

AN/TRN-30 Non-Directional Radio Beacon

The first deployment of the AN/TRN-30 beacons began in the early 1970's and due to several issues, the configuration control and parts procurement has been difficult over the years and in some cases, impossible. These factors have caused the Operational Readiness (OR) rating of this equipment to be reduced to an unacceptable level.

There are approximately 160 existing Radio Beacon Sets that the U. S. Army must sustain for another 15-20 years, until they are planned to be replaced by GPS based systems. A strategic goal of the U. S. Army Communications Electronic Command (CECOM) is to maximize the readiness of this equipment by improving its reliability, availability, and maintainability, while also reducing the total ownership costs.



ACI is making the AN/TRN-30 sustainable for the foreseeable future. This re-design will upgrade the Transmitter Radio and Amplifier-Coupler and maintain the compatibility of the current Transmitter Radio and Amplifier-Coupler to each other. The upgraded units shall be form, fit and functionally equivalent as the current system with the possible ability to input an external signal which can be a Global Positioning Satellite (GPS) signal. The outside mechanical housings (chassis) of the Radio Transmitter and Amplifier-Coupler units shall be retained. This approach will ensure form and fit equivalency between the current and upgraded Beacons.

All printed circuit boards required for the Beacon re-design/upgrade will be produced using state-of-the-art manufacturing techniques and ACI's testing capabilities (HAST, HALT and the mechanical vibration table) will be used to qualify the new design. The technology used for this Army CECOM project will be similar to that used for many of the Navy ManTech projects currently running at ACI.

The re-design/upgrade will maintain the existing form, fit and function of the radio set. Obsolete SN54xx series SSI logic will be replaced with a microcontroller. The moving parts associated with the switched LC filters will be designed out by use of linear amplifiers. Obsolete 27-position mechanical switch assemblies will be replaced by an LED display of the message

The new design will be tested at the Army's center for Aviation training at Ft. Rucker.