

# NAVY Transition Assistance Program

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## NEED & CUSTOMER REQUIREMENT

**Need:** In the urban environment, warfighters require the capability to uniquely identify and track very large numbers of entities.

**Value to the Warfighter:** Ability to detect, classify, identify, geolocate and track entities of interest buried in large amounts of urban clutter

**Operational Gap:** Limited tools for detection, classification, identification, geolocation and tracking of entities of interest buried in large amounts of urban clutter

**Customer Specifications:** Covert, detectable at long standoff ranges (>1 km), and detectable with standard US military night vision gear. Capability to use various features for unique identification: use of the infrared taggants' spectral content, relative inter-spectrum amplitude, and spatial patterns -- individually or in groupings -- to provide situational awareness.

**Technology Description:** Voxel has developed a series of environmentally friendly, covert, optically transparent nanotaggants visible in the near infrared (NIR) and/or short-wavelength infrared (SWIR). The taggant nanocrystals are functionalized with luminophores that have narrow and well defined visible (VIS), NIR and/or SWIR emission spectra, allowing unique encoding and detection with silicon cameras, night vision goggles (NVGs), and/or SWIR InGaAs cameras, depending on the taggant chosen. These taggants can be detected from airborne and space platforms as well.

## TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Characterization of transparent taggants	3	High	Quantum yield	June 2007
Demonstration of taggant in laboratory with bench detection system	4	High	Detection of taggant with UVSB stimulation and SWIR detection using aerosol delivery	February 2008
Performance in field experiment	5	High	Detection of optical taggants at range of 2.8 km	June 2009

**Open contract:** N00014-08-C-0101 ending AUG 15 2009

N06-T027 - Voxel Inc.

Covert, Spectrally Coded Infrared Paints for Optical Target Tagging, Tracking and Locating (TTL)

## SPONSORSHIP of original SBIR/STTR Topic

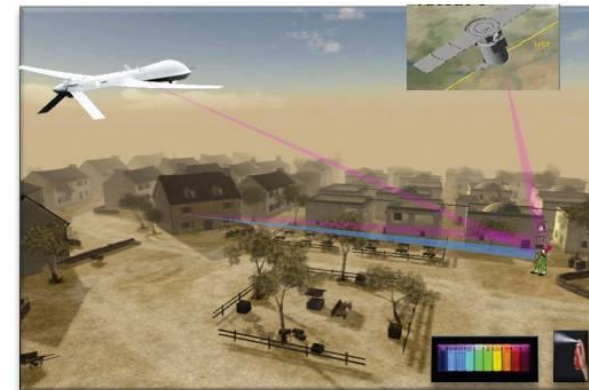
**SYSCOM:** ONR - STTR

**Transition Target:** SOCOM

**Original Sponsoring Program:** ONR

**TPOC Phone Number:** 703-696-5349

**Note:** Expeditionary Warfare & Combating Terrorism Department



## TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

### Other Potential Applications:

Optical Tagging, Tracking, and Locating (TTL)  
 Covert Inks  
 Identify Friend or Foe (IFF)  
 Materiel Tracking  
 Chem/Bio Detection  
 Night Lighting

### Business Model:

Voxel, Inc. intends to manufacture and sell the taggants and interrogation/detection systems to the DoD via the GSA schedule.

### Objective:

Voxel, Inc. seeks \$3.6M in funding to complete the development of the taggants and the associated detection system and to prepare for manufacturing of the products.

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