



- **Enterprise Center, College of Engineering & Technology**
- **Established July 1997 by the Commonwealth of Virginia**
- **Locations in Suffolk (TCC-Portsmouth) and ODU Norfolk Campus**



- **Faculty/Staff: 100 full & part-time**
- **Multidisciplinary: all six academic colleges at ODU and other universities**
- **\$10M research expenditures in FY 2004**
- **Home of the MS&V Graduate program**

HAMPTON ROADS VIRGINIA

The Worldwide NEXUS for Decision Support and Command & Control MS&V

Gloucester

WernerAnderson, Inc.

Williamsburg

Busch Gardens

College of William and Mary
J.T. O'Connell & Associates, Inc.
Technology Marketing Group

Portsmouth

City of Portsmouth
MYMIC, LLC
Virginia's Center for
Innovative Technology

Newport News

C2Technologies, Inc.
Christopher Newport University
Northrop Grumman, NNS

Suffolk

BMH Associates
City of Suffolk
Downhome Enterprises, LLC
Evidence Based Research, Inc.
General Dynamics
Information Technologies
Harbourview Development Co.

Peninsula Fine Arts Center
SDDC/TEA
Siemens Automotive

Lockheed Martin Global Vision
Northrop Grumman
Pruden Vocational Center
Scientific Research Corporation
Suffolk Public Schools
US Joint Forces Command

Hampton

Aerotech Research (USA), Inc.
Analytical Mechanics Association
Bihrie Applied Research
The Boeing Company
City of Hampton
Computer Sciences Corporation
CUBIC
Gateway
General Dynamics (Veridian)

Hampton Roads Technology Incubator
Logistics Modeling Center
NASA/Technological Applications Group
Raytheon
SAIC
Sun Microsystems Computer Company
TRADOC - US Army
ZEL Technologies, LLC

Chesapeake

Anteon
Chesapeake Computer Systems
Hampton Roads Planning
District Commission

Hampton Roads Utility & Heavy
Contractors Association
Lockheed Martin
Northrop Grumman
Onyx Engineering, Inc.
Virtual Healthcare Systems, Inc.

Norfolk

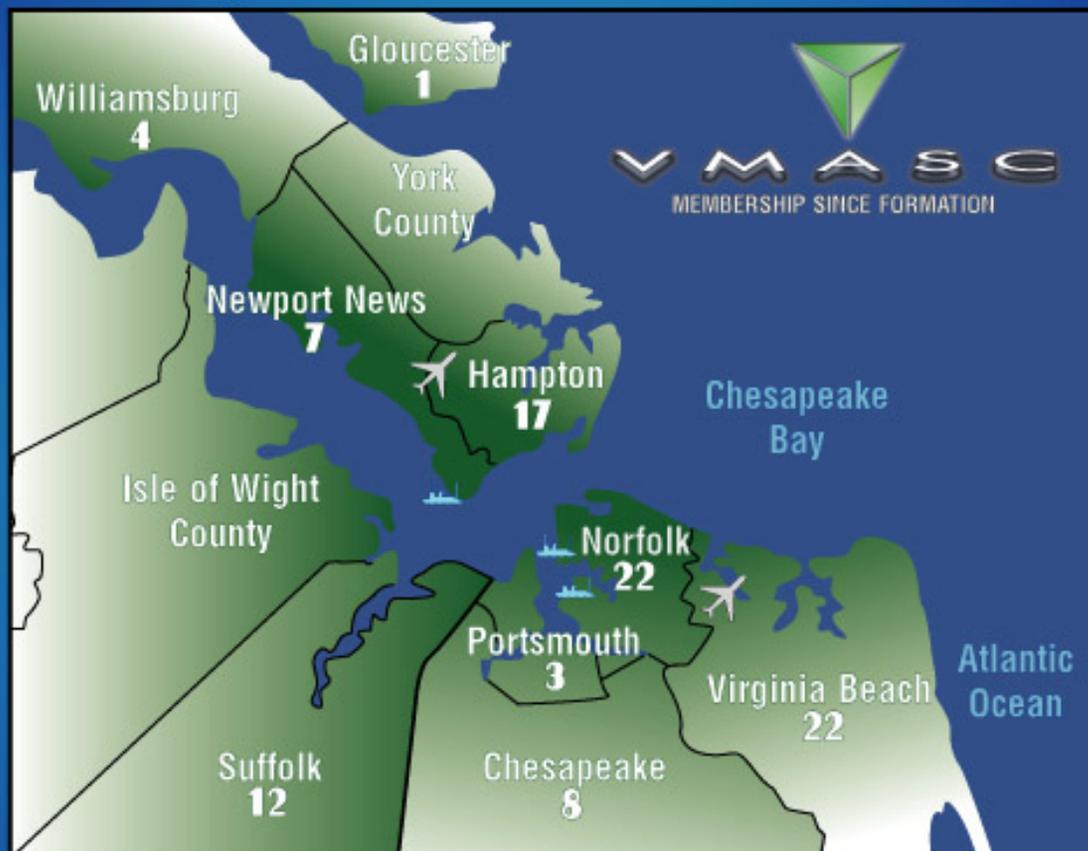
BioMX Corporation
Booz Allen Hamilton
Bon Secours Hampton Roads
Health System
City of Norfolk
Ethicom Associates
Hampton Roads Chamber
of Commerce
Hampton Roads Economic
Development Alliance
Hampton Roads Partnership
IBM
Integrgraph Corporation

Landmark Communications, Inc.
Metro Machine Holdings, Inc.
Metro Video Productions
Norfolk State University
NATO/Supreme Allied Command Atlantic
Nauticus, The National Maritime Center
Old Dominion University
Smart Region Hampton Roads
US Army Corps of Engineers
US Coast Guard
USS Wisconsin Foundation
W R Systems, Ltd.

Virginia Beach

Angle Technologies, Inc.
BMH Associates
CB Richard Ellis
City of Virginia Beach
Continental Realty Services, Inc.
DDL Omni Engineering, LLC
Electronic Systems
Enterprise Dynamics Corporation
Hampton Roads Technology Council
Landmark Design Group
LMV, Inc.

Loyola Enterprises, Inc.
Marah Vison 3, Inc.
NAVSEA Dam Neck
Neal Chaves Photography
Orca Computer, Inc.
Professional Software Engineering, Inc.
Steve Husak & Associates
Virginia Beach Schools
VRCO, Inc.
Virginia Resources
XDIN



MISSION

- Engage in collaborative R&D in Modeling, Simulation and Visualization (MS&V)
- Develop M&S workforce through education programs - Masters/PhD & tailored programs
- Provide M&S technical expertise to government and industry
- Stimulate technology-related economic development

HAMPTON ROADS VIRGINIA

Modeling, Simulation
& Visualization

ECONOMIC IMPACT
CLUSTER ANALYSIS

**Conducted under the sponsorship of the
Hampton Roads Planning District Commission**



RESEARCH OBJECTIVES

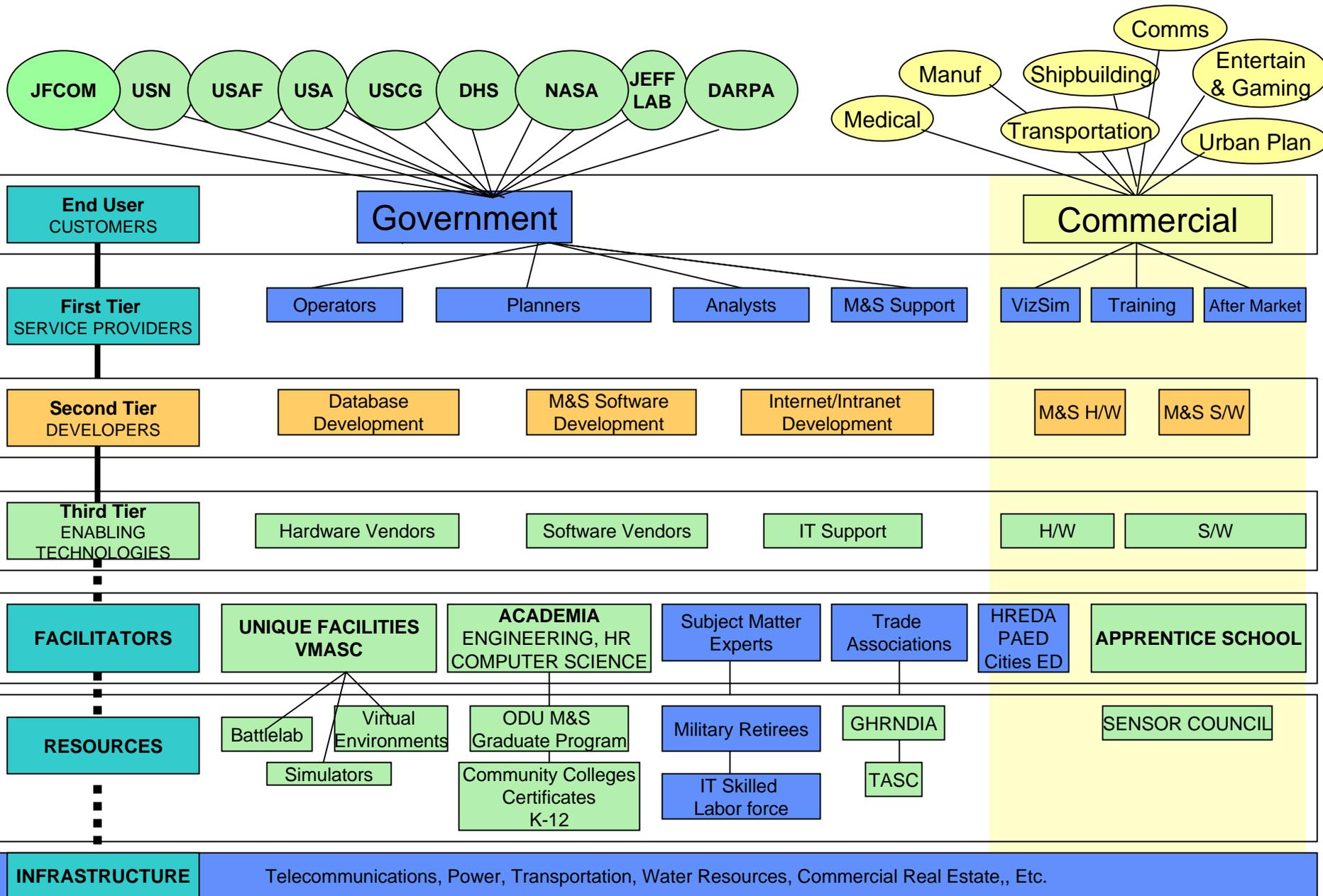
- Measure the economic impact of MS&V within the Hampton Roads Region
- Analyze the depth and breadth of the MS&V industry/DoD cluster
- Collect data on jobs created, income, revenue and investment in MS&V.
- Forecast future MS&V trends and the demand for MS&V.
- Identify gaps & needs in technology, education & labor force requirements.



REGION'S MS&V IMPACT

- Contributed \$413 million output in 2004, to increase to \$764 million in 2009.
- Accounted for \$248 million in GRP in 2004, to increase to \$482 million in 2009
- Generates over 4,000 jobs each year with 7,000 new jobs projected in 2009.
- Annual growth rate of 12.3%
- Average salary \$59,000 twice average in HR
- Total wages of \$99M with 57% from Southside & 41% Peninsula

MODELING, SIMULATION & VISUALIZATION CLUSTER MAP





MS&V Cluster

Strengths

- Decision Support/Command & Control
- M&S for Training – particularly as it relates to Command & Control
- Medical Modeling & Simulation

Growth Areas

- Computer Gaming, entertainment, homeland security, transportation modeling, distribution systems, manufacturing systems



Recommendations

- Develop significant project with stakeholders to raise awareness & interest in MS&V within HR & Commonwealth
- Develop robust command & control training capability for homeland security/disaster recovery to leverage existing JFCOM training capability
- Apply MS&V capabilities to Commonwealth transportation issues
- Coordinated marketing effort



VMASC/EXECUTIVE COMMITTEE LEADERSHIP OF MS&V CLUSTER

Vision:

Hampton Roads Virginia is the worldwide NEXUS for Decision Support and Command & Control MS&V

Concept:

“National Center for Homeland Security/Disaster Recovery Training and Experimentation (HS/DS NCTE)”

"National Center for Homeland Security/Disaster Recovery Training and Experimentation (HS/DS NCTE)"

Conceptual Operational Model

'Stimulates' the EOC & Incident Command Team

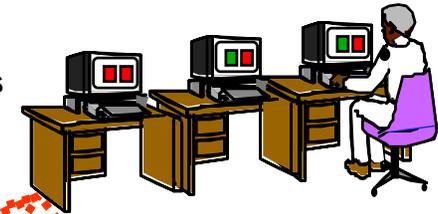


Incident Command

EOC Exercise Control

• Control

• Interactive Interfaces



Police

Fire

Medical

Other Agencies

