



**Technical Support Working Group
Combating Terrorism Technical Support Office
Technical Brief**

REBUS Enclosed RF Inhibition System

Background: Upon discovery of a suspected Remote Controlled Improvised Explosive Device (RCIED), there are limited actions that the first responder to a potential bomb threat can perform until the arrival of an appropriately trained and equipped bomb squad. During this interim period, a terrorist can observe and initiate an RCIED to maximize physical, human and psychological effects. Effectively, the terrorist controls the outcome of the attack. Having the means to rapidly electronically isolate an RCIED and provide blast protection negates the terrorist advantage. This also stabilizes the situation and protects critical infrastructure and lives until the device can be fully rendered safe. Seeking solutions to this problem, TSWG sponsored testing of REBUS systems to confirm their utility as a simple, low-cost and effective counter-measure to mitigate the growing threat of domestic RCIEDs.

REBUS systems consist of an advanced ECM enclosure and a low-power, optimized modulation jammer. REBUS can effectively isolate an RCIED threat within the ECM enclosure and thereby avoid interference with “friendly” signals. REBUS systems are intended for public safety use at mass transit settings, building access checkpoints, any explosives detection/screening station, and venues without timely access to bomb squads or jamming equipment (such as regional airports, underway ferries, and trains). There are three enclosure options: a small self-erecting tent, a blast bin, and a bomb blanket. The enclosures address unattended and checked baggage or packages and suspect unattended vehicles.



Self-erecting Tent



Blast Bin



Blast Blanket

Technical Description:

REBUS technical principles involve the integration of Faraday Cage technology with low-power active, modulated jamming. REBUS enclosures are constructed of directional ECM materials which include an embedded broadband antenna. Low-power jamming is modulated based on threat profile such that signal is contained to a small “bubble” enclosing the suspected RCIED. The jamming signal simultaneously covers

the range of 20MHz – 2.6GHz, which includes mobile phones, hand-held radios, walkie-talkies, and Wi-Fi.

Advantages & Limitations: Current methods to electronically isolate RCIEDs are problematic because jammers (often based on military vehicle convoy protection technologies) collaterally disable or complicate the operating frequencies of the onsite activities and the response teams. These systems are only available in small numbers and to highly trained personnel. REBUS systems are inexpensive, simple to use, require very little training and maintenance, and can be configured to a variety of threat situations. They can be used immediately upon discovery of a suspected RCIED to stabilize the situation until arrival of a Bomb Squad. For example, integration of a REBUS Blast Bin at an explosives screening station would minimize RF trigger exposure time; reduce or eliminate human handling and allow officials to move the RCIED to a holding area while the facility continues to operate. For unattended baggage away from a screening station, a tent enclosure may be used. However, the tent does not provide blast protection and requires measured risk by the first official emplacing the tent (or bomb blanket) on a suspected device. All REBUS enclosures are designed to easily transition to, and support Bomb Squad final render-safe procedures.

Characteristics Statements and Specifications:

	Jammer	Tent Enclosure	Blast Bin	Blast Blanket
Dimensions	11.2" x 9.6" x 5"	25.5" x 25.5" x 25.5"	35.4" x 21.2" x 5/8"	59" x 59"
Weight	7.7 lbs	13.2 lbs	122 lbs	37.5 lbs

Jammer Operating Life: 4+ hours with rechargeable NiMh battery pack (Spare available)

Blast Bin maximum blast containment for 500 g / 18 oz PE4

Blast Blanket meets MIL-STD 662F: V50 Ballistic Test for Armor

Test and Evaluation Results: NAVEODTECH Testing – Available from TSWG Tech Transiion Manager to authorized users. Send request to techtrans@cttso.gov.

Acquisition and Support Pricing: Complete REBUS system including a jammer and any of the three enclosures: \$16,107. Individual enclosures: Tent: \$8,913 / Blast Bin: \$7,487 / Blast Blanket \$7,487

One year warranty, training and servicing on request

Currently, REBUS systems may only be purchased by U.S. Federal, State, and local government agencies.

Contacts at using Departments and Organizations: REBUS systems are new to the U.S. but deployed in the U.K. U.K. contact: Adrian Dwyer, British Transport Police, Counter Terrorism Risk Adviser; 44-2078-308 817; Adrian.Dwyer@btp.pnn.police.uk

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