usignite

Building Smart Bases and Communities

Driving Community Development and Innovation

February 2020

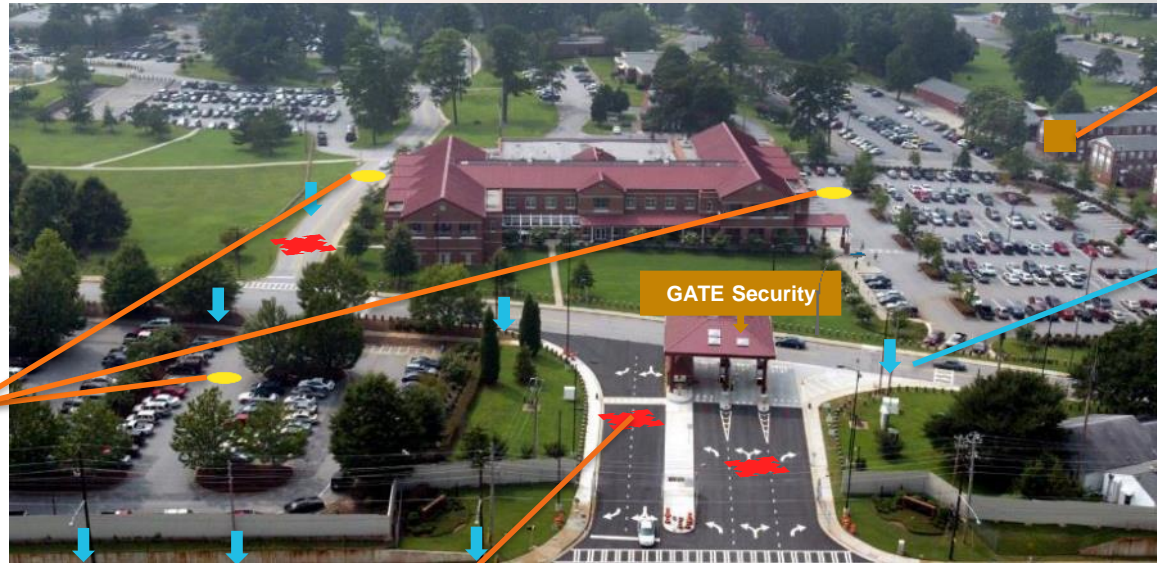# US Ignite: Nonprofit Overview

Background: Nick Maynard, PhD

- Former Assistant Director of the White House Office of Science and Technology Policy
- AIM Integrated Photonics Institute over $610 million in funding from DoD, NY, and industry partners
- Networking lead for DOD's DPAC for assessing challenges to the U.S. industrial base
- Data analysis platform for DOD, ODNI, and NIST to model future telecom sector trends

Platform for Advanced Wireless Research (PAWR)

- $100M program to build 4 city-scale testbeds for next-gen wireless technologies
- Includes $50M in funding from 30 global industry leaders
- US Ignite has selected first two winners: New York City (mmWave) and Salt Lake City (Massive MIMO)

Engineering a Smart Base

Satellite Communications
Terrestrial Broadcast
Navigation
Adaptive Cruise Control

Delivery Vans (DOD/Academia)

Base Public Safety

Delivery Vans

GATE Security

Base Data Center
US Ignite, Base, City

New Light fixtures with sensor infrastructure (US Ignite/Academia)

Commercial AV shuttles

Gov't/Academic AV shuttles

City

Ft. Carson and Colorado Springs are Unique with their Smart City Strategies

Transportation Challenges

- Over 90% of drivers are single occupancy with over 20,000 commuters

- Limited ride-sharing, car-sharing, and shuttles

- Previous shuttle service: less than 60 riders per day from nearby transit center to base – shuttle was discontinued

- Slow gate processing creates long wait times for commuters

- Base and community have budget constraints for new efforts

- Public safety concerns for more than 60% of service members who live off base and have to commute to work

Project Scope

AV Deployment and Operations

- AV pilot vehicles
  - Deploy 2 AV shuttles
  - Operate taxi point-to-point services
  - Add on-base delivery vans and other new vehicles as technologies mature
- Pilot footprint
  1. Start with on-base shuttle and taxi
  2. Add off-base commuter shuttle and taxis to prove out demand
  3. Combine AVs with other new technologies, like facial recognition to reduce security screening times

Data Gathering and Impact Assessment

- Use pole-attached and other sensors to track traffic, safety, pedestrians, and environmental impact
- Link to Colorado Springs smart sensors once deployed:
  - Reduce pedestrian accidents, traffic congestion, and vehicle pollution
  - Link to City AV pilots deployed
- Work with university and industry partners to gather data to assess ROI and impact
- Use assessment to revise pilot program approach while scaling to other bases

NDAA - DoD Smart Bases
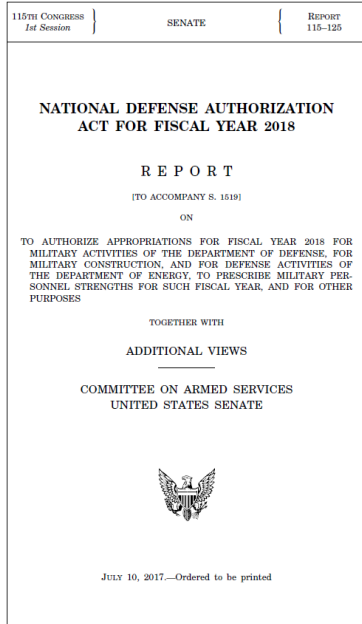
Efficient use of non-tactical government owned transportation
   The committee notes that significant cost savings could be achieved through the more efficient use of non-tactical government-owned mobility and transportation on military installations. Notably, the Department of Defense spends roughly $435 million each year for non-tactical passenger vehicles and light trucks, with a use rate of just seven percent.
   To address these inefficiencies, the committee encourages the Secretary of Defense to examine the Department's approach to providing non-tactical transportation. New technologies and approaches should be utilized to meet department needs while also improving overall efficiency. The recent Department of Transportation Smart Cities Challenge provides useful insight to innovative approaches that might be beneficial to the Department of Defense. The committee also encourages the Secretary of Defense to incentivize military installations to partner with industry and local communities to explore mutually beneficial transportation opportunities.

Ft. Carson - $5M Smart Bases Funding in FY2019

TITLE IV

RESEARCH, DEVELOPMENT, TEST AND EVALUATION

Funds appropriated under this title provide the resources required to conduct a program of research, development, test and evaluation, including research in basic science, applied research, advanced technology development, demonstration and validation, engineering and manufacturing development, and operational systems development.

The President's fiscal year 2019 budget requests a total of $91,056,950,000 for research, development, test and evaluation appropriations.

SUMMARY OF COMMITTEE ACTION

The Committee recommends research, development, test and evaluation appropriations totaling $95,131,819,000 for fiscal year 2019. This is $4,074,869,000 above the budget estimate.

Committee recommended research, development, test and evaluation appropriations for fiscal year 2019 are summarized below:

SUMMARY OF RESEARCH, DEVELOPMENT, TEST AND EVALUATION APPROPRIATIONS
[In thousands of dollars]

Account	2019 budget estimate	Committee recommendation	Change from budget estimate
Research, Development, Test and Evaluation:			
Research, Development, Test and Evaluation, Army	10,159,379	10,812,458	+653,079
Research, Development, Test and Evaluation, Navy	18,481,666	18,992,064	+510,398
Research, Development, Test and Evaluation, Air Force	40,178,343	40,896,667	+718,324
Research, Development, Test and Evaluation, Defense-Wide	22,016,553	24,049,621	+2,033,068
Operational Test and Evaluation, Defense	221,009	381,009	+160,000
Total	91,056,950	95,131,819	+4,074,869

REPROGRAMMING GUIDANCE FOR ACQUISITION ACCOUNTS

The Secretary of Defense is directed to continue to follow the reprogramming guidance as specified in the report accompanying the House version of the Department of Defense appropriations bill for fiscal year 2008 (House Report 110–279). Specifically, the dollar threshold for reprogramming funds will remain at $20,000,000 for procurement and $10,000,000 for research, development, test and evaluation.

48	Joint Service Small Arms Program	5,885	22,805	+16,920
	Program increase: Soldier lethality			+16,920
50	Environmental Quality Technology Demonstrations	9,136	29,136	+20,000
	Program increase: Autonomous transport innovation			+5,000
	Program increase: Environmental sensors for explosives			+2,000
	Program increase: Rapid safe advanced carbon nanotechnology materials			+8,000
	Program increase: Smart bases			+5,000
51	Military Engineering Advanced Technology	25,864	95,464	+69,600
	Program increase: Additive manufacturing/3–D printing			+2,000
	Program increase: Advanced polymer development			+20,000

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Base and Community Impact

- Smart bases are uniquely well-positioned to overcome traditional implementation obstacles to smart technologies in cities (overlapping and competing jurisdiction between city, county, and state governments, or diffused leadership authority).

- Equipping a single US military base with various integrated smart solutions, small investments now to prove the smart base concept should pay off down the road.

- The military has the opportunity to serve as an important incubator for some of these emerging technologies that can be reintroduced to the civilian market after being refined in the military to make for a safer nation.