

# Proposed Economic Development Start-up Plan for Cyber Security

Economic Development Working Group

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# The Opportunity

- Existing high-value commercial interests in advanced automation involving advanced computer control of physical systems (UAV's, Automobiles, Manufacturing)
- Corresponding calling for Cyber Security innovations focused on physical systems, including avoidance of
  - Harm to the systems
  - Harm from the systems
- Lack of professionals who know a lot about both
  - Physical system designs, technologies, and risks
  - Cyber Security technology

# Leveraging Existing Activities To Get Started

- Vehicle Automation
  - UAV's (MAAP, DoD)
  - Automobile Automation (Autonomy) – VDOT Research, DMV Initiative
- Advanced Manufacturing Related Consortiums
  - CCAM
  - CCALS
- Externally recognized, leading edge, physical system cybersecurity University research

## Areas for Stimulation of Economic Development for Automated Vehicles and Advanced Manufacturing

- **Increasing company and university investments in cyber security innovations**
- **Initiation and advancement of early stage companies focusing on cyber physical system security opportunities**
- **Development of a capable professional work force to innovate, manage, implement, and apply new technologies and policies associated with physical system cyber security innovations**
- **Establishment of shared facilities with equipment to enable hands-on experimental work involving cyber security for physical systems**
- **Incentives for cyber security companies to locate in Virginia**

# Potential Investment Opportunities

- **Stimulus for increasing company and university investments in cyber security innovations**
- **Stimulus for initiation and advancement of early stage companies focusing on cyber physical system security opportunities**
- **Development of a capable professional work force to innovate, manage, implement, and apply new technologies and policies associated with physical system cyber security innovations**
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# **Stimulation for increasing company and university investments in cyber security innovations**

- Support a competitive state co-funding initiative for industry research related to developing a complementary physical system or cyber security capability in the supported companies.
- Start a University research support program for MS/PhD students (supporting 10 one year start-up projects).

# **Stimulus for initiation and advancement of early stage companies focusing on cyber physical system security opportunities**

- Provide funding to smaller companies (2-50 people) to augment their basic product/service line with an initial complementary physical system or cyber security capability.
- Increase MACH37 funding to seed fund cyber physical system security companies. Also increase the % of cyber physical system start-ups supported within the current program.

# Development of a capable professional work force

- Start development and promotion of university-based intern programs (BS,MS) to start in Summer of 2015. Co-funded with industry participants who are interested in supporting interns (start-up program would support initial promotion costs and about 30 students across the state).
- Start development and promotion of what will become self-supporting Professional Ed Programs for delivery next fiscal year.

# **Establishment of shared facilities with equipment to enable hands-on experimental work**

- Support a lab-based initiative as part of education initiatives that allows students, in a controlled environment, to break and protect physical systems.

# Immediate Issues

- Agreeing Upon and Establishing the Budget
  - Relationship to existing initiatives (e.g., workforce development) and budgets
- Management of the Economic Development Initiatives
  - Exploring Potential for Outsourcing Roles to Centers of Excellence
- Engagement of Stakeholders to Contribute to Plan Refinement and Initiation (Industry, Academia, Federal Govt, Trade Associations)
- Planning for Expanded Follow-on Efforts  
Accounting for Actual Progress