DEFENSE AND SECURITY

AMIGOS
BATTLEFIELD
TARGET
IDENTIFICATION
DEVICE

Defense and security in five continents

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The objective of Combat Identification (CID) is to maximize combat/mission effectiveness while avoiding the casualties due to fratricide. To fulfill this goal, it is vital to correlate and assign a foe, friend or neutral identification label to the potential targets. In the ground domain, Battlefield Target Identification Device (BTID) is the most important system for CID, especially for direct-fire engagement.

“AMIGOS” is a BTID secure question-and-answer system that performs active ground-to-ground identification of targets.

BTID is a NATO Standardization based on STANAG 4579, capable of identifying platforms at distances beyond the range of the primary weapon system. BTID operates in the Ka band of the electromagnetic spectrum and uses spread spectrum modulation technology which provides Low Probability of Intercept (LPI) and Low Probability of Detection (LPD).

A BTID interrogation can be initiated either by the gunner automatically by activation of the laser range finder or by the commander with an interrogator button. The interrogation consists of an encrypted directional message sent to the targeted vehicle. If it is a friendly target and is equipped with a BTID transponder, it responds with an encrypted, omnidirectional friend message.

If the answer is correct and the distance to the target calculated with the laser range finder is approximately the same as the distance estimated by the BTID interrogator, the target is then labelled as “friend”. If both calculated distances are different but the answer is correct, the BTID identifies a “friend in the sector”. If the BTID interrogator does not receive a correct answer at all, the target is labelled as “unknown.”
**DDL and DEM**

“AMIGOS” BTID system also incorporates a digital datalink (DDL) capability through the BTID system transponder antennas, that allows exchanging and correlating identification information (friend identification, GPS location, and unit identification), and providing local situational awareness (SA) updates to vehicles at short ranges.

The DDL communication is very robust and operates without a network controller. Entry and exit from the network is automatic and non-disruptive. DDL also provides message relaying capability to extend the range beyond the transmitting platform’s range. During the interrogation process, a BTID system also enables SA information exchange between two vehicles. This Data Exchange Mode (DEM) occurs between the interrogated platform and the platform being interrogated and can reach vehicles at ranges beyond the line-of-sight.

The BTID-created networks may use the Battle Management System (BMS) display or other means to portray the DDL-provided information.

**Operational Environment**

![Diagram showing DDL and DEM interactions between vehicles](image)

**“AMIGOS” BTID Combined Interrogator and Transponder (CIT)**

All platforms equipped with offensive weapons systems, such as main battle tanks or armoured personnel vehicles, should be equipped with a combined interrogator and transponder (CIT), especially if they are highly susceptible of being engaged by friendly forces or they perform target detection and identification, prior to shooting their weapons.

The CIT system has two different configurations:
- **Fixed Mount**
  The BTID Interrogator antenna is slaved to the main armament of the platform, which must be directed toward the target prior to initiate an interrogation.

- **Hunter-Killer**
  This configuration includes a steerable interrogator antenna, which is independent of the main armament. This antenna can be controlled by both the commander and the gunner to carry out interrogations. This capability allows interrogating without the need to point the gun at the other vehicle.

  The CIT system could also include a remote control unit for vehicles without Battle Management System (BMS).

**“AMIGOS” BTID Transponder**

All non-shooter platforms (as logistic vehicles in the battlefield) and susceptible of being engaged should be equipped with a BTID transponder.

In order to minimize the integration cost, a “strap-on” version is also available. In this version, the processor unit and the transponder transceiver/antenna have been integrated in a unique LRU with a self contained power supply and retaining all BTID functionality.