

Developing applications for the public safety marketplace:

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Key Presentation Themes

- The Academic Community Is Embracing the Importance of the Public Safety Mission
- Unique Public-Private Partnerships Are Being Formed to Prepare a Future Workforce
- Several Exciting Federal, State and Local Safety Public Safety Projects are Underway
- 2015 Will Bring Expanded Collaboration and Transition from the Lab to the Field
- We Welcome Open Participation and the Promise of New Partnerships / Sharing





Lockheed Martin Overview





100 Years of Accelerating Tomorrow





Nationwide Innovation Enabled by Deterministic Pathways





Bowie State University's Signature Program *Featuring Career Pathways to STEM and Related Professions*



- Letters of Congressional Support and State Proclamations
- Endorsed by the County Executive and Public Safety
- Supported by Lockheed Martin and Several Partners

Inspire Achievement – Incentivize Progression – Innovate the Future

Emerging Technology Forum

Maryland FiRST BSU Project

State of Maryland Value Statement:

- Collaborating with Bowie State University, Lockheed Martin, Motorola, Verizon, Prince Georges County and APCO to **establish a unique program** that supports the development of wireless broadband applications and security for the FirstNet public safety broadband network.
- Leveraging students with heightened understanding and intimate knowledge of smart phone applications to serve as valuable resources that **develop a new set of applications** for use in public safety mission critical operations.
- Raising the awareness of **public safety technology** and the needs of the first responder community.

Realizing new or modified applications for first responders and a pool of **highly motivated and uniquely qualified graduates** who can transition to the public or private sector and continue to develop public safety solutions.

Key Considerations:

- ✓ Mission Impact for First Responders
- End-to-End, Multi-Tiered Interoperability
- ✓ Security & Performance
- ✓ Infrastructure Re-use Potential (Cost Avoidance Options)
- Human-Centered Design & Engineering

Primary Output:

- Prioritized list of Public Safety / First Responder Needs
- Feasibility Analysis of Mobility-Enabled Mission Improvement
- ✓ Academic Rubric Aligned with *APCO's Key Attributes*
- Mobile Application Solutions and Experimentation

Relevance to FirstNet:

- ✓ Diverse Federal, State and Local Stakeholder Engagement
- <u>Real</u> Scenarios, <u>Real</u> Data and <u>Real</u> 1st Responder Input
- Emphasis on Proactive Workforce Development & Job Preparedness





Maryland's 12 Goals of Homeland Security Alignment







Mass Casualty/

Hospital Surge



ACUATIO ROUTE

Planning



Backup Power and

Communications



HAZ MAT/Explosive Device Response

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Interoperable **Communications**

- Robust CAD/RMS systems capable of coordinating dispatch data
- Intelligence / Information Sharing
 - Information sharing model that uses common information sharing & produces useful information to users and executive decision makers



Meet the Team

There are a cohort of fellows assigned to several Education Innovation Initiative Projects:

- COSC students work with Dr. Quincy Brown on application development
- CTEC students work with Professor Clarence Ray on Cloud Development and Services
- Each team is supported by a Public Safety Operational SMEs and Industry Technology Experts







Secure Public Safety Application Storage & Computing Architectures

- Common Unified Architectures for Secure Infrastructure, Platform and Software "As a Service"
- Pre-Integrated Capacity for On-Demand "Scale Up" or "Scale out"
- "In place, non-disruptive" disaster recovery, continuity of operations and equipment upgrade



Bowie State University Cloud Service Environment





Public Safety Mobile Application Development







Phase 1: Analysis

Goal: Document/articulate who users are and their key tasks

Products: User Profiles, Task Analysis, Workflow and Use Cases/Scenarios

Key Players: Public Safety Stakeholders, Developers, Architects, System Engineers





Phase 2: Design

Goal: Develop principle layout and design of UI; Analyze "as is" solutions

Products: Design & layout template, low-fidelity (or paper) prototype

Key Players: Public Safety Stakeholders, Developers, System Engineers, Architect/System Owner, <u>Data Custodians</u>





A Practical Design Example from Firestorm 2011





Phase 3: Implement

Goal: Translate refined design into a testable prototype

Products: Interactive, Iterative operational prototype

Key Players: Developers, Architect/System Owner, System Engineers, Public Safety Stakeholders





Phase 4: Evaluate

Goal: Gain feedback from production system

Products: Style Guide, Future Enhancements

Key Players: System Engineers, Architect/System Owner, Developers, Public Safety Stakeholders





Phase 5: Continuously Analyze, Measure, Improve & Report





Rubrics & Frameworks Aligned to Key Attributes



- Public Safety App Foundation
 - Network Connectivity
 - Data Compliance / Integration
 - User Hardware
 - Mobile Application Design
 - Mission Impact
- Exploring the User Environment
 - Public Safety & First Responders
 - The Individuals that Support Them
 - Those That Benefit from <u>Both</u>



Start Secure

Sample Measures and Metrics



Determine Goals, Target Population, Operational Environment Constraints and Criteria for "Breakthrough" Customer Experience

November 4-5, 2014 • San Francisco, CA







Prince George's County Office of Homeland Security Urban Area Security Initiative (UASI)

- Research & Analysis
- Community Outreach
- Faith-Based Networks



Prince George's County Cybersecurity Assessment

- Critical Infrastructure Protection
- Enterprise Risk analysis
- Information Technology controls assessment
- Contingency planning
- Standards and best practices recommendation







Mobile Application Development for Interoperability

- First Responder Needs Assessment
- Inter-agency collaboration and information sharing concept of operation
- Collaboration with Verizon, Motorola and APCO

Emerging Technology Forum





Ten Prince George's County public school students formed two teams of five and joined the Science, Technology, Engineering, Arts and Math program (STEAM). Team **Make A Better Path** tackled high school dropout rates while team **Technology Walker** put their talents to vulnerable populations and their use of technology to promote public safety.

The two teams each selected a problem facing the county and competed in a six-week program. The students were supported by six ei² Fellows.





Crime Incident Trend



November 4-5, 2014 • San Francisco, CA



Public Safety Training, Logistics and Exercises

Extend the Education Innovation Initiative to allow students to reinforce and understand concepts taught in the classroom through field experimentation (alongside Public Safety and First Responders)

Client Operating Systems:

- PC Architecture
- Computer Networking
- UNIX Administration and Operating Systems
- Cloud Computing
- Operating System Security







Key Points in Closure

- Collaborative partnership between Lockheed Martin Corporation and The Maryland Center at Bowie State University
- Focused on closing the achievement gap in STEM and creating pathways to address workforce demands in emerging markets
- Provides a unique opportunity to engage faculty, staff and students in research aligned with national and international programs of significance
- Aligned to institutional strategic goals & objectives; Highlights industry enrichment of current academic teaching & learning
- Establishes local, regional and national brand; Sets a model and best practice for academic-enriched, public-private partnerships



Questions?