tSecure® is a unique patented, tamper-resistant security device/methodology for disabling and/or controlling electronic and electronically controlled equipment almost anywhere

Abstract

tSecure **is an antitheft system** for use in electronic and electronically controlled equipment. tSecure addresses a gap that existing security solutions do not, that is whether or not the equipment is, at the most basic level, operable. ***tSecure-A*** **is the aviation model designed to be incorporated into avionic systems**.

In addition to being a disabling component, tSecure may also be used as an enabling technology, protecting equipment when not in use; allowing assets to be used only when activated and in the hands of authorized users.

In general, tSecure may be incorporated into various kinds of electronic equipment specifically those that are micro-processor based and have as part of their start up, a Power On Self Test (POST) process. tSecure will deactivate the device into which it is incorporated on receipt of coded paging telemetry. This signal is initiated when it has been determined that equipment has been stolen or misplaced. When the tSecure-A device receives the deactivation code, it is stored internally so that when the equipment is next powered up, the equipment will not boot and thus become inoperative. To ensure the antitheft receiver is not removed or tampered with, internal validation takes place each time the system goes through any type of POST processing activity. If this internal authentication is not possible or is incorrect, the POST process assumes the tSecure antitheft device has been removed or tampered with and causes the equipment to become inoperative.

tSecure-A is integrated into a specific key avionic component(s) of an aircraft. After the receipt of a specialized RF signal, tSecure-A will disable the on-board avionic component or system by causing the POST to fail (so that the equipment will not work) – when the equipment is next powered on – thus rendering all but the simplest of aircraft, un-flyable. Note that tSecure-A is integrated with the squat switch that indicates the aircraft is on the ground – so that avionic systems cannot be disabled in flight. Also note that the RF message can be something other than a disabling command. A command could, for example, initiate transmission of GPS based coordinates so the aircraft could be tracked.

Additionally, integration of the tSecure-A component might, at the manufacturer's discretion, include a redundant, coordinated validation test to eliminate the chance of

undesired activation. As the deactivation is part of the POST, the check for a disabling message is done when the avionic equipment is powered up, not while it is in use.

The disabling signal may be either satellite or terrestrial based so it can be received almost anywhere. Any equipment in which the tSecure-A component is installed may be reactivated upon receipt of a properly coded telemetry signal.

tSecure-A is designed to be an integral part of an avionic LRU (line replaceable unit), as such could easily be retro-fitted into existing aircraft fleets. In order to eliminate the threat of simply replacing the part, the tSecure-A component might, at the manufacturer's discretion, include a redundant, coordinated validation test to protect against circumvention and to eliminate the chance of undesired activation. As the deactivation is part of the POST, the check for a disabling message is done when the avionic equipment is powered up, not while it is in use.

In general, the purpose of the tSecure component is to render any equipment into which it is installed, *un-useable*. It can also be use to thwart the compromise of any of specific components in the host system. To insure receipt of disabling telemetry, signals may be re-broadcast randomly over a period of time.

In the aviation arena, tSecure-A may be thought of an asset management device – it is not used directly to intervene/disrupt a hijacking or passenger takeover event, but rather as a means of controlling the plane once it is on the ground and to prevent it from being used inappropriately. As an example, let's say the crew of an aircraft returns to airport X only to find their aircraft is not where they left it. They could contact their base to both disable the aircraft (via tSecure-A) and to locate it via GPS coordinates transmitted from the aircraft.

***tSecure* is different from other products**/processes that address security issues, it operates at the most basic system level, as part of the internal validation that the system goes through when it is turned on, as a result a system either works or it doesn't.

A custom design insures that tSecure-A will integrate into the avionics of the aircraft it is to protect or manage.

Reference

U.S Patent 5,966,081.

Licensing

tSecure is licensed through ***Tirraappendi, Inc.*** a Washington State Corporation. Any, and all licensing issues are processed through:

Tirraappendi, Inc.
7250 Old Redmond Road, #147
Redmond, Washington 98052
Email Frank Vlacil: Frank@Tirraappendi.com
or
Van Chesnutt at: Van@Tirraappendi.com