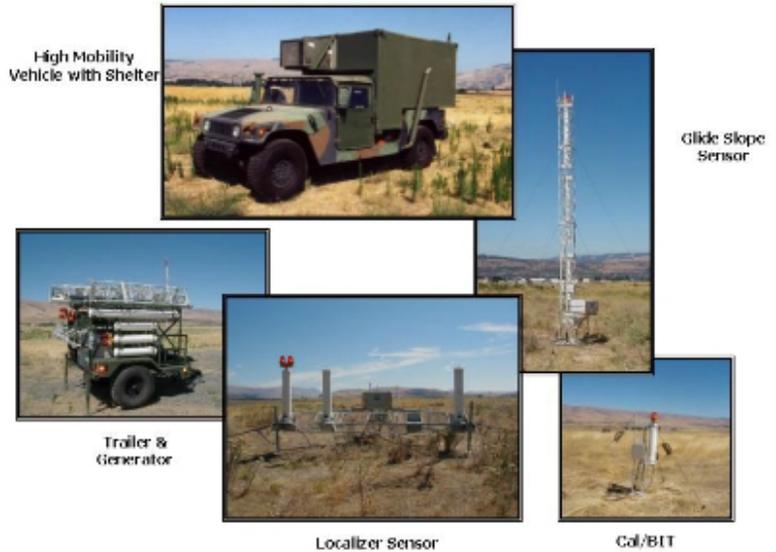


## Transportable Transponder Landing System (TTLS)

**Purpose:** To provide a rapidly deployable (HMMWV mounted or smaller), all weather, precision, non-emitting, terminal air traffic control capability--to be employed under instrument flight rules (IFR) conditions.

**Background:** During April 2001, the Marine Air Board identified a requirement for a non-emitting precision approach landing capability. Such a system would be used to provide an initial tactical precision approach capability with reduced footprint and electronic signature. Congress appropriated \$2.25M in FY03 to explore TTLS technology to determine if it has the potential to provide the Marine Corps a portable, low emitting precision approach landing system for aircraft.



**Description:** TTLS was originally developed under a Defense Advanced Research Projects Agency (DARPA) effort through NAVAIR and Advanced Navigation and Positioning Corp (ANPC). The system was designed to provide a precision approach capability by using inexpensive ground systems to provide position information for aircraft equipped with a transponder and standard Federal Aviation Administration Category I Instrument Landing System (ILS) equipment. In order for TTLS to suit Marine Corps tactical mission requirements, several technologies must be developed. These include: multiple aircraft tracking and guidance; miniaturization of the system for mounting on a supporting ground vehicle; reciprocal approaches/runway support; Local Sector Surveillance & Control; Link 4A data-link guidance output to support Marine aircraft; and reduced susceptibility to jamming. The Lab, in conjunction with NAVAIR, and HQMC, Aviation will assess the ability of ANPC to modify five major features of TTLS: Multiple Aircraft Tracking, 360 Degree Surveillance, Reciprocal Runway Capability, Automatic Carrier Landing System (ACLS), Instrument Carrier Landing System (ICLS) and Joint Precision Approach and Landing System (JPALS) Compatibility, and Miniaturization. Following the assessment, HQMC, Aviation will determine suitability of TTLS for Marine Corps employment and acquisition.

**Deliverable Product(s):** Assessment reports and requirements documentation.

**Milestones:**



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