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**GTSC**  
Government  
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# CBP DAY

**2019** | October 10<sup>th</sup>  
Arlington, VA

# Welcome!



**GTSC**  
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# HOMELAND SECURITY

TODAY.US



# Welcome & Opening Remarks



## **Kristina Tanasichuk**

CEO & Founder

Government Technology & Services Coalition  
& Executive Editor, Homeland Security Today



## **Frontis Wiggins**

Director, Strategic Engagement,  
Northrop Grumman



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# Private Sector Innovation, Border Security Mission



## **Chief David Aguilar**

Former Acting Commissioner, CBP and Chief,  
U.S. Border Patrol; Principal, GSIS



# Enabling Legitimate Trade & National Prosperity



## **Brenda B. Smith**

Executive Assistant Commissioner, Office of Trade



# ENTERPRISE SERVICES SUPPORT



**Benjamin “Carry” Huffman**  
Executive Assistant Commissioner



# Our Border Heroes



## **Sergio Tinoco**

Author, of American Hero and Border Patrol Agent





# Break & Book Signing

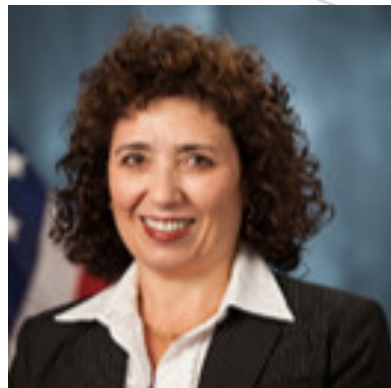


*Special Keynote with*  
**SERGIO TINOCO**  
*Author, Veteran*

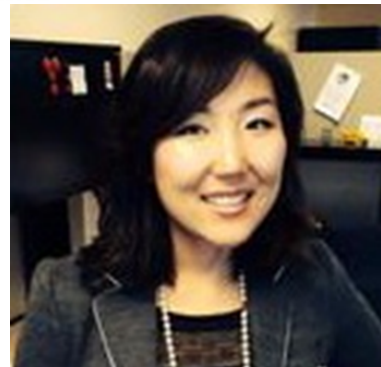


After completing ten years of military service in the army, Sergio joined the U.S. Border Patrol. Being of Mexican descent, having family in south Texas and in Mexico, gave way to new issues of having to counter threats against his family and ill-willed opinions of him for arresting and deporting "his own kind." Bravery, hard work, and perseverance - Sergio Tinoco lived by these qualities to escape the life of a humble migrant laborer in the United States. Join us to hear about his journey from a bullied child who struggled with learning English to a man who has lived through war, tragedy, and poverty and came out on top. Between the Army and the DHS, he has worked in government service for over twenty years.





**Diane V. Sahakian**  
Deputy Assistant  
Commissioner  
for the Office of Acquisition,  
Head of the Contracting  
Activity for CBP



**Julie Koo**  
Information Technology  
Division, Director,  
Procurement  
Directorate



**Earl J. Lewis, III**  
Executive Director for CBP's  
Procurement Directorate,  
Deputy Head of the  
Contracting Activity for CBP

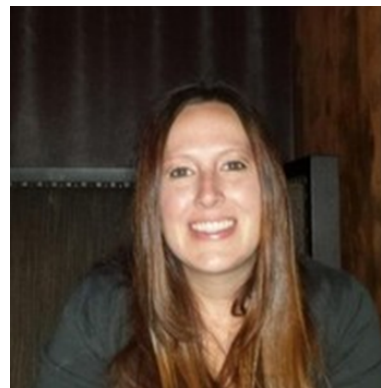


**Joshua Bedregal**  
Contract Specialist,  
Aviation, Maritime, and  
Border Technologies  
Contracting  
Division, Procurement  
Directorate



**U.S. Customs and  
Border Protection**

**Ramona E. Watts-  
Sutton**  
Chief of the Contracting  
Office, Procurement  
Directorate



**Stephanie Shutt**  
Director of the  
Multiple Award  
Schedule Program  
Management Office  
at GSA

# Update on Field Operations



## **Michael Hardin**

Director, Entry/Exit Policy and Planning,  
Office of Field Operations



# Biometric Recognition Offers a New Travel Experience

Government Technology & Services Coalition  
CBP Day 2019  
Strategies for a Dynamic Operational  
Environment



A photograph of a modern airport terminal. The scene is captured from a low angle, showing a woman in a blue shirt and red pants walking with a suitcase. The terminal has a high ceiling with a grid of lights and a large, curved structure. The text "Cohesive Vision" is overlaid in white on the left side of the image.

# Cohesive Vision

# Identity as a Service

- **Operation Efficiency**
- **Security Effectiveness**
- **Passenger Satisfaction**
- **Industry Vitality**

# CBP's

## INVESTMENT

# A FACIAL MATCHING SERVICE

## WHY IT WORKS

- Uses existing traveler biometrics
- Matches one-to-few in the cloud
- Enables token-less processing
- Integrates into airport infrastructure
- Trusted source for identity verification
- No traveler enrollment required

Match	Passenger Name	Date of Birth	Document	Status
	Smith, James	01/08/1992	P TR3456201 JP	Match
	Sally, Jane	09/12/1980	P TR1010201 JP	Match
	Mark, Robert	04/05/1959	P 534564981 US	Match
	Tanaka, Yuri	03/27/1979	P 568049423 US	No Match
	Arrison, Keenan Lanae	09/02/1991	P TR2935948 JP	Match
	Matsuyama, Asuka	06/15/1983	P 759403592 US	Match

# 28

## COMMITTED PARTNERS

Baltimore Washington International Airport

City of Austin Aviation Department

Dallas Fort Worth

George Bush Intercontinental Airport

Greater Orlando Airport Authority

Hillsborough County Aviation Authority – Tampa

Hobby International Airport

John F Kennedy International Airport

Los Angeles World Airports (LAWA)

Massport

McCarren International Airport

Metropolitan Washington Airports Authority

Miami Dade Aviation Department

Newark Liberty International Airport

Denver International Airport

Ontario International Airport Authority

Philadelphia International Airport

Salt Lake City

San Antonio

San Francisco International Airport

San Jose International Airport

Seattle Tacoma International Airport

Broward County Aviation Department

Chicago O'Hare

*airport and airline*  
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PARTNERSHIPS**

All Nippon Airways

Delta

Spirit Airlines

British Airways



NIGHTLY NEWS  
NBC



# SIMPLIFIED ARRIVAL

- **Automatic Capture**
- **Family Processing**
- **Single Touch**
- **Reduced Data Entry**

# PERFORMANCE

## AIR EXIT

**39,025**

exit flights processed

**5.69 M**

exit passengers

**98.2%**

biometric match rate

## AIR ENTRY

**182,418**

entry flights processed

**14.55 M**

entry passengers

**99.0%**

biometric match rate



# PROGRESS WITH CRUISE LINES



CBP is partnered with four major cruise line partners are transforming debarkation through facial biometrics

Prioritizes CBP officers enforcement activities

Streamlines passenger experience

Implements Smart Queuing for customs declarations, streamlining closed loop passenger inspections

Each cruise line performing pilots is experiencing positive customer feedback and operational benefits

STATS

**505**  
vessels  
processed

**1.81 M**  
cruise  
passengers

**81.9%**  
biometric  
match rate



LEVERAGED INVESTMENT

# AT LAND BORDERS

## Pedestrian

- Piloting facial technology at two Southwest border locations evaluating the feasibility of capturing photos from all arriving and departing pedestrians
- Initial results have yielded detection of 191 imposters and a streamlined travel process
- Plans to expand across the Southwest Border

## Commercial

- CBP is finalizing plans to begin work on integrating non-intrusive inspections (NII) with biometrics
- Functional Requirements Document for Vehicle Primary Client finalized
- New mobile Vehicle Primary will integrate with Centralized Cargo Processing (CCP) in a future phase for the Cargo Port of the Future

## Vehicle

- Piloting facial technology at one southwest border location to evaluate the feasibility of capturing photos from travelers inside inbound and outbound vehicles at speed
- Results will inform future port design



STATS

**3.53 M**

pedestrian entries processed

**97.4%**

biometric match rate

**191**

imposters detected

**97.3%**

initial vehicle match rate

# PRIVACY AND SECURITY

by DESIGN

## Limited retention of facial images

- US citizen photos deleted after 12 hours
- Retention of Photos by stakeholder partners restricted by CBP business rules

## Enhanced security measures

- Data encryption both in transit and at rest
- Device access restricted to authorized personnel
- Biometric templates separated from biographic data, associated only with a unique ID

## Biometric performance

- System developed using diverse training sets and limits gallery to flight manifest
- Proactive monitoring of biometric algorithm performance to identify deficiencies
- Partnership with NIST and DHS S&T to continually evaluate algorithms and best practices

THIS IS NOT A SURVEILLANCE PROGRAM

# MICHAEL HARDIN

**DIRECTOR**

**Office of Field Operations  
U.S. Customs and Border Protection**



[michael.hardin@cbp.dhs.gov](mailto:michael.hardin@cbp.dhs.gov)



# IT'S LUNCH TIME!



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**SUPPORTING CBP SINCE 2013**



# A View From the Border



**Carla Provost**

Chief, U.S. Border Patrol



# OPERATIONS SUPPORT



## **Linda Jacksta**

Deputy Executive Assistant Commissioner,  
Operations



U.S. CUSTOMS AND BORDER PROTECTION  
OPERATIONS SUPPORT

**AMORE AGILE,  
INNOVATIVE, AND  
STRONGER CBP**

October 2019



# OS OVERVIEW

## WHAT IS OPERATIONS SUPPORT?

Operations Support (OS) enables U.S. Customs and Border Protection's (CBP) mission through innovation, collaboration, and specialized capabilities, at our Nation's borders and beyond. Given its role in driving a culture of collaboration throughout the Agency, OS is integral to advancing One CBP.

## HOW DOES OS COME TOGETHER TO ADVANCE THE CBP MISSION?



# OS PRIORITIES

## **SUPPORT CBP'S FRONTLINE**

We exist to provide assistance to CBP's operators. We have specialized capabilities and will use them to provide swift and strategic support for CBP's mission of combating terrorism and other threats.

## **INVEST IN OUR PEOPLE**

Our employees are our most valuable asset. We will create an environment that enhances their effectiveness, celebrates their accomplishments, and facilitates continued growth.

## **FOSTER TRANSPARENCY**

We will be open about what we are doing and why. We will be transparent at all levels, within OS, throughout CBP, and with our mission partners. This is how we build trust and credibility.

## **BE RESPONSIVE AND INNOVATIVE**

CBP's operational needs continuously change, as we face new and emerging threats. We will be agile, adaptive and highly responsive in support of changing needs of CBP's operators.

## **PLAN FOR ORGANIZATIONAL SUCCESS**

We are a new organization. We will codify our mission, refine our processes, identify and articulate our needs, and adjust responsibilities to ensure we achieve our collective mission priorities.

# CBP STRATEGIC INITIATIVES

MISSION	COUNTER NETWORK	Leverage CBP's unique authorities, data holdings, Intelligence Enterprise, and partnerships as part of a coordinated counter-network approach against cross-border threat networks.
	AWARENESS & ENFORCEMENT	Increase situational awareness to impede and respond to illicit cross-border traffic.
	SECURE & COMPLIANT TRADE	Anticipate, identify, and address threats that inhibit cross-border commerce.
	BIOMETRIC IDENTIFICATION	Leverage cutting-edge technology to transform traveler verification and dramatically reduce the need to verify physical travel documents.
	VETTING & AUTHORIZATION	Integrate all-source information on travelers across agencies to identify threats.
	STAKEHOLDER EXPERIENCE	Champion and improve stakeholder interactions to protect and facilitate lawful travel and business.
TEAM	HIRING & RETENTION	Recruit, hire, train, and retain the most qualified people.
	RESILIENCE	Promote physical and emotional health for employees and their families.
	ON ECBP	Create a unified and integrated enterprise working together at all levels to execute the CBP mission.
FUTURE	DATA & ANALYTICS	Maintain reliable data and apply advanced analytics to explore insights that inform critical strategic and tactical decisions.
	IT INFRASTRUCTURE	Provide fast and reliable access to resilient, secure infrastructure to streamline CBP work.
	PARTNERSHIPS	Expand international and intelligence partnerships to promote economic cooperation, identify and mitigate threats, and extend influence beyond our borders.

# AWARENESS & ENFORCEMENT

Increase situational awareness to impede and respond to illicit cross-border traffic.

## CBP WATCH

- Establishing the **CBP Watch** at CBP Headquarters to fuse data and analytics, intelligence, and a Common Operating Picture to have multi-domain situational awareness —land, air, and sea—and integrating our work with other law enforcement and systems at the local level.
- Provides real-time threat awareness across the Agency's operational domains, increase capabilities and surge support, and enable the synchronization of intelligence and operations.



# DATA & ANALYTICS

Maintain reliable data and apply advanced analytics to explore insights that inform critical strategic and tactical decisions.

## ENTERPRISE ANALYTICS

- **Enterprise Analytics Division**— advances data-driven decision making enterprise-wide.
- Implements **analytics tools and techniques** in operations, policy, and resources to improve mission outcomes.
- Rapid Develop Analytics Teams
- Data Visualization
- Descriptive Analytics
- Predictive Analytics



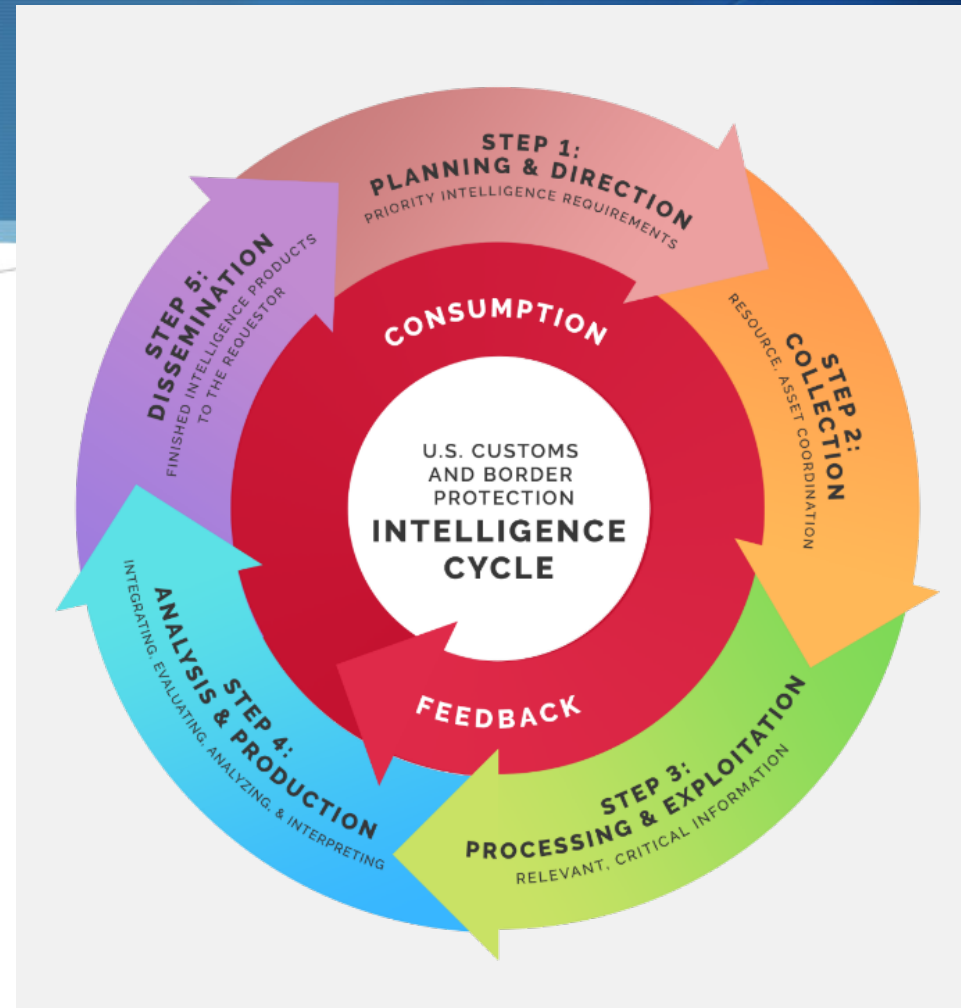


# PARTNERSHIPS

Expand international and intelligence partnerships to promote economic cooperation, identify and mitigate threats, and extend influence beyond our borders.

## OFFICE OF INTELLIGENCE

- Joint Task Forces
  - Department of Defense
- Federal and Intelligence Community Partnerships
  - ODNI, FBI, NSC, and more
- State and Local
- International Partnerships



# PARTNERSHIPS

## OFFICE OF INTERNATIONAL AFFAIRS

- International Engagement Strategy
- Regional Action Plans: Mexico, Central America, South America, Canada, Caribbean
- Border Five (B5): UK, Australia, New Zealand, Canada
- Partnership with Department of State
- World Customs Organization
  - Secure and compliant trade

## LABORATORIES AND SCIENTIFIC SERVICES

- U.S. Food and Drug Administration
- Department of Justice
- Centers for Disease Control
- Academia



CREATIVITY  
IS THINKING  
UP NEW  
THINGS.

INNOVATION IS  
DOING NEW THINGS.

THE ODORE LEVITT



# Innovating to Protect the Border



**U.S. Customs and  
Border Protection**

## **Chris Pietrzak**

Deputy Director, CBP Innovation Team (INVNT),  
Office of the Commissioner



# CBP Innovation Team(INVNT) - Innovating to Protect the Border

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October 2019



- Commercial technology is driving innovation that will enable CBP operators to execute the mission more safely and effectively
- The CBP Innovation Team (INVNT) is a CBP-wide asset, located within the Office of the Commissioner, which rapidly identifies, develops, and **transitions** capabilities to the front line operators
- This program is modeled off of similar successful efforts within DOD and the Intelligence Community
- We are partnership focused: both internal (operational and support components) and external (innovators across the USG)
- Robust pipeline with new technologies being vetted for the field – we want to be “Hall of Famers” not “One-Hit Wonders”



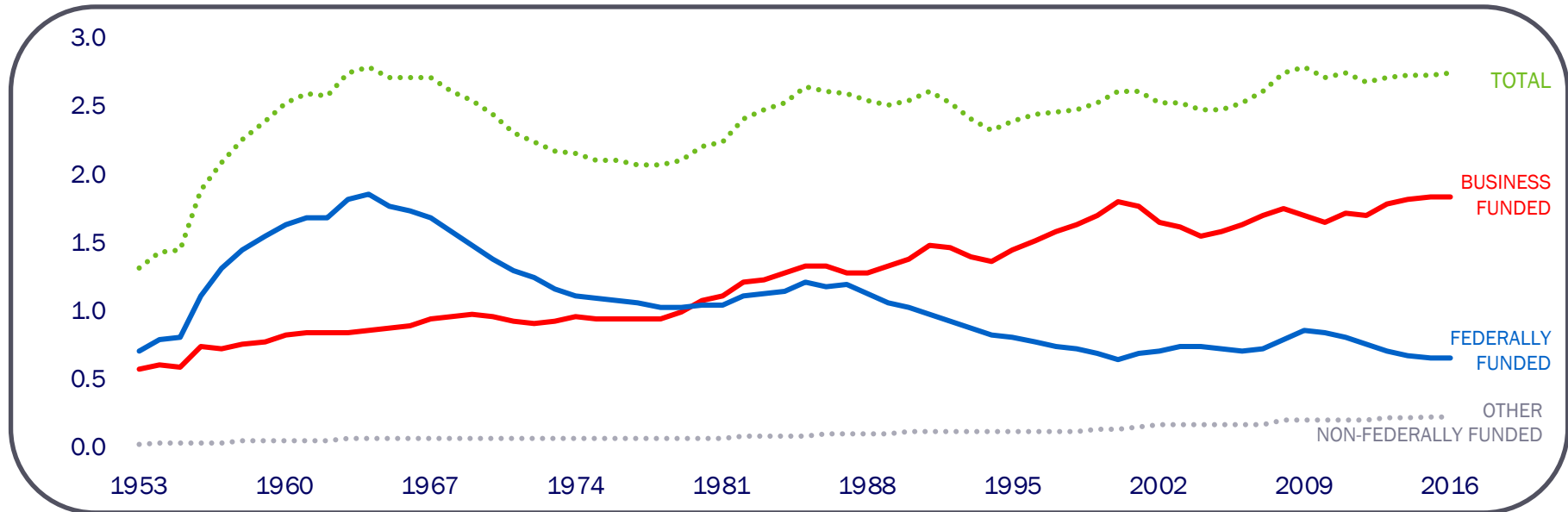
- The CBP Innovation Team (INVNT) is **Operator Focused** - pushing innovative commercial capabilities to users at the edge...fast and in operationally relevant quantities (pilot and low rate initial production).
- This is about making the workforce safer and more effective. It is the core of every decision we make.
- Deliver fast – **6-18 months**



# Why is there a CBP Innovation Team?



# Why Commercial Innovation?



Ratio of U.S. R&D to gross domestic product, by source of business, federal, and nonfederal funding for R&D.  
Source: National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Research. December 2017.

- The majority of new technology is coming from the private sector – principally in venture-backed startups
- Large tech firms “purchase innovation” by acquiring startups
- Government must adapt to leverage this capability – business as usual does not work
- Commercial technology is powerful, **but not a panacea** – commercial tech cannot solve every problem



# Tech Focus Areas

INVNT resides within CBP's Office of the Commissioner to **identify, adapt, and deliver innovative and disruptive commercial technology solutions** to keep front-line personnel **safer, more effective, and one step ahead**. INVNT identifies and pilots cutting-edge commercial technologies, adapts them for government use, and **transitions** proven capabilities – all while moving at the pace of commercial industry.

## FOCUS AREAS

### Autonomous Capabilities

*Better allocation of time and resources*

Serves as force multipliers to execute repetitive tasks better suited for machines than humans.



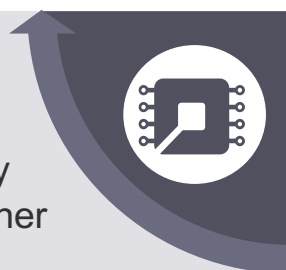
### Artificial Intelligence & Advanced Analytics

*Reveal insights and anticipate future outcomes*

Enables CBP to derive actionable and meaningful insights from our internal data.



Detects inputs from the physical environment, leverages commercially available data, and transmits to another system for analysis.



### Sensors & Data

*Increase ability to detect, respond, and resolve*



Ensures we can get our data to our operators – whether remotely in the field or with cutting edge IT infrastructure.

### Communications

*Improved shared situational awareness*

#### BENEFITS FOR HEADQUARTERS

Increased **strategic awareness** through optimized **risk to resource allocation** and alignment throughout the budget cycle.

#### BENEFITS FOR FIELD COMMANDERS

Improved information flows, increased **operational awareness**, and enhanced **resource allocation**.

#### BENEFITS FOR THE FIELD

Enhanced officer and agent **safety** and **effectiveness** across all of CBP operations.



# Transitioned Capabilities



## TEAM AWARENESS KIT



### SHARED SITUATIONAL AWARENESS

- MOU w/ Bargaining Unit complete
- sUAS, MSC, Sensors (ICAD), and Lattice integrated
- Somewear SATCOM radio integrated
- *\*Supported, not led, by CBP INVNT*



## ANDURIL TOWERS



### AUTONOMOUS SURVEILLANCE

- 14 San Diego Sector
- 18 Laredo Sector – Scheduled September Deployment
- 5 tower procurement for El Centro pending
- 21 Tower procurement for TX planned for Q4

## ECHODYNE RADAR



### LOW COST RADAR

- Primary component on Anduril Towers
- 1.5 mile human detection
- Integrating on Northern Border Towers (VT) and Agent Portable Surveillance System (Argos)
- Follow-up IQT work program planned to double range

## tamr Data Analytics

### ENTITY RESOLUTION

- Multi-layered entity resolution deployed within open source GTAS software
- Incorporated into upcoming GTAS deployments



## Data Robot

### DATA SCIENCE / TARGETING

- Enables “force multiplication” of data scientists to rapidly test and build new algorithms across the full spectrum of risk analysis
- CBP purchased and deployed 80 licenses



### NETWORK VISUALIZATION / MONITORING

- Provides network visualization and modeling for the Enterprise Networks & Technology Support Directorate.
- Improves network stability, decreases troubleshooting time, and improves network security
- CBP is deploying Forward Networks on approximately 60% of the network, including the entire southwest border, coastal networks, and datacenters.



# How INVNT Does Business



# How INVNT Does Business



- › Access to robust startup pipeline / Non-FAR based mechanism
- › 3-6 months to initiate once a capability is identified
- › Responds directly to CBP Needs, but also serves DoD & IC



- › Prototyping, T&E, and Procurement (OTA)
- › 6-9 month for new topics, very fast for existing procurement OTAs
- › Pursue capabilities with DoD / CBP overlap



- › Focuses on early stage startups
- › \$200k per award for a total of \$800k plus \$5M in procurement
- › Responds directly to CBP Needs, mission is to serve DHS components



NDA 880

- › CBP non-FAR based authority derived fro 2016 NDAA
- › Commercial Solution Development, Prototyping, and Procurement
- › Up to \$10M per award



# FY19 Status

Goal	Status
<p>Obligate FY 19 Funding</p> <ul style="list-style-type: none"><li>• \$28M enacted for Innovative Towers</li><li>• \$15M enacted for Innovative Technology in FY19</li></ul>	<ul style="list-style-type: none"><li>• FY19 93% obligated</li><li>• FY18 100% obligated</li><li>• Executing \$5M in funding from DHS/CBP partners</li></ul>
<p>Innovative Tower Deployment</p>	<ul style="list-style-type: none"><li>• Autonomous Towers</li><li>• Tethered sUAS</li><li>• Enhancing Capabilities (ex. LiDAR)</li><li>• Counter sUAS (DIU Partnership)</li></ul>
<p>Utilize 880 Authority</p>	<p>First ever DHS award made on TSUAS, next Digital Towers (Non-Terrestrial Officer Safety) solicitation soon</p>
<p>Expand Strategic Partnerships</p>	<p>Formal partnership with Defense Innovation Unit (DIU)</p>
<p>Build a Robust Innovation Pipeline</p>	<p>Over 30+ active projects, 10 in operational pilots, 5 fully transitioned</p>



## CBP Innovative Towers

**Future 880**

**Digital Towers**  
Cost effective, non-terrestrial, commercial solutions that deliver relevant data about potential border security threats.

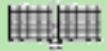


**Closed 880**

**High Altitude**  
Persistent surveillance/communications with flexible deployment within multiple domains and remote locations providing tactical, mobile, and fixed applications for CBP operations.



**Autonomous Land and Maritime**  
Low cost, relocatable, and autonomous surveillance



**Enhancing Capabilities**  
Capabilities to enhance the border security surveillance mission: Communications, Analytics, Machine Learning and Artificial Intelligence.

**Shared Situational Awareness**  
All operational data created by innovative towers technology feeds our shared situational awareness.





- First of the 880 authority in DHS
  - Up to \$10M ceiling
- Enables us to reach companies of ALL sizes with a non-FAR based, nimble authority
- Focused on low altitude (below 400 feet) surveillance and communication technologies to support the border security mission
- Partnered with CBP sUAS PoR and DHS S&T
- First awards announced:
  - Hoverfly
  - Lockheed Martin
  - Additional awards pending Q1 FY20



- Will be our second usage of the 880 authority in Q1FY20
- Delayed due to unforeseen circumstances, but Pre-Solicitation notice is live!
  - <https://www.fbo.gov/spg/DHS/USCS/PDDC20229/CSOP-BP-GS-000003/listing.html>
- Looking for innovative capabilities to simulate a tower's benefit in places where we can't physically deploy a tower. Examples could include:
  - Commercially available data streams
  - Space-based capabilities such as synthetic aperture radar (SAR) and high resolution imagery
  - Computer vision and similar algorithms that enable autonomous change detection
  - Small unmanned aircraft systems as-a-service
  - Maritime unmanned systems
- Key focus on privacy best practices
- But – cannot be a permanent CBP infrastructure footprint – must be “digital”
- There are many ways this data could be provided to CBP – we are interested in creative, innovative, and operationally relevant concepts



# Opportunities to Partner

## Funding 2020 - TBD

- Initial HAC markup for CBP Innovation in \$60M - \$80M
- But nothing is done until there is a full bill passed and signed

## Operational Priorities

- Continued Deployment of Innovative Towers
  - Autonomous Land and Maritime
  - High Altitude
  - Digital
  - Enhancing capabilities
- Counter SUAS
- IT infrastructure technologies
- Artificial intelligence/machine learning for data analytics





## How can industry help with future challenges?

- Labeled training data – with the push for AI, we need curated, labeled data sets – which largely do not exist
- Synthetic data – a possible alternative to the above as a way to deal with sensitive data types (i.e., LES data)
- “Strategic” software integration – all of our current integrations are “one-off” – but as INVNT grows, we are evaluating a more strategic solution
- Internet of Things – similar to software integration – we want to expand our capabilities to be more strategic to leverage this critical capability



# U.S. Customs and Border Protection

Questions...

---



# Developing Cooperative International Partnerships



## **E. Erik Moncayo**

Deputy Assistant Commissioner, Office  
of International Affairs



# How Data & the Cloud Support the CBP Mission



**Clyde Relick**

VP of Strategic Client Solutions, **TREX**



**Ed Mays**

Executive Director, Enterprise Data Management and Engineering Director







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# The New Era of Digital Modernization- OIT



## **Frontis Wiggins**

Director, Strategic Engagement,  
Northrop Grumman



# Key Note Speaker



## **Sanjeev “Sonny” Bhagowalia**

Deputy Assistant Commissioner, Office  
Of Information and Technology (OIT)



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# GTSC Upcoming Events:

**USCIS Day**

October 28, 2019, Arlington, VA

**GTSC & ISWG DHS Personnel  
Security Forum**

November 12, 2019

Register for all events at: <http://gtscoalition.eventbrite.com/>



Thank You For Joining Us  
Today!

See you at USCIS DAY!!

