



Your Information Security Silver Bullet

United States Strategic Command

Mr. George McMullin
USSTRATCOM/J512



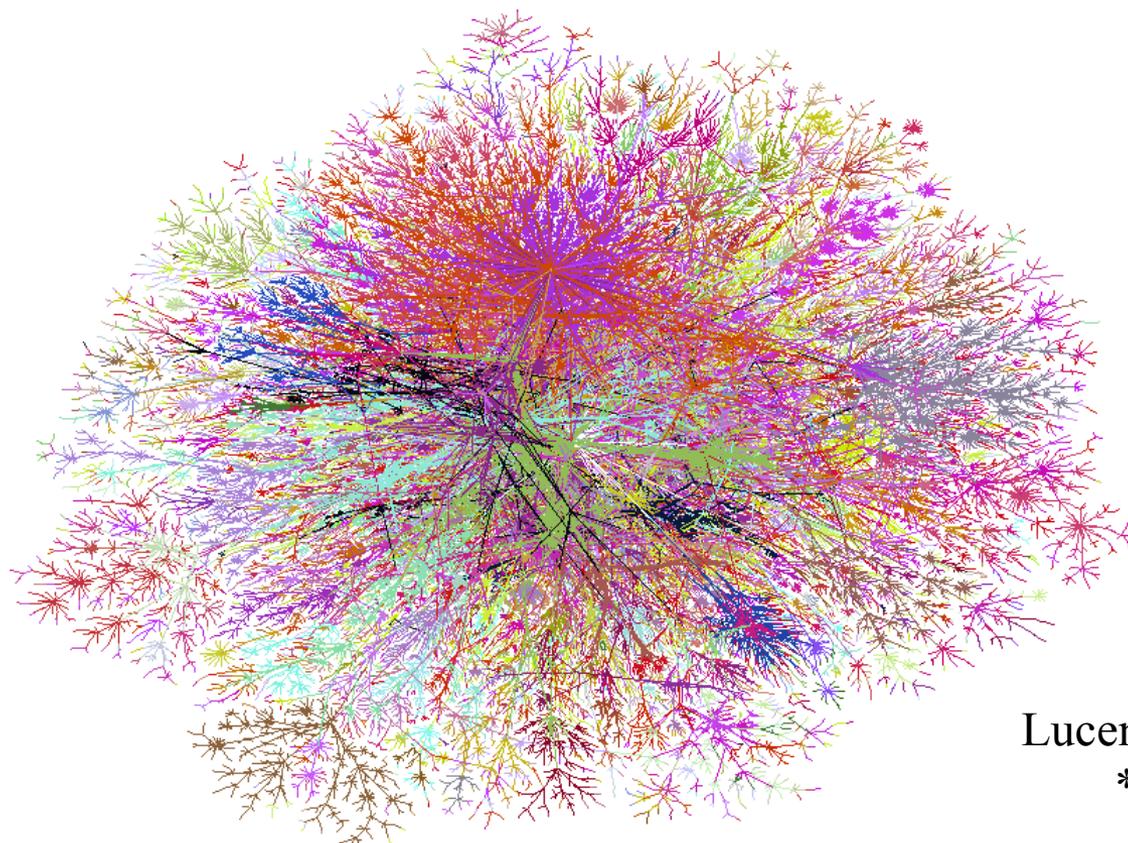
Silver Bullet ? ? ?

- Too early for Coors Light
- Not the Lone Ranger
- Certainly not killing werewolves
- Magic bullet – closer...but maybe not exactly



The Challenge

- Growing dependence on information systems
- Rapid growth in computer networks
- Vulnerability to internal and external attack



Lucent Technologies,
* 1996-2000



Demand for Bandwidth

Civil War

WWI

WWII

Gulf War

Kosovo

AEF



Data Transfer Rate

<32 BPS

32 BPS

71 BPS

256 KBPS

1.544 MBPS

? Trillion BPS

Soldiers to Cover 10² Km

38,830

4,040

300

24

3

?

Time Line

1865

1914

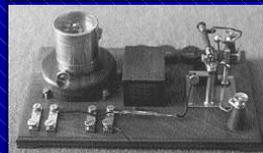
1945

1991

1999

2010

Technology



Telegraph

Telephone

Computer

VTC

Web Tools

Cognitive Tools



Joint Vision 2020



Dedicated individuals and innovative organizations transforming the joint force for the 21st Century to achieve full spectrum dominance :

- persuasive in peace
- decisive in war
- preeminent in any form of conflict



DoD IA Vision

Information Superiority for the DoD, achieved through a balanced integration of highly skilled personnel, operational policy and capability, and leading edge technology.

Information Assurance is essential to achieve and maintain Information Superiority.

Ref: Defense Information Assurance Panel (DIAP), July 1998



IA Model



IDS
Firewalls
Cryptography
Biometrics
Proxies

Awareness
Training
Education
Experience
Certification

I&W
Intelligence
Mission Criticality
Policies & Doctrine



IA Goal

***Ensure critical DoD and
command information
resources are secure and
protected***

Ref: DoD CIO October 1999, **DoD Information Management (IM) Strategic Plan**
(ver 2.0)



Information Assurance (IA)

Information Assurance - “capabilities to maintain network availability, protect data integrity, and enforce authentication, confidentiality, and non-repudiation.”

Ref: CJCSI 6510.01



Elements of Information Assurance

Condition existing when data is unchanged from its source and has not been accidentally or maliciously modified, altered, or destroyed.

Assurance the sender of data is provided with proof of delivery and the recipient is provided with proof of origin, so neither can later deny having processed the data.

Assurance that information is not disclosed to unauthorized persons, processes, or devices.

Timely, reliable access to data and information services for authorized users.

Security measure designed to establish the validity of a transmission, message, user, or system or a means of verifying an individual's authorization to receive specific categories of information.





Information Assurance

Information Assurance → **Mission Assurance**

- More than Information Protection
- Information Assurance ensures your network is available and operationally ready to provide:



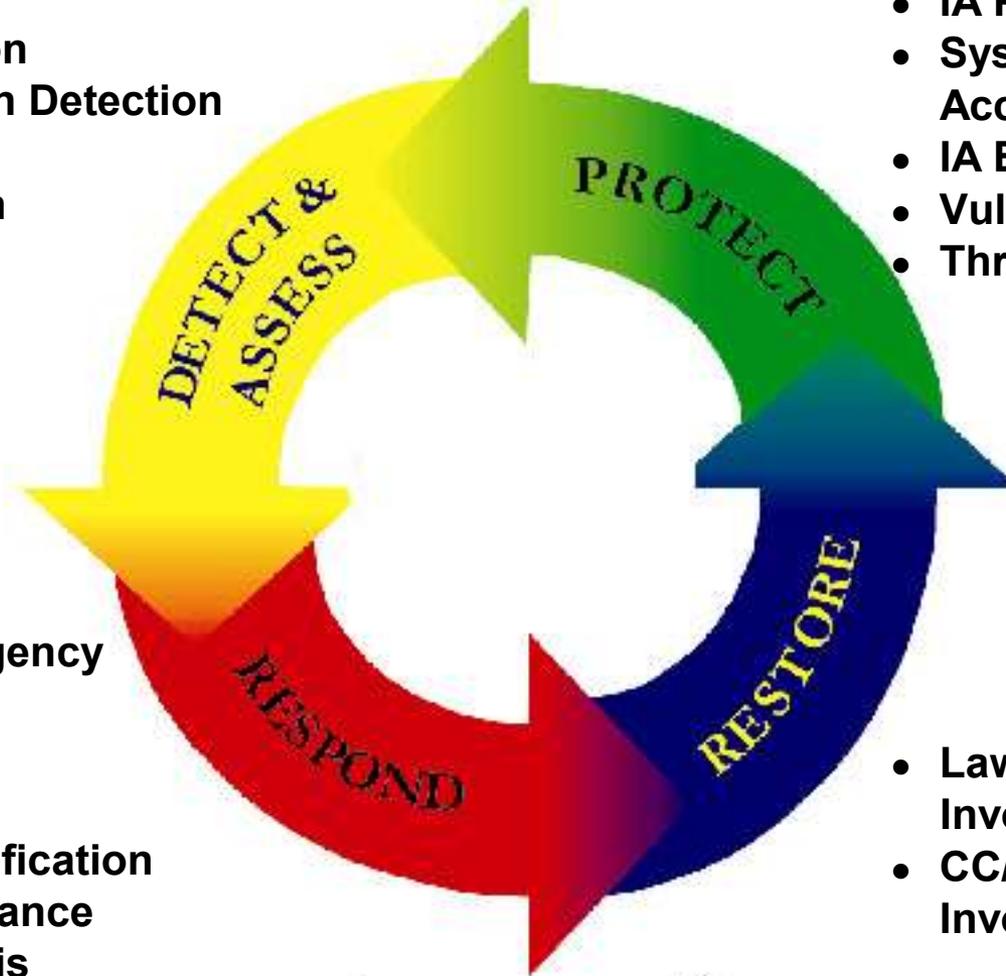
- ***The right information***
- ***At the right time***
- ***In the right place***
- ***In the right format***



The Network is a Weapon System



CND Process



- IA Policies & Procedures
- System Certification & Accreditation
- IA Education & Training
- Vulnerability Assessment
- Threat Countermeasures

- Law Enforcement Involvement
- CC/S/A CERT Involvement

- Threat Identification
- Real Time Intrusion Detection
- Incident Reporting
- Intel/LE Integration

- Implement Contingency Plans
- Incident Response
- Exercise
- Plan & Policy Modification
- Restoration Assistance
- Post-attack analysis



Information Assurance Challenges

- Interconnected, interdependent systems underscore need for broad understanding of threats and vulnerabilities
- Security-enabled commercial products - strong encryption with key recovery
- Global Security Management Infrastructure
- Cyber situation awareness - Cyber attack, sensing, warning and response capability
- **Certify ALL users – from system administrators to common users**

Risk accepted by one may be imposed on all



Certification Mechanism

- **Certification of Persons - ISO 17024, General Requirements for Bodies Operating Certification of Persons**
 - **Private organizations like the International Information Systems Security Certification Consortium**
 - **Government**
- **DoD Directive 8570.1, Information Assurance (IA) Training, Certification and Workforce Management, 15 Aug 2004**



Partial Solution

- **'No Silver Bullet' – Will Poole, senior vice president of Microsoft's Windows client division**
- **DoD Recognizes It**
 - **Vulnerability Management Process**
 - **Inspection Process**
 - **Service Provider Responsibility**
- **'Best Practice' Standard**



Extreme Benefits

- **Minimizes 'stupid user tricks'**
- **Reduces potential business cost**
- **Raises overall awareness**
- **Increases your network police force**
- **Improves security of entire internet**
- **Reduces potential business cost**



NSA Centers of Academic Excellence in Information Assurance Education

5 DoD Institutions

Naval Postgraduate School
United States Military Academy, West
Point
United States Air Force Academy

Information Resources Mgmt College
(IRMC) / National Defense University
(NDU)
Air Force Institute of Technology

62 Public / Private Non-DoD Institutions

Oklahoma State University
Florida State
George Mason University
Idaho State
Iowa State <<<
James Madison University
Drexel University
University of Texas, San
Antonio

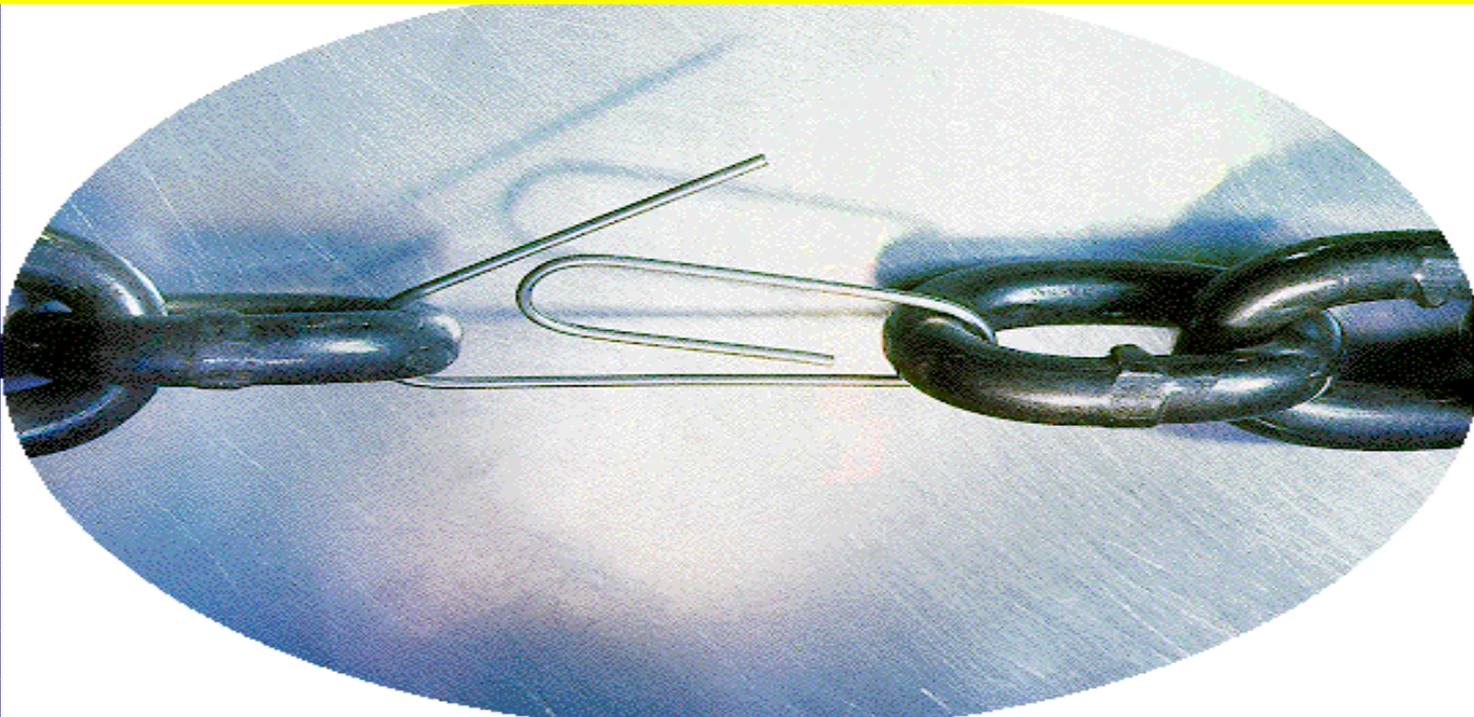
University of Maryland
(Baltimore County)
University of North
Carolina, Charlotte
West Virginia University
Georgia Institute of Technology
Syracuse University
New Mexico School of Mining and
Technology

Purdue University
Stanford
UC Davis
University of Illinois
University of Idaho
University of Nebraska <<<
University of Tulsa
Mississippi State University
Norwich University



The Weak Link

A Risk Accepted By One May Be Imposed On All



In IA we're only as strong as our weakest link!



United States Strategic Command