

Wealth of Applications: Telemetry Equipment

Telemetry, literally meaning "remote measurement" or the remote collection of data, is an automated measurement process that enables data to be gathered at remote locations, and transmitted to receiving telemetry equipment for interpretation, display, and recording. Telemetered data can be biological, environmental or physical data. Telemetry is used to gather data from remote, inaccessible or dangerous locations, such as a satellite in orbit, to control stations on ground, where the information is decrypted. Space agencies like National Aeronautics and Space Administration (NASA), European Space Agency (ESA) and other international space agencies employ telemetry equipment to collect data from orbiting spacecraft and satellites.

Communication channels are a major part of any telemetry system. When telemetry was relatively new, information was relayed over wires. Today it uses radio transmissions and GSM (Global System for Mobile communication) technology for data transmission. Telemeter is the apparatus used for recording the readings of an instrument and transmitting them by radio. A telemetry handler, collects, formats and stores the data in a dedicated buffer, and then relays it to the receiving station. The type of telemetry equipment required depends on the type and amount of data to be transmitted and whether remote control capability is desired. In the simplest system, the data are simply displayed on annunciator, indicator, and recorder. In larger systems, video display terminal and data logging is frequently used. Many times this data is analyzed by computer systems in order to put meaning to the readings being recorded.

The contribution of telemetry to basic biological and medical research cannot be overstated. Discoveries made during manned space programs led to development of complex physiological monitoring and telemetry equipment, typically to gauge the health and well being of astronauts. Since early 70s, the use of these devices to provide real time physiological monitoring in hospitals has become widespread. Cardiac patients are equipped with automatic recording, measuring, and transmitting devices. I even recall one time when I went into the hospital for chest pains and even in this small town hospital, they were equipt with telemetry devices. I wore one to go outside for some fresh air when I was stable. Incase of an emergency, an alerting function instantaneously summons the healthcare professional in charge of the patient. Telemetry also permits the tracking of endangered land and marine species tagged with customized telemetry equipment. These devices collect data on their patterns of movement, dispersion, and migrations. The daily positioning of these animals, coupled with continuous tracking gives an explicit representation of the way they utilize their habitat.

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About the Author

Keith Londrie II is a well known author. See the site at <http://www.telemetry-info.info/> for a wealth of information. You may also want to visit keith's own web site at <http://keithlondrie.com/>