

Integrative Systems Approaches to 21st Century National Security

September 22, 2010 • National Defense University • Washington D.C.

Join the best and brightest minds in the nation as they come together to discuss the use of integrated systems approaches to strengthen our national security.

The conference and its proceedings will result in recommendations for the use of integrative systems approaches to achieve a more collaborative and efficient whole-of-government national security system.

Participate in the conference's scheduled panels that have been designed to encourage a better exchange of knowledge and to promote interagency performance. The panels and speakers will discuss the reforms required in the following areas:

- Interrelated organizational structures and processes
- Dynamic and flexible human capital
- Integrative science and technology

KEYNOTE SPEAKERS

Leon Fuerth, Research Professor of International Affairs, George Washington University

Jim Locher, President and CEO, Project on National Security Reform

Argonne
NATIONAL LABORATORY



Presented by The Center for Technology and National Security Policy (CTNSP) at the National Defense University (NDU) and Argonne National Laboratory.

www.anl.gov/eesa/integrative_systems_conference

National Defense University • Fort Lesley J. McNair • 300 5th Avenue SW, Marshall Hall • Washington, DC 20319-5066



Integrative Systems Approaches to 21st Century National Security

Fort Lesley J. McNair, Marshall Hall Rm 155
Washington, D.C. 20319



Wednesday, September 22, 2010

- 0830-0900** **Registration and Continental Breakfast**
- 0900-0915** **Conference Welcome and Overview (Argonne/NDU)**
- **Dr. Sheila R. Ronis**, *Director of the MBA/MM Programs at Walsh College in Troy, Michigan and Distinguished Fellow, Project on National Security Reform in Washington, D.C.*
 - **Ms. Pam Sydelko**, *Deputy Associate Laboratory Director, Energy Engineering and Systems Analysis, Argonne National Laboratory*
- 0915-0945** **Keynote Speech**
- **Professor Leon Fuerth**, *Research Professor of International Affairs at the George Washington University Elliott School of International Affairs, Director of the Project on Forward Engagement*
- 0945-1015** **“Observations from the Fray”**
- **Mr. Edward Buikema**, *Senior Consultant to Argonne, former FEMA Regional Administrator (Region V) and Acting FEMA Response Division Director during Katrina*
- 1015-1030** **Break**
- 1030-1130** **Panel on National Security Community “Whole-of-Government” Needs**
- **CHAIR: Dr. Sheila R. Ronis**, *Director of the MBA/MM Programs at Walsh College in Troy, Michigan and Distinguished Fellow, Project on National Security Reform in Washington, D.C.*
 - **Dr. Steven Aoki**, *Deputy Under Secretary of Energy for Counterterrorism, Office of the Under Secretary for Nuclear Security, United States Department of Energy (DOE)*
 - **Ambassador John Herbst**, *Incoming Director for the Center for Complex Operations at the National Defense University, Term September 2010 – Present*
 - **Dr. Irv Lachow**, *Senior Research Professor, National Defense University*
 - **Mr. John F. Morton**, *Distinguished Fellow and Homeland Security Lead, Project on National Security Reform (PNSR)*

1130-1300

Lunch and Keynote Speech

- **Honorable James Locher III**, *President and CEO, Project on National Security Reform*

1300-1330

“Mock Documentary” Illustrating the Use of Alternative Future National Security Scenarios for Driving Systems Level Thinking

1330-1500

Panel on Advanced Science and Technology for Integrative Computing And Data/Knowledge Sharing

- **CHAIR: Ms. Pam Sydelko**, *Deputy Associate Laboratory Director, Energy Engineering and Systems Analysis, Argonne National Laboratory*
- **Mr. John Crowley**, *Research Coordinator, Harvard Humanitarian Initiative*
- **Mr. Charles E. Catlett**, *CIO, Argonne National Laboratory and Senior Fellow, Computation Institute at the University of Chicago*
- **Mr. Clay Robinson**, *DoD VA Interagency Program Office (IPO)*
- **Mr. James Young**, *Enterprise Manager, Google DoD*

1500-1515

Break

1515-1630

Panel on Systems Approaches for Organizational Integration

- **Dr. Michael J. North (Chair)**, *Deputy Director, Center for Complex Adaptive Agent Systems Simulation, Decision and Information Sciences Division, Argonne National Laboratory, United States Department of Energy*
- **Ms. Myra Howze Shiplett**, *Distinguished Fellow, Project on National Security Reform*
- **Dr. James Douglas Orton**, *Subject Matter Expert, Organizational Performance and Interagency Collaboration, Center for Strategic Research, NDU*

1630-1700

Closing Synthesizing Speech: “The Center for Strategic Analysis and Assessment in the EOP: A Systems Approach to National Grand Strategy”

- **Dr. Sheila R. Ronis**, *Director of the MBA/MM Programs at Walsh College in Troy, Michigan and Distinguished Fellow, Project on National Security Reform in Washington, D.C.*



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Dr. Steven Aoki

Steven Aoki is the Deputy Under Secretary of Energy for Counterterrorism. A career member of the Senior Executive Service, from 2000-2004 he was Senior Advisor for International Affairs to the Administrator of Department of Energy's National Nuclear Security Administration. Before joining DOE, he served at the U.S. Department of State as the Director of the Office of Proliferation Threat Reduction. During 1993-1996, he was on the staff of the National Security Council, with responsibility for nonproliferation and export control policies. Prior to that, he served as Special Assistant to the Under Secretary of State for International Security Affairs and in several positions in the Bureaus of Politico-Military Affairs and Near East-South Asian Affairs at the State Department, specializing in nonproliferation, regional security, and counter-terrorism activities. From 1978-1984 he was a scientific staff member and program manager at the Lawrence Livermore National Laboratory. He holds a Ph.D. in physics from the University of Chicago.

Mr. Edward Buikema

Edward G. Buikema is a senior consultant at Argonne National Laboratory in Chicago, Illinois. Mr. Buikema is also the Director of Preparedness and Response for Armada Ltd, an emergency management consulting firm based in the Midwest. He is an instructor at the University of Chicago, a subject matter expert for the Mobile Executive Education Team seminars conducted by the Naval Postgraduate School's - Center for Homeland Defense and Security, and a member of the Emergency Management Accreditation Program (EMAP) commission. Mr. Buikema was appointed by President Bush as the Administrator of Region V of the Federal Emergency Management Agency (FEMA) (now part of the Department of the Homeland Security) in November, 2001 and served until January, 2009. During his tenure as Regional Administrator, Mr. Buikema oversaw the delivery of disaster relief and assistance in more than sixty-five Presidential declared disasters and emergencies. Mr. Buikema was also designated as a Principal Federal Official (PFO) by the Secretary of Homeland Security for pandemic influenza for Region C in the United States (combined FEMA Regions V and VIII). Mr. Buikema served as the Acting Director of FEMA's Response Division from February, 2005 through October, 2005. In that position he was responsible for administration and leadership of Response Division programs including the Urban Search and Rescue (US&R) program, the National Disaster Medical System (NDMS) teams, the Mobile Emergency Response System (MERS), logistics, the National Response Coordination Center (NRCC), and the Temporary Disaster Workforce. Prior to his FEMA position, Mr. Buikema was commander of the Emergency Management Division of the Michigan State Police. In this position, Mr. Buikema was responsible for leadership and coordination of the State of Michigan's emergency management program and served as the state coordinating officer and governor's authorized representative for nine presidential disaster declarations. He also served as chair of the Michigan Emergency Planning and



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Community Right-to-Know Commission, the Michigan Hazard Mitigation Coordinating Council, and Michigan's Anti-Terrorism Task Force. Mr. Buikema was an officer with the Michigan State Police for more than 26 years, serving in the Emergency Management Division for 19 of those years. Mr. Buikema was awarded the first ever Eric Tolbert Distinguished Service Award by the Emergency Management Accreditation Program (EMAP) at the 2008 National Emergency Management Association (NEMA) conference "for exemplary service and dedication to EMAP and fostering excellence and accountability in Emergency Management. And recently, he was awarded the Steven R. Cohen Award by the Chicago Federal Executive Board for "giving exemplary service to his own agency and the Federal community at large." A native of Grand Rapids, Michigan, Mr. Buikema holds a bachelor of art's degree in political science from Calvin College in Grand Rapids and is a graduate of the FBI National Academy in Quantico, Virginia. He is married and has three children and two grand children.

Dr. Charlie Catlett

Charlie Catlett is Chief Information Officer of the U.S. Department of Energy's Argonne National Laboratory and a Senior Fellow at the Argonne / University of Chicago Computation Institute. His current focus areas include cyber security and privacy, mobile devices and social networks, and transformation of information infrastructure. Prior to joining Argonne in 2000, Catlett was Chief Technology Officer at the National Center for Supercomputing Applications (NCSA). He was part of the original team that established NCSA in 1985 and his early work there included participation on the team that deployed and managed the NSFNet. In the early 1990's Catlett participated in the DARPA/NSF Gigabit Testbeds Initiative, coordinated by the Corporation for National Research Initiatives. Catlett was the founding chair of the Global Grid Forum (GGF, now Open Grid Forum) from 1999 through 2004. During this same period he designed and deployed one of the first regional optical networks dedicated to academic and research use – I-WIRE, funded by the State of Illinois. He has been involved in Grid (distributed) computing since the early 1990s, when he co-authored (with Larry Smarr) a seminal paper "Metacomputing" in the Communications of the ACM, which outlined many of the high-level goals of what is today called Grid computing.

Mr. John Crowley

John Crowley coordinates a research program on crisis mapping at the Harvard Humanitarian Initiative. Supporting the STAR-TIDES initiative at the National Defense University, he led a tiger team to connect crowdsourcing communities with the U.S. Southern Command's emergency operations centre during the Haiti response. Between earthquakes, John coordinates the "Camp Roberts" RELIEF experiments through the Naval Postgraduate School—a program that gathers participants from responder communities and



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challenges them to swarm around shared problems.

John holds an MPA from the John F. Kennedy School of Government at Harvard University, where he was the Robert C. Seamans Fellow in Science, Technology, and Public Policy. He also holds masters and bachelors degrees in intellectual history and music from Boston University. He tweets at @jcrowley.

Mr. Leon Fuerth

Leon Fuerth is the former National Security Advisor to Vice President Al Gore. Following eleven years as a Foreign Service Officer, Fuerth joined then-Congressman Gore's staff as senior legislative assistant for national security, focusing on issues of arms control and strategic stability. As the Vice President's National Security Advisor, Fuerth served simultaneously on the Deputies' and Principals' Committees of the National Security Council, alongside the Secretary of State, the Secretary of Defense, and the President's own National Security Advisor. He created and managed five bi-national commissions, and led efforts to: develop the International Space Station; to marshal international support for sanctions against Slobodan Milosevic's regime; to raise awareness and take action to prevent the spread of HIV/AIDS in Africa; to denuclearize former Soviet states; to win China's cooperation in protecting the environment and reducing pollution; and to spur foreign investment in Egypt as part of the Middle East peace process. After retiring from government service at the conclusion of the Clinton Administration, Professor Fuerth came to The George Washington University to serve as the J.B. and Maurice C. Shapiro Professor of International Affairs from January 2001 to January 2003. He currently serves as a research professor at the Elliott School of International Affairs and leads the Project on Forward Engagement, which incorporates three components: (1) a graduate seminar on long-range policy analysis; (2) expert seminars on unpacking Forward Engagement concepts; and (3) public outreach to US citizens in an effort to create a constituency for apolitical long-range analysis and anticipatory governance. In addition, Professor Fuerth is also currently: a consultant for SCITOR, exploring use of space-based sensors in the design of a monitorable climate agreement; a member of the National Academy of Science Committee on Climate, Energy and National Security; a member of the Guiding Coalition to the Project on National Security Reform (PNSR); a consultant to The Alliance on Climate Change; and a consultant to former vice president Al Gore. He holds a bachelor's degree in English and a master's degree in history from New York University, as well as a master's degree in public administration from Harvard University.

Ambassador John Herbst

Ambassador John Herbst is the incoming Director for the Center for Complex Operations (CCO) at the National Defense University and the outgoing Coordinator for Reconstruction



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and Stabilization. He is a career member of the Senior Foreign Service and holds the rank of Career-Minister. As Coordinator, Ambassador Herbst has led the development of U.S. Government civilian capacity to promote the stabilization and reconstruction of societies in transition from conflict or civil strife, and to provide support to countries at risk of instability.

In 2007, the Ambassador led the government-wide effort to institutionalize the Interagency Management System (IMS), a whole-of-government system for planning and managing crisis response. The Coordinator is overseeing the establishment of the Civilian Response Corps of the United States. The Corps's Active, Standby, and Reserve components will span eight federal government agencies, local governments, and the private sector. The Corps is the U.S. civilian rapid response force for reconstruction and stabilization operations overseas.

In May 2003, Ambassador Herbst was appointed the U.S. Ambassador to Ukraine. During his tenure, he worked to enhance U.S.-Ukrainian relations and to help ensure the conduct of a fair Ukrainian presidential election. In Kyiv, he witnessed the Orange Revolution. Prior to that, Ambassador Herbst was the U.S. Ambassador to Uzbekistan, where he played a critical role in the establishment of an American base to help conduct Operation Enduring Freedom in Afghanistan. He also promoted improved U.S.-Uzbek relations, in part by encouraging the government in Tashkent to improve its human rights record. Mr. Herbst previously served as U.S. Consul General in Jerusalem; Principal Deputy to the Ambassador at Large for the Newly Independent States; the Director of the Office of Independent States and Commonwealth Affairs; Director of Regional Affairs in the Near East Bureau; as political counselor at the U.S. Embassy in Tel Aviv and at the Embassies in Moscow and Saudi Arabia. Both the Presidential Distinguished Service Award and the State Department's Distinguished Honor Award were presented to Mr. Herbst. He received a Bachelor of Science in Foreign Service from Georgetown University's School of Foreign Service, Phi Beta Kappa, and a Master of Law and Diplomacy, with Distinction, from the Fletcher School. He also attended the Johns Hopkins University School of Advanced International Studies Bologna Center. Ambassador Herbst and his wife Nadezda Christoff Herbst have five children.

Professor Irv Lachow

Irv Lachow is a Senior Research Professor at the National Defense University's Information Resources Management College. Dr. Lachow has extensive experience in both information technology and national security. He has worked for Booz Allen Hamilton, the RAND Corporation, and the Office of Deputy Under Secretary of Defense (Advanced Systems & Concepts). Dr. Lachow received his Ph.D. in Engineering & Public Policy from Carnegie



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Mellon University. He earned an A.B. in Political Science and a B.S. in Physics from Stanford University.

Mr. James Locher

James R. Locher III has more than 25 years of professional experience in both the executive and legislative branches of the federal government, and is executive director of the Project on National Security Reform. Locher began his career in Washington as an executive trainee in the Office of the Secretary of Defense. Subsequently, he served in the Executive Office of the President as executive secretary of the White House Working Group on Maritime Policy. Returning to the Pentagon, Locher worked in the Office of the Assistant Secretary of Defense for Program Analysis and Evaluation. As an operations research analyst in the Mobility Forces and Naval Forces Divisions, he evaluated selected Navy and Marine Corps programs. In 1978, Locher joined the professional staff of the Senate Committee on Armed Services, where he would go on to work closely with Senators Nunn, Kennedy, and Levin, among others. Initially, he served as the senior adviser on international security affairs and force projection programs. In 1985, the committee assigned Locher responsibility for strategy and organization. He directed the bipartisan staff effort that resulted in the Goldwater-Nichols Defense Reorganization Act of 1986 and served as the senior staffer for the special operations and low-intensity conflict reform legislation, known as the Cohen-Nunn Amendment. President George H. W. Bush appointed Locher to the post of assistant secretary of defense for special operations and low-intensity conflict in October 1989. He supervised the special operations and low-intensity conflict activities of the Department of Defense, performed as the principal civilian adviser to the secretary of defense on these matters, and represented the secretary in senior subordinate groups of the National Security Council. He served as assistant secretary throughout the Bush administration and the first five months of the Clinton administration. During the latter period, Locher also served as acting under secretary of defense for policy. Upon leaving government service in June 1993, he was awarded the Department of Defense Medal for Distinguished Public Service, the department's highest civilian award. Since 1993, Locher has been consulting, lecturing, and writing. He served as a senior consultant to the Commission on Roles and Missions of the Armed Forces and as a member of the Secretary of Defense's Task Force on Defense Reform and the National Security Study Group of the U.S. Commission on National Security/21st Century. In 1999, Locher joined the board of directors of Power Medical Interventions, a medical device company. Subsequently, he was elected company secretary and later board vice chairman. In 2002, Texas A&M University Press published his book, *Victory on the Potomac: The Goldwater-Nichols Act Unifies the Pentagon*. In 2003-04, Locher served as chairman of the Defense Reform Commission of Bosnia and Herzegovina. In 2005, the National Society of the Daughters of the American Revolution awarded Locher its Medal of Honor for "outstanding service to the United States."



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Mr. John Morton

John F. Morton is currently a Distinguished Fellow and the Homeland Security Lead for the Project on National Security Reform. He is also the Strategic Advisor to Domestic Preparedness.com and a consultant to Gryphon Technologies under a contract supporting the Navy's Surface Warfare Directorate, SEA 21. With over 25 years experience in complex national and homeland security issues, he has consulted and conducted independent research and analyses for among others: BAE Systems/Detica, Technology Strategies & Alliances (under a contract with the OSD Office of Net Assessment), Lockheed Martin Government Electronics Group, United Defense, L.P., Business Executives for National Security, Forecast International/DMS, Center for Strategic and International Studies and National Defense Industrial Association. Mr. Morton has been extensively published and has written for virtually every major defense publication. He is currently completing a book for the U.S. Naval Institute Press tentatively titled *When, Not If: Instituting American Resilience Now*, sponsored by a grant from the Smith Richardson Foundation to the Center for the Study of the Presidency and Congress. Previously, the Naval Institute Press published his *Mustin: A Naval Family of the 20th Century*, a title on the CNO's Book List for Leadership and Management.

Dr. Michael North

Michael J. North, MBA, Ph.D. is the Deputy Director of the Center for Complex Adaptive Agent Systems Simulation within the Decision and Information Sciences Division of Argonne National Laboratory, a Senior Fellow in the joint Computation Institute of the University of Chicago and Argonne, and an Adjunct Professor of Design in the Institute of Design at the Illinois Institute of Technology. Dr. North has over fifteen years of experience developing and applying advanced modeling and simulation applications for various branches of the U.S. federal government; state government; several international agencies; private industry; and academia. Dr. North is the program director for the widely used free and open source Repast agent-based modeling platform. Dr. North is the lead author of the book *Managing Business Complexity: Discovering Strategic Solutions with Agent-Based Modeling and Simulation* (Oxford 2007) and has authored or co-authored over fifty journal articles and conference papers. Dr. North has been a keynote speaker at a variety of national and international events. Dr. North has been recognized as a Senior Member by the Association for Computing Machinery (ACM), the Institute of Electrical and Electronics Engineers (IEEE), and the American Society for Quality (ASQ). Dr. North holds ten college degrees, including a Ph.D. in Computer Science from the Illinois Institute of Technology. In addition, Dr. North is a Project Management Institute certified Project Management Professional (PMP), an IEEE Computer Society Certified Software Development Professional (CSDP), and is also certified by the American Society for Quality in software development processes (CSQE).



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Dr James Douglas Orton

Dr. James Douglas Orton is a business-school-trained Ph.D. in organization and management theory. More specifically, Dr. Orton is an expert on loosely coupled systems, organizational sensemaking, strategic management, and national security reform processes. Dr. Orton's 1990 journal article, co-authored with Dr. Karl Weick, "Loosely Coupled Systems: A Reconceptualization," has been cited approximately one thousand times by other experts in organization and management theory. His 1989-1993 dissertation at the University of Michigan (Reorganizing: An Analysis of the 1976 Reorganization of U.S. Intelligence) was a study of Ford White House documents leading to intelligence reform in 1976. During his six years as a strategy professor at Hautes Etudes Commerciales (HEC) in Paris, France, Dr. Orton studied the Cuban Missile Crisis in 1962 and the Aspin-Brown proposals for intelligence reform in 1996. While in Europe, Dr. Orton taught graduate courses, conducted executive education seminars, and presented research papers in Barcelona, Seville, Sophia Antipolis, Paris, Geneva, London, Istanbul, Frankfurt, Vienna, and Warsaw. In the U.S., Dr. Orton has taught graduate-level seminars on his research topics at Boston College, Massachusetts Institute of Technology, University of Nevada-Las Vegas, University of California-Irvine, University of California-Riverside, Michigan Technological University, and The George Washington University. In 2007, Dr. Orton started working with Dr. Christopher Lamb at National Defense University on bringing high-end organizational research into the service of national security reform, organizational performance, and interagency collaboration.

Mr. Clay Robinson

Mr. Robinson is currently serving as a Data Strategist in the DoD VA Interagency Program Office. He is new in that position but is working to improve health information sharing between the DoD, VA, and other Federal government entities as well as private health providers. Until this past June, he was the Chief for Data Strategy in the DoD CIO's Office of Enterprise Services and Integration. In that role he served as the IPT lead to analyze and make recommendations to the Deputy Secretary of Defense and the Vice Chairman of the JCS on improving utilization of Full Motion Video from UAVs in Iraq. He also performed as the liaison to DoD's Information Sharing Executive for technical issues and the DoD's NetCentric Data Strategy. This included supporting the DoD and Federal Information Sharing efforts. Mr. Robinson led the Content Discovery initiatives and policy development in the Office of the Secretary of Defense (OSD). In this role, Mr. Robinson co-chaired the joint DoD and IC Content Discovery IPT. His last published article was entitled "Making Information Visible, Accessible, and Understandable: Meta-Data and Registries" which was published in "Crosstalk" magazine. Prior to working in the DoD CIO's office he was a CIA officer at the National Reconnaissance Office and served as Chief of the NRO IT Strategic Direction Group. In his 34 years of service, Mr. Robinson has also held positions in the



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Office of the Secretary of Defense, the United States Senate, at the Defense Information Systems Agency and at the Defense Logistics Agency.

Dr. Sheila Ronis

Dr. Sheila R. Ronis is Director of the MBA/MM Programs at Walsh College in Troy Michigan where she teaches in the Doctorate and MBA Programs. She is also President of The University Group, Inc., a management consulting firm, and think tank specializing in strategic management, visioning, national security and public policy. Dr. Ronis is a Distinguished Fellow and Vision Working Group leader of the congressionally mandated Project on National Security Reform (PNSR) in Washington, which will prepare the replacement for the National Security Act of 1947. She is currently looking at mechanisms to infuse foresight into the Executive Office of the President of the United States. Her B.S. is in Physics and Mathematics. Her M.A. and Ph.D. are from The Ohio State University in Large Social System Behavior. After nearly forty years of working in government, industry, academia and as the CEO of a management consulting firm, Dr. Ronis published *Timelines into the Future: Strategic Visioning Methods for Government, Industry and Other Organizations* by Hamilton Books in June, 2007. She edited the *Project on National Security Reform Vision Working Group Report and Scenarios*, published by the Strategic Studies Institute of the U.S. Army War College in July, 2010 and chaired the conference in which those finds were presented at the Center for Strategic and International Studies. Also, in August, 2010, she chaired a conference at NDU called *Economic Security: Neglected Dimension of National Security* and will be editing a *Proceedings* from that event this fall. In June, 2005, she chaired at the Industrial College of the Armed Forces the Army's Eisenhower National Security Series Conference, "The State of the U.S. Industrial Base: National Security Implications in a World of Globalization." The *Proceedings* of that conference, which Dr. Ronis co-edited with Dr. Lynne Thompson was published by the National Defense University Press in April, 2006. In March, 2006, she completed a study of the national security implications of the erosion of the U.S. industrial base for the U.S. House of Representatives' Committee on Small Business.

Ms. Myra Shiplett

Myra Howze Shiplett is the President of RandolphMorgan Consulting LLC. Her work has included advising a variety of governments, non-profit organizations, and private sector firms on organizational effectiveness and human capital management issues. Prior to forming her own consulting firm, Ms. Shiplett directed the National Academy of Public Administration's Center for Human Resources Management. The Center performed cutting edge research on human capital and organizational effectiveness issues. This research provided a body of knowledge used by Congress and by federal agencies to restructure federal public sector human capital programs, and by foreign governments in developing



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countries to establish merit based civil service systems. Ms. Shiplett spent more than 30 years as a federal executive working for both the executive and judicial branches of the federal service. At the Administrative Office of the US Courts, Ms. Shiplett was the Assistant Director for Human Resources and Statistics. In the executive branch, her federal positions included a variety of line manager and human resource executive positions, including Director of Administration for a banking regulatory agency and directing the worldwide passport issuance system for the Department of State. Ms. Shiplett has also taught at the high school and college level, is the author of a number books and articles, and does extensive public speaking. She holds a Masters Degree in Urban Affairs from the Virginia Polytechnic Institute and State University in Blacksburg, VA and a Bachelor of Arts Degree in English and Journalism from the University of South Florida in Tampa, FL.

Ms. Pamela Sydelko

Pamela Sydelko is the Deputy Associate Laboratory Director for Energy Engineering & Systems Analysis. Her role within the Energy Engineering & Systems Analysis Directorate is to assist in strategic planning, research coordination and program development. She supports development of initiatives and encourage innovations that lead to new research opportunities across basic and applied sciences and engineering programs. Ms. Sydelko earned her MBA from the University of Chicago and her M.S. in soil science from the University of Illinois at Urbana-Champaign. She joined Argonne in October 1989, coming from the U.S. Army Engineering Research and Development Center – Construction Engineering Research Laboratory (CERL) in Champaign-Urbana. Until recently, Ms. Sydelko served as the Deputy Division Director for the Decision and Information Sciences Division. She has expertise in systems-level research and technology aimed at developing innovative modeling, analysis and decision support tools / technologies including the development of integrated multi-component software systems. Key modeling domains include environmental/land use, sustainable energy, national security, and infrastructures. Sponsoring organizations include U.S. Environmental Protection Agency, Department of Defense, Department of Homeland Security, and Department of Energy.

Mr. James Young

Jim Young is an Enterprise Manager on Google DoD team focusing on Innovation and Google's cloud computing capabilities. His background includes working for the Directorate of Science and Technology (DS&T) at CIA where he received an Exceptional Performance Award. In addition, Jim worked for the Walt Disney Company, a Fortune 500 IT company working on large-scale IC programs, several innovative start-up companies focusing on the DoD, and most recently, web security. He graduated from the University of South Carolina with a B.A. in International Studies with an emphasis on National Security. Jim attended graduate-level courses at University of Virginia focusing on employee motivation in the



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federal workforce, and at RAND Corporation focusing on Defense Analysis in the 21st Century. Recently Jim was recently elected to the AFCEA DC Chapter Board of Directors where he served on the Executive Committee as Chapter CIO. In his free time, he plays tennis, trains on the Homes for our Troops Boston Marathon team, and works on Veteran's projects to include GoogleVoice for Homeless Vets. In his younger days, Jim lifted 2000 pounds in the leg press, completed 10,000 situps in a row, and played tennis 34 hours in a row to raise money for charity.

Observations from the Fray

Edward G. Buikema
Senior Consultant
Argonne National Laboratory

Brief History

Cuban Missile Crisis

Three Mile Island

Union Carbide Incident, Bhopal, India

World Trade Center and Murrah Federal
Building

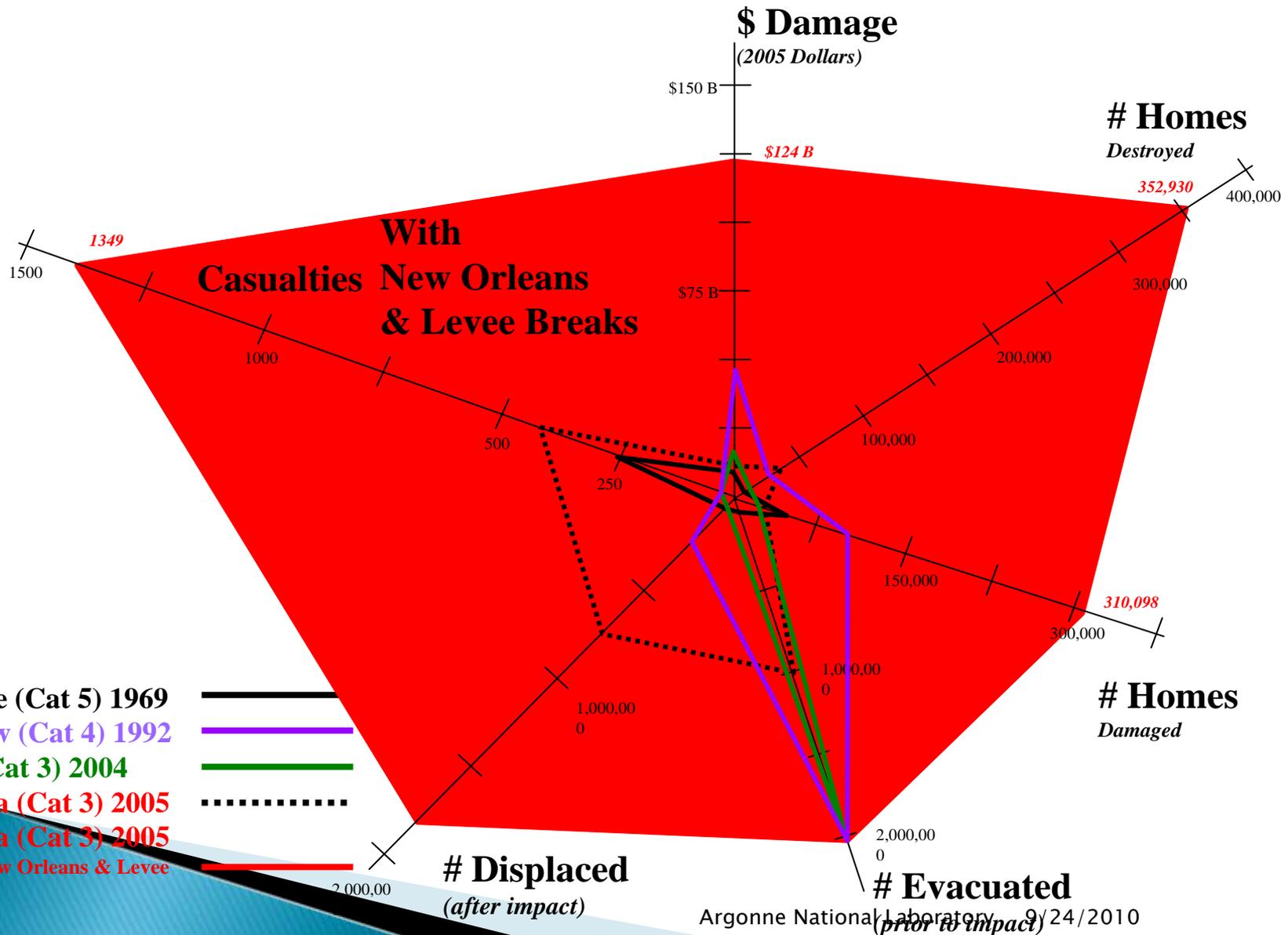
Brief History (cont)

Y2K

Sept. 11, 2001

Hurricane Katrina

Hurricane Katrina



Impacts

- ▶ Complex events involving many entities / organizations / depts / agencies
- ▶ Challenges
 - Structures, cultures, resources, needs, perspectives, agendas, turf, politics, media

Progress

- ▶ Development of Coordination Mechanisms including plans/agencies
 - National Contingency Plan
 - Federal Response Plan
 - National Response Plan
 - National Incident Management System
 - National Response Framework
 - Post Katrina Emergency Management Reform Act

Standards and Guidance

- ▶ Program Standards NFPA 1600 – EMAP
- ▶ HSPD 8
 - Planning Scenarios
 - Target Capabilities
 - Universal Task List

Challenges

- ▶ Integration and coordination of practitioners/science/academia/research and development.
 - Using the tools and resources for planning and response
- ▶ Emergency Management/Homeland Security/National Security
 - Federal (including military), State, Local Roles
- ▶ Critical Infrastructure/Key Assets Protection
 - HSPD 7
 - Public/Private coordination/collaboration

Challenges (cont)

- ▶ Catastrophic Planning
- ▶ Turnover and Fundamentals
- ▶ Managing Expectations
- ▶ Relationships: building and sustaining
- ▶ 5 C's
- ▶ FEMA Region V/IEMA/OEMC/ANL/S&T

- ▶ Edward Buikema
- ▶ ebuikema@anl.gov

Collective Situational Awareness

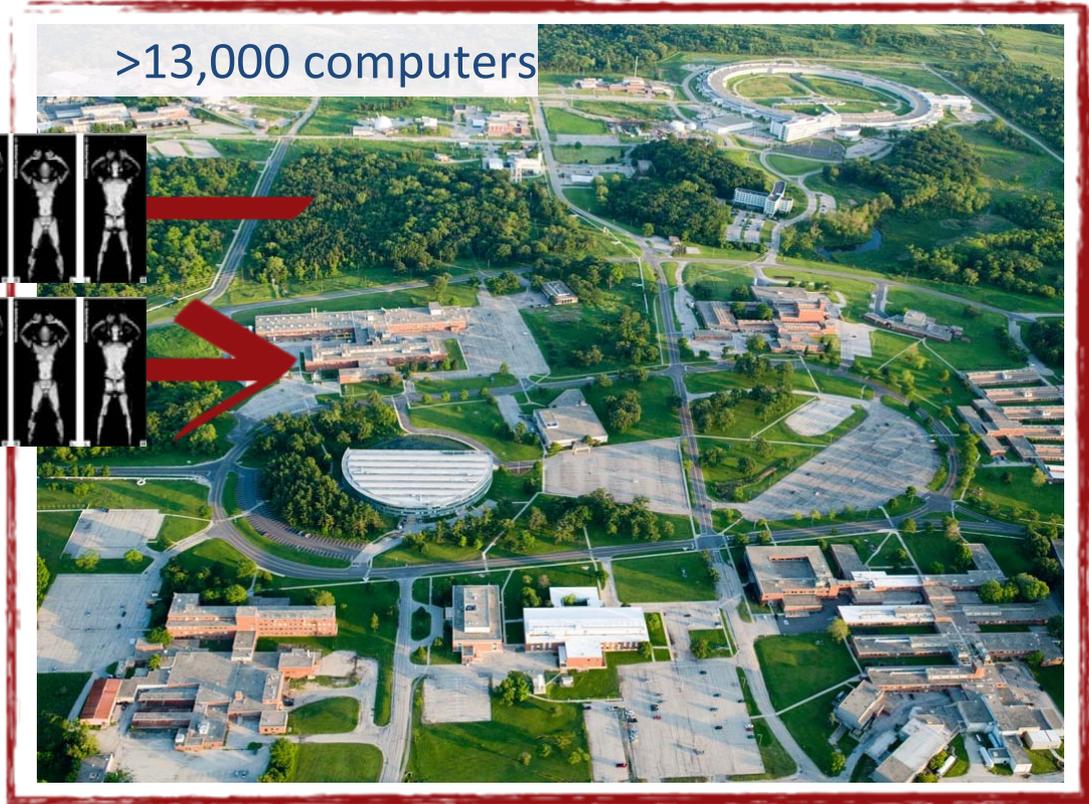
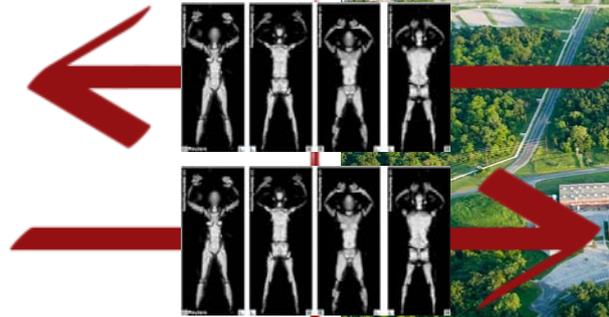
Office of Science “Cyber Federated Model”

Emerging Challenge: The Mobile Internet

Charlie Catlett
CIO, Argonne National Laboratory
Senior Fellow, Computation Institute, University of Chicago

September 2010

>13,000 computers



Millions of probes daily
>2M hostile sources
identified in 2009

IP address

192.168.1.37

URL

<http://www.badactor.com>

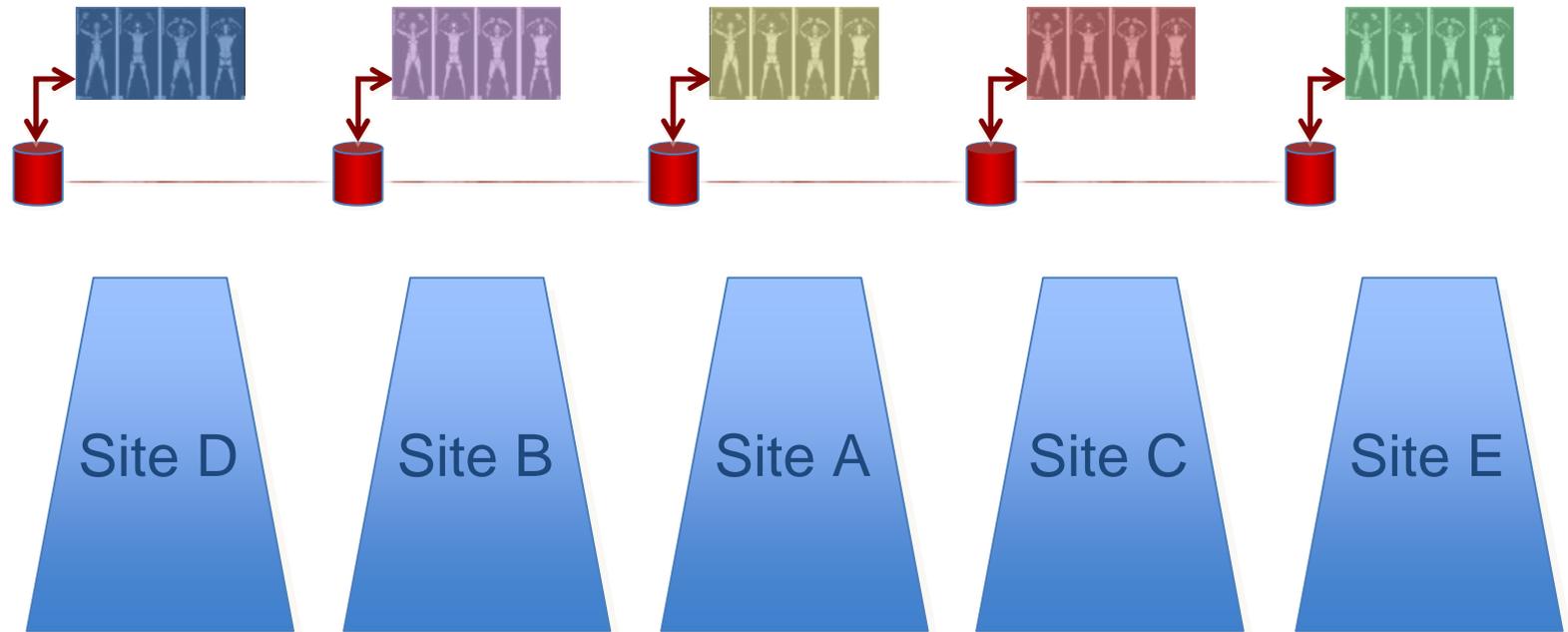
email address

spmr@freemail.org

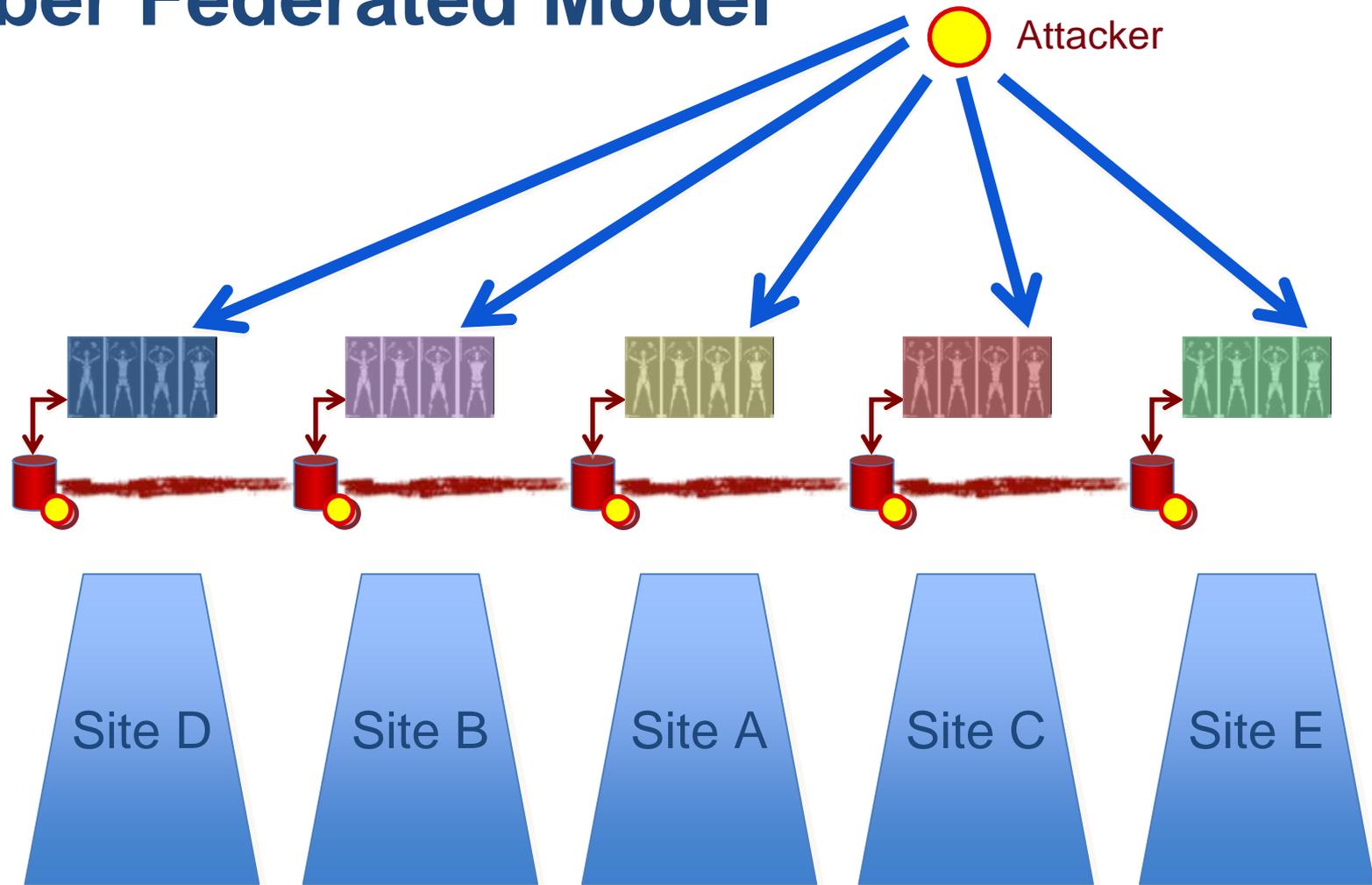
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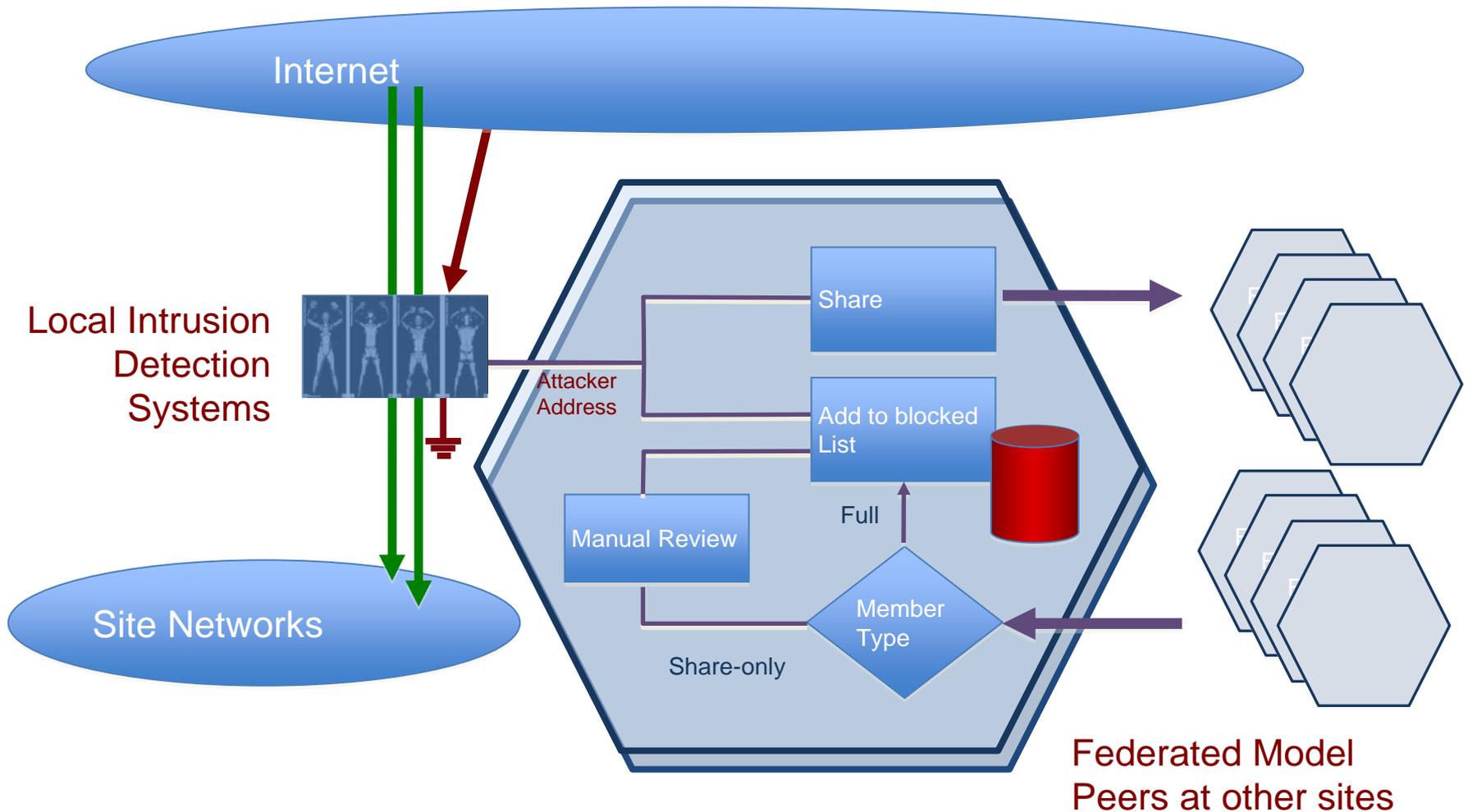
Cyber Federated Model



Cyber Federated Model

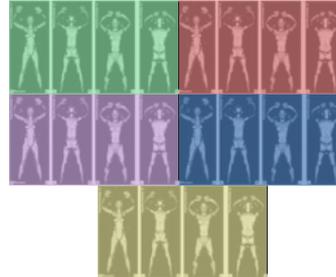


Inside the Cyber Federated Model



Cyber Federated Model

Genetic Diversity



Collective Protection

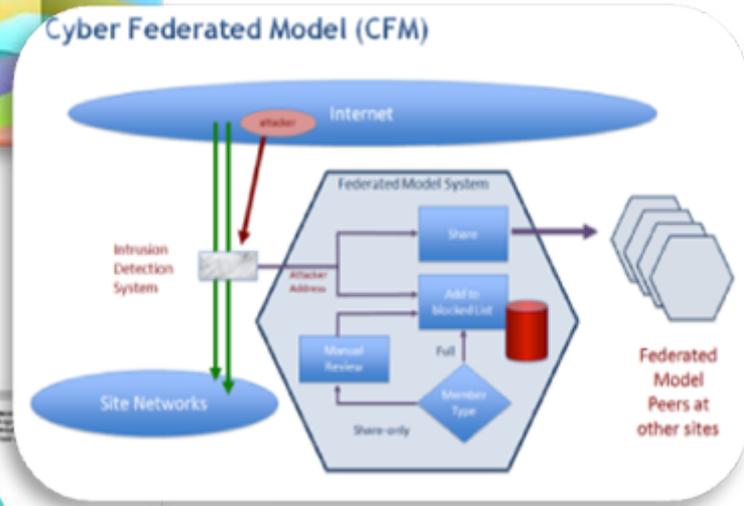
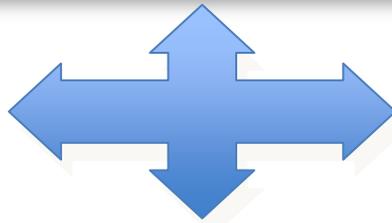
Local Autonomy



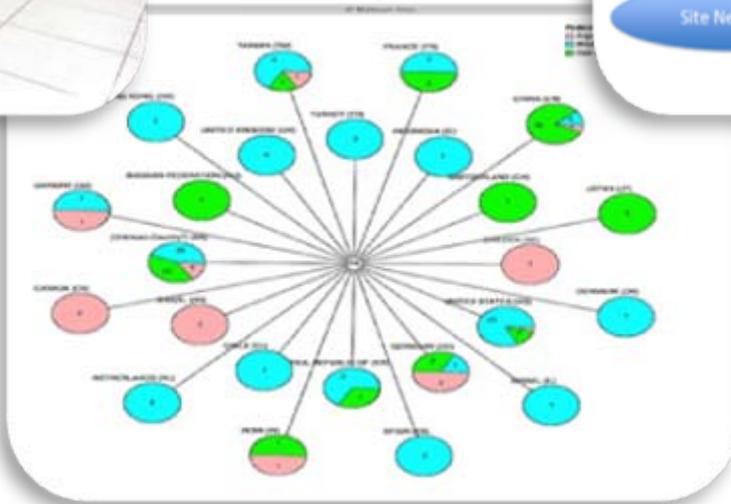
Mathematical Models



Data Analysis & Visualization

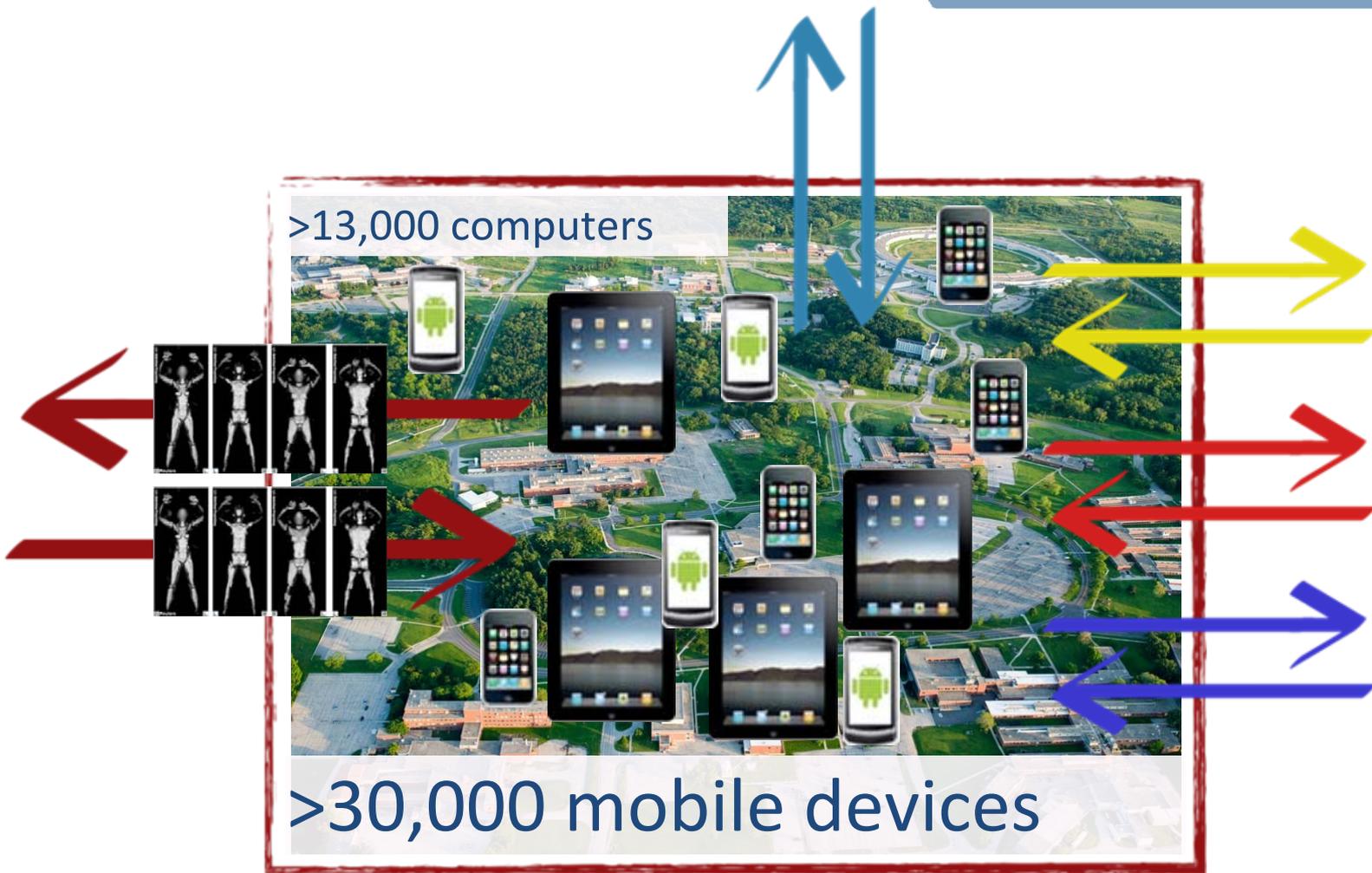


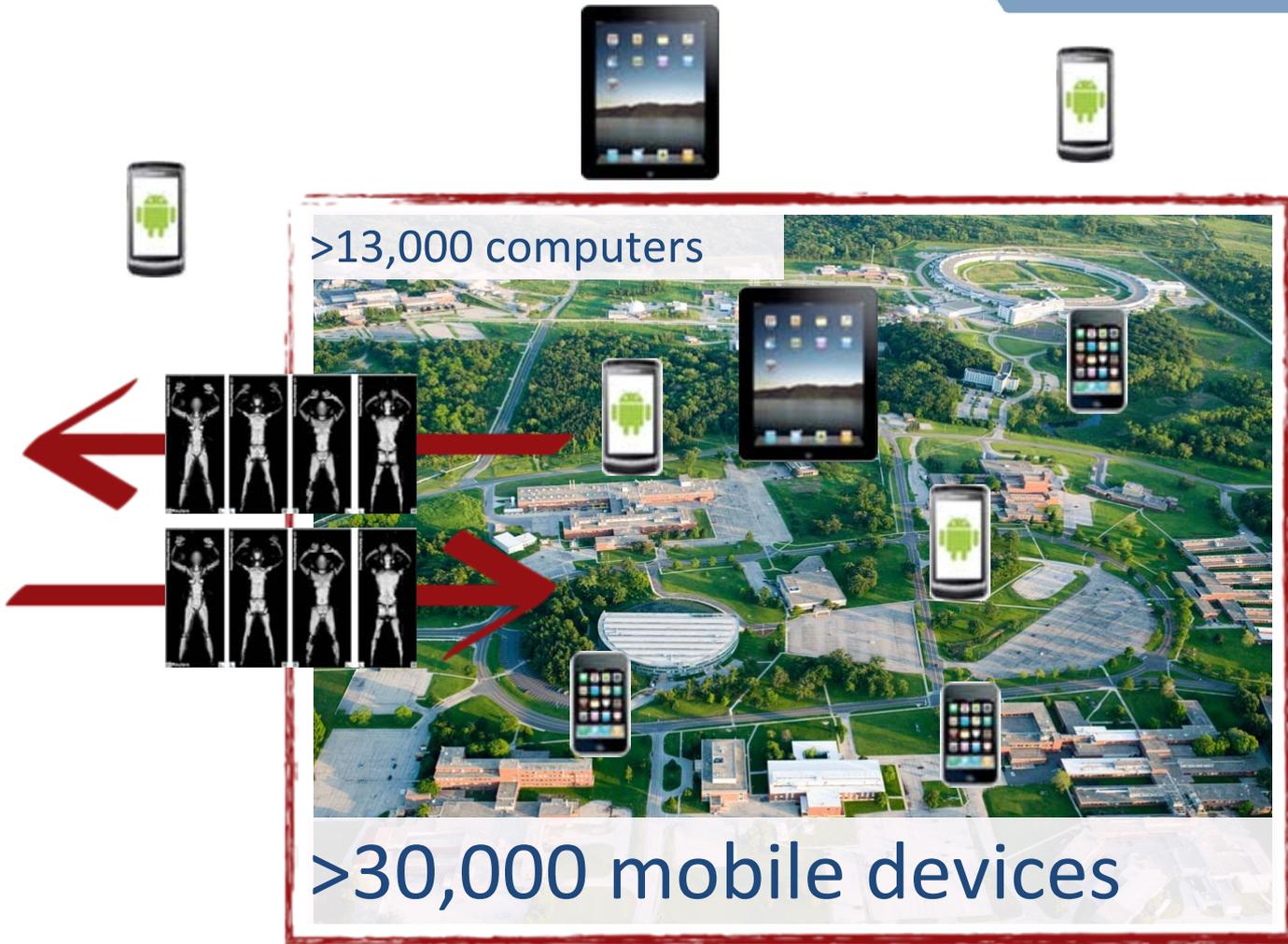
Agent-Based Simulations



Integrated Data Sources





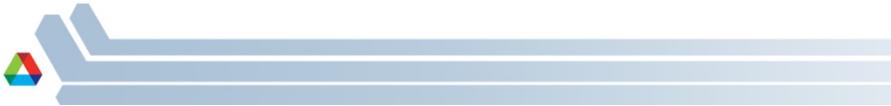
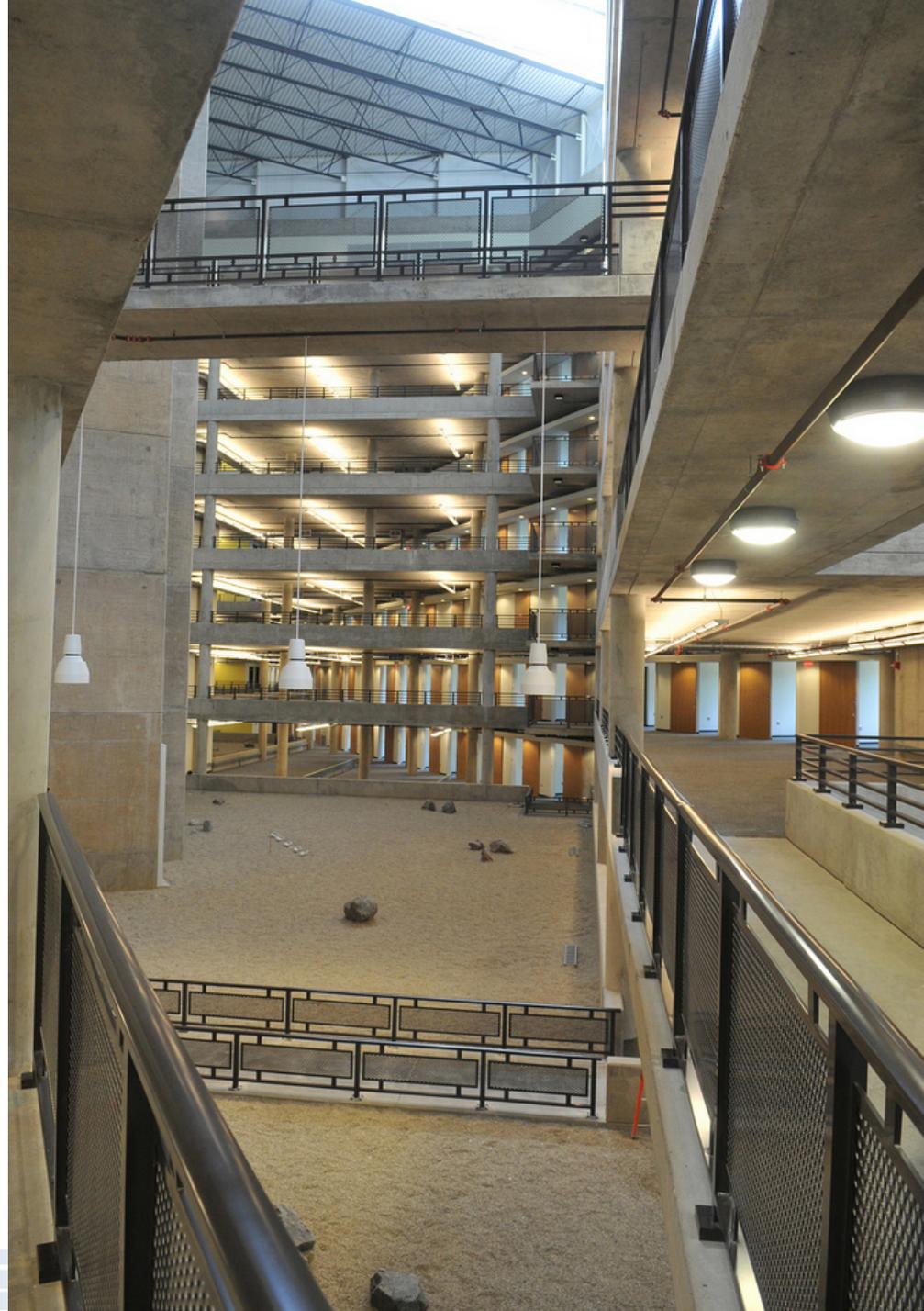


Location Based Applications

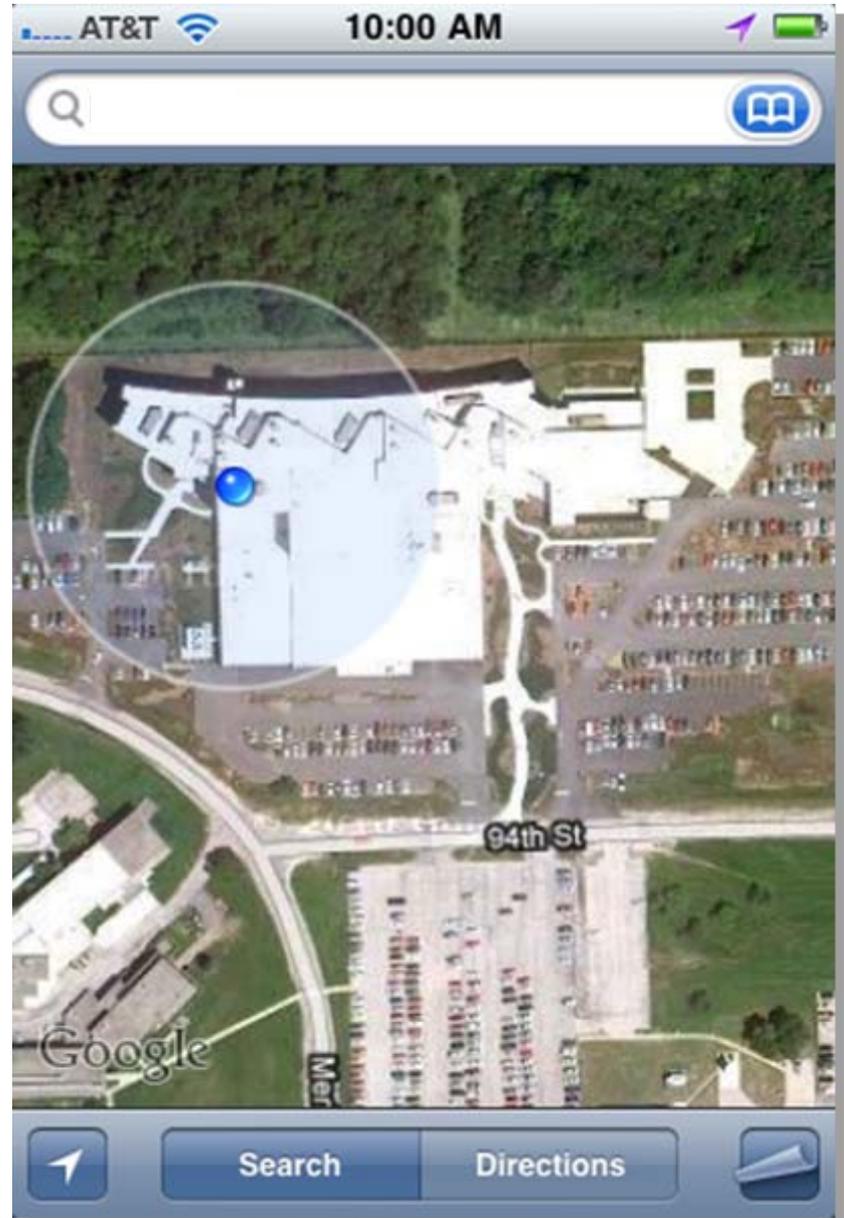
science

energy

safety



Secure Intelligent Infrastructure





Haiti's 'Kapab Mednet': Discovering Systems Problems between Response Organizations

John Crowley

twitter: @jcrowley

Harvard Humanitarian Initiative &
National Defense University STAR-TIDES

12 January 2010

Switch from silos in Helmand to Haiti

7.0M Earthquake near Port au Prince

Collapsed buildings, crushing injuries

Calculating health facilities' capacity
became priority for all responders

Key Questions



Where are the hospitals?



How do we communicate with those hospitals?



How do we supply hospitals for changing throughput rates?

New Dynamic Changed Response

Relationships forged between
Institutions created information
sharing around imagery, maps, &
operational data. Just do it.

Strong Angel (DARPA),
Crisis Mappers, UNOCA/CDAC

2004 Indian Ocean Tsunami



2010 Haiti Earthquake:

We waited one day

Haiti imagery layer now available

Wednesday, January 13, 2010 at 7:05 PM

We've worked closely with GeoEye throughout the afternoon to make their most recent satellite imagery of Haiti, taken at approximately 10:27am EST today, available as a KML overlay for Google Earth. You can [download the KML here](#) and open it in Google Earth, or look at it via the browser plug-in below. As you'll see, the imagery shows a powerful glimpse into the destruction in Haiti. Here are before-and-after screenshots of the Presidential Palace and an area of Port-au-Prince:



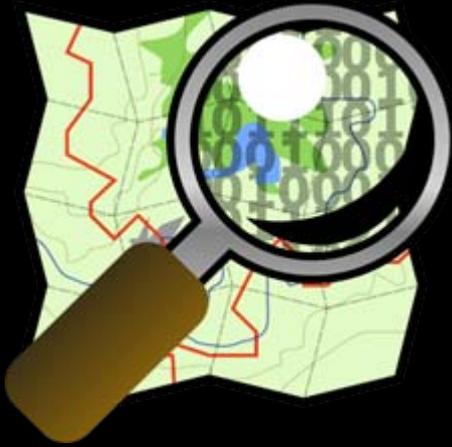
Entirely New Public Sources

Globalhawk and P3

World Bank 15cm



OpenStreetMap is like a Wikipedia of Maps



=



+



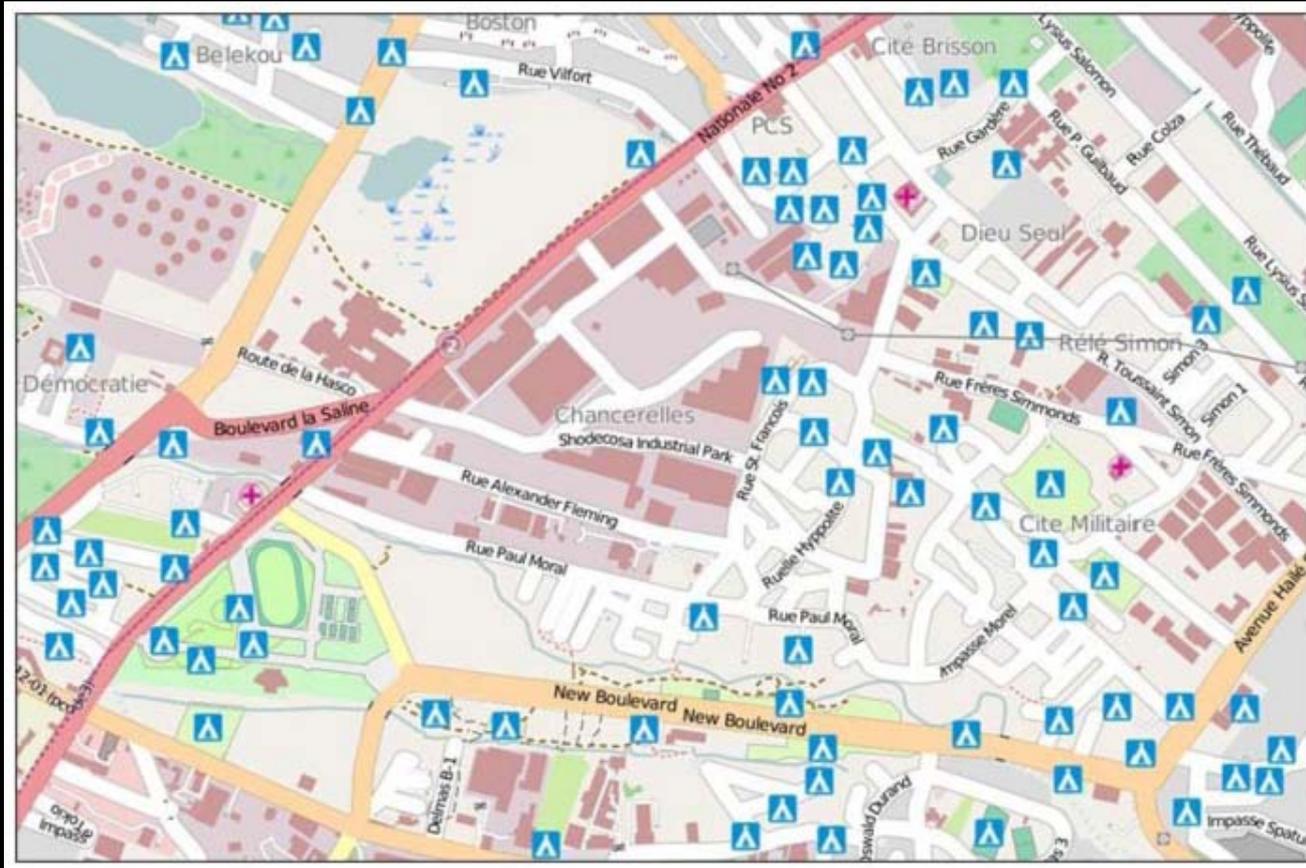
OpenStreetMap

1000 contributors turned this map of Haiti...



OpenStreetMap

...into this...



OpenStreetMap in Haiti

...in just two weeks...

ito!



9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 January 2010

OpenStreetMap

CC-by-SA www.itoworld.com

Map data www.openstreetmap.org 31 Jan 2010

Texts

from the

Rubble

Mwen se carline pierre mw poko mori
mwen anba dekonb nan universite
caraibes ki sitye nan delma 29 la tanpri
map tann pou yo vini sove m.

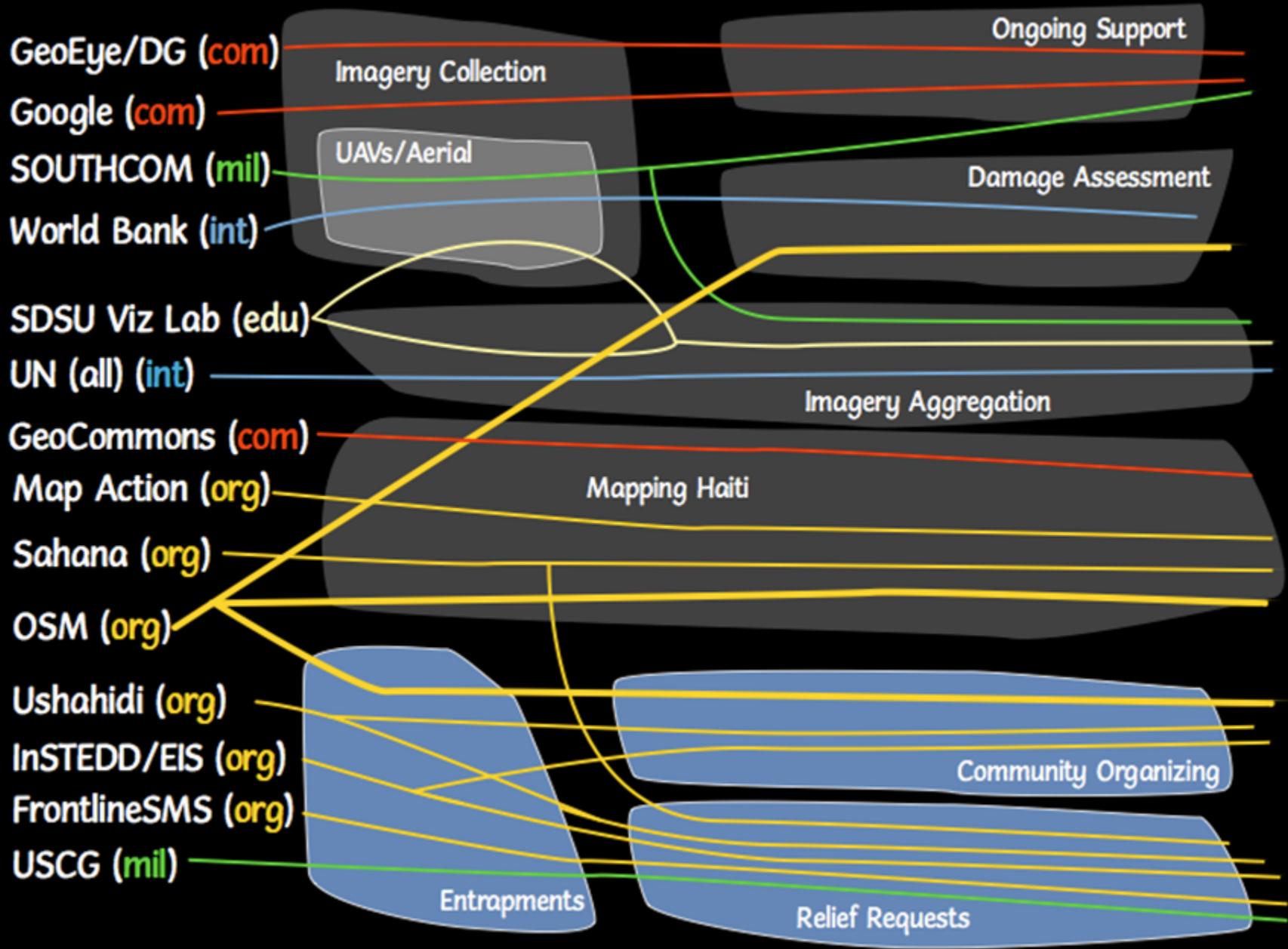
My name is Carline Pierre **I'm not dead.**
I am under the rumbles in University
Caraibes, which is in Delmas 29.
Please come and get me!
I'm waiting for you.

18.5546
-72.314



Ushahidi @ Tufts Fletcher School

Haiti Narrative: Responders' Paths through Challenges



Requests from UN and NGOs



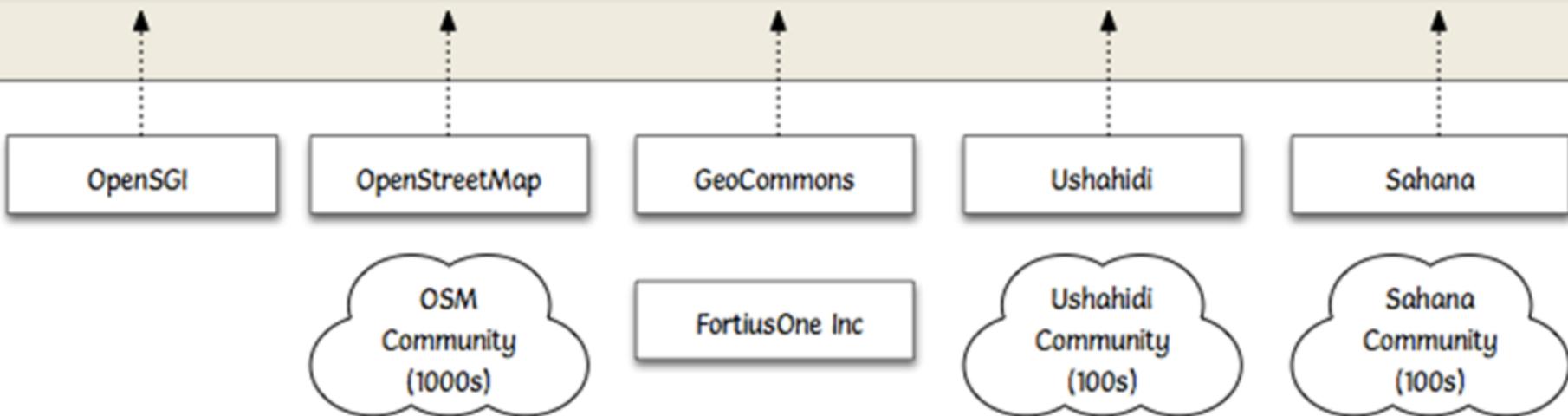
How could we connect SOUTHCOM to these information flows?

How could we connect the entire response to health facilities?

How could we create an interface of top-down and bottom-up?

Genesis of Kapab MedNet

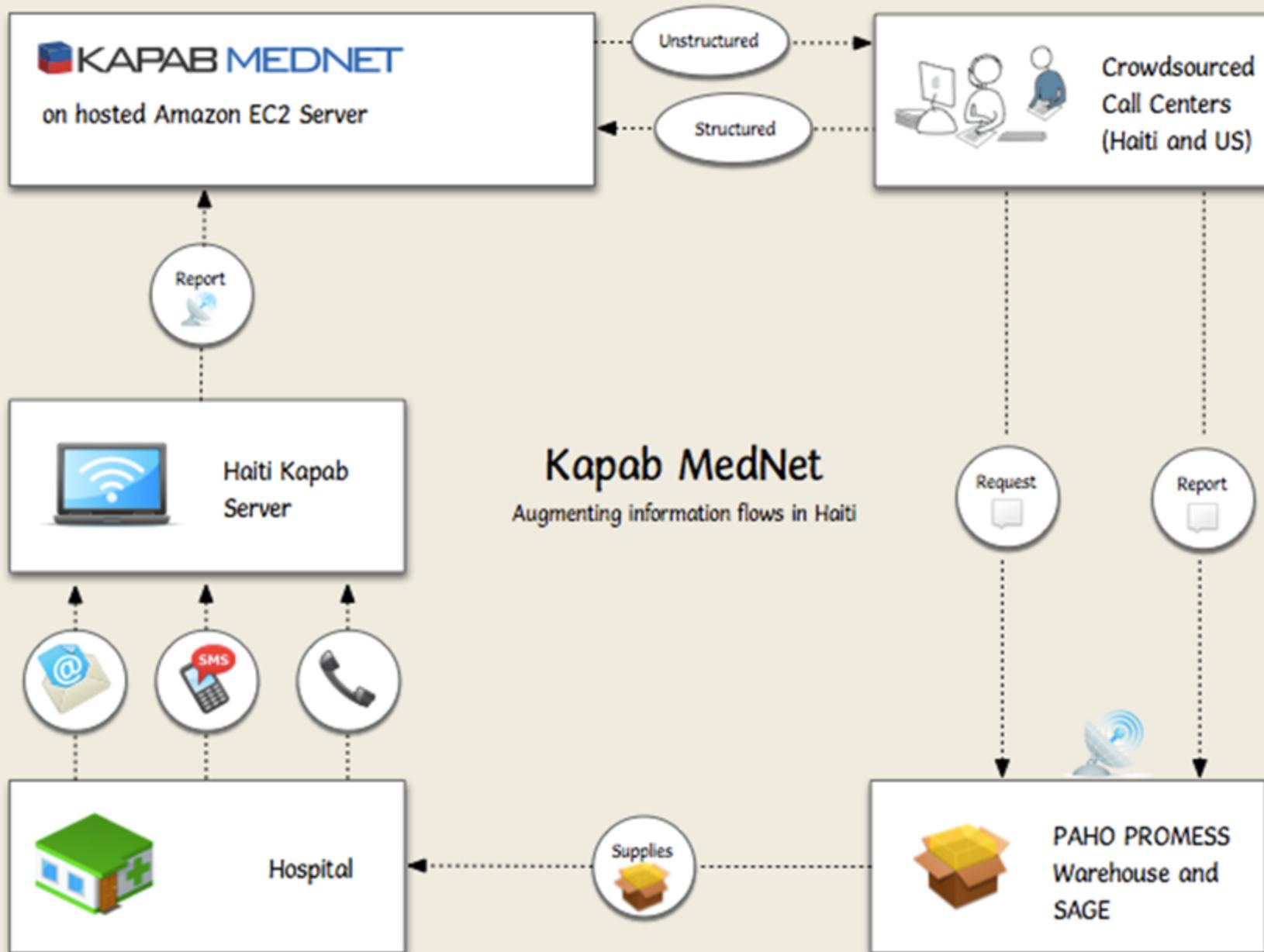
3 KAPAB MEDNET



2

Mobilization of Effort to Improve Information Flow
by Crisis Commons, STAR-TIDES (NDU R&D), and Synergy Strike Force (PVO)

1 Perceived Poor Information Flow between Civilian and Military Organizations Responding to Haiti





System Failure

Legal and process delays

Inefficient Funding Flows

Low stocks of experience and trust

Inability to adapt government structures to meet new challenges.

Roadblock 1: Who owns health?



From SOUTHCOM to PAHO to WHO.

Challenge 1: **Legal Delay**

Legal concerns diverted effort needed by field staff into interorganizational space, without process for dialogue to resolve issues. *Externalizing* risks instead of *managing* risks.

Challenge 2:

Narrow Interface of Top-down & Bottom Up

Staff on the ground were collecting vital data, but it never made it out of theatre in formats or classifications that the entire international response operation could use.

Coordinated action requires communication.

Roadblock 2: Novice Problem



HHS convened working group, but experts in data standards marginalized.

Took 5 weeks to agree to use an *existing* DHS standard.

Challenge 3: **Experience Gap**

Staff turnover in agencies will continue to be a problem, but these officials need to get up to speed on each crisis and be able to adapt to meet common and unique challenges. *They need to know who to call.*

Roadblock 4: Process Delay



Agencies got stuck in processes to develop processes to verify and validate unexpected assets.

Challenge 4:

Flexibility to react and anticipate

We need space to experiment and to measure feedback between the expected and actual, without violating law or policy.

Challenge 5:

Hub and Spokes Mental Model

Information assurance compels government to build web portals that force hub and spokes model on international response, yet low trust and centralized architecture prevent its effective use with key stakeholders.

Roadblock 3: Funding Vehicles



Needed about \$150K to run for 8 months, most of which was for local labor.

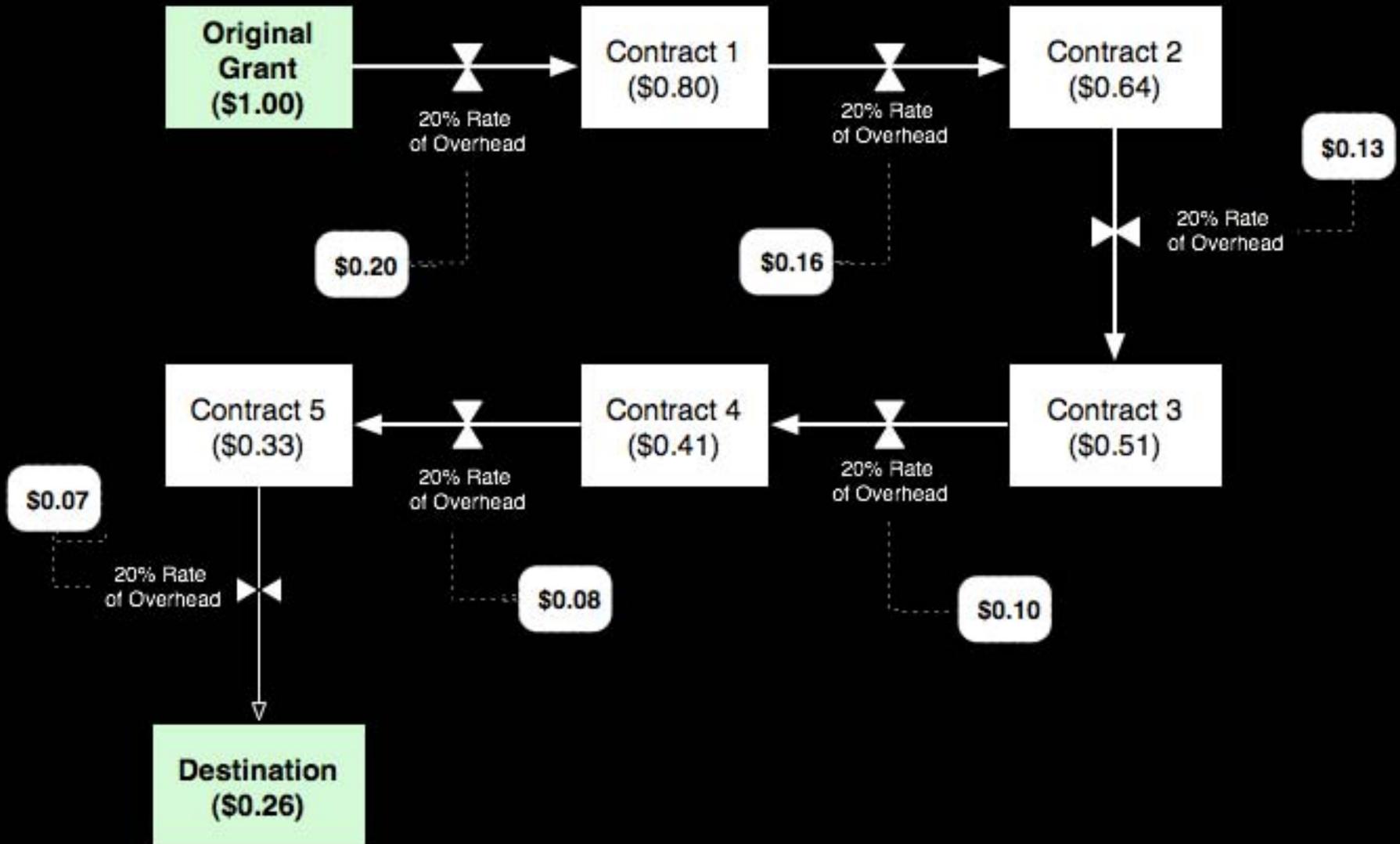
Yet impossible to get on human timescale.

Challenge 6:

Delays

Contracting process is designed to ensure fair competition, not speed and flexibility.

Contracting Flow Delays



We are acting like a large,
lumbering animal on the Serengeti

We need to adapt to survive.

Process Jazz

Practice with a common song book

Encourage different ways to improvise on a theme

Adapt when something unexpected opens an opportunity or challenge

Be flexible enough to work *within* the unexpected

Incorporate the audience into the improvisation

INSS



INSTITUTE FOR NATIONAL
STRATEGIC STUDIES

INSTITUTE FOR NATIONAL STRATEGIC STUDIES

National Defense University

Organizational Analysis of the U.S. National Security System

Dr. James Douglas Orton

Dr. Christopher Lamb

Institute for National Strategic Studies

National Defense University

September 22, 2010



Introduction

- Value of thorough organizational analysis of the entire U.S. national security system
- NDU support for the Project on National Security Reform
 - Landmark study, *Forging a New Shield*
- Ongoing research critiques national security system from a organizational perspective
 - “Broken Shield: Organizational Analysis Reveals Contradictions and Missing Elements of the U.S. National Security System”

24 Lenses	1st Order	2nd Order	3rd Order
Leadership	Heroic Leadership	Administrative Leadership	Distributed Leadership
Structure	Rational Structures	Natural Structures	Open Structures
Culture	Integrated Cultures	Differentiated Cultures	Fragmented Cultures
Strategy	Firm Strategies	Corporate Strategies	Network Strategies
Decision-making	Rational Actor	Bureaucratic Politics	Organizational Processes
Learning	Exploitation Learning	Experimentation Learning	Exploration Learning
Sense-making	Objective Sensemaking	Subjective Sensemaking	Enactive Sensemaking
Change	Macrostrategic Changes	Mesostrategic Changes	Microstrategic Changes

Net Assessment

System strengths:

- Deep functional expertise
- Innovation in the capillaries
- Dedicated workforce

Notable limitations:

- System contradictions
- Missing elements

24 Lenses	1st Order	2nd Order	3rd Order
Leadership	President-centric System	Powerful Secretaries	Policy Entrepreneurs
Structure	Weak NSC Staff	Bureaucratic Equities	Undisciplined Expansion
Culture	No Overarching Culture	Cylinders of Excellence	Under-resourced National Missions
Strategy	No Real Strategy	Portfolio of Policies	Few Network Strategies
Decision-making	Slow Decision System	Bureaucratic Politics	Easily Thwarted Decisions
Learning	Insufficient Information Flow	Fractured End-to-End Process	Thwarted Learning
Sense-making	Psychic Prisons	Biased Stovepipe Filters	Squandered Sensors
Change	Congressional Gridlock	Changed Environment	Incapable of Self-Correction

Contradiction

(Conventional Wisdom)

“Cylinders of Excellence” Encourage Competition More than Collaboration

- Biasing, powerful, autonomous, functional stovepipes
- Lead agency means sole agency (Beers, 2007)
- Country teams do not always work collaboratively
- Odd triumvirate in Afghanistan – Defense, CIA, State
- Mistrustful mirroring (Pentagon’s mini-State Dept.)
- Replication increases conflict and burdens president
- Each department requires geographic substructures
- Inconsistent maps of the world for each stovepipe

Contradiction

(Unconventional Wisdom)

Small, Ephemeral NSC “Non-headquarters” Cannot Integrate Powerful Functional Bureaucracies

- Tiny, ephemeral, “non-headquarters” staff
- Treasury, State, Defense, Security, Justice
- 71 employees, 155 detailees, \$9.09 million budget
- Harvard comparative calculation: 3200 HQ members
- Limited attention, sleep deprivation, employee burnout
- Missing many cross-cutting coordination mechanisms
- “Tangled mess of people trying to do the right thing”

Missing Element

(Conventional Wisdom)

Information Flow Necessary for Basic Organizational Learning Processes Is Impeded

- Little learning infrastructure at the national level
- Knowledge compartmentalization
- Structural impediments; e.g. Zegart's *Spying Blind*
- Missing elements; e.g. no NSC Inspector General
- Systematic destruction of institutional memory
- The system militates against rigorous evaluation

Missing Element

(Unconventional Wisdom)

Innumerable Information Nodes that Capture Diverse, Weak and Ambiguous Signals are Squandered

- Does not process weak signals well
- Struggles to triage unimportant from important
- Blind to indicators of virtuous circles, vicious circles
- Does not effectively employ narrative rationality
- Blind to six types of past/present/future rationalities
- Small wins stifled by macrostrategic planning
- Squanders sensemaking capacity of millions of nodes

Conclusions

- Systemic look at national security system is rare but revealing
- Makes a compelling case for national security reform
- Continuing education required
- Monograph out soon
 - (if you want an electronic copy, please leave your email with conference organizers)



NDU/Argonne Integrative Systems Conference

National Security Whole-of-Government The *Intergovernmental* Dimension “NETWORK FEDERALISM”

John F. Morton

Distinguished Fellow & Homeland Security Lead
Project on National Security Reform

22 SEP 2010



“The preparation and response to Hurricane Katrina show we are still an analog government in a digital age.”

A Failure of Initiative

The Final Report of the Select Bipartisan Committee to Investigate the Preparations for and Response to Hurricane Katrina, U.S. House of Representatives, February 15, 2006



*“Where the hell is the cavalry on this one?
. . . They keep saying we’re going to get
supplies. For God’s sake, where are
they?”*

Kate Hale, Director of Emergency Management, Miami-Dade County FL
Day Three Press Conference, Hurricane Andrew Response, 1992



“At some point we saw there was . . . nothing for the Federal government to stick on to.”

Scott Wells, FEMA Deputy Federal Coordinating Officer for Hurricane Katrina in Louisiana
quoted in *Hurricane Katrina: A Nation Still Unprepared*

Special Report of the Committee on Homeland Security and Governmental Affairs, U.S. Senate,
May 2006



“We’ve played the game. We’re done playing the game.”

Wayne Harris, Chairman, County Commission, Okaloosa County, FL

15 June 2010—the day after Commissioners unanimously approved to the decision to shut the Destin Pass into Choctawhatchee Bay during the BP oil spill without authorization from either the state EOC or the Unified Command in Mobile, AL



Whole-of-Government

- The Horizontal Dimension
 - Interagency
- The Vertical Dimension
 - Intergovernmental

- *And what about whole-of-society, whole-of-nation?*
 - “Inherently Government Functions”
 - Steady-state “left-of-the-boom” CI/KR
 - Crisis-state “right-of-the-boom” ESAR-VHP, social media/dynamic mapping in Haiti, etc.



The Vertical Dimension

- The fundamental reality of the intergovernmental vertical dimension is shared sovereignty over common territory
 - Federal
 - State
 - Local

i.e., the “problem” is Federalism



which translates to. . . .

- The Core Intergovernmental Problem:
 - The President exercises no delegated authority over state and local jurisdictions, their organizations or personnel



National Preparedness: *The Operational Problem*

- Conflict over all-hazards risk
 - Federal orientation to terrorism
 - State and local orientation to natural disasters which they deem as high-probability
- Inadequate capabilities for catastrophic operational planning at the state and local levels
 - States and locals apply scarce resources to planning for routine high-probability



Network Federalism: Four Solutions

- Regional Catastrophic Preparedness Staffs (RCPSs)
- Interagency National Security Professional (INSP) “Enterprise Cadres”
- Net-enabled Information Sharing Environment (N-ISE)
- White House Non-Federal Stakeholder Collaboration Office



Regional Catastrophic Preparedness Staffs, I

- An FPC-facilitated preparedness, planning and support-staff entity in each Federal region
 - Drawing personnel for TDY from Federal, state and local departments/agencies
 - **Serving as co-equals**
 - Operating under a structure and process informed by National Incident Management System (NIMS)
 - Effected by Intergovernmental Personnel Act (IPA) Mobility program
 - Funded by Federal direct assistance—not by grants



Regional Catastrophic Preparedness Staffs, II

- To develop and sustain regional capability to do
 - Catastrophic risk assessments
 - Catastrophic operational planning and exercise validation
 - Catastrophic capability inventories via negotiated processes
 - Through which gaps are identified for targeting grants and other resources
 - Evaluations and self-assessments informed by regionally-determined performance metrics

Project on National Security Reform *Recalibrating the System: Toward Efficient and Effective Resourcing of National Preparedness* (December 2009)

http://www.pnsr.org/data/files/pnsr_national_preparedness_system.pdf



Interagency National Security Professional (INSP) Development

- PNSR Section 1054 Study on INSP Development
- PNSR HLS Team recommending means for including *non-federal* organizations and personnel in the EO 13434-envisaged INSP system
 - “Enterprise cadres”
 - “National” professional development guidelines (vice “Federal” requirements) benchmarked by professional boards
 - Pilot an RCPS as a proof-of-concept for INSPs



Net-enabled Information Sharing Environment (N-ISE)

- A technology- and governance-based information sharing and analysis architecture
 - Internet-derived environment
 - Based on common security framework
 - Aggregates data
 - Configured for specific purposes
 - Presents to other authorized users for other purposes
 - Via a user-defined operating picture
 - Conforms to governance information protection and privacy protection requirements as they evolve



White House Non-Federal Stakeholder Collaboration Office

- A entity in the White House, EOP or NSC Staff to serve as non-FACA mechanism for *non-federal* HLS stakeholders to provide formal, systematic, up-front *concur/non-concur responsibility* for:
 - Strategic guidance
 - Assessment
 - Strategy/policy formulation
 - Implementation/evaluation
 - Issue management, as may be required
 - Input into deliberations involving decisions on homeland security and emergency management risk assessment and resourcing



“I like to steal President Bush's line in reverse: We need to take a thousand points of light sometimes and make it a laser beam.”

ADM Thad Allen, USCG (Ret.), National Incident Commander, Gulf Oil Spill
9 September 2010 Morning Edition Interview with Steve Inskeep, NPR



John F. Morton

PNSR Distinguished Fellow, HLS Lead

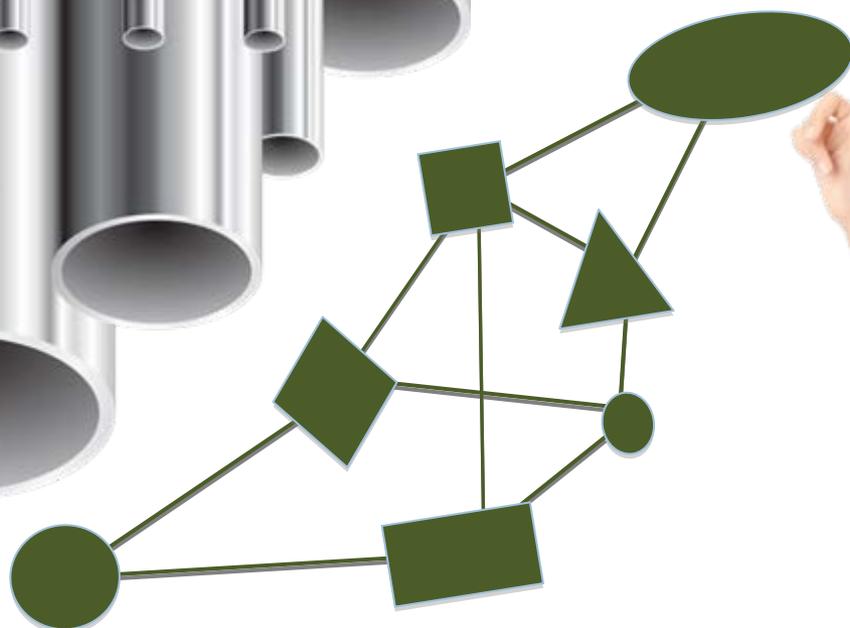
410-263-0036

jmorton@pnsr.org



The complex national security challenges of today and the future require new approaches to system design that focus on missions and outcomes and emphasize integration, collaboration, and agility.





Equally as challenging are efforts to design, develop, and successfully deploy integrative and adaptive systems solutions across the national security system.

