“By 2020, light-emitting diodes will reduce worldwide electrical consumption by 1,400 terawatt-hours annually.”

“By 2017, over half of consumer goods manufacturers will employ crowdsourcing to achieve fully 75% of their consumer innovation and R&D capabilities.”

“By 2020, the labor reduction effect of digitalization will cause social unrest and a quest for new economic models in several mature economies.”

“By 2017, 80% of consumers will collect, track and barter their personal data for cost savings, convenience and customization.”

My name is Johnny Appleseed, I was born on January 18, 2001 and I live at 1234 Monkey Street, Arlington, VA

“By 2020, at least one consumer product manufacturer will be held liable by a national government for security vulnerabilities in its product.”

“By 2017, at least seven of the world’s top 10 multichannel retailers will have deployed 3D printing technologies.”

“By 2024, at least 10% of activities potentially injurious to human life will require mandatory use of nonoverideable “smart system.”

Call Barbara

I’m sorry Dave I’m afraid I can’t do that.
“By 2020, one in three knowledge workers will be replaced by enterprise-owned smart machines that they trained.”

“By 2020, consumer data collected from wearable devices will drive 5% of sales from the Global 1000.”

“By 2017, 10% of computers will be learning, rather than processing.”

A Unique Dual Mission

State Mission: To provide military support to civil authorities and respond to State emergencies; to provide support to law enforcement in counter-narcotics.

Federal Mission: To provide trained units available for active duty in the armed forces, in time of war or national emergency, and at such other times as the national security may require.

We are America's First Military Responder

We are America's First Military Responder
Examples of Dual Missions

- Responsive to President and Governors
- Mobilize with no notice in response to natural and man-made disasters
- Serves as linkage between US Army and “Main Street, USA”

New York Afghanistan 2011 OEF
- Exceed 358.2k end strength
- 43,000 Zip Codes in the US
- 28,141 Zip Codes contain Army National Guard Soldiers; 2,244 Zip Codes contain Armories

New York 2011 Hurricane Irene
Director’s Imperatives

- Preserve the Operational Army National Guard
- Generate Ready Units and Soldiers
- Partner with Combatant Commanders to provide relevant, ready forces capable of performing unified land operations worldwide
- Provide the nation’s force of choice for domestic operations
- Enhance the ARNG’s core strengths, character and culture

- LTG William E. Ingram, Jr.
  Director, Army National Guard
How does the G6 support these?

• **Preserve the Operational Army National Guard:**
  – Develop and Maintain the Operational and Tactical Networks
  – Govern, develop and integrate all Applications and Systems
  – Leverage other DOD IT solutions to meet ARNG Requirements

• **Generate Ready Units and Soldiers:**
  – Network and Applications provide access and capability to enable unit training, individual training, tactical exercises and reporting requirements

• **Partner with Combatant Commanders to Provide Relevant, Ready Forces Capable of Performing Unified Land Operations Worldwide:**
  – Network must support the Armory as a Docking Station in order to connect and maintain tactical communications systems in order to improve unit training and readiness while preparing for mobilization at home station
  – Training must also include participation in joint cyber exercises and related training when those opportunities arise
  – Maintain interoperability with other components of the Army, other Services, and coalition partners
  – Leverage resources and provide policies shaping the IT Skillset required to enable Cyber Warriors
How does the G6 support these?

- **Provide the Nation’s Force of Choice for Domestic Operations:**
  - Provide interoperability with state, territorial, tribal, and local governments to enable rapidly employable forces for Governors and Northern Command in support of homeland missions operating in an interagency and intergovernmental environment.

- **Enhance the ARNG’s Core Strengths, Character, and Culture:**
  - Be good stewards of IT resources
ARNG G6 Organization

ARNG G6
(IMZ)
COL Henry
Mr. Dmuchowski

NCR DOIM
(IMO-D)
LTC Biddle

IT BUSINESS CENTER
(IMO-B)
Mr Minnich

NETWORKS DIVISION
(IMN)
COL Camoroda
Mr Gunter

INFO SYSTEMS DIVISION
(IMS)
COL Swann
Mr Lewis

PLANS, POLICY & RESOURCE DIVISION
(IMG)
COL Brach
Vacant
A Community-Based Force

FOOTPRINT OF THE ARMY NATIONAL GUARD

FY 2012

2,899 COMMUNITIES
- 2,645 Readiness/Reserve Centers
- 786 Ground/Vehicle Maintenance Buildings
- 286 Aviation Support Buildings
- 110 Training Centers
  - 12,151 Training Buildings

TOTAL FACILITY FOOTPRINT
167.1 M SQUARE FEET
2.0 M ACRES

11/01/2011 ARNG-IL-I-E

* Note: Inset maps not to scale.
• GuardNet is the ARNG Mission Command Network
• We support Tactical and Generating Force operations everyday
• We are working with Army on network planning
Existing GuardNet Infrastructure
The ARNG gets 17 Cents of every dollar in the MDEPS that support our IT infrastructure

The ARNG IT infrastructure supports 37% of the Army operational force including 8 Divisions, 28 BCTs and 104 Theater Commands, Functional Brigades, SF Groups and Multifunctional Brigades

The ARNG gets 12 Cents of every dollar in the entire Army IT Portfolio
NG Network Users

NG Users

GuardNet 88%

AFNET 12%
<table>
<thead>
<tr>
<th>Capabilities</th>
<th>GuardNet Today</th>
<th>LWN Today</th>
<th>GuardNet 2020</th>
<th>LWN 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Personal Files from any ARNG Computer</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Only modernized locations</td>
</tr>
<tr>
<td>Maintain comms to the States</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Possibly with JIE</td>
</tr>
<tr>
<td>Maintain comms within States (JFHQ to Armories)</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No – State comms not an Army issue</td>
</tr>
<tr>
<td>Automation Support for State USPFO &amp; Enterprise</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No – State automation not an Army requirement</td>
</tr>
<tr>
<td>Live, Virtual &amp; Constructive Training at Remote Locations</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Not at Armories Some selected Training Areas</td>
</tr>
<tr>
<td>Armory as a Docking Station</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Only modernized locations</td>
</tr>
</tbody>
</table>
Army’s Proposed Network Architecture

(Reaches 88% of Army’s CONUS Population)
FOOTPRINT OF THE ARMY NATIONAL GUARD
FY 2012

2,899 COMMUNITIES
- 2,645 Readiness/Reserve Centers
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TOTAL FACILITY FOOTPRINT
167.1 M SQUARE FEET
2.0 M ACRES

11/01/2011 ARNG-IL-E

* Note: Inset maps not to scale.
Provides ARNG an enduring capability and capacity contributing to the full-scope of cyber mission profiles and operations.
The National Guard supports cyber operations across the entire cyber spectrum under Title 32, Title 10, and State Active Duty (SAD) statuses—a Force of Choice!

<table>
<thead>
<tr>
<th>Cyber Activity</th>
<th>Led by</th>
<th>NG Duty Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title 6 (Homeland)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Homeland Security</td>
<td>DHS</td>
<td>Title 32 SAD</td>
</tr>
<tr>
<td>- Critical Infrastructure</td>
<td>DOJ</td>
<td>SAD</td>
</tr>
<tr>
<td>- Homeland Defense &amp; Operational Support</td>
<td>Gov/TAG</td>
<td>Title 10</td>
</tr>
<tr>
<td><strong>State Law Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Title 10 (Military)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Military Operations</td>
<td>DoD</td>
<td>Title 32 SAD</td>
</tr>
<tr>
<td>- Defense Critical Infrastructure</td>
<td>IC</td>
<td>SAD</td>
</tr>
<tr>
<td>- Defense Industrial Base</td>
<td></td>
<td>Title 10</td>
</tr>
<tr>
<td>- Support to Civil Authorities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- National Defense, including HLD</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Title 18 (Crime)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Criminal Investigation</td>
<td>DHS</td>
<td>Title 32 SAD</td>
</tr>
<tr>
<td>- Domestic Threat</td>
<td>DOJ</td>
<td>SAD</td>
</tr>
<tr>
<td>- Critical Infrastructure</td>
<td></td>
<td>Title 10</td>
</tr>
<tr>
<td><strong>Title 44 (Information Security)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- National Security Systems</td>
<td>DoD</td>
<td>Title 10</td>
</tr>
<tr>
<td><strong>Title 50 (Intelligence)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Counterintelligence</td>
<td>DoD</td>
<td>Title 10</td>
</tr>
<tr>
<td>- Intelligence Nets</td>
<td>IC</td>
<td>Title 32*</td>
</tr>
</tbody>
</table>

*Title 50 activities may be conducted in Title 32 Duty Status when training.
The ARNG Cyber Niche

Chief, National Guard Bureau is the channel of communication between The Secretary of Defense and the Adjutants General of the 54 States, Territories, and DC.

**EVENT**
- Disruption at State/Local Level

**Seams**
- Expeditionary Operations
- Garrison-Based Operations

**ESCALATION**
- Defend The Nation?
- Incident Escalation: Transition to Title 10 or Title 18 Law Enforcement
- Intergovernmental (Federal) Mission partners
- Intergovernmental (State) Mission Partners

**Military Response**
- Global Response
- State Active Duty
- Expeditions

**Title 10**
- Title 10
- Title 32

**Title 32**
- Cyber Guard Exercise
- Cyber Shield Exercise

**CATASTROPHIC CYBER INCIDENT**
- Transition to Intergovernmental (Federal) Mission Partners
- Transition to Intergovernmental (State) Mission Partners
- Transition to Garrison-Based Operations
- Transition to Garrison-Based Operations

**Guidance Coordination**
- Puerto Rico
- Virgin Islands

Army National Guard CIO/G6
Conclusion

• Cyber operations are executed by the G6 (Signal) and the G2 (Intelligence), and are integrated by the G3 (Operations).

• The National Guard is the “go to” solution in National, State, Tribal, and Local cyber operations.

• EOSS-network contract

• The ARNG G6 focuses on consolidation, efficiencies, cost reduction and avoidance, first looking internally and then in conjunction with the Army as appropriate (states have a vote)