



## Vessel RadCheck™ Overview

- Vessel RadCheck is comprised of one or more Detection Units (DUs) with TAGS™ Radiological Sensors deployed on submersible remote operated vehicles (ROVs) to provide a dynamic TAGS Radiological Survey Capability underwater around a Vessel.
- The DUs and Sensors are mounted on submersible ROVs to provide radiological threat assessment as the ROVs inspect the hull of the vessel.

## Targeted Automatic Gamma Spectroscopy™ Radiological Sensor

- The Targeted Automatic Gamma Spectroscopy™ (TAGS) Radiological Sensor is capable of detecting Radiological Threat Agents and distinguishing these malicious radioactive agents from normal radiation sources routinely found in any environment under survey.

## Detection Unit

- The Detection Unit (DU) collects gross gamma counts and TAGS gamma counts from the sensors, augments these with location and timing data and sends them to the RWS. The DU manages all encryption and communication to the RWS.
- The DU is integrated with the ROV's power, networking and location determination functionality.

## RadWatch Server™ Lite

- The RadWatch Server Lite (RWS-Lite) simultaneously collects data from all DUs in the network, analyzes the "threat level" of the measurements based on background radiation determined from the location-based historical information and user defined criteria, and stores them in its database. This data is available to the RadWatch Manager.

## RadWatch Manager™

- The RadWatch Manager (RWM) is dynamic, GIS-based software that graphically displays measurement, location, time, and color coded "threat level" information retrieved from the RWS-Lite. It provides complete radiological threat information, including visual and audio incident alerts, in real-time to the Bomb Squad members.

## TAGS Radiological Sensor

Spectroscopy: supports TAGS detection  
 Underwater Range (3s for 5 kCi Cs137): 6m  
 Vessel Inspection Range (3σ for 5 kCi Cs137):  
 1' water,  
 2" vessel steel hull,  
 10' air inside vessel, and  
 22" of steel shielding (4.6-8.8 tons)  
 Volume: 0.5L or larger  
 Physical Dimensions: 3.25"OD x 10.5"  
 Weight: 4.2lbs, neutral buoyancy  
 Operation Temperature: -40°C to +60°C  
 Depth Rating: 150m

## Detection Units

Supported Sensors:  
 MDI TAGS Radiological sensor  
 any CBRNe RS232 sensor  
 Spectroscopy: supports TAGS detection  
 Connectivity: ROV RS232  
 Sampling Rate: 1 second  
 Power:  
 12V DC from ROV (10.5V-16V, unregulated)  
 Physical Dimensions: 10" x 8" x 1"  
 Weight: 1 lbs  
 Operation Temperature: -40°C to +60°C  
 Depth Rating: 150m

## RadWatch Server Lite

Processor: 1+ GHz 32-bit or 64-bit  
 RAM: 2 GB  
 Hard Disk: 100+ GB  
 Operating System: Windows XP/7+  
 Database Technology: SQL Server, MySQL, PostgreSQL  
 Bandwidth Required: 128+kbps  
 Applications Installed: Relay Server, Data Manager, Location Manager, Database

## RadWatch Manager

Processor: 1+ GHz 32-bit or 64-bit  
 RAM: 1 GB  
 Operating System: Windows XP/7+  
 Bandwidth Required: 128+ kbps

*Patents pending in US, UK, Germany, France, Canada.  
 Patents granted in US(8,026,846); UK, Germany, France (1,692,672)*