CALLISTO INSTALLATION AT NATIONAL SPACE AGENCY (ANGKASA) OF MALAYSIA

Asnor Nadirah Ishak, Christian Monstein, Zulia Kurnia Dewi Nurlisman, Zahira Mohd Radzi

asnor@angkasa.gov.my, monstein@astro.phys.ethz.ch, zulia@angkasa.gov.my, zahira@angkasa.gov.my

We have successfully installed the CALLISTO system at National Space Agency (ANGKASA), Banting, Selangor, Malaysia located 2°78'00N and 101°51'00E with cooperation National University of Malaysia (UKM). This is one of the candidate sites for radio astronomical purpose in Malaysia. The antenna is mounted outside and the CALLISTO spectrometer system (spectrometer, control computer, power supplies and preamplifier) is located inside the cabin. Figure 1. shows the Log Periodic Dipole (LDPA) antenna and the CALLISTO spectrometer system at ANGKASA, Banting, Selangor, Malaysia. And, Figure 2. shows the joint research group from Universiti Teknologi MARA (UiTM), Shah Alam, Selangor and Universiti Sultan Zainal Abidin (UniSZA), Kuala Nerus, Terengganu.

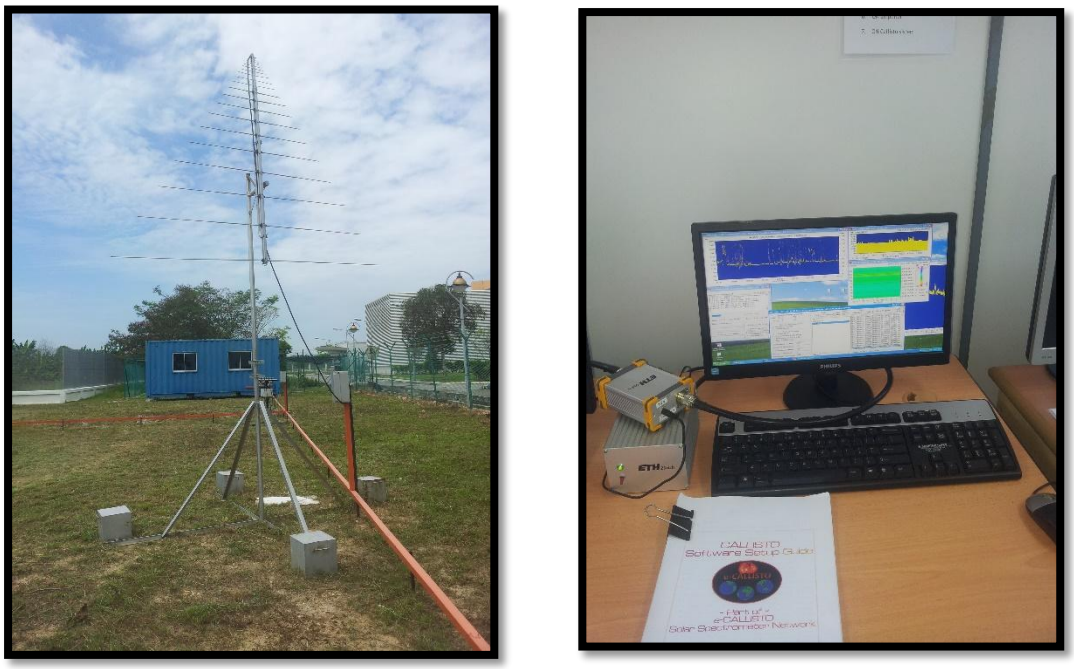

Figure 1: *The Log Periodic Dipole (LDPA) antenna and the CALLISTO spectrometer system at ANGKASA, Banting, Selangor, Malaysia.*

Figure 2: *The joint research group from Universiti Teknologi MARA (UiTM), Shah Alam, Selangor and Universiti Sultan Zainal Abidin (UniSZA), Kuala Nerus, Terengganu.*

This system consists of LDPA antenna, CALLISTO spectrometer and standard computer connected to the internet. Figure 3 shows the configuration system of CALLISTO and LDPA at ANGKASA, Banting, Selangor, Malaysia.

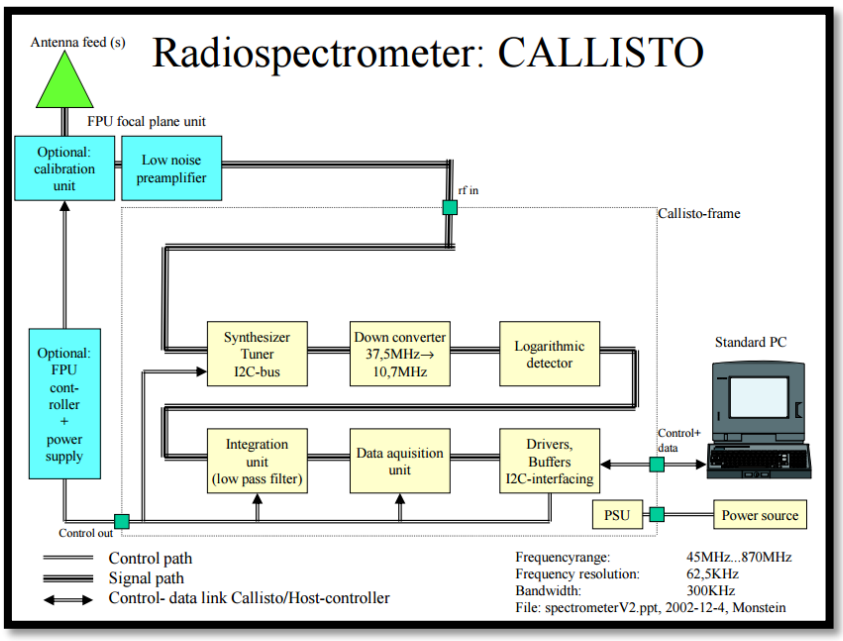

Figure 3: *The configuration system of CALLISTO and LDPA at National Space Agency (ANGKASA), Banting, Selangor, Malaysia.*

The antenna that we used is a commercial log-periodic antenna, model CLP-5130, a high gain and wide band VHF and UHF log periodic type beam antenna. The antenna is mounted on an aluminium tripod. A coaxial cable is connected to the preamplifier to the CALLISTO system inside the cabin. The CALLISTO spectrometer operates between 45 and 870 MHz using a modern, commercially available broadband cable-TV tuner CD1316 having a frequency resolution of 62.5 KHz. The data are transferred via a RS-232 cable to a computer and saved locally. It's provide 0.25 sec time resolution and 1 millisecond integration time.

The CALLISTO application software, which was supplied by Christian Monstein, ETH Zurich, is installed in a control computer inside the cabin. CALLISTO measurement time and frequency are controlled using a scheduler file and a frequency file. The system is running automatically 24hours.