SVIP DEMO WEEK

2021 Program

SILICON VALLEY INNOVATION PROGRAM

Homeland Security — Science and Technology

HELLO FROM MELISSA

Welcome to the inaugural virtual Silicon Valley Innovation Program (SVIP) Demo Week! We are excited to showcase our portfolio of SVIP startups and the valuable partnerships with the global innovation community and the DHS components we support.

This series will demonstrate how SVIP-funded startups have incorporated DHS requirements into their commercial products, expanding their capabilities and providing DHS operational components access to innovative products that solve their most critical mission needs.

These startups have a range of products they are working on for Customs & Border Protection, DHS Privacy, Federal Protective Service, National Biosurveillance Integration Center, Transportation Security Administration, U.S. Citizenship and Immigration Services, U.S. Coast Guard, and the U.S. Secret Service.

Thank you to all of our startups, keynote speakers, and panelists for their participation and bringing information about the important work we do to safeguard our homeland and inspiration to our current and future innovation communities!

Warm regards,
Melissa Oh
SVIP Managing Director

DEMO WEEK SCHEDULE

TUESDAY, SEPTEMBER 14
AVIATION SECURITY AND SEAMLESS TRAVEL

12:00 PM	**Welcome from Melissa Oh, SVIP Managing Director**
12:10 PM	**Opening Remarks from Kathryn Coulter Mitchell, Senior Official Performing the Duties of the Under Secretary for Science & Technology**
12:25 PM	**Keynote from John Tien, DHS Deputy Secretary**
12:35 PM	**SVIP Overview, Aviation Security & Seamless Travel Introduction**
12:50 PM	**Aviation Security & Seamless Travel Demos**
	iProov, Kiana, Crowdvision, Deep North, Lauretta AI, Analytical AI, Synthetik, Cignal
3:15 PM	**Panel: Innovation in Aviation**
4:00 PM	**Adjourn Day One**

WEDNESDAY, SEPTEMBER 15
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES

12:00 PM	**Welcome from Anil John, SVIP Technical Director**
12:10 PM	**Keynote from Tiana Laurence**
12:30 PM	**Blockchain and Distributed Ledger Technologies Demos**
	Transmute, Mavennet, Mesur.io, Danube Tech, SecureKey, MATTR
3:00 PM	**Panel: Choice and Global Interoperability**
3:40 PM	**Adjourn Day Two**

THURSDAY, SEPTEMBER 16
BORDER & MARITIME SECURITY
ARTIFICIAL INTELLIGENCE/MACHINE LEARNING

12:00 PM	**Welcome from Ron McNeal, SVIP Transition Director**
12:10 PM	**Keynote from USCG Admiral Douglas Schofield**
12:30 PM	**Border and Maritime Security Demos**
	Planck Aerosystems, Echodyne, HaloLights, Kenautics, TranslateLive
2:10 PM	**AI/ML Demos**
	Tamr and Bastille
2:55 PM	**Panel: AI, Society's Collective Approach to Getting it Right**
3:35 PM	**Adjourn Day Three**

FRIDAY, SEPTEMBER 17
COVID-19 RESPONSE AND FUTURE MITIGATION

12:00 PM	**Welcome from Darryl Kramer, SVIP Associate Director**
12:10 PM	**Keynote from DHS Chief Medical Officer Dr. Pritesh Gandhi**
12:30 PM	**COVID-19 Response Demos**
	Mesur.io, Bloodstone Division, Farmspace, AppCensus
1:45 PM	**Panel: Global Perspectives on Pandemic Future Proofing**
2:25 PM	**Closing Remarks from Melissa Oh**
2:30 PM	**Adjourn SVIP Demo Week**

DAY 1 | SEPTEMBER 14
Aviation Security & Seamless Travel

OPENING REMARKS

KATHRYN COULTER MITCHELL
SENIOR OFFICIAL PERFORMING THE DUTIES OF THE
UNDERSECRETARY FOR SCIENCE & TECHNOLOGY

KEYNOTE SPEAKER

JOHN K. TIEN, DEPUTY SECRETARY
U.S. DEPARTMENT OF HOMELAND SECURITY

ANALYTICAL AI
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www.analyticalai.com

Analytical AI develops novel artificial intelligence solutions. Analytical AI is working with TSA to achieve rapid and accurate classification of Stream of Commerce items in passenger carry-on bags. Currently, they are implementing and testing their algorithm on an Original Equipment Manufacturer (OEM) emulator and aim to have this adaptive algorithm model working in field testing and airport operations soon.

CROWDVISION
& COPENHAGEN OPTIMIZATION
sam.kamel@skyfii.com
hounsgaard@copopt.com
www.crowdvision.com

CrowdVision is an expert in computer vision enabled measurement and analysis of human activity in airports and other crowded locations. Copenhagen Optimization specializes in analyzing and planning airport operations on strategic, tactical, and operational levels. Together, they are combining their expertise to improve the effectiveness and efficiency of TSA and CBP operations with highly accurate, trusted data, and data-optimized tools.

CIGNAL
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www.cignal.io

Cignal develops cutting-edge capabilities for the rapid training, evaluation, and deployment of advanced CT and X-ray inspection security systems. Cignal is developing the ability to generate a diverse library of high-fidelity synthetic CT baggage data to detect improvised weapons, incendiaries, and explosives as well as tools that automatically create tampered versions of synthetic objects.

DEEP NORTH
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www.deepnorth.com

Deep North is an AI video analytics company that converts video footage from physical locations into actionable insights. Deep North has been working with TSA to apply AI and Computer Vision based solutions to increase security effectiveness at airports while reducing wait times to improve passenger experience in the wake of the COVID-19 pandemic and necessary social distancing requirements.

DAY 1 | SEPTEMBER 14
Aviation Security & Seamless Travel

IPROOV
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www.iproov.com

iProov is the world leader in using secure biometric face authentication to verify that a remote online user is the right person, a real person, and authenticating right now. iProov is integrating their technology with CBP apps and systems to facilitate self-service completion of checks by travelers when crossing land borders.

LAURETTA AI
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www.lauretta.io

Lauretta AI uses state of the art computer vision solutions for the security, industrial, and property industries. Using privacy preserving technology, Lauretta's system can provide personalized instructions to allow passengers to smoothly navigate a self-service screening process while limiting contact between TSA agents and passengers.

KIANA
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www.kiana.io

Kiana is a cloud-based SaaS company providing intelligent site, asset behavior management, health, and safety services to organizations worldwide. Kiana provides a video interview application that connects to biometric analysis. This mobile application allows CBP to view and locate visitors when they arrive, the ability to request a CBP interview, and manage entry points remotely.

SYNTHETIK
brewer@synthetik-technologies.com
www.synthetik-technologies.com

Synthetik develops machine learning, computer vision, and data science applications for commercial and federal clients. The SynthetikAI platform provides the TSA with high-quality annotated data to train Automatic Threat Recognition models, to include machine-assisted annotation, digital unpacking of existing bags, and digital repacking to generate completely new synthetic bags.

Panel: Innovation in Aviation

The aviation industry is seeing many innovative disruptions from apps that will tell you which security gate line is shortest to facial scanners replacing boarding passes. This panel will discuss their views on top technology trends in the aviation sector but also in orthogonal sectors that could be leveraged to improve our travel experiences.

CHRIS RUNDE
MODERATOR
Director, Corporate Strategy and Innovation, Ross & Baruzzini

CHRIS MCLAUGHLIN
Executive Vice President of Operations, Dallas Fort Worth Airport

AMIR AMIDI
Managing Partner, Travel and Hospitality Center of Innovation at Plug and Play Tech Center

DAN MCOY
Chief Innovation Officer, Transportation Security Administration

DAY 2 | SEPTEMBER 15
Blockchain and Distributed Ledger Technologies

KEYNOTE SPEAKER
TIANA LAURENCE
GENERAL PARTNER AT SEED CATALYST, AUTHOR, AND FOUNDER

DANUBE TECH
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www.danubetech.com

Danube Tech is using modern decentralized identity technologies such as Decentralized Identifiers (DIDs) and Verifiable Credentials to build decentralized identity technologies to implement a digital version of the U.S. Permanent Resident Card, while avoiding vendor lock-in.

MATTR
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www.mattr.global

MATTR provides infrastructure for verifiable data and digital trust. Extending earlier work on appointment and visa credentials and digital vaccination certificates, MATTR's is now focused on building generalized capabilities to support the issuance of "any type" of verifiable credentials in the context of the USCIS environment.

DIGITAL BAZAAR
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www.digitalbazaar.com

Digital Bazaar produces Web Standards-based software products that are applicable in the payments, identity and access management, digital credentialing, and decentralized security markets. In preparation for production deployments of their citizenship and age verification technologies, Digital Bazaar is Red Teaming the VeresTM decentralized identity ecosystem during their Phase 3 with the SVIP.

MAVENNET
ana@mavennet.com
www.mavennet.com

Mavennet is a product startup and a venture studio, based out of Toronto, focusing on building applications for enterprises and big organizations using emergent technology like blockchain and AI. Currently, they are developing a platform called Neoflow to trace cross-border movements of oil and gas from Canada to the US, which allows industry to exchange pre-arrival data securely and share the intent to transit or import oil and gas products, in real-time.

DAY 2 | SEPTEMBER 15
Blockchain and Distributed Ledger Technologies

MESUR.IO
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Using AutoML and AI, mesur.io has developed the Open Food Trust™ platform to facilitate visibility into the food supply chain using open data standards. The Open Food Trust™ platform brings traceability, field conditions, and food risks together in one place, so that the farmer, food processors, and global leaders in food delivery can access their data, record the information they need, while meeting current and future regulations, and share that data securely with appropriate regulatory agencies.

TRANSMUTE
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www.transmute.industries

Transmute secures critical trade data related to suppliers, products, and shipments by leveraging open standards-compliant decentralized identifier-based technology to streamline and enforce identity authorization via key-based signatures, cloud-wallets, verifiable credentials, and immutable logging. Transmute is working with CBP to provide them with actionable data regarding steel products and e-commerce shipments.

SECUREKEY
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SecureKey provides identity solutions that build highly scalable trusted identity networks which enables organizations to efficiently deliver high-value secure and privacy-assured services to millions of consumers. SecureKey is developing an interoperable system based on W3C standards that allows individuals to safely proof their identity to and exchange their identity attributes with various authorized organizations.

Panel: Choice and Global Interoperability

Ensuring the availability of a global competitive marketplace of diverse and standards-based interoperable solutions are critical for both government and the private sector to deliver cost effective and innovative credentialing solutions that provide choice, personal control, security, and privacy. This panel will provide a global perspective on how World Wide Web Consortium (W3C) standards are being used in various contexts and the approaches being taken to ensure global, cross-border interoperability of solutions.

HEATHER VESCENT
MODERATOR
Credential Community Group Chair, World Wide Web Consortium

OLIVIER BRINGER
Head of Unit, Next Generation Internet European Commission

TIM BOUMA
Senior Policy Analyst, Treasury Board Secretariat, Canadian Government

ANIL JOHN
Technical Director, Silicon Valley Innovation Program, DHS

KEYNOTE SPEAKER

ADMIRAL DOUGLAS SCHOFIELD, ASSISTANT COMMANDANT FOR ACQUISITION & CHIEF ACQUISITION OFFICER, UNITED STATES COAST GUARD

ECHODYNE

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Echodyne created the Metamaterial Electronically Scanning Array (MESA) radar system. This system uses metamaterials—engineered, artificial materials with properties not found in nature—to build a new architecture for an all-electronic scanning radar system. The use of metamaterials means MESA has significantly lower cost, size, weight and power-usage than other radar systems. These radars are being piloted with the potential of incorporation into border surveillance and counter-UAS programs.

HALOLIGHTS

developer@halolights.net
www.halolights.net

HaloLights™ designs, develops and deploys smart K9 wearable technologies focusing on canine biology, micro sensors and communications systems. C.H.A.M.P., (Canine Health Analytics Monitoring Platform) records working K9's critical health & activity data—such as heart rate, temperature, humidity, & GPS— to provide handlers and medical professionals with a holistic view of the working canine's health status in a user-friendly interface, ensuring the safety and wellbeing of the canine..

KENAUTICS

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www.kenautics.com

Kenautics focuses on specialized underwater diver navigation, tracking, and subsea imaging systems, as well as autonomous unmanned maritime systems. Kenautics is currently working with the USCG to develop a buoy system for the purpose of contraband interdiction at sea, as well as hazard, spill, or object marking.

PLANCK

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www.planckaero.com

Planck Aerosystems designs, develops, builds, and deploys advanced solutions to enable unmanned mobility for surveillance, reconnaissance, and force protection. Through four phases of the SVIP, Planck developed an autonomous, truck-based small unmanned aircraft system (UAS) for US Border Patrol agents. The system allows agents to launch, operate, and recover small UAS while maintaining mobility in the off-road environment.

DAY 3 | SEPTEMBER 16

Border and Maritime Security & AI/ML

TRANSLATE LIVE
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TranslateLive is creating hardware and software that allows people to easily and instantly have a real-time, natural back and forth conversation no matter the language, disability, device or location. They are developing a 2-sided 810G mobile device to meet USCG requirements for an offline translation capability in over 120 languages, ideal for mission-critical situations and certified for use in classified hazardous locations.

BASTILLE
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www.bastille.net

Bastille uses software-defined radio (SDR) Sensor Arrays to provide full visibility into the known and unknown mobile, wireless, and Internet of Things (IoT) devices inside an enterprise's airspace. Critical infrastructure components increasingly use wireless and radio frequency (RF) networking to transfer data and to connect to control consoles. Through this DHS project, Bastille has created a way for organizations to get comprehensive RF network traffic visibility so that they can detect and mitigate RF threats.

TAMR
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Tamr leverages the scalability of the cloud and the analytic power of machine learning to enable large enterprises to master data for better analytics and operational decision-making. Tamr is working with CBP's Office of Trade to help establish a holistic view of trade entities to help predict and identify threats and opportunities to facilitate compliant trade. Tamr has also developed data visualization and machine learning capabilities to identify opportunities for efficiencies and cost savings among CBP's contracts.

Panel: AI, Society's Collective Approach to Getting It Right

Artificial Intelligence and Machine Learning (AI/ML) technologies are globally being sought by many across both government and the private sector. However, these technologies bring many concerns about proper and ethical uses, their maturity, and if they are being used appropriately in the many use cases. This panel will discuss all these areas from a variety of viewpoints with a goal of informing and educating both government and the tech community about tangible actions and approaches to consider now so that the benefits of AL/ML technologies are helpful to society.

**GREG OSLAN
MODERATOR** Strategic Advisor, Board Director, Investor, former Commercial Executive for DIU and the Joint AI Center

JUSTIN BROOKMAN
Director, Technology Policy, Consumer Reports

LYNN PARKER DUPREE
Chief Privacy Officer, Department of Homeland Security

JON CALLAS
Director of Technology Projects, Electronic Frontier Foundation

MARK WEATHERFORD
Chief Strategy Officer, National Cybersecurity Center

DAY 4 | SEPTEMBER 17
COVID-19 Response & Future Mitigation

KEYNOTE SPEAKER

DR. PRITESH GANDHI, DHS CHIEF MEDICAL OFFICER

APPCENCUS

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AppCensus has developed a platform for analyzing the runtime behaviors of mobile apps and assessing their security and privacy risks at scale. They are adapting this platform to develop an on-demand, automated mobile-app testing system to enhance the security and privacy testing of publicly available android and iOS digital contact tracing apps for the public, government and industry.

FARMSPACE

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www.fss.ventures

Farmspace Systems, LLC, leads a consortium, composed of two small businesses, along with the University of Tennessee Health Science Center supporting through a research collaboration agreement. The consortium is developing a noninvasive infectious disease screening portal that captures and analyzes aerosolized exhaled breath droplets.

BLOODSTONE DIVISION

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Bloodstone Division along with Kingfisher Medical proposes a new use for an existing U.S. Environmental Protection Agency (EPA)-approved active ingredient for use as an anti-viral, or virucide. The project seeks to develop the data needed for this new use by assessing residual viricidal efficacy, along with the effectiveness of its application on personal protective equipment (PPE) and use for surface cleaning, and as a hand sanitizer.

MESUR.IO

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mesur.io has adapted their Earthstream Platform to provide DHS and the National Biosurveillance Integration Center (NBIC) with quantitative data related to an outbreak or emergence of new or existing biological threats. The platform automatically identifies, extracts and links case related data with other relevant information, such as demographics and travel, for easy analysis and improved surveillance.

DAY 4 | SEPTEMBER 17

COVID-19 Response & Future Mitigation

Panel: Global Perspectives on Pandemic Future Proofing

As the world continues to battle the COVID-19 pandemic, many countries tackled this public health crisis in various ways, with different cultural and operational approaches. This panel will offer global perspectives of important considerations for planning for, addressing and mitigating future pandemics or health crises, and how lessons learned from today will inform tomorrow on a global, and perhaps collaborative level.

DR. TOD COMPANION MODERATOR

Program Manager Coordinator, DHS S&T

DIRECTOR JINHA KIM

Center for International Cooperation Policy, Korea Institute of S&T Evaluation and Planning

CAROL CUNNINGHAM,MD

State Medical Director, Ohio Department of Public Safety, Division of EMS

PROFESSOR IAN TOWN

Chief Science Advisor, New Zealand Ministry of Health

MR. CHEN YEANG TAT

Deputy Chief Executive (Operations), Home Team Science & Technology Agency, Singapore Government

SVIP | MEET THE TEAM

MELISSA OH
Managing Director

ANIL JOHN
Technical Director

RON MCNEAL
Transition Director

DARRYL KRAMER
Associate Director

ANGELA CARTER
Innovation Support Associate

CHARLES DOWNING
Innovation Support Associate

CHI HICKEY
Innovation Support Associate
(Technical Director)

PAUL HUNT
Innovation Support Associate
(Legal)

MARY-GRETCHEN JOHNSON
Innovation Support Associate
(Outreach)

JENNIFER MEKIS
Innovation Support Associate
(Finance)

MARK PROTACIO
Innovation Support Associate
(Transition Director)

YOLANDA SAUNDERS
Innovation Support Associate

ABOUT DHS SCIENCE & TECHNOLOGY

As the research and development (R&D) arm of the Department of Homeland Security (DHS) and the Science Advisor to the Secretary, the **Science and Technology Directorate (S&T)** conducts basic and applied research, development, testing, and evaluation activities in alignment with the DHS mission. S&T works for, and with, customers such as DHS Components, first responders at all levels of government, and other members of the homeland security community to address a broad spectrum of current and emerging threats such as pandemic response, flood resilience, drones, opioid epidemic, biometrics, and beyond. Uniquely positioned with access to today's innovators and front-line homeland security professionals, S&T leverages a network of partners across the scientific community to provide the experiences, resources, and knowledge products necessary to help prevent, respond to and recover from hazards and threats.

Innovation is the driving force of the work at S&T and S&T casts a wide inclusive net to find and use the best technologies. The **Office of Industry Partnerships' (OIP)** role in the DHS Science and Technology Directorate (S&T) is to engage industry and facilitate partnerships between S&T and private sector innovators to advance commercial technology solutions that address homeland security challenges. OIP manages a variety of contracting mechanisms and funding opportunities to support S&T's partnership goals with the private sector and works to transfer federal research and development (R&D) technology products to the commercial market for use by homeland security operators.

The **Silicon Valley Innovation Program (SVIP)** is one of S&T's innovation funding programs that expands DHS's reach to find new technologies that strengthen national security with the goal of reshaping how government, entrepreneurs and industry work together to find cutting-edge solutions. The program reaches out to innovation communities across the nation and around the world to harness the commercial R&D ecosystem for technologies with government applications and to co-invest in and accelerate technology transition-to-market. SVIP offers U.S. and international start-ups up to $2M in non-dilutive funding over 24 months to carry out prototype projects and possibly transition successful projects to production.

Homeland
Security

Science and Technology