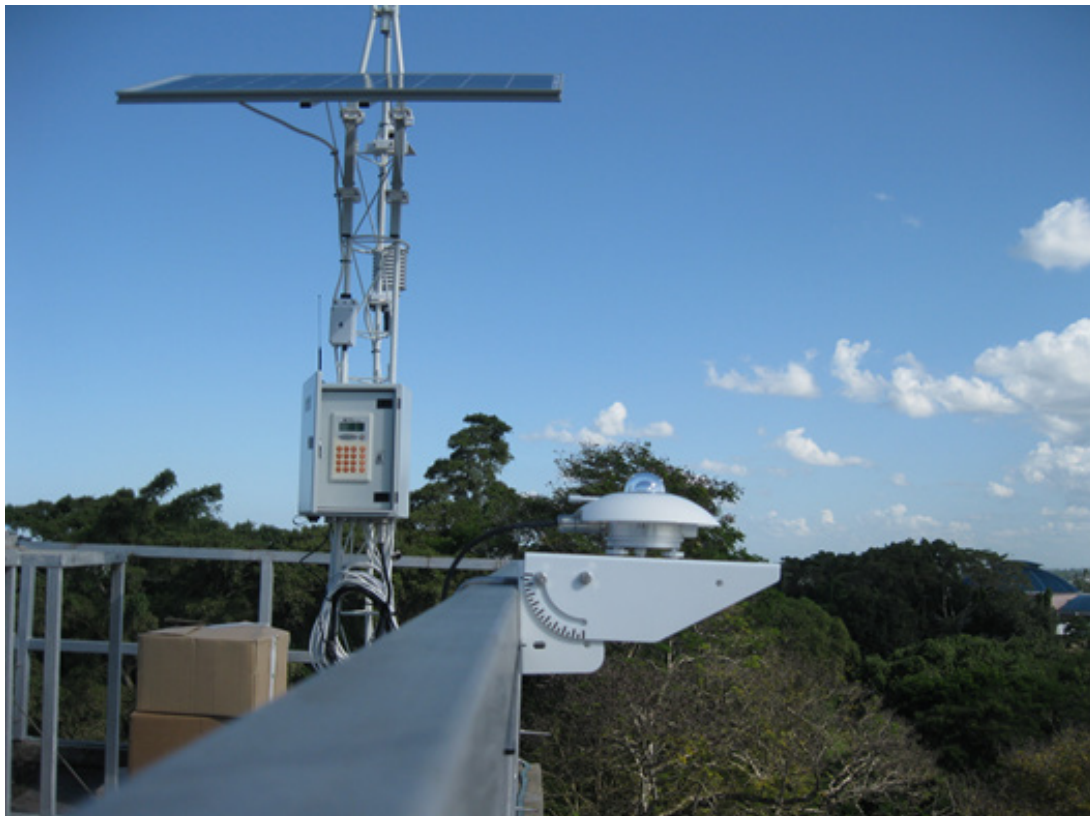
Tanzania is estimated to have the resources for solar power generation equivalent to those in Spain. Tanzania's energy mapping is part of a global, \$22.5 million initiative by ESMAP to help this country to analyse their renewable energy resources to guide policymakers and investors.

A TIER1 station is a research quality station that provides the highest accuracy measurements, collecting data according to the protocols of the Baseline Surface Radiation Network (BSRN).



This station is based on our **SEMS-2000** system, which together with the measurement of global solar radiation incorporates its own solar tracker design, the **SUN TRACKER-2000** that enables the measurement of both diffuse and direct solar radiation.

In this way, the **SEMS-2000** System has been designed by **GEONICA** for the measurement and transmission in real-time data of all components of solar irradiance, as well as all the necessary meteorological parameters, making it even more interesting for the creation of National Networks for the Evaluation of Solar Energy Resources.

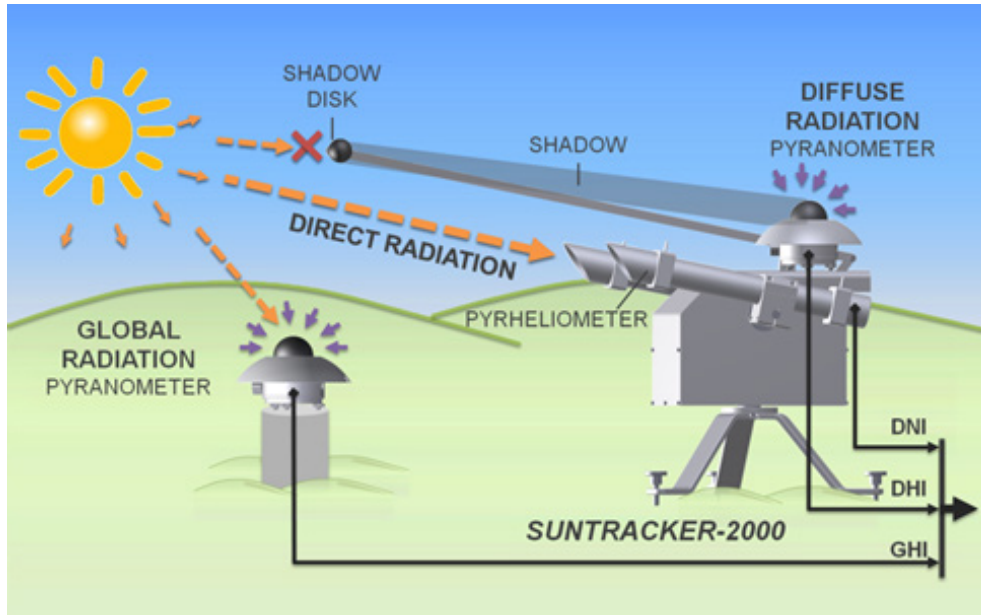


On May 20, 2015, two senior technicians of **GEONICA** travelled to Dar es Salaam (Tanzania) to install the Automatic Weather Station. The emplacement is sited on the rooftop space above the main of the physics department building and the campus is sited in Ubungo district of the Dar es Salaam.

According to World Bank's requirements for the ESMAP the Automatic Weather Station type TIER1 has to provide the highest accuracy measurements, and use thermopile radiometers to measure all three components (GHI, DNI, and DHI). The sensors selected for the GHI and DHI measurements must meet ISO 9060:1990 Secondary Standard. The sensors chosen for the DNI measurements must meet at least ISO 9060:1990 First Class.

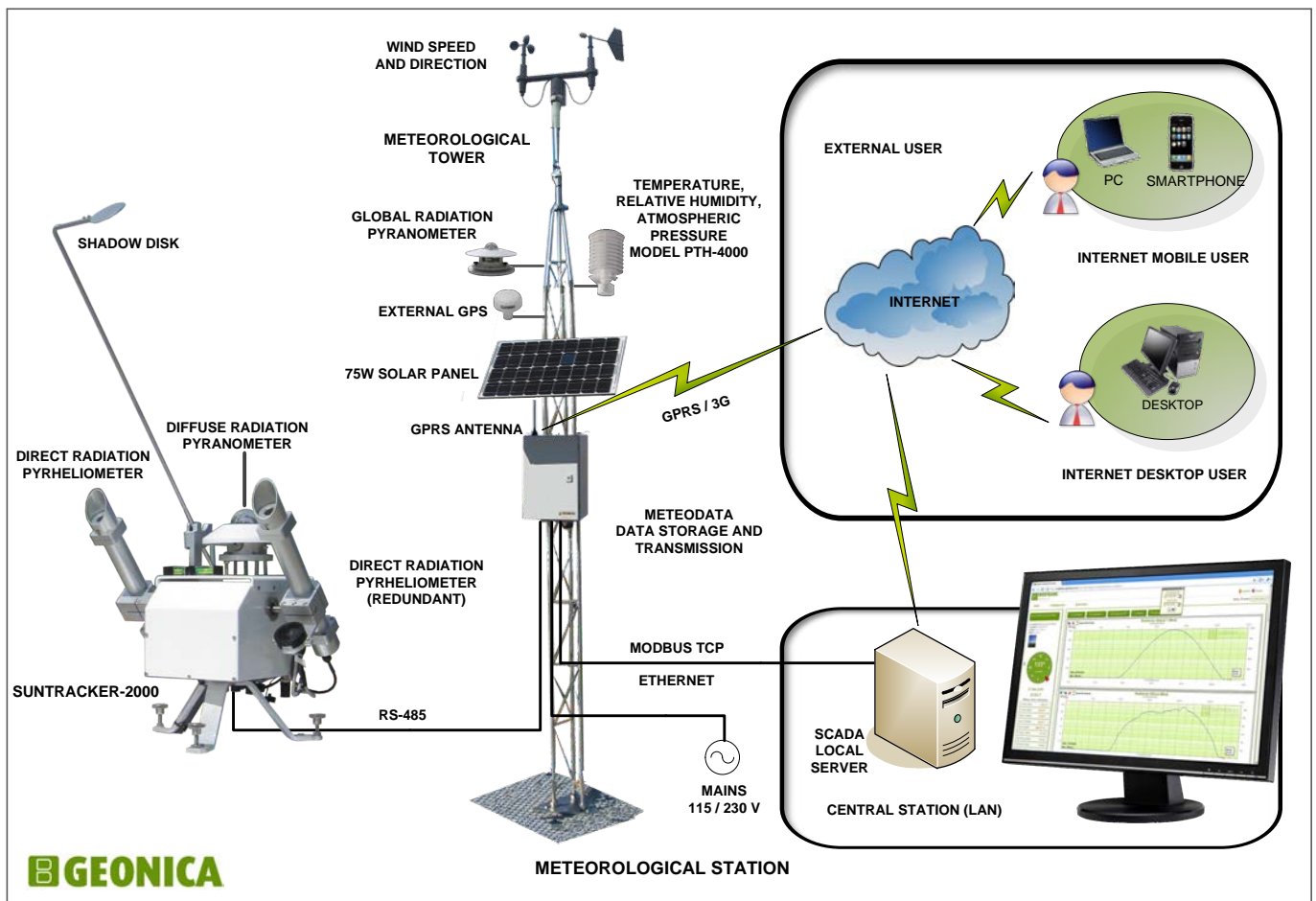
The Automatic Weather Station also includes several ways of communications: GPRS, Ethernet and RS-232.

**SEMS-2000 SOLAR ENERGY MEASUREMENT SYSTEM
(SOLAR RESOURCE ASSESSMENT)**



SEMS-2000

INTERCONNECTING DIAGRAM WITH INTERNET AND SCADA COMMUNICATIONS



ADDITIONAL PHOTOS OF THE INSTALLATION

